TEACHER PERCEPTIONS REGARDING THE INFLUENCE BLOCK SCHEDULING HAS ON STUDENT LEARNING AS COMPARED TO TRADITIONAL SCHEDULING IN MIDDLE SCHOOLS

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by

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The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

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And hereby certify that, in their opinion, it is worthy of acceptance.

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Special thanks to

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ABSTRACT

The purpose of this study was to compare middle school teachers' perceptions on student learning in A/B block schedules and traditional schedules in schools with grade configurations of 6 through 8. Responses to the survey were disaggregated by schedule type and years of teaching experience within groups and between groups. Middle school teachers in the A/B block schedule perceived their schedule had a greater impact on student learning on over 90% of the survey responses. In addition the A/B block schedule teachers perceived their instructional strategies were more diverse than the traditional schedule middle teachers. While professional development demonstrated significant differences between the two groups, the differences were not as many or as large.

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CHAPTER 1

The National Commission on Excellence in Education (NCEE) published a report entitled "A Nation at Risk" (1983). The report presented recommendations for school reform. One of their most prominent recommendations advocated a more effective use of school time. In 1994, another report was published stating: "Learning in America is a prisoner of time. For the past 150 years, American public schools have held time constant and let learning vary. The rule, only rarely voiced, is simple: learn what you can in the time we have available" (National Education Commission on Time and Learning (NECTL) (1994). The implications in these reports were that reorganizing class time and restructuring the school day would address how students learned best because not all students learn on the same schedule.

Since the early reports have been published new reforms, government mandates, and research has surfaced to re-address student learning and instruction. The focus on student achievement has gained momentum since the No Child Left Behind Act (NCLB) (2002) was signed into law by President Bush. Accountability, one of the significant elements of NCLB, has become a key principle for schools in assessing student achievement. One aspect of this accountability is standard-based instruction which demands critical thinking skills, in-depth instruction, extensive dialogue, and problem solving (Flynn, Lawrenz, & Schultz, 2005). This type of instruction requires educators to re-examine classroom practices and alter teaching procedures to facilitate student learning.

Acknowledgement of the differences among learners is often unaddressed in educational institutions. Students are often given the same materials, study the same content and work at same pace on the same schedule. A limited knowledge of cognitive development and student learning can restrict educators in instructional practices (Caskey & Anfara, 2007). Research on cognitive development has gained momentum in the past decade (Anfara, 2001; Caskey & Anfara, 2007; Huitt & Hummel, 2003; Jackson & Davis, 2000; Manning, 1993; Pruitt, 1999; Wood, Smith, & Grossniklaus, 2001). Educators have become more interested in the knowledge of how the brain works in connection with learning and teaching.

If instructional practices are not guided by an understanding of how the brain works and the importance of learning differences, decisions on restructuring the school day and teaching practices will be superficial at best. With the realization that an increased focus on standard-based instruction is taking a prominent position in education and how particular strategies can gain and hold the attention of students during instruction, some schools are beginning to meet these exigencies by addressing time issues of student instruction.

Conceptual Underpinnings

Referred to as early adolescents, middle school students are often viewed as flawed, unpredictable, hormonally challenged, turbulent and subject to multiple risks (NMSA, 2003; Caskey & Anfara, 2007; Jackson & Davis, 2000). A predominate response of educators is to remediate, conform, and/or tolerate adolescents as they maneuver through this stage of life. This discourse can have a ripple effect on schools

and classrooms through time, space, and behavior management (Jackson & Davis, 2000). This archetype regarding early adolescents necessitates re-evaluation (Jackson & Davis, 2000; Stevenson, 2002). The challenge is to access past and current research reported in the literature in order to ascertain how well middle schools are serving young adolescents (National Middle School Association (NMSA), 2003).

Stages of early adolescence are routinely defined by chronological ages of 10-14 and through developmental stages of varying degrees (Anfara, 2001). The works of Piaget (Huitt & Hummel, 2003; Wood, Smith, & Grossniklaus, 2001), Pavlov (Huitt & Hummel, 2003), and Erikson (1980) reinforced this notion and allowed for definition of developmental models and formation of theories. While biological and developmental ages are convenient stereotypical definitions by which to identify the journey to adulthood, the order and timing of the stages is unique to each individual.

Physical changes within each early adolescent vary as individuals move from childhood to physical maturity. Secondary sexual characteristics begin to form as in pubic, arm, chest, and leg hair growth. New sexual awakenings provide confusion and uneasiness. Early adolescents begin to experience a rapid growth in height conversely with sporadic growths of the arms, ears, and noses (Anfara, 2001; Erickson, 1980). The disproportionate physical growth creates awkwardness and self-consciousness.

Early adolescents begin to change in their cognitive thinking abilities (Roseth, Johnson, & Johnson, 2008). The prefrontal cortex of the brain where initiating and shifting attention, planning, and making decisions continues to mature during the adolescent years (Caskey & Anfara, 2007). Adolescents are required to absorb and

process much more information in school now than in the past. Detailed facts, complex concepts, assignments, and organization of materials place heavy demands on students' processing abilities and concentration. How adolescents assimilate and attend to this information is often determined by the span of attention for a particular task.

The ability to begin to operate in the abstract is emerging, yet many rely on concrete learning (NMSA, 2003). As the brain is also undergoing growth, early adolescents are beginning to think mega-cognitively, looking at their own intellectual growth and thought processes while considering others (Erickson, 1980; Pruitt, 1999; Roseth, et. al., 2008). Young adolescents now view the world and themselves differently. The early adolescent's ability to make decisions, remain focused, and stay attentive for long periods of time are still emerging and developing (Anfara, 2001; Erickson, 1980; NMSA, n.d.). While early adolescents deal with the cognitive, physical, and emotional changes, societal issues are brought into the mix.

"The conditions of early adolescence have changed dramatically from previous generations" (Carnegie Council on Adolescent Development, 1989). The Council further iterated "Many middle grade schools today fall far short of meeting the critical educational, health, and social needs of millions of young adolescents" (1989). Early adolescents are faced with more pressures and choices and often are unprepared for the future. Gender roles, family structure, and economy are more diverse than ever before. The age of technology and increased exposure to the media have placed more decisions in the hands of our youth and brought together more cultures.

The Task Force on Education of Young Adolescents (established by the Carnegie Council in 1987) suggested that middle schools should organize to ensure success for all students. The National Middle School Association (1995) prepared a position paper, *This We Believe,* which stated flexible organizational structures are characteristic in a "developmentally appropriate" middle school (p. 28). These two reports emphasize the need to look beyond the traditional six to eight classes per day to a schedule that will meet the diverse needs of the early adolescent.

Anfara in *Reforming Middle Level Education: Considerations for Policy Makers* (2004) stated "While it seems common sense to assume that schools would respond to the needs of their students and create developmentally appropriate learning environments, it is evident from the history of middle-level reform that schools are slow to change" (p. 6). When educators combine the aforementioned reports with NCLB, state mandates, and adolescent research, educators in middle schools are readjusting their perceptions of student learning. Awareness of adolescent learning differences results in educators looking at various programs and educational decisions. Attempts are being made to incorporate concepts such as block scheduling that align with the cognitive and physical development and the social and emotional needs of early adolescents (Veal & Flinders, 2001).

Block Schedules

Block schedules are schedule configurations which allow for daily extended periods of instruction in fewer classes rather than the traditional six-, seven- or eight-period daily schedules (Queen, 2003). While there are may be many modifications to any

block scheduling model, there are three typical models. They are the Alternating Day Plan (Canady & Rettig, 1996; Gable & Manning, 1997), Four Block Plan (Rettig, 2004), and the Flexible Plan (DiRocco, 1998).

The Alternating Block Plan is also known as the A/B Block Schedule. In this plan, classes are ninety minutes in length and teachers teach three classes a day with one ninety minute planning period. In the Alternating Block Plan, students attend an "A" day schedule of classes for periods 1-4. The next day, students switch to "B" class periods 5-8 and then alternate back to the "A" day schedule (Canady & Rettig, 1996; Gable & Manning, 1997). Students would have "A" and "B" days on alternate Fridays or alternate "ABABA" weeks with "BABAB" weeks. The Alternating Block allows for some classes to be double-blocked as seen in Period Five. Double blocking is when a class meets every day instead of every other day and is usually used for classes that are co-curricular such as Art, Music, or Physical Education or designed to meet a particular need.

The Four Block Plan takes year long classes and converts them to half-year programs as in Table 2. The Four Block Plan utilizes ninety minute class periods in conjunction with a course load of four classes. The four classes are then completed in their entirety before students begin other classes. Teachers receive one ninety minute preparation period (Rettig & Canady, 1997). In most cases, social studies and science are rotated every other day, by every other unit, or by semester. The fourth period of the day is used for exploratory classes, physical education and/or music. Communication Arts and math teachers teach three groups per day for the entire year while social studies and science teachers work with six groups per year (Gable & Manning, 1997).

The Flexible Block Plan is a combination of the Four Block and the Alternating Block schedules, but class length varies from day to day. In one example, on three out of the five days, each class could meet for ninety minutes. On the other two days, each class may meet for sixty to seventy-five minutes in length. A portion of this time is often set aside for student advisory. In another example of the Flexible Block Plan, two or more teachers team up to develop interdisciplinary studies with a set group of students in two to four class periods of 45-90 minutes each. During the school day, teachers may draw from any subject matter that aligns with curriculum directives. Teachers in the flexible block plan all teach at the same time and have the flexibility to teach under several designs. This structure becomes a school within a school focused on student-centered instruction around active learning processes. Teachers may design classes to meet the same time every day or they may vary the teaching times (DiRocco, 1999).

Experimenting with various forms of block and flexible scheduling has occurred since the 1980s especially in high schools. In 1996 the National Association of Secondary School Principals (NASSP) reported in *Changing an American Institution* that high schools should be concerned with the quality and quantity of time spent in the classroom instruction by altering the rigidity of the traditional 45 to 55 minute period to more flexible scheduling parameters. As more and more high schools began implementing block scheduling, studies on the effects of block scheduling at other levels emerged. While there is substantial evidence on the effects of block scheduling at the secondary level, little research has been done at the middle school level. Due to the fact that middle school students show a decline in the transition year from elementary to middle school

(Jackson & Davis, 2000; Thompson, 2004) many middle schools have begun to investigate and adopt some form of block scheduling to address the transition from self-contained elementary classrooms and the needs of early adolescents.

Statement of the Problem

According to NCES data (National Center for Education Statistics, 2005) school days have not increased much over the past twenty years. While the average length of the school day varies across grade levels, the average school day is 6.5 hours, an increase of two-tenths of an hour. NCES (2005) reports that public middle schools average 6.8 hours but Midwest middle schools average the longest school day with 6.9 hours. While school hours have remained relatively unchanged over the years, many schools have implemented strategies to use the time more efficiently through block scheduling and varying teaching strategies.

Research indicates that block scheduling is effective at the secondary level (Benton-Kupper, 1999; Canady & Retting, 1995a; Dexter, Tai, & Sadler, 2006; Evans, Tokarczyk, Rice, & McCray, 2002; Veal & Flinders, 2001). However, few studies have been done to determine the effectiveness of block scheduling in the middle school. The little research that has been done on middle school scheduling is often tied to mathematics (Cobb, Abate, & Baker, 1999; Mattox, Hancock, & Queen, 2005) or social studies (DiBiase & Queen, 1999). Even less research is concentrated on comparing teachers' perceptions of the impact on student learning in both traditional and block scheduling situations.

Innovative teaching methods and a greater variety of instructional strategies that address multiple learning styles are considerations in implementing block schedules (Evans, et. al., 2002; Rettig & Canady, 1997; Robbins, et. al., 2000). This researcher is particularly interested in the professional development of teachers who teach in the block schedules. According to Hirsch in *Reforming Middle Level Education* (Thompson, 2004) "Unfortunately, most professional development systems organize around courses or content offered in a smorgasbord approach to educators" (p. 206). Canady and Rettig (1996) and Robbins, Gregory, and Herndon (2000) argue that the extension of time into blocks lends itself to require teachers to be better prepared in regards to instruction and planning. In *The Handbook of Research in Middle Level Education* (Thompson, 2001), Roney's research found that teachers need assistance with planning lessons, shifting from one activity to another, content, and adolescent development. Robbins, Gregory, and Herndon (2000) suggest a consideration for teachers would be to: "Divide the time into three or four chunks to provide several beginnings, ends, and middles (BEMs). Consider changing topics or activities related to a particular standard. This promotes alertness, attention, and engagement" (p. 43). Other strategies indicated in research suggest that successful teaching strategies should include collaborative learning, hands-on-activities, in-depth and extended projects, and higher order thinking skills (Derouen, 1998; DiRocco, 1998; Gable & Manning, 1998; Hackman, 1995b; Rettig, 2004; Robbins, et. al., 2000; Veal & Flinders, 2001; Zepeda, & Mayers, 2001).

It is the teacher who orchestrates the learning environment and activities and evaluates student success. If middle schools are to meet the demands of government

mandates, meet the needs of early adolescent development, and improve student achievement, teachers need to be more involved in the development of varied instructional strategies and school structures that make blocks of time productive learning environments. Therefore, this research examines teacher perceptions regarding the impact A/B block scheduling has on student learning compared to teacher perceptions in traditional time schedules. The perceptions of middle school teachers regarding A/B block scheduling and student success will be used to determine the impact of A/B block scheduling as compared to traditional schedules. Researching how teachers perceive the impact of A/B block scheduling on student learning may allow other educators to make informed decisions on meeting middle school student challenges through scheduling.

Purpose of the Study

The purpose of this study is to compare teacher perceptions regarding the impact A/B block scheduling and traditional scheduling may have on student learning in middle schools. Perceptions of teachers experiencing three years or less in their respective schedules will be compared to the perceptions of teachers experiencing more than three years in their respective schedules. The researcher will seek to discover what teachers perceive to be the major advantages/disadvantages of A/B block scheduling and traditional scheduling. Teachers may have varying perceptions of the advantages/disadvantages of A/B block scheduling and traditional scheduling as it relates to teachers, students, and instruction.

This study will seek to find factors perceived to be the most difficult in implementing A/B block scheduling. It is important that this study also attempt to

determine the factors crucial to sustaining the A/B block schedule over time. This study has the potential to offer practical direction for educators who may be considering A/B block scheduling.

Potential implications for the study

Perceptions, positive or negative, can have a large impact on programs and concepts in education. Individuals bring personal experiences, bias, and beliefs into situations which may have diverse or enhancing effects on how others respond or judge programs or change. By surveying teachers who are teaching in A/B block schedules, as well as those in traditional schedules, other educators will have a clearer picture and a better understanding of how A/B blocks are perceived to impact student learning as compared to traditional class arrangement. Additionally, educators looking into implementing A/B block scheduling may find practical guidelines in the literature. Necessary components in sustaining the block schedules may be identified and trial and error may be diminished as a result of this study.

Research Questions

As perceptions may be dependent on a variety of factors and are subjective, this study will address the following research questions:

1. Do middle school teachers teaching in the traditional schedule and those teaching in the A/B block schedule differ in their perceptions of the impact their respective schedules may have on student learning?
2. Do middle school teachers experiencing three years or less of A/B block scheduling and those experiencing more than three years of A/B block

scheduling differ in their perceptions of the impact of A/B block scheduling on student learning?

3. Do middle school teachers experiencing three years or less of traditional scheduling and teachers experiencing more than three years of traditional scheduling differ in the perceptions of the impact of traditional scheduling on student learning?
4. Do middle school teachers experiencing three years or less of A/B block scheduling and teachers experiencing three years or less of traditional scheduling differ in their perceptions of the impact of scheduling on student learning?
5. Do middle school teachers experiencing more than three years of A/B block scheduling and teachers experiencing more than three years of traditional scheduling differ in their perceptions of the impact of scheduling on student learning?
6. What do teachers identify as advantages and disadvantages of their daily schedule?
7. What do teachers perceive to be the most difficult factors in implementing a block schedule?
8. What do teachers perceive to be the most important factors in sustaining a block schedule?

Limitations

One of the limitations of this study is the small sample of eighty-two school teachers teaching in the A/B block schedule. Only four middle schools utilizing the A/B block schedule will be invited to participate in this research. Initial investigations by the researcher discovered a variety of middle school grade configurations of fifth through ninth. The researcher chose middle schools with the grade configuration of sixth through eighth as this is the most common middle school grade configuration (Canady & Rettig, 1996; DiBiase & Queen, 1999; Irmsher, 1996; Laitsch, 2004; Robbins, et. al., 2000). Additionally, after contacting middle schools requesting information on the type of block scheduling, the researcher determined the A/B type of block schedule was the most common and chose not to investigate other types of block scheduling.

Another limitation is the possible inaccuracy of the responses from the participants. Promising anonymity and/or confidentially does not guarantee participants will respond honestly or impartially to the questions. Subjective interpretation of questions may also limit the accuracy of any participants' responses.

Finding schools with traditional and A/B block scheduling that have similar demographics and programs is important. Care was taken to find schools comparable in student demographics to minimize any concern regarding confounding variables.

Assumptions

Studying teachers' perceptions of block scheduling requires participants to be currently teaching in a school utilizing A/B block scheduling. The study will provide as

much anonymity as possible for teachers as they respond to the survey questions, therefore, it is assumed that teachers will give truthful answers.

Definition of key terms

For the purpose of this study the following terms are defined:

Accountability is defined by taking responsibility for decisions and the implementation of state educational standards. Reporting the results and answering to the consequences for the decisions further defines accountability (French, In Thompson, 2004).

Block schedules are defined as school schedules with an A/B class schedule in which classes meet for eighty to one hundred twenty minutes every other day for the entire year (Canady & Rettig, 1996).

Instructional strategies are defined by systematic activities with explicit steps to achieve specific student outcomes (Jackson & Davis, 2000; NMSA, 2003; Robbins, Gregory, & Herndon, 2000). Examples may include:

1. Authentic tasks are strategies used by students such as presentations, demonstrations, posters, or projects to demonstrate knowledge and skills of concepts and ideas (Robbins, Gregory, & Herndon, 2000).
2. Cooperative learning where student teams, each with students of different levels of ability, use a variety of learning activities to improve their understanding of a concept or subject. Each member of the team is responsible not only for learning what is taught but also for helping teammates learn, thus

creating an atmosphere of learning (Canady & Rettig, 1996; Jackson & Davis, 2000).

3. Graphic organizers are used to represent concepts and ideas visually in graphic form in order to assist students in organizing and seeing relationships among ideas.
4. Mnemonics is an activity that assists the recall of specific information and processes through such techniques as songs, related images, or rhymes (Robbins, Gregory, Herndon, 2000).
5. Scaffolding is used as a temporary support for learning which includes systematic prompts in materials, content, and activities. As student learning new skills and knowledge the support fades as the student reach mastery (Canady & Rettig, 1996; (Jackson & Davis, 2000).

Interdisciplinary instruction is defined by instruction that includes several academic areas (Powell & Allen, In Anfara, 2001).

Middle schools are defined for this research as schools with the grade configuration of sixth through eighth grades.

Standard based instruction is defined by the instructional practice of specific expectations students are expected to know and perform (Flynn, Lawrenz, & Schultz, 2005).

Student learning is defined by a student demonstrating knowledge, skills, or performance usually expressed in terms of progress toward school objectives through measureable outcomes or standards (Robbins, Gregory, & Herndon, 2000).

Teachers are defined by persons teaching in the A/B block schedule certified and employed to teach in a specific subject or grade level span as dictated by respective states.

Experienced teachers are defined by teachers with more than three years of teaching experience.

Novice teachers are defined by teachers with three years or less teaching experience.

Traditional schedules are defined as school schedules with six or seven periods a day with forty to fifty minutes for each period (Canady & Rettig, 1996).

Summary

Early adolescence can mean a period of accelerated motivation, new socialization skills and changes in learning strategies. New cognitive abilities emerge and early adolescents begin to think in more abstract terms while formal operations begin to materialize. These profound changes may provide cause for middle level educators to rethink how students learn and how time issues may influence student learning. The issue in this study is the teacher perceptions of the impact A/B block scheduling has on student learning. To identify the impact of A/B block scheduling on middle school students, teachers who teach in A/B block schedules will give their perceptions of how student learning is affected by the A/B block schedule. Therefore, the purpose of this research is to discover how teachers perceive A/B block scheduling impacts student learning in middle schools and to provide factors teachers perceive as being important in implementing and sustaining A/B block schedules.

It is the intent of this study to provide information for administrators and teachers to evaluate instructional time and take into account the characteristics of middle level students when making a decision regarding scheduling. The information from the literature review and this study on adolescent development and block scheduling may also provide middle schools with scheduling options so classes can be configured to give support to middle school concepts and meeting students' collective and individual needs.

Considerable research has been conducted on the implementation and outcomes of block scheduling in various grade configurations. The literature published on block scheduling focuses on the issues of student outcomes, school climate, instruction, and teacher professional development. The review of block scheduling literature which follows will briefly refer to research regarding the historical background of middle schools and school climate but will focus on instruction, student learning, and teacher professional development and the purported advantages and disadvantages in these areas.

CHAPTER 2

Review of Literature

"For middle schools to be successful, their students must be successful; for students to be successful, the school's organization, curriculum, pedagogy, and programs must be based upon the developmental readiness, needs, and interests of young adolescents" (NMSA, 2003, p. 1). Never has this statement been truer since the implementation of NCLB (2002). School leaders face the challenge of increased pressure to produce better prepared students by demanding higher standards which have lead them to explore ways to better meet these demands. In order to better prepare students at the middle school level, educators must understand the diverse needs of adolescents. This study will briefly explore the physical development, cognitive psychology and societal perspectives as related to adolescents, history of the middle school movement, block scheduling, and teacher perceptions of block scheduling.

As educators become more informed on adolescent development, they will be better equipped in understanding the importance of the middle school concept and the reforms which may be taking place. To help educators to better understand middle school structure, this study will also discuss the history of the middle school movement. In understanding the middle school system, educators may find strategies and programs to improve student learning.

Changing the schedule structure is one concept in transforming middle schools to increase student achievement (Jackson & Davis, 2000). School schedule structure can have a variety of meanings but this study will be concerned with the A/B block schedule

and the traditional specified minute period schedule. In *Turning Points 2000: Educating Adolescents in the 21st Century*, Jackson and Davis (2000) believe that changing school structure is only symbolic in nature and structural changes will have little effect if there is no focus on how the change will improve student learning. Improvements in instructional practice need to change in order to ensure success for all students. A clear idea of what kind of instructional practice is wanted must be decided before schools can design a structure to go with the practice to enhance student learning (Jackson & Davis, 2000; Robbins et. al., 2000; Veal & Flinders, 2001). The lecture method of teaching does not provide opportunities for student-based inquiry, research, cooperative learning, thematic units, and hands-on learning experiences. Changing the focus from teacher centered classrooms to student centered classrooms, improves student learning as students "…learn best when they exercise some control over their learning" (Jackson & Davis, 2000, p. 83).

A developmental theory on how students learn and how the pedagogy relates to the expansion of content and knowledge is critical when adjusting the school structure (Anfara, 2001; Benton-Kupper, 1999; Canady & Rettig, 1995b; Canady & Rettig, 1996; DiBiase & Queen, 1999). Altering the focus of professional development to address the developmental needs of adolescents, the appropriate design of curriculum, and the use of extended periods of time will increase the success of structural change in schools (Benton-Kupper, 1999; Derouen, 1998; DiRocco, 1998; Flynn, et. al., 2005; Queen, 2000). Teachers need to know and model the skills needed to adapt to the structural change. This study is designed to find out how teachers' perceive A/B block scheduling

impacts student learning. In addition, the study will explore how those perceptions influence teaching strategies, teacher professional development, and standard based curriculum of the schools using block scheduling.

Adolescent Development

Adolescence, ages 12 to 19, is the transition time between childhood and adulthood. It is a time when physical, emotional, and intellectual growth occurs at a disconcerting speed. This challenges the adolescent to adjust to a body that is ever changing, to discover their social identity, and to expand their world view (Caskey & Anfara, 2007). Perhaps the most noticeable changes in adolescence are physical. Hands and feet may grow at different times than legs and arms so coordination is awkward and adolescents become clumsy. Growth spurts occur with an increase in height and weight (Manning, 1993; NMSA, 2003; Pruitt, 1999). The time of rapid physical development is also known as puberty. Puberty has no timetable and is individual in its onset. Primary and secondary sexual characteristics begin to appear and cause further confusion and awkwardness. These changes can bring about concerns about appearance and body image (NMSA, 2003; Pruitt, 1999; Roseth, et. al. 2008; Stevenson, 2002).

Cognitive development is how a person thinks, perceives, and gains understanding. As children, adolescents could only think concretely but at this stage of their lives adolescents begin to think in the abstract (NMSA, 2003; Pruitt, 1999; Stevenson, 2002). Adolescents reach Piaget's stage of formal operations in which they develop new tools for manipulating information at twelve years of age (Huitt &

Hummel, 2003). During this stage, adolescents need not have firsthand experiences in order to draw conclusions, or deal with problems. Deductive logic which involves hypothetical situations becomes easier and more pronounced and is often required in science and mathematics (Erikson, 1980). Adolescents are better able to solve problems that they could not have solved when they were less mature and want the opportunity to do so. They often use a scaffolding technique to build on the formal operations. Adolescents build on their previous knowledge by adding the knowledge they are currently actively acquiring to construct meaning. This type of learning is sometimes connected to "constructivist" learning (Hackman, 2004; Preskill & Torres, 1999). They further explain:

> Constructivism is concerned with how people process information in ways that affect their worldview. It proposes that individuals continually create and re-create meaning as a result of their relationship with others in the social environment. *Constructivism* is particularly well suited for understanding interpersonal relationships and how behavior is mediated by organizational environments. Constructivist learning theories are built on the belief that all knowledge is based on experience and that meanings are arrived at by continually seeking order in these experiences (Preskill & Torres, 1999, p. 19).

Each middle school student will be constructing and generalizing their knowledge on timetables distinctive to their individual development (Hackman, 2004; Pruitt, 1999). It is important to understand that because of the different rates of development, middle school

students will range from concrete operational to formal operational thinking (Hackman, 2004).

While undergoing physical and cognitive changes, adolescents have to contend with societal perceptions. Adolescents are often seen as rebellious and fighting against authority when, in fact, they are seeking to find their identity and their place among their peers. Peers play an important part in the development of middle school adolescents as peers may validate adolescents' feeling about themselves (Pruitt, 1999; Stevenson, 2002). Image, and how others see them, is important to this age (Roseth, et. al., 2008). Society often mistake concerns about their image for being more egocentric. As children progress into the adolescence stage, they actually become more concerned about others. Often, as their concerns grow for others or society, adolescents become more emotional whereby society may perceive them as "problem" children or immature (Manning, 1993).

In-attention and inability to sit still are perceived as defiance or immaturity. In fact, the irregular growth spurts and other physical changes occurring during adolescence are painful and often uncontrollable. While society may see this stage of development as turbulent and cause for alarm, adolescence can be an opportunity for society and educators to guide them in their decisions and successful learners (Caskey & Anfara, 2007). As past society became more aware of adolescent development, an educational movement began to provide a more affective transition from childhood to adulthood.

Middle School Historical Background

In the early 1900s, the configuration of junior high school began as a way to transition students from elementary to high school (Canady & Rettig, 1996). The times

demanded education take a new course to a seventh through ninth grade arrangement for students who may not be continuing on to high school, provide more curriculum opportunities, and aid in the social development of adolescents (Canady & Rettig, 1996; Dexter, et. al., 2006; Irmsher, 1996; Queen, 2000; Veal & Flinders, 2001). With the published works of Piaget in the 1960's on children's cognitive development, researchers began to explore the psychomotor, cognitive, and emotional development of children between the ages of ten to fourteen (Huitt & Hummel, 2003; Wood, Smith, & Grossniklaus, 2001). In the findings, it was discovered children go through a transitional phase between elementary school and junior high school (Manning, 1993; NMSA, 1995 & 2003). Middle schools began to increase in popularity for the next twenty years as researchers saw junior highs as "little high schools" (Canady & Rettig, 1996; Gable & Manning, 1997).

In 1969, the Association for Supervision and Curriculum Development (ASCD) established The Council on the Emerging Adolescent Learner (CEAL) which was appointed to develop a rationale for the importance of middle schools and their programs (Anfara, 2001). In their 1975 report, ASCD identified several features that were important in successful middle schools. The innovative ideas included individualized instruction, challenging curriculum, flexible scheduling, and team teaching (Anfara, 2001). Many of these innovative ideas were also reported and suggested by the National Middle School Association (NMSA) in 1977.

This We Believe was published by NMSA in 1982 (revised in 1992, 1995, and 2003) which outlined essential building blocks needed for successful middle schools.

These included (a) educators committed to young adolescents, (b) a shared vision, (c) high expectations for all, (d) an adult advocate for every student, (e) family and community partnerships, (f) a positive school climate, (g) curriculum that is challenging, integrative, and exploratory, (h) varied teaching and learning approaches, (i) assessment and evaluation that promote learning, (j) flexible organizational structures, (k) programs and policies that foster health, wellness, and safety, and (l) comprehensive guidance and support services (NMSA, 1995, p. 13-31).

In 1985, the National Association for Secondary School Principals (NASSP) described the most successful middle schools as those that focus on: "culture and climate, student development, school organization, curriculum, learning and instructions, transition, client-centeredness and connections" (Anfara, 2001, p. xii). Following these recommendations, *Turning Points: Preparing American Youth for the 21st Century* (Carnegie Council, 1989) released eight necessary elements essential for middle schools. In order for middle schools to be the student-centered they need to

> create small communities for learning, teach a core academic program, ensure success for all students, empower teachers and administrators to make decisions about the experiences of middle grade students, staff middle grade schools with teachers who are expert at teaching young adolescents, improve academic performance through fostering the health and fitness of young adolescents, reengage families in the education of young adolescents, and connect schools with communities (p. 9).

Ultimately, *Turning Points (Carnegie Council, 1995)* became one of the most widely accepted and quoted middle school publications. As others turned their attention on middle school reform, the Carnegie Council offered grants to middle schools in twenty-seven states to improve and reorganize their middle schools. As educators became more aware of adolescents and the importance of middle schools, more and more middle schools came into existence. Increasing the number of middle schools, however, did not solve the problem of addressing adolescent needs (Gable & Manning, 1997). While school districts reconfigured their building levels, many were just transitional schools from elementary to secondary (Manning, 1993). The public began to notice that some middle schools were only partially incorporating the recommendations. Middle schools did not appear to be working. New studies on middle schools, new curriculum standards, and community concerns began to force new investigations on the middle level school (Anfara, 2001). The need to create high-performing middle schools means educators need to understand the research, read the literature, and shift their thinking regarding instructional strategies. One element for re-evaluation to consider is school structure or flexible scheduling.

Block Scheduling

For decades high schools had the flexibility and ability to design their own schedules. Time allotment and standards were left up to individual schools. In order to reduce the discrepancies in high school scheduling, the Carnegie unit was introduced by the College Entrance Examination Board in 1909 (Hackman, 2004). The Carnegie unit was designed "…in which students' seat-time in a given subject is equated to completion

or mastery of that subject" (Benton-Kupper, 1999, p. 1). The amount of class time equals a set number of credits which accumulates into a set amount of credits needed for graduation. School subjects are awarded credits over the course of the school year with each subject weighted by importance (Benton-Kupper, 1999). The Board designed the Carnegie unit to instruct schools to have one hundred twenty hours of classroom instruction in forty to sixty minute classes in order to allow for various courses to be taught daily (Hackman, 2004). School days were divided into six or seven periods a day, with separate subject and teacher per period (Table 1). For decades, the Carnegie unit was the only accepted time structure. As the times demanded a more organized answer to the problem of educating students more effectively, educators began rethinking the traditional schedule.

Table 1

Traditional Single-Period Schedule (Seven Courses)

Period	Monday	Tuesday	Wednesday	Thursday	Friday
			Course		
7:30-8:15	1	1	1	1	1
8:20-9:05	2	2	2	2	2
9:10-9:55	3	3	3	3	3
10:00-10:45	4	4	4	4	4

Table 1 *(continued)*

Traditional Single-Period Schedule (Seven Courses)

Period	Monday	Tuesday	Wednesday	Thursday	Friday
			Course		
10:50-12:00	Lunch Activity Classes	Lunch Activity Classes	Lunch Activity Classes	Lunch Activity Classes	Lunch Activity Classes
12:05-12:55	5	5	5	5	5
12:55-1:40	6	6	6	6	6
1:45-2:30	7	7	7	7	7

Opponents of the Carnegie unit argued that students were not successfully engaged in higher order thinking skills in the short amount of class time (Canady & Rettig, 1995ab). Further, in the traditional schedule, time drives the traditional schedule which forces more teacher-directed lessons and less student-driven activities. The short time was not conducive to instructional strategies that allowed for problem solving, student interaction, or take into account the various student learning styles (NASSP, 1996; Stevenson, 2002). Another criticism was the impersonal school environment. When students have six or seven teachers a day, there is little chance to develop relationships that can foster learning or meet student's emotional needs (Rettig & Canady, 1997). Discipline problems were another concern with the traditional schedule.

The fact that hundreds of students are released in the hallways at the same time six or seven times a day means that there are more opportunities for conflicts among students. Often these conflicts are carried into the classroom disrupting instruction (Benton-Kupper, 1999; Evans, et.al., 2002; Queen, 2000). Responding to these concerns, new strategies and scheduling models emerged and high schools began to experiment with new classroom structures.

Block scheduling began to make its mark at the high school level in the 1990s (Gable & Manning, 1997; Jackson & Davis, 2000) in part due to extensive research by Canady and Rettig (1995). In their report, Canady and Rettig (1995b) stated that the traditional schedule intensified discipline problems, fragmented the school day, limited instructional time, and did not meet the students' individual needs. When students move through a traditional schedule of six, seven, or eight periods a day, there is little chance for in-depth study (Canady & Rettig, 1995b; Evans, et. al., 2002; Rettig, 2004; Queen, 2000).

With block scheduling the school day is divided into large periods (blocks) of time allowing for fewer classes per day. Classes are blocked for ninety to one hundred twenty minutes with three or four classes per day instead of the traditional seven or eight classes. The concept of block scheduling was formed as concerns regarding insufficient time for in-depth learning of concepts and subjects for student achievement grew. The theories behind larger blocks of instruction time include students will be able to focus more time on lessons and subject matter is more thoroughly covered (Canady & Rettig, 1995). Research in cognitive development suggests that extended periods of time can

facilitate student learning (NMSA, 2003; Pruitt, 1999; Stevenson, 2002). As students begin to think in the abstract rather than the concrete, extended time allows students to make better use of scaffolding techniques to enhance learning (Canady & Rettig, 1996; Jackson & Davis, 2000). Theoretically, longer periods of class time also assist teachers in employing more effective pedagogical practices (Canady & Rettig, 1995; Evans, et. al., 2002; NASSP, 1996; NMSA, 2003). According to Queen (2003), block scheduling enhances the possibility of uninterrupted class time and improves student achievement if proper curriculum and instruction are used to motivate the learner.

Various types of block schedules can be implemented and classes can be scheduled in a broad combination. Block scheduling is often used interchangeably with flexible scheduling, modified scheduling, and alternative scheduling. While there are many modifications to any block scheduling model, there are three typical models. They are the Alternating Day Plan (A/B) (Gable & Manning, 1997), the Four Block Plan (Rettig, 2004), and the Flexible Plan (DiRocco, 1999).

The Alternating Day Plan, also known as the A/B block schedule, has students attending three or four extended classes of ninety to one hundred twenty minutes per day (Cobb, et. al., 1999; Canady & Rettig, 1996). Classes alternate every other day for the entire year with one class of shorter duration held every day to accommodate subjects such as music or physical education or other subjects as needed. Teachers have one ninety minute planning time per day (Gable & Manning, 1997). Table 2 illustrates one example of a configuration of the A/B block schedule. In this example, Block A consists of Courses 1, 3, and 7 with each course being ninety minutes long while Block B

encompasses Courses 2, 4, 6 with each course of ninety minute durations. Course 5 meets every day.

Table 2

Alternate Day (A/B) Block Schedule (Seven Classes)

	Monday	Tuesday	Monday	Tuesday
Block	A	B	A	B
	One half of school		One half of school	
Block 1	1	2	1	2
	1	2	1	2
Block 2	3	4	3	4
	3	4	3	4
Lunch & Period 5	Lunch	Lunch	Period 5	Period 5
	Period 5	Period 5	Lunch	Lunch
Block 3	7	6	7	6
	7	6	7	6

Table 3 presents another variation of the A/B block schedule. In this schedule, classes also alternate all year. Courses 1, 3, and 7 rotate every other day with Courses 2, 4, and 6 Monday through Thursday with Course 5 held daily. On Friday, the schedule reverts to a six-period day for courses deemed necessary by schools.

Table 3

Modified A/B Block Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
Block	A	B	A	B	A& B

The Four Block Plan divides the school year into ninety-day semesters with four classes per day (See Table 4). Three of the classes are generally ninety minutes in length. The fourth block is often utilized for classes which are deemed important enough to meet on a daily basis. Students complete courses in the first semester before beginning new courses in the next semester and can complete four year-long courses in one semester (Canady & Rettig, 1995). Teachers have one ninety minute planning block.

Table 4

The Four Block Schedule (Eight Courses)

	Semester	
Period	1	2
1 & 2	Course 1	Course 5
3 & 4	Course 2	Course 6
5 & 6	Course 3	Course 7
7 & 8	Course 4	Course 8

The Flexible Plan is an individualized schedule and can be a combination of the Alternating Day Plan and the Four Block Plan designed to meet the specific needs of a school or community (DiRocco, 1999). There are numerous variations of the Flexible Plan. In some instances classes such as History and Science meet in large blocks of time for three days a week only while the other two days have students spending shorter amounts of time in some classes such as band, choir, physical education, art, or industrial technology. Other courses such as math and English are deemed too important to only attend every other day so those classes meet every day.

Table 5

Flexible Block Plan

Period	Monday	Tuesday	Wednesday	Thursday	Friday
8:00-9:30	English	Science	English	Science	English
9:30-11:00	Math	Social Studies	Math	Social Studies	Math
11:00-11:30	Lunch	Lunch	Lunch	Lunch	Lunch
11:30-12:30	Activity Classes	Activity Classes	Activity Classes	Activity Classes	Activity Classes
12:30-1:30	Science	English	Science	English	Science

Table 5 *(continued)*

Flexible Block Plan

Period	Monday	Tuesday	Wednesday	Thursday	Friday
1:30-2:30	Social Studies	Math	Social Studies	Math	Social Studies
2:30-3:00	Advisory	Advisory	Advisory	Advisory	Advisory

The main characteristic of block scheduling is the larger block of time. But that block of time is of no value unless there is productive instruction and learning activities occurring. A major implication of block schedules centers around teacher methodology. Effective implementation of the block schedule necessitates teachers shift from the traditional lecture to a more hands-on curriculum (Benton-Kupper, 1999; Canady & Rettig, 1996; Derouen, 1998). Teachers cannot simply lecture for eighty or ninety minutes (Canady & Rettig, 1995b). Teachers must be innovative and inventive in their teaching strategies through incorporating a variety of activities, projects, and assessments to increase student involvement through multiple intelligences (Evans, et. al., 2002; Hackman, 1995b; Rettig & Canady, 1997; Robbins, et. al., 2000). In the block schedule, more performance based tasks are encouraged to provide a greater diversity in class activities, such as cooperative learning (Jackson & Davis, 2000; NMSA, 1995/2003), hands-on exercises (CCAD, 1989; Flynn, et. al., 2005; Rettig & Canady, 1997) and

interdisciplinary lessons (Anfara, 2001; Canady & Rettig, 1995a; Freeman, 1998; Furner, 1998; Hackman, 2004).

In several studies, teachers agreed that block scheduling forced them to increase the pace of instruction (Queen, 2000; Evans, et. al., 2002; Veal & Flinders, 2001). In their study, Evans, Tokarczyk, Rice, and McCray (2002) reported: "By varying activities between large group assignments, small group assignments, and individual projects, teachers reported that they were able to spend more than half of each class period on activities other than teacher-oriented lecture" (p. 3). McCoy and Taylor (2000) stated: "Teachers said the 90-minute instructional format allowed a topic to be fully explored, with students remaining focused on the topic for the amount of time needed to bring it to conclusion" (p. 8). Zepeda and Mayers (2001) reported that in traditional schedules transitioning from one activity to another were short and often interrupted by classroom management issues. The teachers believed their teaching methodology changed as they could cover concepts with more depth, used a variety of creative teaching strategies that addressed the multiple intelligences, could employ authentic forms of assessment, and teaching was challenging and interesting (Evans, et. al., 2002; McCoy & Taylor, 2000; Queen, 2000).

Integrating and reinforcing basic skills throughout the curriculum means less fragmentation of concepts which was an additional strength reported (McCoy & Taylor, 2000; Queen, 2000). The cross-curriculum performance based tasks allow students to apply learned material across the curriculum (Evans, et. al., 2002; Freeman, 2001; Hackman, 1995b; Veal & Flinders, 2001). According to proponents of block scheduling,

continuously engaging students in active learning can better accommodate the diverse learning styles of students and raise student achievement (Canady & Rettig, 1995ab; Evans, et. al., 2002; Hackman, 1995a; Jackson & Davis, 2000; Laitsch, 2004; Rettig, 2004; Robbins, et. al., 2000).

Critics of block scheduling argue that the extension of class time does not guarantee teachers will utilize diverse teaching methods (Canady & Rettig, 1996). Block scheduling challenges teachers to keep students' attention for longer periods thus requiring teachers to frequently change learning activities. Teachers moving from the traditional schedule to the block schedule are often ill-prepared to meet these demands. Opponents stress that some teachers use the same methods as before block scheduling, only for a longer period of time (Queen, 2000; Veal & Flinders, 2001). Teachers do not always know how to utilize the extended time appropriately so they do not always plan enough activities to keep students engaged (Dexter, et. at., 2006). Financially, schools may not be able to afford the professional development needed to provide teachers the resources to gain new teaching strategies (Queen, 2000; Veal & Flinders, 2001). To further exacerbate the problem, substitute teachers are ill-prepared and are often unclear about how to handle longer periods (Queen, 2000).

Supporters of block scheduling believe the extended time period allows teachers to more thoroughly teach the curriculum. Less time is wasted in beginning classes and settling the students to be ready for class. Classes that are more suited for longer periods of exploration and discussion, such as science classes and laboratories, are well-matched to the block schedule (Irmsher, 1996; McCoy & Taylor, 2000; NMSA, 1995). Opponents

contend that the curriculum and textbooks in many subjects are not designed for the ninety minute class period and there is less time to complete the curriculum especially in the Four Block Plan (Cobb, et. al., 1999). Opponents to block scheduling believe students experience more difficulty in retaining information when classes meet every other day as in the A/B block schedule (Queen, 2000). One major criticism is that knowledge acquisition often depends on students being exposed to concepts and subjects frequently such as foreign languages (Queen, 2000). Proponents maintain that as students spend longer periods of time on a subject, retention of information is enhanced (Canady & Rettig, 1996; Freeman, 2001; Furner, 1998; Laitsch, 2004). Longer blocks of time allow for differentiated instruction as teachers are better able to provide varied instructional strategies (Queen, 2000). Rettig and Canady also argue that as less content is covered in a block schedule, more meaningful learning is taken place (1995).

Critics also cite problems occur when students transfer in from other schools employing the traditional schedule. The line of reasoning suggests it is difficult to match courses in accordance with state requirements as credits do not always transfer equitably (Queen, 2000). Supporters proclaim that it is usually challenging to match schedules and courses of transfer students regardless of the type of schedule (Canady & Rettig, 1995a; DiBiase & Queen, 1999; Queen, 2000).

In the traditional schedule, students traverse through the hallways when changing classes every forty to fifty minutes (Queen, 2000). The congestion and indirect supervision often causes discipline issues to arise and, if not dealt with immediately, can carry over into the classroom. Instruction may be delayed as teachers have to deal with

the issues. With fewer class changes, there is less opportunity for student discipline issues resulting in a safer school climate (Evans, et. al., 2002).

Other dimensions of school climate are also addressed in block scheduling. Traditional schedules often do not allow teachers and students to build relationships due to the large number of students seen by teachers (Dexter, et. al., 2006; Canady & Rettig, 1995a). The traditional schedule often has teachers teaching five or six classes of students in a given day for forty or fifty minutes which often translates into one hundred and fifty students. Schools become impersonal, students often feel separated from adults and their peers, and believe they are alone (Hackman, 1995a; Queen, 2000). In block scheduling, teachers see fewer students as classes meet for longer periods of time. Teachers know their students' learning styles better, can take more interest in students' lives, better understand the students as individuals, and provide increased emotional support (Roseth, et. al., 2008).

Students are better able to build stronger and more lasting relationships among their peers in the block schedule concept (Benton-Kupper, 1999; Canady & Rettig, 1995a; Irmsher, 1996; Veal & Flinders, 2001). As students work collaboratively and cooperatively in their classrooms, the opportunity to experience positive interactions increases. Students learn from the diverse cultures as they interact, share ideas, and experience other beliefs. Interpersonal relations and teacher/student relationships are strong factors in student achievement (Canady & Rettig, 1995a; Hackman, 1995a and 2004; Rettig, 2004; Roseth, et. al., 2008). School climate becomes more positive and students and staff are happier.

Block scheduling is not just about time allotment of daily classes. Student learning and using the most effective means to achieve student success are important considerations in block scheduling. Designing classroom timetables involves diverse teaching strategies, longer blocks of time to achieve learning, student-centered curriculum, and student emotional support. If block scheduling is to be put into effect, all parties involved must adjust the curriculum, learning strategies, time allotments, budget, and teaching strategies (Hackman, 1995b).

Teacher perceptions of block scheduling

Human behavior is influenced by the external and internal environments in which it occurs (Bolman & Deal, 2003). The variables and specifications of the environment play valuable roles on meanings, values, and perceptions. Phenomena can be created by perceptions and may be seen as constructs of the participants with some overlap of the subjective and objective contexts (Bolman & Deal, 2003). There may be an unclear division between subjectivity and objectivity in participants' meaning in regard to their personal theories and perceptions. Bolman and Deal (2003) further explain:

Personal theories are essential because of a basic fact about human perception: in any situation, there is simply too much happening for us to attend to it all. To help us understand what is going on and what to do next, well-grounded personal theories offer two advantages: (1) they tell us what is important and what can be safely ignored, and (2) they group scattered bits of information into manageable patterns or concepts (p. 34).

At times, our perceptions can keep us from seeing the reality or from moving forward to new ideas and beliefs. At other times, perceptions can enhance our beliefs and make us

see things in a more positive light. Either way, perceptions influence behaviors and thoughts.

Studies have been conducted on teachers' perceptions regarding the effectiveness of block scheduling (Benton-Kupper, 1999; Furner, 1998; Laitsch, 2004; McCoy & Taylor, 2000; Queen, 2000; Veal & Flinders, 2001; Zepeda & Mayers, 2001). The most discussed advantages of block scheduling in these studies were improved teacher-student relationships, stronger teacher-teacher relationships, creative teacher instruction, advanced student learning, and improved school climate. In juxtaposition with these findings, middle school scholars have previously touted the same results (Anfara, 2001; Canady & Rettig, 1996; Jackson & Davis, 2000; NMSA, 2003; Thompson, 2004).

"For young adolescents, relationships with adults form the critical pathways for their learning; education 'happens' through relationships" (Jackson & Davis, 2000). Teachers getting to know the students better was cited as having a positive effect in implementing block scheduling (Queen, 2000; Veal & Flinders, 2001). Teachers felt they could build stronger relationships with students because of the additional time spent in block scheduling (Jackson & Davis, 2000; Queen, 2000; Veal & Flinders, 2001). As the relationships strengthen, teachers become more aware of student interests which allow teachers to diversify their teaching strategies in order to motivate students to learn. In *The Handbook of Research in Middle Level Education*, Anfara and Brown (Anfara, 2001) further reinforces this belief which stated that when teachers and students have strong relationships there are fewer discipline referrals.

In *This We Believe* (NMSA, 2003) one of the characteristics of successful middle schools is the importance of "meaningful relationships" (p. 29). Just as important as student to teacher relationships is the teacher to teacher relationships. "Teaming is the starting place for building a strong learning community with its sense of family, where students and teachers know one another well, feel safe and supported, and are encouraged to take intellectual risks" (NMSA, 2003, p. 29). The importance of teacher relationships is seen through teaming, common planning time and interdisciplinary teaching in block scheduling. Teachers felt they were able to exchange strategies and ideas, utilize staff development more comprehensively, and meet with each other more frequently (Jackson & Davis, 2000; Latish, 2004; McCoy & Taylor, 2000). Sharing resources with colleagues was also noted.

Improved school climate is another advantage teachers perceive resulted from the introduction of block scheduling (Anfara, 2001; Evans, et. al., 2002; McCoy & Taylor, 2000; Jackson & Davis, 2000). "Students seem more settled in class, and there are fewer student behavior problems, resulting in fewer detentions" was reported by Evans, Tokarczyk, McCoy & Taylor (2000). In another study, teachers believed "…fighting incidents had decreased since the scheduling change, which could explain the reduced rate for out-of-school suspensions and/or expulsions at the school…" (McCoy & Taylor, 2000). Queen (2000) concurred in his research that indirectly, discipline was improved due to the decrease number of class transitions.

As other levels began to notice the changes at high schools that implemented block scheduling, efforts to re-organize the structure took hold. If it worked for the high

school students with their diverse needs, then perhaps it would work for middle schools. This study will determine the perceptions of middle school teachers on the impact of block scheduling. This study will also investigate if teachers perceive block scheduling to positively or negatively influence student learning. As the success of any type of scheduling is dependent on how educators implement and perceive it, this study will provide other middle school educators with information to put into practice effective block scheduling. It is the intent of this study to provide current research on how teachers perceive A/B block scheduling impacts their instructional strategies and student learning. This study will also provide varying teacher perspectives on the extent of the activities teachers utilize in the classroom.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

Introduction

In the publication *Turning Points 2000; Educating Adolescents in the 21st Century* Jackson and Davis (2000) contend "Time is perhaps the most important but least available resource in American education" (p. 131). In 1994, the National Commission on Time and Learning published *Prisoners of Time* which identified factors that impeded student learning. One issue argued in the publication was that a change must be made in the school schedule because the fixed schedule is a major defect in the educational system (Brown, 2001). Other research on time and learning (Canady & Rettig, 1995ab; Evans, et. al., 2002; Rettig, 2004; Queen, 2000) lead to the same conclusion: in order to increase student learning, school organization needs to incorporate blocks of learning time to meet the needs of the students.

Public school organization began to change shape in the early 1900s to better prepare students for the transition to high school (Canady & Rettig, 1995). The junior high concept began but not without flaws (Manning, 1993; NMSA, 1995 & 2003). Junior high schools were not taking into account the cognitive, physical, emotional, and psychomotor development of students between the ages of ten to fifteen (Carnegie Council, 1995; Gable & Manning, 1997; NMSA, 1995 & 2003). The Carnegie Council (1989) stated

"Many middle grade schools today fall far short of meeting the critical educational, health, and social needs of millions of young adolescents. Many youth now

leave the middle grades unprepared for what lies ahead of them. A fundamental transformation of the education of young adolescents is urgently required" (p. 36). Subsequently, middle school reform came into existence and encouraged educators to revisit the learning needs of middle school students through non-traditional scheduling (DiBiase & Queen, 1999; Laitsch, 2004; Mattox, et. al., 2005; NMSA, 1995). Brown (Anfara, 2001) reported that placing an emphasis on the developmental needs of the early adolescent was an incentive to introduce block scheduling at the middle level.

One of the greatest challenges in introducing block scheduling is preparing educators to embrace non-traditional schedules. Canady and Rettig (1995a) and The National Commission on Time and Learning (1994) reported that schools cannot be transformed without providing teachers the time needed to reorganize and rethink their teaching strategies. In a study by Benton-Kupper (1999) teachers felt that is was extremely important to receive training and professional development on teaching strategies and adolescent development not only prior to the implementation of block scheduling but as an on-going process. Zepeda and Mayers (2001) concurred that teachers need the training on various instructional strategies and managing class times due to their limited number of teaching methods. In the publication *Reforming Middle Level Education: Considerations for Policymakers* (Thompson, 2004) McEwin, Dickinson, and Smith reiterate the need for teacher preparation in teaching strategies and adolescent development but also argue for middle school philosophy and organization to help "… middle level teachers understand the rationale for and context of middle level schooling (p. 113). Incorporating cooperative learning, group work, projects, independent

study, and hands on activity can improve the quality of learning for the young adolescent (DiBiase & Queen, 1999; Jackson & Davis, 2000; Laitsch, 2004; Mattox, et. al., 2005; Robbins, et. al., 2000; Veal & Flinders, 2001). Knowledge and training are critical factors in instituting any reform but just as important for reform can be how perceptions influence change.

Knowledge is built through social construction of the world both objectively and subjectively (Bolman & Deal, 2003). While some subjective characteristics reflect the meaning of the world that is being investigated, the objective characteristics demonstrate how one negotiates these meanings with others. Merriam (2001) states that "reason and rationality are viewed as the primary foundations of process for learning, through which learners obtain access to the "objective" structures of our world" (p. 67). Adding to this understanding, Merriam (2001) believes that "… emotions and our imaginative appraisal of them are integral to the process of meaning-making; to the ways we experience and make sense of ourselves as well as our relationships with others and the world" (p. 66-67). With this in mind, this study addresses middle school teachers' perceptions regarding the impact of block and traditional scheduling on student learning.

This research design and methodology chapter is divided into three subsections. The first subsection will state the problem and purpose of the study followed by the research questions in the second subsection. The research design is discussed in more detail in the third subsection which also describes the population of the study, the data collection, and instrumentation.

Problem and Purposes Overview

The problem addressed in this study is the impact that middle school teachers perceive the A/B block scheduling may have on student learning as compared to the traditional schedule. Research conducted by Benton-Kupper (1999), Canady & Rettig (1995b), Dexter, Tai, & Sadler (2006) discussed block scheduling at the secondary level but few studies have involved middle school (Cobb, et. al., 1999; DiBiase & Queen, 1999; Mattox, et. al., 2005). There is even less research investigating middle school teachers' perceptions of block scheduling. The problem is based on the need for more research on how teachers perceive block scheduling in order for others to make more informed decisions regarding the restructuring of classroom time.

The purpose of this study is to discover the impact that middle school teachers perceive A\B block scheduling may have on student learning as compared to teachers' perceptions of the impact of traditional schedules on student learning. Comparisons of perceptions of novice teachers and experienced teachers in both A/B block and traditional schedules will be made. In addition, factors which teachers believe are critical to the implementation of block scheduling will be identified as well as factors perceived to be important to sustaining block schedules.

Research Questions

The study will answer the following research questions:

1. Do middle school teachers teaching in the traditional schedule and those teaching in the A/B block schedule differ in their perceptions of the impact their respective schedules may have on student learning?

2. Do middle school teachers experiencing three years or less of A/B block scheduling and those experiencing more than three years of A/B block scheduling differ in their perceptions of the impact of A/B block scheduling on student learning?
3. Do middle school teachers experiencing three years or less of traditional scheduling and teachers experiencing more than three years of traditional scheduling differ in the perceptions of the impact of traditional scheduling on student learning?
4. Do middle school teachers experiencing three years or less of A/B block scheduling and teachers experiencing three years or less of traditional scheduling differ in their perceptions of the impact of scheduling on student learning?
5. Do middle school teachers experiencing more than three years of A/B block scheduling and teachers experiencing more than three years of traditional scheduling differ in their perceptions of the impact of scheduling on student learning?
6. What do teachers identify as advantages and disadvantages of their daily schedule?
7. What do teachers perceive to be the most difficult factors in implementing a block schedule?
8. What do teachers perceive to be the most important factors in sustaining a block schedule?

Research Design

In choosing a framework of study, researchers are aware that the depth of the analytic processes "…is determined by the purpose of the study" (Krueger and Casey, 2000, p. 127). In this study, the purpose is to identify the perceptions of classroom teachers regarding the impact of the A/B block schedule on student learning as compared

to the impact of the traditional schedule. The results should provide others with information regarding the benefits and pitfalls of A/B block scheduling. The quantitative data from the teacher surveys created by Carol Brown (CAREI, 2001) will be analyzed to answer the eight research questions.

Data Analysis

As this study is concerned with teachers' perceptions and not in testing a hypothesis, descriptive strategies will be primarily explanatory and be used to "summarize, organize, and simplify data" as defined by Gravetter and Wallnau (2004, p. 6). Line item responses were categorized into sections regarding teacher perceptions, the extent of the utilization of particular instructional strategies, and teacher professional development. The means and standard deviations for each item response were calculated in order to compare novice and experienced teacher perceptions of the A/B block schedule and the same for traditional schedule. T-tests were completed to test any statistical significance of possible differences in the means of the responses of novice and experienced teachers in both the A/B block perceptions and the traditional perceptions.

The term "qualitative research" is used in describing an interpretative, naturalistic, and exploratory approach to understanding individuals' experiences, beliefs, actions, and values within their environment (Merriam, 1998). Qualitative methods can be used to gain new perspectives on phenomena about what which is already known or to gain more comprehensive information that may be difficult to convey quantitatively. During the qualitative research process, the researcher focuses on what is happening in the present and how individuals are making sense of the phenomena in order to develop conceptual

frameworks or theories (Merriam, 1998). The qualitative data from this study will be obtained from the responses of the teachers to two open-ended questions on the survey. The two open-ended questions asked teachers to specify what professional development they acquired to support teaching in the A/B block schedule and what teachers perceive to be the most difficult characteristic of the A/B block schedule. Responses will also be obtained from traditional schedule teachers. The qualitative data will be documented and coded for similarities and differences.

Coding of the qualitative data and the statistical analysis of the quantitative data will aid in clearly seeing the perceptions of the participants of the study. There will be no interaction between the researcher and the participants other than the initial e-mail contact in order to allow the researcher to be objective and unbiased in analyzing the results. As the research was designed for information use only, the study was a descriptive statistical method and does not allow for the study to be generalized or to infer meanings to other populations.

Population

The nature of this study required that the participants involved be middle school teachers using the A/B block schedule or the traditional schedule. The population for this study was public, six through eighth grade middle schools in Missouri that were identified in the *2006-2007 Missouri School Directory* published by DESE. The sixth through eighth grade configuration is the most common according to DiBiase and Queen (1999) and Laitsch (2004). The researcher searched the middle schools' websites with the sixth through eighth grade configuration that were available through the internet for any

reference to their scheduling program. Of the websites searched, those that referenced no schedule or referenced a variation of a type of block schedule were sent correspondence via e-mail to the principals of the targeted middle schools. This email explained the nature of the research and inquired about the type of instructional schedule utilized in the respective middle schools. Of the fifteen e-mails sent out, five were returned with e-mail responses and four principals verbally conveyed their answers by telephone. Four principals responded from four different school districts stating A/B block scheduling was utilized in the respective middle schools. As A/B block schedule was the most common scheduling program in the sample, the research was based on this criteria.

Initial contact was made to superintendents of eight school districts in Missouri with middle schools of sixth through eighth grade configurations utilizing the A/B block schedule through email. In the email, the research and importance of the study was explained and the researcher asked for permission to contact the principals in order to distribute the survey to the teachers. Two superintendents granted the researcher permission to contact the principals.

The Missouri Department of Elementary and Secondary Education (DESE) website was searched to identify school and student demographics of both middle schools. The information was used to choose middle schools with the same demographics using traditional schedules. Four superintendents were emailed asking for permission to contact to principals. Permission was given by two superintendents. Emails were sent asking the principals to forward the letter to certified teachers explaining the research with the link to the on-line survey attached.

Data Collection and Instrumentation

A survey was the primary instrument in obtaining quantitative data regarding teacher perceptions in this study. According to Fink (2006), it is important to ensure researchers utilize a reliable and valid survey especially if one is surveying attitudes. The survey entitled "Teacher Survey" was developed by researcher Carol Freeman of the Center for Applied Research and Educational Improvement (CAREI) and has been in use by the CAREI since the survey's development in 1995 (Freeman, 2001) which ensures the reliability and validity of the survey (see Appendix A). Written permission was given by the author to use or modify the survey. For this research some questions were withdrawn due to irrelevance of this study (see Appendix B).

The survey was divided into two sections: demographics and perceptions. The demographics section asked teachers to identify gender, years employed in the district, total years of teaching, years of teaching in the respective schedule, and subject areas taught. The second section pertained to the teachers' perceptions of the current schedule and divided into subsections: (a) perceptions of student achievement (b) educational instructional strategies, and (c) professional development. Using a five-point Lickert scale, the questions measured how the teachers perceive the respective schedule. The Lickert scale ranged from "1" restricts to "3" neither to "5" enhances. This section further asked teachers' overall opinion about the current schedule. A five-point Lickert scale was used to measure teachers' response on their opinions of the current schedule from strongly non-support to strongly support. The last portion of the section questioned the variety and extent of instructional activities teachers employ in their classrooms.

Teachers were asked to rate each activity on a scale of "1" never or seldom to "3" fairly often to "5" almost all the time.

Summary

The descriptive data analyzed in this study will provide information on issues and factors when implementing the A/B block schedule in middle schools. The purpose of this study is to discover how teachers perceive the impact A/B block scheduling has on student learning. By analyzing teachers' perceptions, this study may permit school districts to predict any future concerns and problems that may arise as a block schedule program is established. In addition, this study will look at the factors teachers believe are critical in the implementation of A/B block scheduling and how the factors correlate with student learning.

CHAPTER 4

Results

The issue addressed in this study was how middle school teachers perceive A/B block scheduling impacts student learning as compared to the impact of traditional schedules. Benton-Kupper (1999), Furner (1998), Laitsch (2004), McCoy and Taylor (2000), Queen (2000), Veal and Flinders (2001) indicated block scheduling had a positive impact on middle school students by increasing student achievement. According to Missouri middle schools' websites, most middle schools utilize the traditional schedule. The problem addressed in this study was teachers perceptions of A/B block scheduling and traditional scheduling impact student learning.

The purpose of this study was to find out how teachers perceive A/B block scheduling impacts student learning as compared to teachers' perceptions in traditional schedules. In addition, the researcher determined if teacher perceptions were different based on years of teaching experience. The number of years of teaching experience could be an influence on how teachers perceive the school schedule impacts student learning.

How teachers' perceived the advantages and disadvantages of A/B block scheduling and traditional scheduling was determined in this study. Further, the study also identified how the advantages and disadvantages were related to instructional activities, professional development, and student achievement. The study should provide school districts information on factors to consider when looking at restructuring the daily school schedule.

The following research questions guided the study:

1. Do middle school teachers teaching in the traditional schedule and those teaching in the A/B block schedule differ in their perceptions of the impact their respective schedules may have on student learning?
2. Do middle school teachers experiencing three years or less of A/B block scheduling and those experiencing more than three years of A/B block scheduling differ in their perceptions of the impact of A/B block scheduling on student learning?
3. Do middle school teachers experiencing three years or less of traditional scheduling and teachers experiencing more than three years of traditional scheduling differ in the perceptions of the impact of traditional scheduling on student learning?
4. Do middle school teachers experiencing three years or less of A/B block scheduling and teachers experiencing three years or less of traditional scheduling differ in their perceptions of the impact of scheduling on student learning?
5. Do middle school teachers experiencing more than three years of A/B block scheduling and teachers experiencing more than three years of traditional scheduling differ in their perceptions of the impact of scheduling on student learning?
6. What do teachers identify as advantages and disadvantages of their daily schedule?
7. What do teachers perceive to be the most difficult factors in implementing a block schedule?

8. What do teachers perceive to be the most important factors in sustaining a block schedule?

Characteristics of Participants

Twelve school districts in Missouri with the middle school configuration of sixth through eighth grades were invited to participate in the study. Eight school districts utilized the A/B block schedule in the middle schools and four school districts had traditional schedules. Superintendents of two middle schools using A/B block scheduling and two superintendents with middle schools using traditional schedules granted their permission. Four principals were contacted by email to forward the survey to their respective certified teachers. Of the 177 possible participants in this study, 82 middle school teachers completed the survey. The majority of the participants were female. Of the 82 participants, 48 (58.5%), are teaching in the traditional schedule and 34 (41.5%) are teaching in the A/B block schedule.

The survey instrument used in this study was "Teacher Survey" (Freeman, 1995) (see Appendix A). Some questions were omitted and minor changes were made in order to focus more on concepts dealing with middle school and less on work life issues (see Appendix B). The participants completed the demographic portion of the survey that asked for responses in order to gather data on gender, number of years teaching in current schedule, and total number of years teaching. Frequency distributions on these variables are presented in the following tables.

Gender

A total of 82 teachers participated in this study. One participant skipped the gender question. A frequency distribution of gender is presented in Table 6. Of the 81 participants, 60 (74.1%) were female and 21 (25.9%) were male.

Table 6

Distribution by Gender of the Sample Middle School Teachers

Gender	n	Percentage
Male	21	25.9%
Female	60	74.1%
N = 81		100%

Years teaching in the current schedule

A detailed illustration of teaching experiences of the participants is presented in Table 7. The survey results indicated that 33.3% (n =16) have been teaching 6+years in the traditional schedule. The average years of teaching are 3.3 years of teaching in the traditional schedule and 41.2% (n=14) have been teaching 6+ years in the A/B block schedule. There was a mean average of 4.26 years of teaching in the A/B block schedule and 3.39 years in the traditional schedule.

Table 7

Distribution by Schedule of Years Teaching in the Current Schedule

	Frequency	Percent
Traditional Schedule		
0 Year	4	8.3%

Table 7 *(continued)*

Distribution by Schedule of Years Teaching in the Current Schedule

	Frequency	Percent
Traditional Schedule		
1 Year	13	27.1%
2 Years	5	10.4%
3 Years	2	4.2%
4 Years	6	12.5%
5 Years	2	4.2%
6+ Years	16	33.3%
Total	48	100.0%
A/B Block Schedule		
0 Years	2	5.9%
1 Year	3	8.8%
2 Years	4	11.8%
3 Years	1	2.9%
4 Years	3	8.8%
5 Years	7	20.6%
6+ Years	14	41.2%
Total	34	100.0%

Total Years of Teaching

A frequency distribution table of the total years the participants have been teaching is presented in Table 8. The survey results indicated that 52% (n= 25) of the teachers in the traditional schedule have been teaching 13+ years, while 41.2% (n=14) of teachers in the A/B block schedule have been teaching 13+ years.

Table 8

Distribution of Total Years of Teaching by Schedule

	Frequency	Percent
Traditional Schedule		
0-2 Years	5	10.4%
3-6 Years	6	12.5%
7-10 Years	6	12.5%
11-13 Years	6	12.5%
13+ Years	25	52.1%
Total	48	100.0%
A/B Block Schedule		
0-2 Years	4	11.8%
3-6 Years	8	23.5%
7-10 Years	3	8.8%
11-13 Years	5	14.7%
13+ Years	14	41.2%
Total	34	100.0%

Analysis of Data

Research question 1 - Do middle school teachers teaching in the traditional schedule and those teaching in the A/B block schedule differ in their perceptions of the impact their respective schedules may have on student learning?

An independent samples *t* test was conducted to evaluate whether there was a difference in middle school teachers' perceptions teaching in the traditional schedule and middle school teachers teaching in A/B block schedules regarding student learning (see Table 9). Middle school teachers utilizing traditional schedules were designated by a 1 under the schedule heading of the table while teachers utilizing A/B block schedules were designated by a 2. The test was significant for 28 out of the possible 31 responses to the forced choice items with equal variances not assumed for all data. One item showing a large difference was question 16 concerning schedules providing enrichment and advanced study for students. The difference between the middle school teachers utilizing traditional schedules and middle school teachers utilizing A/B block schedules was significant $t(81) = -6.53$, $p<.05$. Middle school teachers in the traditional schedule (M = 2.32, SD 1.16) believe their schedules provide less opportunity for enrichment and advanced study than middle school teachers in the A/B block schedule (M = 4.0, SD = 1.13).

Questions 8, 20, and 35 asked middle school teachers how they perceived their schedules assisted special education students and/or lower achieving students experience success. Significant differences $t(80) = -5.16$, $p<.05$ was found on question 8 where middle school teachers in traditional schedules (M = 2.19, SD 1.21) believed their

schedule was less conducive to low achieving students than middle school teachers in A/B block schedules (M = 3.67, SD 1.29). In addition, on question 20, middle school teachers in traditional schedules (M = 2.61, SD 1.27) ranked their schedule lower in accommodating the needs of special education students $t(79) = -4.04$, $p<.05$ than middle school teachers of A/B block scheduling (M = 3.68, SD 1.06). Question 35 $t(77) = -5.15$, $p<.05$ further re-enforced the trend of middle school teachers in traditional schedules (M = 2.17, SD 1.05) to perceive a less number of low achieving and special education students were likely to be successful in their schedules than middle school teachers in A/B block schedules (M=3.46, SD 1.10) felt regarding their schedule.

Question 36 $t(77) = -4.39$, $p< .05$ asked middle school teachers their perceptions on the relationship of their respective schedules to their top achieving students. Middle school teachers in the traditional schedule (M = 2.48, SD 1.10) did not believe their schedule was better for the top achieving students as middle school teachers in the A/B block schedule (M = 3.65, SD 1.18). What's more, middle school teachers were asked to rate how their schedules assisted students who were absent or behind in Question 7 $t(81) = -4.26$, $p<.05$. Once more, middle school teachers in traditional schedules (M = 2.15, SD 1.04) believed the traditional schedule was not as beneficial in this area as middle school teachers in the A/B block schedule (M = 3.3, SD 1.29).

Question 11 showed a significant difference $t(79) = -5.77$, $p<.05$ in how middle school teachers perceived their respective schedules allowed them to know individual students' strengths and weaknesses. Middle school teachers in the traditional schedule (M = 2.608, SD 1.23) did not believe this was a strong point of their schedule compared to

middle school teachers in the A/B block schedule (M = 4.15, SD 1.12). Middle school teachers in the traditional schedule (M = 2.70, SD 1.08) did not believe their schedule allowed students to apply concepts and processes to real-world experiences in question 17 $t(81)=-4.61$, $p<.05$ compared to middle school teachers in the A/B block schedule (M=3.70, SD .87). In relationship to the above question, middle school teachers were asked to rate how their schedule allowed students to have a deeper understanding of the concepts in question 34 $t(77)=-5.53$, $p<.05$. Middle school teachers in the traditional schedule (M = 2.37, SD 1.0) did not consider this a strength compared to middle school teachers in the A/B block schedule (M=3.78, SD 1.15).

Consequently, a significant difference was found in question 33 $t(77)= -5.50$, $p<.05$ when middle school teachers were asked to rate the forced choice question on how their respective schedule helps students get better grades. In comparison, middle school teachers utilizing traditional schedules (M=2.35, SD .980) did not believe their schedule helped students get better grades as middle school teachers in A/B block schedules (M=3.62, SD 1.00). In general, middle school teachers in traditional schedules (M=2.36, SD 1.02) had a lower opinion regarding their schedule than middle school teachers in A/B block schedules (M=3.91, SD 1.25) in question 37 $t(77)= -5.75$.

Table 9

Research Study Statistics, Traditional Schedule vs. A/B Block Schedule, February, 2009

Survey criterion – Student achievement	Schedule	n	M	SD	*t*
7. assisting students absent or behind	1	47	2.15	1.04	

Table 9 *(continued)*

Research Study Statistics, Traditional Schedule vs. A/B Block Schedule, February, 2009

Survey criterion – Student achievement	Schedule	n	M	SD	*t*
	2	34	3.33	1.29	-4.26
8. helping lower achieving students	1	47	2.19	1.20	
	2	33	3.66	1.29	-4.16
11. knowing individual strengths/weaknesses	1	46	2.61	1.24	
	2	33	4.15	1.12	-5.77
16. opportunity for enrichment/advanced study	1	47	2.32	1.16	
	2	34	4.00	1.13	-6.53
17. applying concepts to real world	1	47	2.70	1.08	
	2	34	3.71	.87	-4.62
20. needs of special education students	1	47	2.62	1.28	
	2	32	3.68	1.06	-4.05
33. students get better grades	1	45	2.36	.98	
	2	32	3.63	1.01	-5.51
34. deeper understanding of subjects	1	45	2.38	1.00	
	2	32	3.78	1.16	-5.53
35. low achieving and special education students experience success	1	47	2.19	1.20	
	2	33	3.66	1.29	-5.16

Table 9 *(continued)*

Research Study Statistics, Traditional Schedule vs. A/B Block Schedule, February, 2009

Survey criterion – Student achievement	Schedule	n	M	SD	*t*
36. better for top achieving students	1	45	2.48	1.10	
	2	32	3.65	1.18	-4.40
37. opinion about schedule	1	45	2.36	1.02	
	2	32	3.91	1.25	-5.76

The results reported in Table 9 indicate there was a significant difference in the perceptions of middle school teachers in the traditional and A/B block schedules. Middle school teachers in the A/B block schedule perceived their schedule to have a greater impact on student learning than the teachers in the traditional schedule. Of the 11 questions asked, all showed significant differences of -4.05 or greater.

Fifteen questions on the survey dealt with instructional strategies middle school teachers used in their classrooms (see Table 10). For the most part, middle school teachers in the A/B block schedule made the most of student centered classroom activities. The most significant difference is seen with question 19 $t(80)=-7.583$, $p<.05$. Middle school teachers in A/B block schedules (M=4.411, SD .924) employed more teaching strategies involving active and hands-on activities than was used by teachers in the traditional schedule (M=2.60, SD 1.20). When teachers were asked how often they used hands-on activities in their classrooms $t(77)=-3.35$, $p<.05$, middle school teachers in the A/B block schedule (M= 4.03, SD 1.03) stated they made use of these activities more

often than those in traditional schedules (M=3.17, SD 1.19). Conversely, middle school teachers in the traditional schedule (M=2.977, SD 1.06) exercised the lecture method $t((76)= 1.25, p<.05$ more than middle school teachers in the A/B block schedule (M=2.68, SD .931). Additionally, worksheets and study guides $t(77)= 1.87, p<.05$ were also used by middle school teachers in traditional schedules (M=3.044, SD 1.16) more so than middle school teachers in A/B block schedules (M=2.56, SD 1.07). Diverse instructional delivery methods $t(81)= -6.28, p<.05$ were also used by middle school teachers in the A/B block schedule (M=4.15, SD 1.09) more than middle school teachers in the traditional schedule (M=2.55, SD 1.15).

Higher level thinking activities $t(82)=-5.993, p<.05$ were more achievable according to middle school teachers in A/B block schedules (M=4.17, SD 1.08) than perceived by teachers in the traditional schedule (M=2.70, SD 1.10). In-depth discussion $t(78)=-3.90, p<.05$ was used by more middle school teachers in the A/B block schedule (M=3.80, SD .76) than their colleagues in traditional schedules (M=2.96, SD 1.03). Cooperative or small group instruction $t(76) =-2.38, p<.05$ was also used more by middle school teachers in the A/B block schedule (M=3.93, SD .89) than by middle school teachers in the traditional schedules (M=3.4, SD 1.05). Individualizing instruction also showed a significant difference $t(81)=-6.09, p<.05$ in question 12 between the two groups as middle school teachers in the A/B block schedule (M=3.85, SD 1.20) felt their schedule enhanced individualized instruction as opposed to more restricting in the traditional schedule (M=2.27, SD 1.05). There was only a slight difference between middle school teachers in the A/B block schedule (M=3.56, SD 1.16) and those using the

traditional schedule (M=3.25, SD .89) as to whether the schedule allows teachers to relate classroom content to student experience in question 28 $t(76)=-1.27$, $p<.05$. As to the schedule allowing students to use classroom content for purpose other than remembering, middle school teachers in A/B block schedules (M=3.78, SD 1.00) believe this more enhanced than those teachers in traditional schedules (M=3.28, SD .91). Also, technology has a greater advantage with middle school teachers in the A/B block schedule (M=3.84, SD 1.3) than middle schools in the traditional schedule (M=2.88, SD 1.16).

With a larger repertoire of instructional strategies comes more alternative assessment approaches as seen in question 17 $t(81)=-6.39$, $p<.05$ where middle school teachers using A/B block schedules (M=3.97, SD 1.05) practice more assessment options than teachers in the traditional schedule (M=2.44, SD 1.05). One of the assessment alternatives middle school teachers were asked to rank were performance based evaluations $t(77)=-3.63$, $p<.05$. Middle school teachers in the A/B block schedule (M=3.843, SD .846) used these types of student assessments more than teachers in traditional schedules (M=3.022, SD 1.13).

Table 10

Research Study Statistics, Traditional Schedule vs. A/B Block Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
12. individual instruction	1	47	2.27	1.06	
	2	34	3.85	1.21	-6.10

Table 10 *(continued)*

Research Study Statistics, Traditional Schedule vs. A/B Block Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
14. more alternative assessment approaches	1	47	2.44	1.06	
	2	34	3.97	1.06	-6.39
15. higher-level thinking activities	1	47	2.70	1.10	
	2	34	4.18	1.09	-5.99
18. diversity of instructional delivery methods	1	47	2.55	1.16	
	2	34	4.15	1.09	-6.28
19. active and hands on teaching strategies	1	47	2.61	1.20	
	2	34	4.41	0.92	-7.58
23. hands-on activities	1	45	3.18	1.20	
	2	32	4.03	1.03	-3.35
24. lecture	1	44	2.98	1.07	
	2	32	2.69	0.93	1.26
25. performance evaluation	1	45	3.02	1.14	
	2	32	3.84	0.85	-3.63
26. cooperative or small groups	1	45	3.40	1.05	
	2	31	3.93	0.89	-2.39
27. worksheets or study guides	1	45	3.04	1.17	
	2	32	2.56	1.08	1.87

Table 10 *(continued)*

Research Study Statistics, Traditional Schedule vs. A/B Block Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
28. relating classroom content to student experience	1	44	3.25	0.89	
	2	32	3.56	1.16	-1.27
29. content for purpose other than remembering	1	46	3.28	0.91	
	2	32	3.78	1.01	-2.24
30. technology in class	1	44	2.87	1.17	
	2	32	3.84	1.14	-3.58
31. in-depth discussion	1	46	2.96	1.03	
	2	32	3.80	0.76	-3.91
32. variety of activities	1	45	2.96	1.06	
	2	32	4.03	0.90	-4.79

Once again, middle school teachers in the A/B block schedule rated their schedule as more conducive in being able to utilize a variety of instructional strategies during class time. Of the 15 questions addressing instructional strategies there were significant differences in 13 forced choice items. Teachers in the A/B block schedule used more of the variety of instructional strategies in their schedule than the teachers in the traditional schedule. The largest difference was in being able to use active and hands on teaching strategies. Two strategies the traditional schedule teachers believed were used more in

their classrooms were lecture and using worksheets or study guides. Middle school teachers in the A/B block schedule did not believe they used these strategies as often.

The third part of the survey dealt with professional development for teachers (see Table 11). When asked to rank if the current schedule provides teachers adequate time to prepare for teaching $t(81) = -4.596$, $p<.05$, middle school teachers in the traditional schedule (M=2.25, SD 1.22) perceived their schedule to be more restrictive than middle school teachers in the A/B block schedule (M =3.50, SD 1.18). Question 22 asked middle school teachers if their schedule allowed them to observe other teachers in the classrooms $t(78) = -2.729$, $p<.05$. Middle School teachers in the traditional schedule (M=2.108, SD 1.268) felt their schedule did not allow them the opportunity as middle school teachers in the A/B block schedule (M = 2.875, SD 1.184).

A significant difference was found in question 10 $t(81) = -6.181$, $p<.05$ asking if the schedule provided formal meeting time to spend on the curriculum, pedagogy, and assessment issues with other teachers. Traditional schedule middle school teachers (M = 1.851, SD 1.215) did not believe their schedule provided the formal meeting time they needed while middle school teachers in the A/B block schedule (M= 3.558, SD 1.235) had more favorable perceptions. Questions 13 and 21 dealt with in-services and programs to improve teachings. Both groups believed more staff development programs were needed $t(80) = -.748$, $p < .05$. However, sufficient and useful in-service $t(81) = -1.654$, $p<.05$ was seen as more substantial with the A/B block schedule (M= 3.205, SD .808).

Table 11

Research Study Statistics, Traditional Schedule vs. A/B Block Schedule, February, 2009

Survey criterion – Professional Development	Schedule	n	M	SD	*t*
9. adequate preparation	1	47	2.25	1.22	
	2	34	3.50	1.19	-4.60
10. formal meeting time	1	47	1.85	1.22	
	2	34	3.56	1.24	-6.18
13. sufficient and useful in-service	1	47	2.85	1.12	
	2	34	3.20	0.81	-1.65
21. new skills staff development programs	1	47	3.11	1.07	
	2	33	3.27	0.91	-0.75
22. visit other teachers' classrooms	1	46	2.11	1.27	
	2	32	2.88	1.18	-2.73

Once more, A/B block schedule middle school teachers had more positive perceptions of their schedule in the area of professional development. The professional development portion had one question were there was no significant difference. When teachers were asked if staff development programs permit teachers to acquire important new knowledge and skills neither group felt their schedule supported them. However, teachers in the A/B block schedule believed their schedule allowed for more formal meeting time to spend on curriculum, pedagogy, and assessment issues with other teachers. The same group also believed the A/B block schedule allowed them to have

adequate time to prepare for teaching significantly more than the teachers in the traditional schedule.

Research question 2. - Do middle school teachers experiencing three years or less of A/B block scheduling and those experiencing more than three years of A/B block scheduling differ in their perceptions of the impact of A/B block scheduling on student learning?

An independent t test was conducted to compare teachers' years of experience. The data was disaggregated by the number of years middle school teachers have been using A/B block schedules. Teachers experiencing 3 years or less are characterized by a 21 in Tables 12, 13, and 14 and those teachers with more than 3 years are labeled with a 22. It was demonstrated in this research study that middle school teachers (n= 9) teaching 3 years or less in the A/B block schedule had few statistically different perceptions of student achievement, instructional strategies, or professional development than teachers (n=25) with more than 3 years experience in the A/B block schedule.

In the area of student achievement, teachers with more than 3 years experience had slightly more positive perceptions of the A/B block schedule on low achieving and special education student success $t(32) = -1.090$, $p<.05$ (see Table 12). In addition, middle school teacher in the A/B block schedule with 3 years are less experience (M=4.00, SD .75) believed the A/B block schedule met the needs of special education students more than those teachers with 4 or more years experience (M=3.58, SD 1.13) in question 20 $t(32) = 1.176$, $p<.05$. In an area where the A/B block schedule has a slight significance was when teachers were asked how they believed the schedule was better for

the top achieving students. Middle School teachers with more than 3 years had a higher opinion than the teachers with 3 years or less experience ($t(32) = -1.003$, $p<.05$).

Table 12

Research Study Statistics, Three Years or Less vs. More Than Three Years – A/B Block Schedule, February, 2009

Survey criterion – Student achievement	Schedule	n	M	SD	*t*
7. assisting students absent or behind	21	9	3.00	1.32	
	22	25	3.40	1.29	-.783
8. helping lower achieving students	21	8	3.62	1.18	
	22	25	3.68	1.34	-.110
11. knowing individual strengths/weaknesses	21	9	4.11	1.26	
	22	24	4.16	1.09	-.116
16. opportunity for enrichment/advanced study	21	9	3.77	1.09	
	22	24	4.08	1.15	-.701
17. applying concepts to real world	21	9	3.77	0.83	
	22	24	3.68	0.90	.295
20. needs of special education students	21	8	4.00	0.75	
	22	24	3.58	1.13	1.176
33. students get better grades	21	8	3.50	1.19	
	22	24	3.66	0.96	-.358

Table 12 *(continued)*

Research Study Statistics, Three Years or Less vs. More Than Three Years – A/B Block Schedule, February, 2009

Survey criterion – Student achievement	Schedule	n	M	SD	*t*
34. deeper understanding of subjects	21	8	3.75	1.28	
	22	24	3.79	1.14	-.082
35. low achieving and special education students experience success	21	8	3.12	0.99	
	22	24	3.58	1.13	-1.090
36. better for top achieving students	21	8	3.25	1.38	
	22	24	3.79	1.10	-1.003
37. opinion about schedule	21	8	4.00	1.41	
	22	24	3.87	1.22	0.224

When addressing student achievement, there were little differences in the perceptions between middle school teachers with 3 years or less experience and middle school teachers with more than 3 years experience. Both groups were fairly positive in their beliefs that their schedule had a positive impact on student learning. However, teachers with 3 years or less experience believed their schedule enhanced the needs of special education students more than the teachers with more than 3 years experience.

The largest statistical difference was found in question 31 $t(32) = 1.123$, $p<.05$ asking teachers to rank how often in-depth discussion was used in the classroom among their instructional strategies (see Table 13). Participants with 3 years or less years of experience (M=4.00, SD .53) stated they used in-depth discussion more often than teachers with over 4 years experience (M=3.66, SD .81). With regard to teachers being able to use more active and hands on teaching strategies, teachers with more than 3 years experience believed the A/B block schedule was more propitious in this area ($t(34) = -1.042$). In other areas, there were little significant differences between the 2 groups.

Table 13

Research Study Statistics, Three Years or Less vs. More Than Three Years – A/B Block Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
12. individual instruction	21	9	4.11	1.26	
	22	25	3.76	1.20	0.722
14. more alternative assessment approaches	21	9	4.00	1.00	
	22	25	3.96	1.09	1.000
15. higher-level thinking activities	21	9	4.11	0.02	
	22	25	4.20	1.15	-0.230
18. diversity of instructional delivery methods	21	9	4.22	1.09	
	22	24	4.12	1.11	0.226

Table 13 *(continued)*

Research Study Statistics, Three Years or Less vs. More Than Three Years – A/B Block Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
19. active and hands on teaching strategies	21	9	4.11	1.05	
	22	25	4.52	0.87	-1.042
23. hands-on activities	21	8	4.00	0.75	
	22	24	4.04	1.12	-0.118
24. lecture	21	8	2.75	0.70	
	22	24	2.66	1.00	0.257
25. performance evaluation	21	8	4.00	0.53	
	22	24	3.79	0.93	0.777
26. cooperative or small groups	21	8	4.12	0.64	
	22	23	3.86	0.96	0.842
27. worksheets or study guides	21	8	2.62	1.18	
	22	24	2.54	1.06	0.176
28. relating classroom content to student experience	21	8	3.75	0.46	
	22	24	3.50	1.31	0.794
29. content for purpose other than remembering	21	8	4.00	0.75	
	22	24	3.70	1.08	0.841

Table 13 (continued)

Research Study Statistics, Three Years or Less vs. More Than Three Years – A/B Block Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
30. technology in class	21	8	4.12	0.83	
	22	24	3.75	1.22	0.970
31. in-depth discussion	21	8	4.00	0.53	
	22	24	3.66	0.81	1.323
32. variety of activities	21	8	3.87	0.64	
	22	24	4.08	0.97	-0.691

When addressing instructional strategies, there were little significant differences in the responses between the two sample groups. Most questions did not reveal major differences. However, teachers with 3 years or less teaching experience in the A/B block schedule did believe the schedule provided more in-depth discussion in the classroom.

The criterion of professional development revealed a significant difference in adequate preparation for teachers only (see Table 14). Middle school teachers with more than 3 years experience believed they had just a slight more adequate time to prepare for teaching than those with 3 years or less experience $t(34) = -1.161$, $p<.05$. There were no significant differences in the other questions.

Table 14

Research Study Statistics, Three Years or Less vs. More Than Three Years – A/B Block Schedule, February, 2009

Survey criterion – Professional Development	Schedule	n	M	SD	*t*
9. adequate preparation	21	9	3.44	1.33	
	22	25	3.52	1.15	-1.161
10. formal meeting time	21	9	3.33	1.32	
	22	25	3.64	1.22	-0.608
13. sufficient and useful in-service	21	9	3.00	0.70	
	22	25	3.28	0.84	-0.966
21. new skills staff development programs	21	9	3.44	0.88	
	22	24	3.20	0.93	0.674
22. visit other teachers' classrooms	21	9	2.55	1.23	
	22	23	3.00	1.16	-0.929

Professional development did not appear to have but only one significant difference between the two groups. Middle school teachers with more than 3 years experience, though, did believe they had more adequate time to prepare for teaching.

Research question 3. – Do middle school teacher experiencing three years or less of traditional scheduling and teacher experiencing more than three years of traditional scheduling differ in the perceptions of the impact of traditional scheduling on student learning?

An independent *t* test was conducted to evaluate any differences between middle school teachers' perceptions teaching in the traditional schedule 3 years or less and those teaching in the traditional schedule 4 years or more (see Tables 15, 16 & 17). Middle school teachers in the traditional schedule for 3 years or less are indicated by an 11 under the schedule heading of the table while teachers with more than 3 years experience in the traditional schedule are indicated by a 12 under the schedule heading. The test was significant for 6 of the 31 responses to the forced choice items with equal variances not assumed for all data.

In the area of student achievement, questions 11 $t(46) = 2.119$, $p<.05$ and 20 $t(47) = 1.729$, $p<.05$ had the highest significant differences (see Table 15). Question 11 asked middle school teachers to rate their traditional schedule according to how the schedule restricts or enhances the ability to know about individual students' strengths and weaknesses from "1" restricts to "5" enhances. Middle school teachers with 3 years or less in the traditional schedule (M = 3.00, SD, 1.27) believed the schedule provided them a better understanding of each students' strengths and weaknesses more so than the middle school teachers with over 3 years experience (M = 2.25, SD 1.11).

Correspondingly, middle school teachers in the traditional schedule with 3 years or less (M = 2.95, SD 1.29) perceived their schedule also was better suited in accommodating the needs of the special education students as compared to middle school teachers with more than 4 years experience in the traditional schedule (M = 2.32, SD 1.21). In general, there was only a slight difference when asked if their schedule provides a deeper understanding of subjects $t(45) = 1.086$. Middle school teachers with 3 years or

less experience perceived the traditional schedule provided students a deeper understanding of subjects.

Table 15

Research Study Statistics, Three Years or Less vs. More Than Three Years – Traditional Schedule, February, February, 2009

Survey criterion – Student achievement	Schedule	n	M	SD	*t*
7. assisting students absent or behind	11	22	2.13	1.20	
	12	25	2.16	0.89	-0.075
8. helping lower achieving students	11	22	2.18	1.43	
	12	25	2.20	1.00	-0.050
11. knowing individual strengths/weaknesses	11	22	3.00	1.27	
	12	24	2.25	1.11	2.119
16. opportunity for enrichment/advanced study	11	22	2.45	1.29	
	12	25	2.20	1.04	-0.735
17. applying concepts to real world	11	22	2.72	1.16	
	12	25	2.68	1.02	0.147
20. needs of special education students	11	22	2.95	1.29	
	12	25	2.32	1.21	1.729
33. students get better grades	11	22	2.40	1.14	
	12	23	2.30	0.82	0.352

Table 15 *(continued)*

Research Study Statistics, Three Years or Less vs. More Than Three Years – Traditional Schedule, February, February, 2009

Survey criterion – Student achievement	Schedule	n	M	SD	*t*
34. deeper understanding of subjects	11	22	2.54	1.18	
	12	23	2.21	0.79	1.086
35. low achieving and special education students experience success	11	22	2.18	1.09	
	12	23	2.17	1.02	-0.025
36. better for top achieving students	11	22	2.54	1.14	
	12	23	2.43	1.07	-0.334
37. opinion about schedule	11	22	2.45	1.18	
	12	23	2.26	0.86	0.624

When comparing the results of the survey of traditional schedule middle school teachers with 3 years or less experience to those with more than 3 years experience only three criterion demonstrated any significant differences. Middle school teachers with 3 years or less experience did feel that the traditional schedule allowed them to know the individual students' strengths and weaknesses and met the needs of the special education students. The same group also felt students grasped a better understanding of subjects.

The area of instructional strategies showed significant differences in two questions regarding how the current schedule restricts or enhances instructional activities (see Table 16). According to the data, only two questions demonstrated significant differences. In question 12, middle school teachers were asked to define the degree their current schedule enhanced or restricted them in using diverse instructional strategies in the classroom $t(47) = 2.927$, $p<.05$. As in the area of student achievement, middle school teachers with 3 years or less in the traditional schedule (M = 2.72, SD, 1.07) had a better perception regarding the traditional schedule allowing them to use a diversity of instructional delivery methods or styles. Regarding the schedule allowing teachers to use classroom activities which require higher level thinking skills on question 15, $t(47) = 1.478$, $p<.05$, middle school teachers in the traditional schedule more than 4 years (M = 2.48, SD 1.00) did not believe the schedule was as conducive for these activities as those with 3 years or less (M = 2.95, SD 1.17) experience.

Table 16

Research Study Statistics, Research Study Statistics, Three Years or Less vs. More Than Three Years – Traditional Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
12. individual instruction	11	22	2.72	1.07	
	12	25	1.88	0.88	2.927

Table 16 *(continued)*

Research Study Statistics, Research Study Statistics, Three Years or Less vs. More Than Three Years – Traditional Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
14. more alternative assessment approaches	11	22	2.63	1.00	
	12	25	2.28	1.10	1.162
15. higher-level thinking activities	11	22	2.95	1.17	
	12	25	2.48	1.00	1.478
18. diversity of instructional delivery methods	11	22	2.77	1.23	
	12	25	2.36	1.07	1.216
19. active and hands on teaching strategies	11	21	2.52	1.12	
	12	25	2.68	1.28	-0.440
23. hands-on activities	11	22	3.31	1.08	
	12	23	3.04	1.29	0.772
24. lecture	11	22	3.18	0.95	
	12	22	2.77	1.15	1.281
25. performance evaluation	11	22	2.86	1.12	
	12	23	3.717	1.15	-0.913
26. cooperative or small groups	11	21	3.52	1.03	
	12	24	3.29	1.90	0.736

Table 16 *(continued)*

Research Study Statistics, Research Study Statistics, Three Years or Less vs. More Than Three Years – Traditional Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
27. worksheets or study guides	11	22	3.27	1.12	
	12	23	2.82	1.19	1.295
28. relating classroom content to student experience	11	22	3.31	0.77	
	12	22	3.18	1.00	0.502
29. content for purpose other than remembering	11	22	3.31	0.94	
	12	24	3.25	0.89	0.250
30. technology in class	11	22	2.81	1.05	
	12	22	2.95	1.29	-0.384
31. in-depth discussion	11	22	2.86	1.12	
	12	24	3.04	0.95	-0.576
32. variety of activities	11	22	2.90	0.97	
	12	23	3.00	1.16	-0.284

The results from this particular survey criterion showed the most significant differences were seen in the teachers with 3 years or less experience in the traditional schedule. According to the results, individual instruction, more alternative assessment approaches, higher-level thinking activities, and using a diversity of instructional delivery

methods were used more by the middle school teachers with 3 years or less experience. Interestingly, this same group also said they used lecture and worksheets or study guides more than the other group.

The area with the most number of significant differences was in the area of professional development (see Table 17). When asked if their current schedule allows for adequate time to prepare for teaching in question 9 $t(47) = 1.532$, $p<.05$, middle school teachers with 3 years or less experience in the traditional schedule (M =2.54, SD 1.29) believed the schedule provided a better opportunity than those middle school teachers with 3 years or more experience in the traditional schedule (M = 2.00, SD 1.11). In addition, question 22 $t(46) = 1.561$, $p<.05$, revealed middle school teachers with 3 years or less in the traditional schedule (M = 2.42, SD 1.39) believed they were able to visit other teachers classrooms more than those middle school teachers with more than 3 years in the traditional schedule (M = 1.84, SD 1.10). The third question which illustrated a significant difference was question 21 $t(47) = 2.173$, $p<.05$. Middle school teachers were asked to rate how their current schedule restricted ("1") or enhanced ("5") staff development programs which permitted them to acquire important new knowledge and skills. Once again, middle school teachers in the traditional schedule with 3 years or less experience (M = 3.45, SD 1.05) had a more favorable impression than those middle school teachers with more than 3 years of experience in the traditional schedule (M = 2.80, SD 1.00).

The question with the lowest difference asked teachers to rate if their schedule restricted or enhanced sufficient and useful in-service. The difference, $t(47) = 0.576$,

showed that teachers with 3 years or less experience had a slightly more positive opinion than the other group. However, neither group believed this was a strength of the traditional schedule.

Table 17

Research Study Statistics, Research Study Statistics, Three Years or Less vs. More Than Three Years – Traditional Schedule, February, 2009

Survey criterion – Professional Development	Schedule	n	M	SD	*t*
9. adequate preparation	11	22	2.54	1.29	
	12	25	2.00	1.11	1.532
10. formal meeting time	11	22	1.64	1.41	
	12	25	3.64	0.99	1.250
13. sufficient and useful in-service	11	22	2.85	1.32	
	12	25	2.76	0.92	0.576
21. new skills staff development programs	11	22	3.45	1.05	
	12	25	2.80	1.00	2.173
22. visit other teachers' classrooms	11	21	2.42	1.39	
	12	25	1.84	1.10	1.561

Professional development was not a strong point with middle school teachers in the traditional schedule. While there were significant differences, the middle school teachers with 3 years or less experience had a more positive perception in how staff

development programs allowed them to acquire new knowledge and skills. The same group also believed their schedule allowed them to adequately prepare for teaching and to visit other teachers' classrooms.

Research question 4. – Do middle school teachers experiencing three years or more less in the traditional schedule and middle school teachers experiencing three years or less in the A/B block schedule differ in their perceptions of the impact of scheduling on student learning?

An independent *t* test was administered to investigate any significant differences between middle school teachers with 3 years or less experience in the traditional schedule and in the A/B block schedule (see Tables 18, 19, & 20). Middle school teachers instructing in the traditional schedules are identified with an 11 under the schedule heading of the table and middle school teachers in the A/B block schedule are identified with 21 under the schedule heading. The test was significant for 28 of the possible 31 forced choice items with equal variances not assumed for all data.

Under the survey criterion of student achievement, middle school teachers in the A/B block schedule teaching 3 years or less perceived their schedules to better address the needs of the lower achieving and/or special education students and those students who are absent or behind (see Table 18). Question 7 $t(31) = -1.692$, $p<.05$, asked teachers to rate their schedules on assisting students who have been absent or behind. The survey indicated that middle school teachers with 3 years or less in the traditional schedule (M = 2.13, SD 1.20) did not believe their students who were behind or absent very much were enhanced as much as the teachers in the A/B block schedule with less than 4 years (M =

3.00, SD 1.32). A more noticeable difference was noticed in question 8 $t(30) = -2.777$, $p<.05$ where middle school teachers with 3 years or less in the A/B block schedule (M = 3.62, SD 1.18) believed their schedule assisted lower achieving students in experiencing success better than those teaching 3 years or less in the middle school traditional schedule (M = 2.18, SD 1.43). When inquired as to how middle school teachers perceived their respective schedule accommodated the needs of special education students $t(30) = -2.726$, $p<.05$, those teachers in the A/B block schedule with 3 years or less experience (M = 4.00, SD .75) had more favorable perceptions than those teaching 3 years or less in the traditional schedule (M = 2.95, SD 1.29). Along these lines of perceptions, when middle school teachers answered if they agreed or disagreed that their current schedule is allowing a greater number of their low-achieving and special education students to experience success under the current schedule $t(30) = -2.239$, $p<.05$, middle school teachers with less than 3 years experience in the A/B block schedule (M = 3.12, SD .99) agreed. Middle school teachers in the traditional schedule for 3 years or less (M = 2.18, SD 1.09) did not perceive this was a positive attribute of their schedule.

One of the largest significant differences was demonstrated in question 16 $t(31) = -2.891$ $p<.05$, which asked middle school teachers if they believed their current schedule provided students opportunities for enrichment and advanced study. A/B block schedule middle school teachers with 3 years or less (M = 3.77, SD 1.09) had a better perception of their schedule than those teaching in the traditional schedule 3 years or less (M =2.45, SD 1.29). Somewhat dissimilar in their perceptions was question 36 which asked middle school teachers to agree or disagree if the current schedule is better for the top-achieving

students $t(30) = -1.285$ $p<.05$. The difference was not as significant as in question 16, yet middle school teachers in the A/B block schedule 3 years or less (M = 3.25, SD 1.38) did agree more than the traditional schedule middle school teachers also teaching 3 years or less (M =2.54, SD 1.14).

Also derived from the survey data was how middle school teachers believed their respective schedules allowed them to better know the individual strengths and weaknesses of their students (question 11) $t(31) = -2.211$ $p< .05$. Once again, A/B block schedule middle school teachers with teaching experience of 3 years or less (M = 4.11, SD 1.26) believed their schedule was more conducive to understanding students strengths and weaknesses than those with the same teaching experience in the traditional schedule (M =3.00, SD 1.27). Question 34 asked teachers how they believed their current schedule allows students to have a deeper understanding of the subject matter $t(30) = -2.322$, $p.<.05$. Middle school teachers with 3 years or less in the traditional schedule (M = 2.54, SD 1.18) did not respond as favorably as the middle school teachers in the A/B block schedule with 3 years or less experience (M = 3.75, SD 1.28). Middle school teachers teaching in the A/B block schedule 3 years or less (M = 3.50, SD 1.19) felt their schedule did allow students to get better grades $t(30) = -2.238$, $p<.05$ than the traditional schedule middle school teachers with 3 years or less experience (M = 2.40, SD 1.14).

The second largest significant difference in the category of student achievement was on question 17 $t(31) = -2.822$, $p<.05$. The question asked teachers to define to what degree their current schedule restricts or enhances teaching students how to directly apply the concepts and process to real-world work or daily life. The A/B block schedule middle

school teachers with 3 years or less experience in their current schedule (M = 3.77, SD 0.83) perceived their schedule provided more opportunity than middle school teachers with 3 years or less experience in the traditional schedule (M = 2.72, SD 1.16). The overall opinion regarding their current schedule also showed significant difference $t(30) = -2.759$ $p<.05$. With a mean difference of -1.54, middle school teachers with 3 years or less in the A/B block schedule (M = 4.00, SD 1.42) had a higher opinion of their schedule than the middle school teachers teaching 3 years or less in the traditional schedule (M = 2.45, SD 1.18).

Table 18

Research Study Statistics, Three Years or Less in Traditional Schedule vs. Three Years or Less in A/B Block Schedule, February, 2009

Survey criterion – Student achievement	Schedule	n	M	SD	*t*
7. assisting students absent or behind	11	22	2.13	1.20	
	21	9	3.00	1.32	-1.692
8. helping lower achieving students	11	22	2.18	1.43	
	21	8	3.62	1.87	-2.777
11. knowing individual strengths/weaknesses	11	22	3.00	1.27	
	21	9	4.11	1.26	-2.211
16. opportunity for enrichment/advanced study	11	22	2.45	1.29	
	21	9	3.77	1.04	-2.891

Table 18 *(continued)*

Research Study Statistics, Three Years or Less in Traditional Schedule vs. Three Years or Less in A/B Block Schedule, February, 2009

Survey criterion – Student achievement	Schedule	n	M	SD	*t*
17. applying concepts to real world	11	22	2.72	1.16	
	21	9	3.77	0.83	-2.822
20. needs of special education students	11	22	2.95	1.29	
	21	8	4.00	0.75	-2.726
33. students get better grades	11	22	2.40	1.14	
	21	8	3.50	1.19	-2.238
34. deeper understanding of subjects	11	22	2.54	1.18	
	21	8	3.75	1.28	-2.322
35. low achieving and special education students experience success	11	22	2.18	1.09	
	21	8	3.12	0.99	-2.239
36. better for top achieving students	11	22	2.54	1.14	
	21	8	3.25	1.38	-1.285
37. opinion about schedule	11	22	2.45	1.18	
	21	8	4.00	1.41	-2.759

As can be seen in Table 18, there are significant differences between middle school teachers with 3 years are less experience in the traditional and A/B block schedule. In each forced choice response, teachers in the A/B block schedule believed their schedule enhanced student achievement more than the teachers in the traditional schedule. Providing students with opportunities for enrichment and advanced study had the largest difference.

The portion of the data analysis identified as instructional strategies showed significant differences between middle school teachers with 3 years or less in the traditional schedule and in the A/B block schedule (see Table 19). In question 14, participants were asked how they felt their current schedule restricted or enhanced teachers being able to use more alternative assessment approaches $t(31) = -3.444$, $p<.05$. Middle school teachers in the A/B block schedule with 3 years or less teaching experience (M = 4.00, SD 1.00) believed their schedule enhanced these approaches more than the middle school teachers with 3 years or less in the traditional schedule (M = 2.63, SD 1.00). A more significant difference was seen when middle school teachers were asked in question 25 how often they utilize exhibitions, demonstrations, other performance evaluation methods in their classroom $t(30) = -3.721$, $p< .05$. The mean difference between the two groups of -1.13 revealed middle school teachers with 3 years or less in the traditional schedule (M = 2.86, SD 1.12) made use of these activities less than the middle school teachers with 3 years or less in the A/B block schedule (M =4.00, SD 53).

When inquired as to whether the current schedule restricts or enhances teachers when the need arises to individualize instruction in question 12, a significant difference was found $t(31) = -2.875$, $p<.05$. Middle school teachers with 3 years or less in the traditional schedule (M = 2.72, SD 1.07) did not believe their schedule allowed them to individualize instruction as well as the middle school teachers in the A/B block schedule with 3 years or less (M = 4.11, SD 1.26). Questions 18 and 19 looked for any differences in the perceptions of the middle school teachers in their instruction delivery methods and teaching strategies that involve active and hands-on learning. Middle school teachers in the A/B block schedule with 3 years or less teaching experience (M = 4.22, SD 1.09) felt their current schedule allowed them to use diverse instruction delivery methods or styles $t(31) = -3.228$, $p<.05$ more than traditional schedule middle school teachers with the same experience (M = 2.77, SD 1.23). In addition, A/B block schedule middle school teachers with 3 years or less teaching experience (M = 4.11, SD 1.05) also believe their current schedule allows them to use more teaching strategies which involve students in active and hands-on learning $t(31) = -3.705$, $p<.05$ than the teachers in the traditional schedule with 3 years or less teaching experience (M = 2.52, SD 1.12). Furthermore, when middle school teachers were asked to rate their schedule on the potential of their schedule allowing them to use more classroom activities which require higher order level thinking skills, there was a significant difference in the two groups perceptions $t(31) = -2.906$, $p<.05$. A/B block schedule middle school teachers with 3 years or less experience (M = 4.11, SD 0.92) perceived their schedule had a better likelihood of enhancing the

activities than the middle school teachers in the traditional schedule with 3 years or less experience (M = 2.95, SD 1.17).

Middle school teachers were also asked to identify from a rating scale of "1" is never or seldom, "2" sometimes, "3" fairly often, "4" very often, to "5" almost all the time the extent they use certain activities in their current classroom. Two of the least significant differences can be seen in questions 24 and 27. Question 24 asked how often middle school teachers used the lecture method as part of their instructional activities $t(30) = 1.338$, $p<.05$. Middle school teachers with 3 years or less experience in the traditional schedule (M = 3.18, SD 0.09) said they used the lecture method more often than teachers in the A/B block schedule with 3 years or less teaching experience (M = 2.75, SD 0.70). The same teacher group also said they used worksheets or study guides more in their classrooms $t(30) = 1.341$, $p<.05$.

Overall, teachers with 3 years or less experience in middle schools using A/B block schedules (M = 3.87, SD 0.64) used a variety of activities in most class periods more often than middle school teachers with 3 years or less experience (M = 2.90, SD 0.97) according to question 32 $t(30) = -3.147$, $p<.05$. This section also defines particular strategies while asking teachers to rate the extent they are utilized in the current classroom. Middle school teachers in the A/B block schedule with 3 years or less in their current schedule (M = 4.00, SD 0.75) stated they use more hands-on activities, labs, and other student participation activities $t(30) = -1.928$, $p<.05$ than middle school teachers in the traditional schedule with 3 years or less in their current schedule (M = 3.31, SD 1.08). Cooperative or other small group activities $t(29) = -1.883$, $p<.05$ were not utilized in the

classroom by middle school teachers in the traditional schedule with 3 years or less experience (M = 3.52, SD 1.03) as with middle school teachers in the A/B block schedule with comparable experience (M 4.12, SD 0.64). In-depth discussion was employed more with the middle school teachers in the A/B block schedule with 3 years or less experience (M = 4.00, SD 0.53) than their counterparts (M = 2.86, SD 1.12). A significant difference can be seen in Table 12 on question 31 $t(30) = -3.721$, $p<.05$. The extent teachers use technology in the class was requested in question 30 $t(30) = -3.525$, $p<.05$. Middle school teachers with 3 years or less in the A/B block schedule (M = 4.12, SD 0.83) stated they made use of technology more often than the middle school teachers in the traditional schedule with 3 years or less experience (M = 2.81, SD 1.05). A mean difference of only -0.431 was seen in question 28 which asked if middle school teachers use activities that require students to use classroom content for a purpose other than remembering it $t(30) = -1.851$, $p<.05$. Traditional schedule middle school teachers with 3 years or less experience (M = 3.31, SD 0.77) utilized this strategy less than the middle school teachers in the A/B block schedule with 3 years or less experience (M = 3.75, SD 0.46). In conjunction with the question above, middle school teachers were asked how often they required students to use classroom content for a purpose other than remembering it $t(30) = -2.037$, $p<.05$. Middle school teachers with 3 years experience or less in the A/B block schedule (M = 4.00, SD 0.75) stated they used the activity more than the middle school teachers in the traditional schedule with the same teaching experience (M = 3.31, SD 0.94).

Table 19

Research Study Statistics, Three Years or Less in Traditional Schedule vs. Three Years or Less in A/B Block Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
12. individual instruction	11	22	2.72	1.07	
	21	9	4.11	1.26	-2.875
14. more alternative assessment approaches	11	22	2.63	1.00	
	21	9	4.00	1.00	-3.444
15. higher-level thinking activities	11	22	2.95	1.17	
	21	9	4.11	0.92	-2.906
18. diversity of instructional delivery methods	11	22	2.77	1.23	
	21	9	4.22	1.09	-3.228
19. active and hands on teaching strategies	11	21	2.52	1.12	
	21	9	4.11	1.05	-3.705
23. hands-on activities	11	22	3.31	1.08	
	21	8	4.00	0.75	-1.928
24. lecture	11	22	3.18	0.95	
	21	8	2.75	070	1.338
25. performance evaluation	11	22	2.86	1.12	
	21	8	4.00	0.53	-3.721

Table 19 *(continued)*

Research Study Statistics, Three Years or Less in Traditional Schedule vs. Three Years or Less in A/B Block Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
26. cooperative or small groups	11	21	3.52	1.03	
	21	8	4.12	0.64	-1.883
27. worksheets or study guides	11	22	3.27	1.12	
	21	8	2.62	1.18	1.341
28. relating classroom content to student experience	11	22	3.31	0.77	
	21	8	3.75	0.46	-1.851
29. content for purpose other than remembering	11	22	3.31	0.94	
	21	8	4.00	0.75	-2.037
30. technology in class	11	22	2.81	1.05	
	21	8	4.12	0.83	-3.525
31. in-depth discussion	11	22	2.86	1.12	
	21	8	4.00	0.53	-3.721
32. variety of activities	11	22	2.90	0.97	
	21	8	3.87	0.64	-3.147

As noted in the study criterion of student achievement, the area of instructional strategies also showed significant differences between the two groups. Middle school

teachers in the A/B block schedule with 3 years or less experience utilized more of a variety of instructional strategies than their counterparts in the traditional schedule. However, the traditional schedule middle school teachers with 3 years or less experience used the lecture method and used worksheets or study guides significantly more than the teachers in the A/B block schedule.

In the survey criterion dealing with professional development, only two questions showed any significant differences in the responses (see Table 20). Question 9 asked middle school teachers if they perceived their schedule allowed them to have adequate time to prepare for teaching $t(31) = -1.71$, $p<.05$. Middle school teachers in the A/B block schedule with 3 years or less experience (M = 3.44, SD 1.33) felt their schedule provided them with more time to prepare than those middle school teachers in the traditional schedule with equal experience (M = 2.54, SD 1.29). Middle school teachers in the A/B block schedule with 3 years or less teaching experience (M = 3.33, SD 1.32) also believed their schedule had the advantage of allowing for more formal meeting time than traditional schedule middle school teachers with 3 years or less experience (M = 2.09, SD 1.41), $t(31) = -2.327$, $p<.05$. In the areas of having sufficient and useful in-service to improve teaching $t\ (31) = -0.123$, staff development programs that permit teachers to acquire important new knowledge and skills $t(\ 31) = 0.027$, and if teachers visit other teachers' classrooms to observe their teaching, $t(\ 31) = -0.248$ there was little difference in the responses. The majority of the respondents stated their schedules did little or nothing in providing these types of professional development opportunities.

Table 20

Research Study Statistics, Three Years or Less in Traditional Schedule vs. Three Years or Less in A/B Block Schedule, February, 2009

Survey criterion – Professional Development	Schedule	n	M	SD	*t*
9. adequate preparation	11	22	2.54	1.29	
	21	9	3.44	1.33	-1.717
10. formal meeting time	11	22	1.64	1.41	
	21	9	3.33	1.32	-2.327
13. sufficient and useful in-service	11	22	2.85	1.32	
	21	9	3.00	0.70	-0.123
21. new skills staff development programs	11	22	3.45	1.05	
	21	9	3.44	0.88	0.027
22. visit other teachers' classrooms	11	21	2.42	1.39	
	21	9	2.55	1.23	-0.248

Interestingly, in the area of professional development, there were only two questions that had significant differences. Having adequate preparation for classes and having formal meeting time was enhanced by the A/B block schedule according to the middle school teachers participating in the block schedule. Both groups did perceive their respective schedules did not allow them to develop new skills in professional development programs, in-services, or visit other teachers' classrooms.

Research question 5. – Do middle school teachers experiencing more than three years of A/B block scheduling and teachers experiencing more than three years of traditional scheduling differ in their perceptions of the impact of scheduling on student learning?

An independent sample *t* test was conducted to determine the differences, if any, in middle school teachers' perceptions teaching in the traditional schedule more than 3 years and middle school teachers teaching in the A/B block schedule more than 3 years (see Tables 21, 22, & 23). Under the heading of schedule, middle school teachers in the traditional schedule with more than 3 years of teaching experience are identified with a 12 and middle school teachers in the A/B block schedule with more than 3 years teaching experience are identified with a 22. There were significant differences in 28 out of the 31 survey questions.

The survey criterion that addressed student achievement showed significant differences in each question that middle school teachers were asked to respond to with forced choice items with equal variances not assumed for all data (see Table 21). Questions 11 and 16 showed the largest differences in teacher perceptions. Middle school teachers were asked to the degree their current schedule restricted or enhanced teachers' capability to know students' individual strengths and weaknesses. In this particular data set, $t(48) = -6.027$, $p<.05$, middle school teachers with more than 3 years experience in A/B block schedule (M = 4.16, SD 1.09) believed their schedule was stronger in this area than the middle school teachers in the traditional schedule with more than 3 years teaching in their current schedule (M 2.25, SD 1.11). Question 16 asked teachers if their

schedule provided students opportunities for enrichment and advanced study $t(50) = -6.055$, $p<.05$. A/B block schedule middle school teachers with more than 3 years experience, (M =4.08, SD 1.15) once again, rated their respective schedule as more successful in this area than the middle school teachers in the traditional schedule with the same years of experience (M = 2.20, SD 1.04).

Middle school teachers with more than 3 years of teaching in the A/B block schedule (M = 3.79, SD 1.14) believed their students had a deeper understanding of the subject matter with the current schedule than the traditional schedule middle school teachers with the same teaching experience (M = 2.21, SD 0.79) as seen in Table 21 on question 34 $t(47) = -5.505$, $p<.05$. Consequently, the same groups disagreed on whether their respective schedules allow students to get better grades $t(47) = -5.223$, $p<.05$. Middle school teachers with more than 3 years teaching in the traditional schedule (M =2.30, SD 0.82) did not believe their current schedule was optimal in allowing their students to get better grades as the A/B block schedule middle school teachers with more than 3 years experience (M = 3.66, SD 0.96).

Question 7 addressed how the current schedule assisted students who were absent or behind. Results showed $t(50) = -3.942$, $p.<.05$. Middle school teachers with more than 3 years experience in the A/B block schedule (M = 3.40, SD 1.29) perceived their schedule was less restrictive than the middle school teachers in the traditional schedule with more than 3 years experience (M = 2.16, SD 0.89). With a slightly larger difference, middle school teachers in the A/B block schedule with more than 3 years experience (M = 3.52, SD 1.15) also agree that their current schedule is better at helping lower achieving

students $t(50) = -4.719$, $p<.05$ than the middle school teachers in the traditional schedule (M = 2.00, SD 1.11). Pertaining to how the current schedule accommodates the needs of special education students $t(49) = -3.756$, $p<.05$, the middle school traditional schedule teachers with more than 3 years of teaching (M 2.32, SD 1.21) did not believe their schedule enhanced student learning as well as the middle school teachers in the A/B block schedule with the same teaching experience (M = 3.58, SD 1.13). The middle school teachers were asked to rate if they agreed or disagreed their current schedule allowed a greater number of their low-achieving and special education students experience success $t(47) = -4.455$, $p<.05$. Middle school teachers in the A/B block schedule with more than 3 years teaching experience in their current schedule (M = 3.58, SD 1.13) agreed more so than the middle school teachers with more than 3 years experience in the traditional schedule (M = 2.17, SD 1.02). The A/B block schedule teachers (M = 3.79, SD 1.10) also concurred that the A/B block schedule was better for the top achieving students, $t(47) = -4.262$, $p< .05$, than the traditional schedule middle school teachers (M = 2.43, SD 1.07).

Teaching students how to directly apply the concepts and process to real-world work or daily life was asked in question 17 $t(50) = -3.656$, $p<.05$. Middle school teachers in the A/B block schedule with more than 3 years experience in their current schedule (M = 3.68, SD 0.90) felt their schedule was less restrictive than traditional schedule middle school teachers with 3 years or more experience (M = 2.68, SD 1.02). Overall, middle school teachers in the A/B block schedule with more than 3 years in their current schedule (M = 3.87, SD 1.22) had a considerable more favorable opinion of their

respective schedule than middle school teachers in the traditional schedule with more than 3 years (M = 2.26, SD 0.86) as addressed in question 37 ($t(47) = -5.231$, $p<.05$).

Table 21

Research Study Statistics, More Than Three Years in Traditional Schedule vs. More Than Three Years in A/B Block Schedule, February, 2009

Survey criterion – Student achievement	Schedule	n	M	SD	*t*
7. assisting students absent or behind	12	25	2.16	0.89	
	22	25	3.40	1.29	-3.942
8. helping lower achieving students	12	25	2.20	1.00	
	22	25	3.68	1.34	-4.414
11. knowing individual strengths/weaknesses	12	24	2.25	1.13	
	22	24	4.16	1.09	-6.027
16. opportunity for enrichment/advanced study	12	25	2.20	1.04	
	22	25	4.08	1.15	-6.055
17. applying concepts to real world	12	25	2.68	1.02	
	22	25	3.68	0.90	-3.656
20. needs of special education students	12	25	2.32	1.21	
	22	24	3.58	1.13	-3.756
33. students get better grades	12	23	2.30	0.82	
	22	24	3.66	0.96	-5.223

Table 21 *(continued)*

Research Study Statistics, More Than Three Years in Traditional Schedule vs. More Than Three Years in A/B Block Schedule, February, 2009

Survey criterion – Student achievement	Schedule	n	M	SD	*t*
34. deeper understanding of subjects	12	23	2.21	0.79	
	22	24	3.79	1.14	-5.505
35. low achieving and special education students experience success	12	23	2.17	1.02	
	22	24	3.58	1.13	-4.455
36. better for top achieving students	12	23	2.43	1.07	
	22	24	3.79	1.10	-4.262
37. opinion about schedule	12	23	2.26	0.86	
	22	24	3.87	1.22	-5.231

As seen in Table 21 above, each question had significant differences between the two groups. Student achievement was perceived to be considerably enhanced by the teachers in the A/B block schedule who have more than 3 years experience. The most significant difference was when respondents were asked if their respective schedules allowed opportunities of enrichment and advanced study in the classrooms.

With the queries regarding instructional strategies (see Table 22), middle school teachers with more than 3 years of experience in the traditional and A/B block schedules

were asked to rank how often they used various strategies and techniques in their respective classrooms. The most significant difference was illustrated in question 12 asking middle school teachers to rate if individualizing instruction is restricted or enhanced in their schedules $t(50) = -6.314$, $p<.05$. Middle school teachers in the A/B block schedule with more than 3 years experience (M = 3.76, SD 1.20) perceived their schedule enhanced their ability to individualize instruction more than middle school teachers in traditional schedules with 3 years or more experience (M = 1.88, SD 0.88).

Middle school teachers were asked if they used a variety of activities in most class periods in their classrooms $t(47) = -3.446$, $p<.05$ on question 32.Middle school teachers in the traditional schedule with more than 3 years teaching in their current schedule (M = 3.00, SD 1.16) employed less of a variety of activities than the middle school teachers in the A/B block schedule with the same experience (M = 4.08, SD 0.97). The largest significant difference was on question 18 $t(49) = -5.635$, $p<.05$. Middle school teachers in the A/B block schedule perceived their schedule allowed them to use diverse methods or styles of instructional delivery methods (M = 4.15, SD 1.11) more so than middle school teachers in the traditional schedule with more than 3 years teaching experience (M = 2.36, SD 1.07). In addition, middle school teachers in the A/B block schedule with more than 3 years experience (M = 4.200, SD 1.15) utilized higher-level thinking activities $t(50) = -2.335$, $p<.05$ than middle school teachers in the traditional schedule with more than 3 years experience (M = 2.48, SD 1.00). With a group mean of 4.04, middle school teachers in the A/B block schedule utilized hands-on activities, labs, and other student participation activities, $t(47) = -2.818$, $p<.05$, than the traditional schedule middle school

teachers with a mean of 3.04. In-depth discussion had a significant difference also between the two groups. Among the middle school teachers with more than 3 years of teaching experience, teachers in the A/B block schedule (M = 3.66, SD 0.81) used in-depth discussion $t(48) = -2.438$, $p<.05$, more than teachers in the traditional schedule (M = 3.04, SD 0.95) and involved students in active and hands-on learning $t(50) = -5.934$, $p<.05$ more so than teachers in the traditional schedule (M =2.68, SD 1.28). Comparatively, there was little difference between the two groups when asked how often they used lecturing, worksheets, or study guides.

Concerning assessment approaches and performance evaluations, there was a significant difference between the two groups concerning using more alternative assessment approaches $t(50) = -5.403$, $p<.05$ as the middle school teachers in the A/B block schedule had a more positive perception (M = 3.96, SD 1.09). Performance evaluations $t(47) = -2.014$, $p<.05$ were utilized less with middle school teachers in the traditional schedule with more than 3 years experience (M = 3.17, SD 1.54). Cooperative or small groups, $t(47) = -1.931$, $p<.05$, were also used less by the traditional schedule middle school teacher with the same experience (M = 3.29, SD 1.08).

There was no significant difference between middle school teachers with more than 3 years in the traditional and A/B block schedule in how often they related classroom content to student experience. However, there was a difference when they were asked how often they required students to use the classroom content for a purpose other than remembering it $t(48) = -1.597$, $p<.05$ with middle school teachers in the A/B block schedule (M =3.70, SD 1.08) stating they practiced this activity more than the

middle school teachers in the tradition schedule (M = 3.25, SD 0.89). Technology was used in the classroom more often in the A/B block schedule (M 3.75, SD 1.22) than in the traditional schedule (M 2.95, SD 1.29).

Table 22

Research Study Statistics, More Than Three Years in Traditional Schedule vs. More Than Three Years in A/B Block Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
12. individual instruction	12	25	1.88	0.88	
	22	25	3.76	1.20	-6.314
14. more alternative assessment approaches	12	25	2.28	1.10	
	22	25	3.96	1.09	-5.403
15. higher-level thinking activities	12	25	2.48	1.00	
	22	25	4.20	1.15	-2.335
18. diversity of instructional delivery methods	12	25	2.36	1.07	
	22	24	4.12	1.11	-5.635
19. active and hands on teaching strategies	12	25	2.68	1.28	
	22	25	4.52	0.87	-5.934
23. hands-on activities	12	23	3.04	1.29	
	22	24	4.04	1.12	-2.818

Table 22 *(continued)*

Research Study Statistics, More Than Three Years in Traditional Schedule vs. More Than Three Years in A/B Block Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
24. lecture	12	22	2.77	1.15	
	22	24	2.66	1.00	0.331
25. performance evaluation	12	23	3.17	1.15	
	22	24	3.79	0.93	-2.014
26. cooperative or small groups	12	24	3.29	1.08	
	22	23	3.86	0.96	-1.931
27. worksheets or study guides	12	23	2.82	1.19	
	22	24	2.54	1.06	0.862
28. relating classroom content to student experience	12	22	3.18	1.00	
	22	24	3.50	1.31	-0.924
29. content for purpose other than remembering	12	24	3.25	0.89	
	22	24	3.70	1.08	-1.597
30. technology in class	12	22	2.95	1.29	
	22	24	3.75	1.22	-2.140
31. in-depth discussion	12	24	3.04	0.95	
	22	24	3.66	0.81	-2.438

Table 22 *(continued)*

Research Study Statistics, More Than Three Years in Traditional Schedule vs. More Than Three Years in A/B Block Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	M	SD	*t*
32. variety of activities	12	23	3.00	1.16	
	22	24	4.08	0.97	-3.446

As reported in other research questions, a variety of instructional strategies was utilized more by teachers with more than 3 years experience in the A/B block schedule than the traditional schedule. Lecture and worksheets or study guides were used more by traditional teachers with more than 3 years experiences than the A/B block schedule teachers. Another exception could be seen in if the schedule allowed teachers to be able to relate classroom content to students' experiences. Middle school teachers in the A/B block schedule with more than 3 years perceived their schedule allowed them to use this strategy only slightly more than the other group.

In the area of professional development, there were significant differences in all the questions between middle school teachers with more than 3 years experience in traditional and A/B block schedules than between any of the other groups in previous research questions (see Table 23). Middle school teachers were asked to rate to what degree they feel the current schedule restricts or enhances having formal meeting time to spend on curriculum, pedagogy, and assessment issues with other teachers. Middle school

teachers with more than 3 years experience in the A/B block schedule (M = 3.64, SD 1.22) expressed a more positive point of view on the formal meeting time and the largest significant difference $t(50) = -6.350$, $p<.05$ in the professional development study criterion than middle school teachers in the traditional schedule with more than 3 years experience (M = 1.63, SD 0.99). Another area with a strong significant difference was in having adequate time to prepare for teaching $t(50) = -4.719$, $p<.05$ where the middle school teachers in the A/B block schedule (M = 3.52, SD 1.15) believed their schedule allowed more opportunity to prepare for teaching than the middle school teachers in the traditional schedule (M = 2.00, SD 1.11).

The ability to visit other teachers' classrooms to observe their teaching was more accessible in the A/B block schedule (M = 3.00, SD 1.16) than in the traditional schedule (M =1.64, SD 1.10) ($t(48) = -3.526$, $p<.05$). Yet, there was a less significant difference when they believed their respective schedule provided them with sufficient and useful in-service to improve their teaching $t(50) = -2.077$, $p<.05$ and staff development programs that permitted them to acquire important new knowledge and skills $t(49) = -1.480$, $p<.05$.

Table 23

Research Study Statistics, More Than Three Years in Traditional Schedule vs. More Than Three Years in A/B Block Schedule, February, 2009

Survey criterion – Professional Development	Schedule	n	M	SD	*t*
9. adequate preparation	12	25	2.00	1.11	

Table 23 *(continued)*

Research Study Statistics, More Than Three Years in Traditional Schedule vs. More Than Three Years in A/B Block Schedule, February, 2009

Survey criterion – Professional Development	Schedule	n	M	SD	*t*
	22	25	3.52	1.15	-4.719
10. formal meeting time	11	25	1.64	0.99	
	22	25	3.64	1.22	-6.350
13. sufficient and useful in-service	12	25	2.76	0.92	
	22	25	3.28	0.84	-2.077
21. new skills staff development programs	12	25	2.80	1.00	
	22	24	3.20	0.93	-1.480
22. visit other teachers' classrooms	12	25	1.84	1.10	
	22	23	3.00	1.16	-3.526

Overall, there were significant differences in all areas of the professional development criterion. In each instance, middle school teachers with more than 3 years experience in the A/B block perceived their schedule allowed them more opportunity for professional development.

Research question 6. – What do teachers identify as advantages and disadvantages of their daily schedule?

Descriptive statistics indicated that middle school teachers perceived there were advantages and disadvantages in their respective schedules as indicated in Tables 24, 25, and 26. Middle school teachers in the traditional schedule are indicated by a 1 under the heading "Schedule" and middle school teachers in the A/B block schedule are indicated by a 2. For the purpose of this study, a survey question is considered to be an advantage if the majority of the respondents rated the question with a "4" or a "5" on the Lickert Scale provided and a disadvantage if they answered with a "1" or a "2". If teachers did not believe their schedule had any direct connection to a particular question or felt a question could not be related specifically to their respective schedule they answered with a "3", which was neither or neutral. Response totals were calculated by totaling the rating scales of "1" plus "2" and totaling the scales "4" plus "5". For the statistical analysis of this research question, the categorical area with the largest percentage is discussed.

In most of the questions dealing with student achievement, middle school teachers in the A/B block schedule believed their schedule had more advantages than those in the traditional schedule. The descriptive statistics indicated assisting students who were absent or behind was rated a "1" by the traditional schedule middle school teachers 34% (n=16) while 35.3% of the A/B block schedule teachers did not believe the schedule had an effect. In conjunction with assisting students absent or behind, traditional middle school teachers also felt their schedules were a hindrance in helping lower achieving students (63.9%, n=30), meeting the needs of special education students (48.9%, n=33), and helping low achieving and special education students achieve success (64.4%, n=29).

In contrast, middle school teachers in the A/B block schedule believed their schedules were advantageous on the same topics. The majority of the teachers (69.7%, n=23) thought their schedule helped lower achieving students and met the needs of special education students (62.5%, n=20). However, the A/B block schedule teachers were split in how the schedule helped low achieving and special education students experience success. Fourteen teachers (43.8%) saw an advantage, but 14 (43.8%) saw no advantage.

The opportunity for enrichment and advanced study was closely divided between the two schedule groups. The traditional schedule was viewed as a disadvantage by the 31 middle school teachers (65.9%) and was an advantage according to 22 of the A/B block schedule teachers (64.7%). Conflicting with these convictions is how they perceive their schedules are better for their top achieving students. Middle school teachers in the traditional schedule were divided with 19 (42.3%) not seeing an advantage and 19 (42.2%) were neutral in their perceptions and saw not advantage or disadvantage. Only 46.9% (n=15) of the A/B block middle school teachers thought there was an advantage.

The largest perceived advantage was seen by A/B block teachers in the area of knowing individual students' strengths and weaknesses. Eighty-one percent of the A/B block schedule teachers believed their schedule was advantageous while only 50% of the traditional schedule teachers allowed them to know their students' strengths and weaknesses. Sixty-five percent of A/B block schedule teachers saw their schedule has having an advantage in allowing students to have a deeper understanding of academic subjects. However, 53.3% of the teachers in the traditional schedule did not believe there

was either an advantage or disadvantage in providing students a deeper understand of the core subjects. They were also divided in their opinion concerning how their schedule allowed opportunities for their students to apply concepts to the real world. While 40.4% thought their traditional schedule was advantageous, 40.4% did not feel the schedule was either.

One of the most common ways of expressing student achievement is through grading systems. When middle school teachers were asked if there was an advantage by their schedule allowing student to receive better grades, 51.1% of the traditional schedule teachers were neutral but 53.2% of the A/B block schedule teachers thought students had the advantage in their respective schedule. Overall, the A/B block schedule teachers had a higher opinion of their schedule (68.8%, n=22) than the traditional schedule teachers who rated their dissatisfaction with 51.1% (n=23).

Table 24

Research Study Statistics, Advantages and Disadvantages of Current Schedule, February, 2009

Survey criterion – Student achievement	Schedule	n	Adv	Dis	Neither
7. assisting students absent or behind	1	29		61.7%	
	2	15	44.1%		
8. helping lower achieving students	1	30		63.9%	
	2	23	69.7%		
11. knowing individual strengths/weaknesses	1	23		50.0%	

Table 24 *(continued)*

Research Study Statistics, Advantages and Disadvantages of Current Schedule, February, 2009

Survey criterion – Student achievement	Schedule	n	Adv	Dis	Neither
	2	27	81.8		
16. opportunity for enrichment/advanced study	1	31		65.9%	
	2	22	64.7%		
17. applying concepts to real world	1	19		40.4%	40.4%
	2	17	50.0%		
20. needs of special education students	1	33		48.9%	
	2	20	62.5%		
33. students get better grades	1	23			51.1%
	2	17	53.2%		
34. deeper understanding of subjects	1	24			53.3%
	2	22	65.0%		
35. low achieving and special education students experience success	1	29		64.4%	
	2	14/14	43.8%		43.8%
36. better for top achieving students	1	19/19		42.3%	42.2%
	2	15	46.9%		
37. opinion about schedule	1	23		51.1%	

Table 24 *(continued)*

Research Study Statistics, Advantages and Disadvantages of Current Schedule, February, 2009

Survey criterion – Student achievement	Schedule	n	Adv	Dis	Neither
	2	22	68.8%		

In summary, middle school teachers in the A/B block schedule perceived their schedule had more advantages for student achievement than their peers in the traditional schedule. Four questions, however, did show a majority of the traditional schedule middle school teachers were neutral in their beliefs. There was a division between how A.B block schedule teachers perceived their schedule assisted low achieving and special education students experience success. In this instance, 43.8% of the middle school teachers were neutral and 43.8% of the middle school teachers perceived advantages with the A/B block schedule.

In the area of instructional strategies, A/B block schedule middle school teachers believed their schedule had more advantages in 13 areas (see Table 25). The largest percent (91.2%) was identified by 31 teachers in utilizing active and hands on teaching strategies with the students but 69.7% of the teachers saw an advantage in being able to use diverse instruction deliver methods. Allowing students to use more hands-on activities in the classroom and utilizing a variety of activities were both seen as an advantage with 75% of the teachers responding.

There were 3 areas where the majority of both groups agreed on the advantages of their respective schedules (see Table 25). Both groups believed their schedules allowed for more cooperative or small groups with 51.2% of the traditional schedule teachers and 51.2% of the A/B block schedule teachers responding positively. Perceiving their schedule is more beneficial in relating classroom content to student experience, 45.4% of the traditional schedule teachers and 59.4% of the A/B block schedule saw an advantage. Along the same line, both groups believed their respective schedules lead to requiring students to use classroom content other than remembering it. Twenty of the traditional schedule middle school teachers (43.5%) and 21 (65.6%) of the A/B block schedule middle school teachers thought their students profited in their schedules. The A/B block schedule had an advantage by promoting individualized instruction according to the middle school teachers with 70.6% responding with more certainty. However, 66% of the traditional schedule middle school teachers responded they did not believe their schedule encouraged individualized instruction

Table 25

Research Study Statistics, Advantages and Disadvantages of Current Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	Adv	Dis	Neither
12. individual instruction	1	31		66.0%	
	2	24	70.6%		

Table 25 *(continued)*

Research Study Statistics, Advantages and Disadvantages of Current Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	Adv	Dis	Neither
14. more alternative assessment approaches	1	24		51.1%	
	2	22	64.7%		
15. higher-level thinking activities	1	20		42.6%	
	2	27	79.4%		
18. diversity of instructional delivery methods	1	23		49.0%	
	2	23	69.7%		
19. active and hands on teaching strategies	1	23		50.0%	
	2	31	91.2%		
23. hands-on activities	1	19	42.2%		
	2	24	75.0%		
24. lecture	1	16		36.3%	
	2	15		46.9%	
25. performance evaluation	1	21		46.6%	
	2	22	68.8%		
26. cooperative or small groups	1	23	51.2%		

Table 25 *(continued)*

Research Study Statistics, Advantages and Disadvantages of Current Schedule, February, 2009

Survey criterion – Instructional Strategies	Schedule	n	Adv	Dis	Neither
	2	24	77.4%		
27. worksheets or study guides	1	18	40.0%		
	2	19		59.4%	
28. relating classroom content to student experience	1	20	45.4%		
	2	19	59.4%		
29. content for purpose other than remembering	1	20	43.5%		
	2	21	65.6%		
30. technology in class	1	19		43.2%	
	2	22	68.8%		
31. in-depth discussion	1	17		36.9%	
	2	22	68.8%		
32. variety of activities	1	17		37.8%	
	2	24	75.0%		

More advantages were seen by middle school teachers in the A/B block schedule than by teachers in the traditional schedule. However, more traditional schedule teachers

felt their schedule was an advantage in using hands-on activities, cooperative or small groups, relating classroom content to student experience, and requiring students to use classroom content for a purpose other than remembering as opposed to other instructional strategies they employed. Traditional schedule teachers did believe their schedule was advantageous for using worksheets or study guides.

Professional development issues had few advantages or disadvantages according to both middle school teachers in the A/B block schedule and the traditional schedule (see Table 26). Qualitative data was also collected in question 38 which allowed for open-ended responses where by teachers were asked to describe any professional development they have found to support teaching in their current schedule. The qualitative responses were coded and evaluated using a constant comparative method which allowed categories to emerge and add more insight to the findings. Two subcategories were established, collaboration and teaching strategies, and cross-referenced with the forced choice responses.

Middle school teachers in the A/B block schedule deemed their schedule had more advantages in allowing them time for adequate preparation (52.9%) and provided more formal meeting time (61.7%). Three of the nine teachers who responded to the open-ended question discussed the positive aspects of having cadre meetings in math and technology and common team plan time. On the other hand, teachers in the traditional schedule judged their schedule being at a disadvantage in allowing adequate preparation (65.9%) and having formal meeting time (78.7%). Of the 11 traditional schedule teachers

responding, only one discussed collaboration. The teacher stated the only collaboration has been with the assistant principal through question and answer sessions.

Sufficient and useful in-service and learning new skills in staff development programs were viewed as neutral by both groups as a whole, yet open-ended responses from twenty of the eighty-one respondents offered other insights. According to the middle school teachers in the A/B block schedule, there have been in-services on cooperative learning, behavioral interventions, multi-intelligences, differentiation, delivery methods, and implementation of new subject matter but little on the actual block schedule and how to use it. In contrast, the eleven middle school teachers in traditional schedule who responded to the open-ended question stated there was little professional development provided. One teacher responded that professional development on Marzano strategies had been provided and another teacher stated that strategy instruction through the school district along with technology skills was made available to their teachers.

Table 26

Research Study Statistics, Advantages and Disadvantages of Current Schedule, February, 2009

Survey criterion – Professional Development	Schedule	n	Adv	Dis	Neither
9. adequate preparation	1	31		65.9%	
	2	18	52.9%		
10. formal meeting time	1	37		78.7%	

Table 26 *(continued)*

Research Study Statistics, Advantages and Disadvantages of Current Schedule, February, 2009

Survey criterion – Professional Development	Schedule	n	Adv	Dis	Neither
	2	21	61.7%		
13. sufficient and useful in-service	1	21			44.7%
	2	23			67.6%
21. new skills staff development programs	1	21			44.7%
	2	16			48.5%
22. visit other teachers' classrooms	1	30		65.3%	
	2	15			46.9%

Adequate preparation and formal meeting time were the only advantages seen in the professional development section. In these two questions, teachers in the A/B block schedule saw advantages as opposed to being disadvantages by the traditional schedule teachers. Another disadvantage seen by the traditional schedule teachers was being able to visit other teachers' classrooms. All other questions were perceived to be neither by both groups.

Research question 7 – What do teacher perceive to the most difficult factors in implementing a block schedule?

Question 39 of the survey was open-ended and asked teachers to describe the most difficult aspects of their current schedule. The question was designed in an attempt to provide further information on teacher perceptions regarding the impact the A/B block schedule has on student learning. As in the study criterion of professional development, qualitative responses were combined according to similar characteristics and qualities. Three subcategories were the result in the areas of collaboration, student needs, and professional development. The cross listing of the responses was used to answer research question 7 and research question 8.

Collaboration

Five of the 20 middle school teachers responding to the open-ended question stated they found that collaboration with their peers was difficult. The main problem expressed by 3 of the teachers appeared there was no chance to meet with a teacher of similar level or department as plan times were different. However, two teachers felt there was too much team time and not enough time for grading or class preparation.

Student needs

Responses that fit into this category comprised 55% (n=11) of the total responses. This was the largest group rate of the two categories. Issues of helping students maintaining and reinforcing content material appeared to be a major concern. If students are to better learn and remember content and new concepts teachers believed some subjects were better suited to daily instruction instead of every other day. According to the responses, students need “reading and math everyday to maintain and reinforce content concepts” and in band class, students “need the repetition and they do not get it

by having class 2-3 times a week". Another concern was that due to holidays and other activities there are times when students may not be in a class for a week. In addition, "keeping A and B day kids on same "page" work, instruction, and activities proved difficult.

One aspect of A/B block scheduling is the diverse teaching and learning strategies needed in order to utilize the longer periods of time in the classroom. Holding the interest of early adolescents is a tough task and often calls for a variety of activities. Some middle school teachers believed this was the most difficult aspect in their schedule. Creating lesson plans to hold student interest and keeping early adolescents on task due to their short attention span can be an arduous task for some teachers.

Research question 8 – What do teachers perceive to be the most important factors in sustaining a block schedule?

The teachers in the survey believed the most important factor in sustaining the A/B block schedule was professional development. The majority of those responding indicated that there was a need for more professional development in how to make the most of the A/B block schedule and how to prepare more appropriate lesson plans. The second most essential issue the teachers felt was needed to sustain the A/B block schedule was collaboration. Middle school teachers considered team time to collaborate and communicate with peers on a regular basis was vital in coordinating lessons and instruction. Collaboration allows teachers discuss student progress or issues and prevents students from being less at risk for failure.

The perceptions of how middle school teachers perceive the A/B block schedule impacts student learning was the basis for this study. Research done by Anfra (2001), Canady and Rettig (1995a, 1995b, 1996), Carnegie Council on Adolescent Development (1989), and the National Middle School Association (1982, 1992, 1995, 2003) indicated that the cognitive and physical development and the social and emotional needs of early adolescents need to be considered and addressed in middle schools. As indicated in the research, one way to address these concerns is through scheduling. The problem centered on the premise that middle school teachers in the A/B block schedule differed in their perceptions regarding the impact their schedule had on student learning as compared to middle school teachers in the traditional schedule.

The purpose of this study was to discover out how teachers perceive A/B block scheduling impacts student learning as compare to teachers' perception in traditional schedules. Also, the study was designed to discover if teacher perceptions were different based on years of teaching experience. The research conducted an independent samples *t* test to evaluate the research questions (see Tables 9-14). The tests were significant for 26 out of the possible 31 responses to the forced choice questions with equal variances not assumed for all data. The overall perceptions in the research questions were that middle school teachers in the A/B block schedule believed their schedule had a greater impact on student learning than the teachers in the traditional schedule. In contrast, there was little difference in the perceptions of middle school teachers according to years of teaching in either schedule. While there were little differences among the groups, the study illustrated there were significant differences between the two groups and years of teaching

experience. The most significant factor that emerged from this study was the need for professional development in order to implement and sustain the A/B block schedule. The results of this study can be used to provide others in their decisions on restructuring the daily school schedule. A discussion of the implications of this study and future research follows in Chapter Five.

CHAPTER 5

Discussion

Summary of the study

In 1987, the Task Force on Education of the Young Adolescents examined the intellectual and emotional status and approaches to improving the intellectual and emotional growth of young adolescents. During the course of their exploration they found that amid the intense challenges faced by young adolescents, educational institutions were falling short in meeting the students' needs. In their 1989 report, *Turning Points: Preparing American Youth for the 21st Century*, the task force advocated for intense reform and transformation of educational practices for middle school students. One recommendation was to organize middle grades schools to ensure success for all students. The manners in which schools are organized for learning are numerous and diverse. The most common form of organization is through time, either by the number of periods in the day or the length of the instructional module.

Since the 1990s, more middle schools began looking into extended periods in part due to the increased literature and research on the cognitive development of early adolescents (1999 Anfara, 2001; Benton-Kupper, 1999; DiBiase & Queen, 1999; Jackson & Davis, 2000; Manning, 1993; Mattox, et al, 2005; NMSA, 1995, 2003; Thompson, 2004). Block scheduling began to appear in more middle schools as a way to affect young adolescent student learning and a way to meet the learning profiles of more students. The additional time was designed to provide additional time for teachers to interact with students, implement varied instructional strategies, integrate curriculum, individualize

instruction, and build relationships with students. However, according to Rettig (2004), block scheduling is the least implemented program in middle schools.

The issue addressed in this study was middle school teachers' perceptions of the A/B block schedule on student learning as compared to perceptions of middle school teachers in the traditional schedule. Research done by Caskey and Anfara (2007), Derouen (1998), DiBiase and Queen (1999), Flynn, Lawrenz, and Schultz (2005), Jackson and Davis (2000), Laitsch (2004), National Middle School Association (1982/1992/1995/2003), and Rettig (2004) indicated in order to meet the developmental needs of middle school students, the traditional class schedules are not as effective as block scheduling modules. The problem statement centered on the premise that middle school teachers' perceptions were different in schools that utilized A/B block scheduling than traditional scheduling.

The purpose of this study was to find out what middle school teachers in the A/B block and traditional schedule perceive to be the advantages/disadvantages of A/B block and traditional scheduling as related to teachers, students, and instruction. In addition, the study was designed to help determine factors to be the most difficult in implementing A/B block scheduling and what factors are considered important in sustaining the A/B block schedule over time. The study was designed to determine if teachers' perceptions were different compared to the number of years of teaching experience in their respective schedules and the current teaching schedule. If differences were present, they could be due to teaching experience, scheduling, or other factors.

This study determined the perceptions of middle school teachers of A/B block and traditional scheduling in regard to student learning. It also identified what middle school teachers believed to be the advantages and disadvantages of their respective schedules. In addition, the study determined factors middle school teachers perceived to be critical in implementing and sustain block scheduling. The study should become a source of information for educational institutions considering implementing block scheduling.

The study was based on the following research questions:

1. Do middle school teachers teaching in the traditional schedule and those teaching in the A/B block schedule differ in their perceptions of the impact their respective schedules may have on student learning?
2. Do middle school teachers experiencing three years or less of A/B block scheduling and those experiencing more than three years of A/B block scheduling differ in their perceptions of the impact of A/B block scheduling on student learning?
3. Do middle school teachers experiencing three years or less of traditional scheduling and teachers experiencing more than three years of traditional scheduling differ in the perceptions of the impact of traditional scheduling on student learning?
4. Do middle school teachers experiencing three years or less of A/B block scheduling and teachers experiencing three years or less of traditional scheduling differ in their perceptions of the impact of scheduling on student learning?

5. Do middle school teachers experiencing more than three years of A/B block scheduling and teachers experiencing more than three years of traditional scheduling differ in their perceptions of the impact of scheduling on student learning?
6. What do teachers identify as advantages and disadvantages of their daily schedule?
7. What do teachers perceive to be the most difficult factors in implementing a block schedule?
8. What do teachers perceive to be the most important factors in sustaining a block schedule?

Findings

Twelve Missouri school districts with a sixth through eighth grade configuration were selected to participate in the study. Of the 12 school districts, 8 utilized the A/B block schedule and 4 used traditional scheduling. Four superintendents granted their permission and principals were contacted by email. Of the possible 172 respondents, 82 responded to the online survey conducted in February, 2009 with 34 coming from the A/B block schedule and 48 from the traditional schedule. Teachers in the A/B block schedule had a mean of 4.26 years teaching experience while teachers in the traditional schedule had a mean of 3.39 years of teaching experience. However, 41.2% of the teachers in the A/B block schedule have been teaching 13 years or more and 52% of the teachers in the traditional schedule had 13 years or more teaching experience (see Table 8).

Research question 1 - Do middle school teachers teaching in the traditional schedule and those teaching in the A/B block schedule differ in their perceptions of the impact their respective schedules may have on student learning?

An independent samples *t* test was conducted to evaluate to determine any difference in middle school teachers' perceptions teaching in the traditional schedule and middle school teachers teaching in A/B block schedules (see Tables 9. 10, & 11). The survey was divided into three criterion: student achievement, instructional strategies, and professional development. The test was significant for 28 out the possible 31 responses to the forced choice items with equal variances not assumed for all data.

Eleven questions on the survey dealt with how teachers believed their respective schedules impacted student achievement (see Table 9). Responses to the eleven survey questions showed that middle school teachers in the A/B block schedule perceived their schedule was significantly better for student achievement than the middle school teachers in the traditional schedule. A total of 81 middle school teachers responded to question 16 which had the largest significant difference between the two groups (see Table 9). Sixteen teachers in the A/B block schedule (47.1%) believed their schedule enhanced student enrichment and advanced study compared to the three middle school teachers in the traditional schedule (6.4%) (see Appendix D). Yet the difference was less ($t(77) = -4.40$, $p<.05$) when participants were asked if the schedule of the two groups was better for the top achieving students as shown in Table 9.

Another significant difference was seen in question 11 which asked how middle school teachers perceived their respective schedules allowed them to better know

students' individual strengths and weaknesses. As seen in Table 9, 81.8% of the teachers in the A/B block schedule saw their schedule as an advantage over the 50% of the teachers in the traditional schedule ($t(79) = -5.77$). In line with knowing individual strengths and weaknesses, teachers can adjust their teaching strategies to assist students of all levels. Questions 7, 8, 20, and 35 were concerned with lower achieving and special education students along with those students who have been absent or behind. In all four questions there were significant differences between the two groups with the *t* factor being greater than -4.00 in the A/B block schedule (see Table 9).

Middle school teachers were asked to rank how they felt about their respective schedules in question 37 from strongly non-support to strongly support. Interestingly, as seen in Appendix D, 43.3% (14) of the teachers in the A/B block schedule strongly supported their schedule while the opinion of the teachers in the traditional schedule strongly did not support their schedule 26.7% (12). The middle school teachers in the traditional schedule had the largest concentration of responses in the neutral category with 16 (35.6%) responding they were neutral in their opinion.

The second study criterion involved instructional strategies teachers may use in the classroom (see Table 10). There were several *t* tests that showed significant differences between the two groups with the middle school teachers in the A/B block schedule having a better opinion of their schedule than the teachers in the traditional schedule. The largest significant differences were seen in instructional strategies that individualized instruction, using more alternative assessment approaches, using classroom activities which require higher level thinking, using diversity of instructional

delivery methods or styles, using teaching strategies which involve students in active and hands-on learning, and hands-on activities, labs and other student participation activities. In all six questions, the significant differences were -5.99 or better according to the *t* tests (see Table 10). The largest significant factor was seen in question 19 when teachers were asked how their respective schedules allowed them to use teaching strategies which involve students in active and hands-on learning ($t(81) = -7.58$). Ninety-one percent (31) of the 34 middle school teachers in the A/B block schedule saw this strategy was enhanced by their schedule as compared to the 21.7% (10) in the traditional schedule who had the same opinion (see Table 9).

Part two of the survey asked teachers to determine the ranking that best represents the extent they use various instructional activities in the classroom (see Table 10). A/B block scheduling teachers stated they use a variety of activities in most class periods more than traditional schedule teachers who said they used these strategies only sometimes. Traditional schedule teachers also said they used lectures and worksheets or study guides slightly more often than the teachers in the A/B block schedule. However, on the whole, both groups said they used these methods of instruction fairly often. Hands-on activities, labs, and other student participation activities were used fairly often and almost all of the time by more teachers in the A/B block schedule (n=24) than those teachers in the traditional schedule (n=19) (see Appendix D).

One of the least significant differences between the two groups was when they were asked if they used content for purpose other than remembering (see Table 10). With a *t* factor of -2.24 middle school teachers in the traditional schedule did not believe they

required this skill of their students quite as much as the middle school teachers in the A/B block schedule. However, a total of 30 participants from both groups believed they required it fairly often and 11 almost all the time (see Appendix D). A lower difference (see Table 10) was seen on survey item 28 regarding requiring students to relate classroom content to their own experience $t(76) = -1.27$. Thirty middle school teachers overall said they used this skill fairly often while only a total of 9 said they used this almost all the time (see Appendix D).

The third criterion was in the area of professional development (see Table 11). As a result of the longer periods of class time, middle school teachers believed their A/B block schedule allowed them to have formal meeting time to send on curriculum, pedagogy, and assessment issues with other teachers. As seen in Table 11, this was the largest significant difference among the five questions relating to this area. Both groups again had opposite opinions on their schedule providing them adequate time to prepare for teaching with a significant *t* factor of -4.60 with 81 participants responding. Middle school teachers in the A/B block schedule responded more positively to this item more than traditional schedule middle school teachers. Interestingly, there was no significant difference between the two groups that staff development programs permit teachers to acquire important new knowledge and skills. This was a weak area with both groups.

Research question 2 - Do middle school teachers experiencing three years or less of A/B block scheduling and those experiencing more than three years of A/B block scheduling differ in their perceptions of the impact of A/B block scheduling on student learning?

There were not as many significant differences between these two groups as there was between the middle school teachers teaching in the A/B block schedule and middle school teachers teaching in the traditional schedule. However the largest significant difference was seen in questions 20 and 35. Middle school teachers teaching three years or less in the A/B block schedule believed the schedule enhanced the needs of special education students with a *t* factor of 1.176 (see Table 12). This was the only area of student achievement where the A/B block schedule teachers with three years or less experience had a positive correlation to their schedule. However, teachers with more than three years experienced believed the A/B block schedule helped low achieving and special education students experience success ($t(32) = -1.090$) and was better for the top achieving students ($t(32) = -1.003$).

When assessing instructional strategies, two questions demonstrated that the A/B block schedule teachers with 3 years or less believed the schedule enhanced more alternative assessment approaches ($t(34) = 1.00$) and allowed for more in-depth discussion ($t(32) = 1.323$). The only other significant difference was seen in the area of active and hands on teaching strategies (see Table 13). Teachers with more than three years experience in the A/B block schedule stated the schedule allowed them to utilize more active and hands on teaching strategies ($t(34) = -1.042$).

Professional development questions showed only one area of significant difference which was with question 9 (see Table 14). A/B block schedule teachers with more than three years experience believed their schedule allowed more adequate time to prepare for teaching with a *t* factor of -1.161. There were no other significant differences

in the area of formal meeting time, having sufficient and useful in-service, having staff development programs to acquire important new knowledge and skills and visiting other teachers' classrooms to observe their teaching.

Research question 3 - Do middle school teachers experiencing three years or less of traditional scheduling and teachers experiencing more than three years of traditional scheduling differ in the perceptions of the impact of traditional scheduling on student learning?

Interestingly, there were more significant differences between these two sample groups than the two sample groups in A/B block scheduling. A significant difference was seen in three factors regarding student achievement by traditional middle school teachers with three years or less experience (see Tables 15, 16, & 17). This sample group had a strong positive opinion about knowing individual strengths and weaknesses ($t(46) = 2.119$), meeting the needs of special education students ($t(47) = 1.729$), and believing their students have a deeper understanding of the subject matter with the current schedule ($t(45) = 1.086$).

There were no significant differences in assisting students who were absent or behind, helping lower achieving students, the schedule providing opportunity for enrichment or advanced study, applying concepts to the real world, their students get better grades, or assisting low achieving and special education students experience success, or better for top achieving students. Overall, there was no significant difference in their opinion about their schedule with only 6 of the total number of traditional schedule teachers or 13.3% supporting their schedule.

Six areas of instructional strategies showed some significant differences (see Table 16). The largest significant difference was seen in providing individual instruction. Teachers with three years or less (n=22) believed their schedule allowed for more individual instruction than the 25 teachers with more than 3 years experience. This sample group also showed strong differences in their opinion that the traditional schedule allowed for more alternative assessment approaches, and allowed for more diversity of instructional delivery methods as compared to those with more than 3 years experience. Conflicting with these differences is that the same group utilized lecture and worksheets or study guides more often than those teachers with more than three years experience in the traditional schedule. Otherwise, there were no other significant differences in the other queries regarding instructional strategies.

Four of the five inquiries regarding professional development had significant differences with the traditional schedule middle school teachers with three years or less experience more convinced their schedule was more effective in this area. Staff development programs permit them to acquire important new knowledge and skills showed a significant difference of 2.173. Visiting other teachers' classrooms and having adequate preparation time exhibited similar differences among the two groups with teachers with three years or less experience believing the schedule had more of an impact on these types of professional development opportunities. Formal meeting time presented less of a difference but was still considered a more positive occurrence with those having three years or less experience in the traditional schedule.

Research question 4 - Do middle school teachers experiencing three years or less of A/B block scheduling and teachers experiencing three years or less of traditional scheduling differ in their perceptions of the impact of scheduling on student learning?

Concerning student achievement, there were significant differences in every inquiry (see Tables 18, 19 & 20). Middle school teachers with three years or less experience in the A/B block schedule saw their schedule enhanced student achievement more so than those with three years or less experience in the traditional schedule. The lowest difference was seen in the question dealing with top achieving students. The responses revealed there was only a difference of -1.285 among the two sample groups with the teachers in the A/B block schedule more inclined to believe their schedule was important in this area (see Table 18).

Instructional strategy areas also demonstrated significant differences. Middle school teachers with three years or less experience in the A/B block scheduling believed their schedule had more of an impact on all but two of the strategies they use in the classroom. In the areas of instructional activities which were required students to be more actively involved, there were more significant differences between the two groups. Middle school teachers in the A/B block schedule with three years or less teaching experience stated they exercised these types of activities more so than the traditional schedule teachers with the same experience (see Table 19). Lecture and using worksheets or study guides were used by more of the traditional schedule teachers with three years or less experience.

The A/B block schedule had more of a positive impact on allowing teachers to have more formal meeting time and having adequate preparation time according to the data. Of the nine teachers in the A/B block schedule with three years or less experience, more said they had more formal meeting time and had more time for adequate preparation than their counterparts in the traditional schedule. Having sufficient and useful in-service, staff development programs that allowed for new skills for teachers, and having the opportunity to visit other teachers' classrooms to observe their teaching showed no significant differences between the two groups (see Table 20).

Research question 5 - Do middle school teachers experiencing more than three years of A/B block scheduling and teachers experiencing more than three years of traditional scheduling differ in their perceptions of the impact of scheduling on student learning?

As in the data derived from research question 4, there were significant differences in all areas of student achievement (see Table 21). Middle school teachers with more than three years experience in the A/B block schedule judged their schedule more positively impacted them being able to know individual students' strengths and weaknesses, being able to provide more opportunities for enrichment and advanced study, allowed students to have a deeper understanding of academic subjects, and permitted students to get better grades. The least significant difference for the teachers in the A/B block schedule was in the area of applying concepts to the real world where the *t* factor was -3.656. The overall opinion about their schedule was seen by the A/B block schedule teachers with more than

three years of experience again more optimistically than the traditional schedule teachers with the same experience.

The data on instructional strategies confirmed there were also significant differences between how the two groups viewed the criterion was impacted by their schedules. Individualizing instruction was considered the most important factor in instructional strategies between the two groups. Teachers in the A/B block schedule with more than three years experience thought their schedule had a much more significant impact on individualizing instruction ($t(50) = -6.314$) than the teachers in the traditional schedule (see Table 22). Using a diversity of instructional delivery methods, having more active and hands on teaching strategies, and being able to provide higher-level thinking activities were other significant features of the A/B block schedule according to teachers with more than three years experience. On the other hand, there were no significant differences seen in using lecture, worksheets or study guides between the two groups as was being able to relate classroom content to student experience.

Question 10 showed significant difference between the two groups in regards to formal meeting time. Teachers in the A/B block schedule with more than three years experience believed their schedule allowed more formal meeting time than the teachers in the traditional schedule with more than three years of teaching. They also believed that had much more adequate time for preparation and could visit other teachers' classrooms more often than the traditional schedule teachers. While they also believed they could have more sufficient and useful in-service and staff development programs to develop new skills than the traditional teachers but to a lesser degree (see Table 23).

Research question 6 - What do teachers identify as advantages and disadvantages of their daily schedule?

This question compared the responses of middle school teachers in the A/B block schedule and traditional schedule to find what they believed to be the advantages and disadvantages of their current schedule (see Tables 24, 25, & 26)). For the most part, teachers in the A/B block schedule saw more advantages in their schedule than traditional schedule teachers found in theirs. Some exceptions became evident in the statistical analysis. Teachers in the traditional schedule agreed with the A/B block schedule teachers that their respective schedules was an advantage for hands-on activities. However, only 42.2% of the traditional schedule teachers saw an advantage compared to 75% of the A/B block schedule teachers. Additionally, traditional schedule teachers (51.2%) saw an advantage in using cooperative or small groups as did teachers in the A/B block schedule (77.4%) (see Table 25). Traditional schedule teachers also saw an advantage in relating classroom content to student experience (45.4%) and requiring students to use classroom content for a purpose other than remembering (43.5%) as compared to the other traditional teachers who saw a disadvantage or had no opinion. In relation to applying concepts to the real world, the majority of the traditional schedule teachers were divided between their schedule being a disadvantage and being neither at 40.4% in each category and a disadvantage for their top achieving students (42.3%) and having a neutral opinion (42.2%). When it came to students getting better grades and providing students with a deeper understanding of subjects, traditional schedule teachers did not believe their schedule was an advantage or a disadvantage.

Middle school teachers in the A/B block schedule were evenly divided on how their schedule helped low achieving and special education students experience success. In the survey, 43.8% saw an advantage and 43.8% had no opinion. However, 69.7% of the A/B block schedule middle school teachers believed their schedule was an advantage in helping lower achieving students. In regard to the rest of the items on student achievement and instructional strategies, middle school teachers in the A/B block schedule saw more advantages in their schedule than the middle school teachers in the traditional schedule.

Advantageous professional development opportunities were not seen by either sample group. Middle school teachers in the A/B block schedule believed their schedule was an advantage for allowing adequate preparation (52.9%) and 61.7% saw an advantage in allowing formal meeting time. When thinking about how their schedule allows teachers to visit other teachers' classrooms, 65.3% of the traditional schedule teachers saw their schedule as a disadvantage while 46.9% of the A/B block schedule teachers saw neither an advantage nor a disadvantage (see Table 26). Both groups were neutral in their belief their respective schedules allowed for sufficient and useful in-service or allowed them to acquire new skills through various staff development programs.

Research question 7 - What do teachers perceive to be the most difficult factors in implementing a block schedule?

The open-ended responses from the participants showed the most imperative factor in implementing a block schedule was being able to meet students' needs. They

believed the most difficult aspect was finding a variety of teaching and learning strategies to use in a ninety minute class time. In addition, they felt the lack of professional development hindered them in this area. Many teachers listed the lack of professional development is the most challenging issue in successfully implementing A/B block schedules.

Another factor concerned how some subjects were not suited for A/B block scheduling. Many believed that certain subjects were more conducive to meeting on a daily basis than others which made this another difficult factor in implementing the A/B block schedule. Teachers also felt that holidays and school activities often disrupted the schedule and made it more difficult to implement the schedule.

Finding time to meet and collaborate with their peers was also listed as a difficult factor in implementing the A/B block schedule. They felt there was not enough time and the time they did have was not utilized as best as it could be. Often their plan time did not coincide with the plan time of their fellow department or subject teachers.

Research question 8 - What do teachers perceive to be the most important factors in sustaining a block schedule?

Again, in order to sustain the A/B block schedule professional development was the most important issue in sustaining a block schedule. Many believed professional development was lacking currently. One respondent said that besides the initial informative professional development on block scheduling, they were given no follow-up or continuous assistance. Others felt that if they received more professional development, they felt they could better implement the schedule.

Conclusions

Twenty eight of the thirty one inquiries resulted in significant differences at the 0.05 alpha level in academic achievement, instructional strategies, and professional development when comparing participants in the A/ B block schedule and the traditional schedule. In terms of academic achievement for students in the middle grades, teacher perception was that students in the A/B block schedule performed better in class and received better grades than those students in the traditional schedule. When the data was compared using *t* tests of significance the results were conclusive. In all eleven responses regarding student achievement, *t* tests showed significant differences between the middle school teachers in the A/B block schedule and their counterpoints in the traditional schedule when compared individually. One question provided a statistically significant result, in providing opportunity for enrichment and advanced study.

Results for types of instructional strategies were also compared using t tests for each group. A total of fifteen *t* tests were conducted to determine any possible differences between middle school teachers in the A/B block schedule and in the traditional schedule. All fifteen significance tests generated a statistically significant result. One of the most significant results concerned teachers using teaching strategies which involve students in active and hands-on learning where teachers in the A/B block schedule perceived the activities were enhanced more than teachers in the traditional schedule. Yet, when asked how often they use hands-on activities, the statistical difference was cut in half but teachers in the A/B block schedule still had a higher perception than those in the traditional schedule. Of special interest was the fact that the results showed teachers in

the traditional schedule were more in favor of lectures, worksheets and study guides as instructional strategies yet both groups utilized them.

Professional development had interesting results. Dissatisfaction with the lack of professional development from A/B block schedule teachers and traditional schedule teachers was the most common response in the open-ended responses. Both groups felt there was not enough professional development for teachers on new skills and strategies. However, the survey showed that A/B block teachers were a little more positive in the area of formal meeting time. It appears that due to the longer blocks of time in the A/B block schedule teachers have more time to spend with their colleagues on curriculum, pedagogy, and assessment issues. Having adequate preparation time was also a more positive aspect of the A/B schedule.

Implications

With NCLB, state mandates, and pressures to meet assessment requirements, school districts are looking at various programs and concepts to achieve optima student achievement. Discussion in school districts has some beginning to re-evaluate how instructional time is divided. In doing so, the implications involve whether middle school students academic achievement is affected by schedule type.

When making a decision on scheduling options, research and data need to be used in making any decision. One decision that needs to be considered is the type of schedule being considered. The implication of this particular research only defines the difference between two types of schedules, traditional and A/B block. In order to make a more informed decision, further research should be conducted on other scheduling options and

comparisons made between those schedules. However, schools may find the information in this research useful in exploring their scheduling options.

With the implementation of A/B block scheduling, comes the demand to use a variety of instructional strategies within the class period and across the curriculum. This research suggests that A/B block teachers address teaching opportunities through more diverse methods that are not considered practical for traditional schedules. It is also suggested that by expanding their teaching strategies and methods, A/B block teachers believe students have a better understanding of the concepts and materials. The ability to use a large range of instructional strategies implies that teachers possess the skills, knowledge, and the conceptual understanding to put in practice the strategies. Therefore, one of the implications of this study is that being able to implement and utilize a variety of instructional strategies is dependent upon teachers being given the professional development and training they need. A priority for school districts looking at implementing A/B block scheduling should be providing teachers the training needed to teach the concepts through a variety of methods.

This study also suggests that A/B block scheduling is an advantage for students. However, this study evaluated teacher perceptions and did not look at student grades or achievement levels. As the case in this study, A/B block teachers perceived their schedule was better for student achievement than those in the traditional schedule. As perceptions can be an important factor in relationship to teaching and student achievement, the implication is that teachers believe scheduling plays an important factor in the success of the students. The question arises then, does the scheduling affect student achievement

or is it merely a perception of the teachers that A/B block scheduling leads to greater student achievement?

Future research

As this study was only conducted among four middle schools in Missouri, it is important that a large-scale study be conducted to include all middle schools. While this study may be of value to some school districts, results from a larger study may offer more critical information in determining which schedule is more beneficial to students. It is also important for other researchers to consider research in conjunction with other types of block schedules than the A/B block schedule discussed in this research. It could be of interest to see if the results of this study would be similar to other studies comparing other types of block scheduling.

This study looked at perceptions of only a relatively small number of teachers. While this method was chosen because teachers had a strong influence on the student achievement, a more comprehensive study should include students, administrators, and parents as it relates to the types of block schedules. As perceptions are influential in most endeavors, whether in education or in life, including the other entities in the research may provide more insight into designing schedules to increase student achievement. In addition, how students perceive teaching and learning can have a prevailing impact on their academic achievement. The study would also be enhanced by following up with interviews or focus groups to bring clarity to the study and perhaps offer additional insights.

Classroom teachers are facing many professional challenges as the dynamics of school districts begin to change with the more a diverse student population. Professional development is critical for educators to implement new and various teaching strategies to meet the needs of all students. In this study, middle school teachers believed they had a need for more professional development in the implementation and sustainability of the A/B block schedule in order to better serve their students. However, this study did not look at specific types of professional development or in-services to support teachers in acquiring new skills and teaching strategies. A more in-depth study on the types of professional development used by the participants of this study may be of further interest to districts interested in implementing a block schedule. Further research on the types of professional development in middle schools could be valuable to districts as to what professional development would be relevant when considering block scheduling.

Summary

State assessments, government mandates, the changing diversity of schools, developmental needs of middle school students, and demanding curriculum have placed school districts in challenging situations. School districts are being forced to look at various methods, concepts, and programs to bring about optima student achievement. Research done at various grade levels on block scheduling have provided districts with insights into how middle school students may learn better (Anfara, 2001; Jackson & Davis, 2000; NMSA, 2003; Thompson, 2004). Many of the conclusions from these research studies are similar to the conclusions of this study. Further, studies on adolescent development have demonstrated that middle school students have special developmental,

cognitive, and emotional needs (Huitt & Hummel, 2003: NMSA, 2003; Pruitt, 1999; Stevenson, 2002). In addition, teachers' perceptions have also been researched in relationship to block scheduling. Studies demonstrated that teachers' perceptions on block scheduling varied but often teachers believed there were more positive aspects to the block schedule than the traditional (Benton-Kupper, 1999; Laitsch, 2004).

This study, conducted in February 2009, was designed to ascertain if middle school teachers in the A/B block schedule differed in their perceptions on student learning as compared to middle school teachers in the traditional schedule. The survey respondents in this study were middle school teachers in Missouri public schools with grade configurations of sixth, seventh, and eighth. The majority of the respondents were female and 41.2% have been teaching in the A/B block schedule over thirteen years.

As there were significant differences on 90% of the survey responses, this study demonstrates that middle school teachers in the A/B block schedule perceive their schedule is better for student learning than those in the traditional schedule. The A/B block schedule teachers perceive they also utilize a wider variety of instructional strategies in teaching middle school students than the teachers in traditional schedules. With the increased types of instructional strategies used, professional development appeared to be an area that had fewer significant differences but was deemed necessary by middle school teachers in the A/B block and traditional schedules. While there were some differences in their professional development opportunities, both groups felt that much more was needed and they had not been provided adequate training on skills and strategies.

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Appendix A

Stanley-Boyd High School
Teacher Survey

Demographics:

A. Gender: Male ____ Female ____

B. Years employed in this district? (check one) 0-3 ____ 4-10____ 11-20____ 20+____

B. Total years in teaching? (check one) 0-3 ____ 4-10____ 11-20____ 20+____

C. Subject Area(s) _____

Part I. The following questions relate to work life issues. Using the scale provided, please indicate the extent to which you agree or disagree with each statement. ***(Circle your answer)***

Strongly Disagree				Strongly Agree	
1	2	3	4	5	1. I am personally recognized for a job well done.
1	2	3	4	5	2. Staff have opportunities to be involved in making building decisions.
1	2	3	4	5	3. I feel respected as a colleague by most staff members.
1	2	3	4	5	4. The building administration works hard to provide adequate resources for teachers.
1	2	3	4	5	5. This school makes an effort to reach out to the community.
1	2	3	4	5	6. Most staff members help out anywhere, anytime – even though it may not be part of their official assignment.
1	2	3	4	5	7. Teachers in this building share a sense of common purpose.
1	2	3	4	5	8. I have some influence in determining the content of staff development programs.
1	2	3	4	5	9. I am proud to tell others that I work for this district.
1	2	3	4	5	10. The building administrators' behavior toward the staff is supportive and encouraging.
1	2	3	4	5	11. Teachers help maintain discipline in the entire school, not just their classrooms.
1	2	3	4	5	12. Teachers have time to meet and talk about teaching and learning.
1	2	3	4	5	13. In this school, teachers and administration are in close agreement on school discipline policy.
1	2	3	4	5	14. It is a waste of time to give my opinion about decisions in this school.
1	2	3	4	5	15. There is a great deal of cooperative effort among staff members.

1	2	3	4	5	16. I coordinate the content of my courses with other teachers in my department.
1	2	3	4	5	17. I coordinate the content of my courses with other teachers in other departments.
1	2	3	4	5	18. In this school, I am encouraged to experiment with instructional methods.

Strongly Disagree **Strongly Agree** ***(Circle your answer)***

1	2	3	4	5	19. Staff development programs in this school permit me to acquire important new knowledge and skills.
1	2	3	4	5	20. My job interferes with my life outside of school.
1	2	3	4	5	21. I feel I have opportunities to achieve what is meaningful to me in this school.
1	2	3	4	5	22. Most staff seem to really care about the students.
1	2	3	4	5	23. I have a chance to get to know other teachers in my school
1	2	3	4	5	24. At department meetings, we talk about student performance data and how to raise student achievement.
1	2	3	4	5	25. I visit other teachers' classrooms to observe their teaching.
1	2	3	4	5	26. I receive meaningful feedback on my performance from peers.
1	2	3	4	5	27. My job frequently requires more work than I think should be expected of me.
1	2	3	4	5	28. I feel I am kept informed about what is going on in this school.
1	2	3	4	5	29. I feel I have opportunities to use my full abilities to achieve my professional goals.
1	2	3	4	5	30. Our school has appropriate authority to make its own decisions.
1	2	3	4	5	31. I have access to expertise in my subject area from within the district.
1	2	3	4	5	32. I have access to expertise in my subject area from outside the district.
1	2	3	4	5	33. Teachers new to this school are given a great deal of assistance and support.
1	2	3	4	5	34. I wouldn't want to work in any other school.
1	2	3	4	5	35. In this school, teachers and administrators agree about school policies.
1	2	3	4	5	36. Staff regularly talk about ways to improve student performance.
1	2	3	4	5	37. Most staff here strive to increase student learning.
1	2	3	4	5	38. Parents are partners with the school in enhancing their child's learning.
1	2	3	4	5	39. Most teachers are interested in new ideas.

Part II. To what degree do you feel that your current schedule restricts or enhances the following for you: ***(Circle your answer)***

Restricts		Neither		Enhances	
1	2	3	4	5	40. Providing the education you want for your students.
1	2	3	4	5	41. Having homework you assign completed and turned in.
1	2	3	4	5	42. Assisting students who have been absent or behind.

Restricts		Neither		Enhances	
1	2	3	4	5	43. Keeping passing times calm.
1	2	3	4	5	44. Helping lower-achieving students to experience success.
1	2	3	4	5	45. Reducing the number of students tardy to class (excluding first hour).
1	2	3	4	5	46. Having adequate time to prepare for teaching.
1	2	3	4	5	47. Helping students have positive feelings about their school experience.
1	2	3	4	5	48. Having formal meeting time to spend on curriculum, pedagogy, and assessment issues with other teachers.
1	2	3	4	5	49. Keeping the workload manageable.
1	2	3	4	5	50. Making the day less tiring and more sane.
1	2	3	4	5	51. Knowing individual students' strengths and weaknesses.
1	2	3	4	5	52. Individualizing instruction.
1	2	3	4	5	53. Having sufficient and useful in-service to improve my teaching.
1	2	3	4	5	54. Being able to teach the content required by the district curriculum.
1	2	3	4	5	55. Using more alternative assessment approaches.
1	2	3	4	5	56. Having students who are focused and ready to learn.
1	2	3	4	5	57. Using classroom activities which require higher level thinking.
1	2	3	4	5	58. Providing students opportunity for enrichment and advanced study.
1	2	3	4	5	59. Getting high quality work from students.
1	2	3	4	5	60. Teaching students how to directly apply the concepts and processes to real-world work or daily life.
1	2	3	4	5	61. Keeping class disruptions to a minimum.
1	2	3	4	5	62. Improving my morale.
1	2	3	4	5	63. Using a diversity of instructional delivery methods or styles.
1	2	3	4	5	64. Limiting disciplinary referrals.
1	2	3	4	5	65. Using teaching strategies which involve students in active and hands-on learning.
					66. Reducing absences.

1	2	3	4	5	67. Reducing record keeping.
1	2	3	4	5	68. Accommodating the needs of special education students.
1	2	3	4	5	

Part III. *Circle the answer* that represents the extent you use the activity listed.

Never or seldom		Sometimes	Fairly Often	Very Often	Almost all the time	
1	2	3	4	5		69. Hands-on activities, labs, and other student participation activities?
1	2	3	4	5		70. Lecture.
1	2	3	4	5		71. Exhibitions, demonstrations, or other performance evaluation methods?
1	2	3	4	5		72. Cooperative or other small group activities?
1	2	3	4	5		73. Students filling out worksheets or study guides.
1	2	3	4	5		74. Requiring students to relate classroom content to their own experiences?
1	2	3	4	5		75. Requiring students to use classroom content for a purpose other than remembering it?
1	2	3	4	5		76. Use technology during class.
1	2	3	4	5		77. Indepth discussion.
1	2	3	4	5		78. A variety of activities in most class periods.

Part IV. Questions about the current schedule.

79. Which answer best defines your feelings about your current schedule? ***(Fill in the circle)***

- ○ Strongly non-support
- ○ Non-support
- ○ Neutral
- ○ Support
- ○ Strongly support

Strongly Disagree				**Strongly Agree**	***(Circle your answer)***
1	2	3	4	5	80. The current schedule helps students get better grades.
1	2	3	4	5	81. My students have a deeper understanding of the subject matter with the current schedule.
1	2	3	4	5	82. A greater number of my low-achieving and special education students are experiencing success under the current schedule.
					83. The current schedule is better for our top-achieving students.

1 2 3 4 5

Appendix B

Middle School
Teacher Survey

Demographics:

1. Gender Male_____ Female _____
2. Years employed in this district? (check one) 0-2 ___ 3-6____ 6-10____ 10-13____ 13+___
3. Total years in teaching? (check one) 0-2 ____ 3-6____ 6-10____ 10-13____ 13+____
4. Total years teaching in traditional schedule? 0___1____ 2____ 3____4____5 _____ 6+_____
5. Total years teaching in A/B block schedule? 0____ 1____ 2____ 3_____4____5 ___6+_____
6. Subject Area(s)/Grade(s) _____

Part I. To what degree do you feel that your current schedule restricts or enhances the following for you: ***(Circle your answer)***

Restricts		Neither		Enhances	
1	2	3	4	5	7. Assisting students who have been absent or behind.
1	2	3	4	5	8. Helping lower-achieving students to experience success.
1	2	3	4	5	9. Having adequate time to prepare for teaching
1	2	3	4	5	10. Having formal meeting time to spend on curriculum, pedagogy, and assessment issues with other teachers.
1	2	3	4	5	11. Knowing individual students' strengths and weaknesses.
1	2	3	4	5	12. Individualizing instruction.
1	2	3	4	5	13. Having sufficient and useful in-service to improve my teaching.
1	2	3	4	5	14. Using more alternative assessment approaches.
1	2	3	4	5	15. Using classroom activities which require higher level thinking.
1	2	3	4	5	16. Providing students opportunity for enrichment and advanced study.
1	2	3	4	5	17. Teaching students how to directly apply the concepts and processes to real-world work or daily life.
1	2	3	4	5	18. Using a diversity of instructional delivery methods or styles.
1	2	3	4	5	19.Using teaching strategies which involve students in active and hands-on learning.
1	2	3	4	5	20. Accommodating the needs of special education students.

1 2 3 4 5	21. Staff development programs permit me to acquire important new knowledge and skills.
1 2 3 4 5	22. I visit other teachers' classrooms to observe their teaching.

Part II. *Circle the answer* that represents the extent you use the activity listed.

Never or seldom	Sometimes	Fairly Often	Very Often	Almost all the time	
1	2	3	4	5	23. Hands-on activities, labs, and other student participation activities?
1	2	3	4	5	24. Lecture?
1	2	3	4	5	25. Exhibitions, demonstrations, or other performance evaluation methods?
1	2	3	4	5	26. Cooperative or other small group activities?
1	2	3	4	5	27. Students filling out worksheets or study guides?
1	2	3	4	5	28. Requiring students to relate classroom content to their own experiences?
1	2	3	4	5	29. Requiring students to use classroom content for a purpose other than remembering it?
1	2	3	4	5	30. Use technology during class?
1	2	3	4	5	31. In-depth discussion?
1	2	3	4	5	32. Variety of activities in most class periods?

Part III. Questions about the current schedule.

Strongly Disagree				Strongly Agree	***(Circle your answer)***
1	2	3	4	5	33. The current schedule helps students get better grades
1	2	3	4	5	34. My students have a deeper understanding of the subject matter with the current schedule
1	2	3	4	5	35. A greater number of my low-achieving and special education students are experiencing success under the current schedule
1	2	3	4	5	36. The current schedule is better for our top-achieving students

37. Which answer best defines your feelings about your current schedule? ***(Circle the letter)***
   a. Strongly non-support
   b. Non-support
   c. Neutral
   d. Support
   e. Strongly Support

38. Describe any professional development you have found to support teaching in the A/B block schedule.

39. What have you found to be the most difficult aspect of A/B block scheduling?

Thank you for your time.

Appendix C

Dear Dr. Superintendent,

My name is Rhonda Dunham and I am currently the principal at Franklin Elementary School in Cape Girardeau Missouri. I am working on my doctoral degree in Educational Leadership and Policy Analysis.

The purpose of this note is to request your assistance in a research project that I am conducting as part of my doctoral work at the University of Missouri-Columbia. For my dissertation, I will be examining teacher perceptions of student learning in relationship to traditional and block schedules from four (4) separate school districts in Missouri. Based on the research literature, a questionnaire has been developed to determine how teachers perceive their current schedule facilitates student achievement, fosters quality education, and improves teacher work life. I would like your permission to send the attached cover letter and survey to the principal of _____ asking permission to distribute the surveys to the certified teachers.

A total of thirty (33) multiple choice questions and two open-ended questions will be asked. There will also be five (7) demographic questions. The loss of anonymity will be minimized because no personally identifiable information will be collected. Response data will be stored in a Survey Monkey encrypted password-protected database on a secured network. As the Principal Investigator, I will be the only one to review the raw data, which will be stored in a locked cabinet in my office.

There will be no direct benefit to the subjects, though the survey will provide information on factors and issues for schools which may be considering schedule changes. The study may permit school districts to predict any future concerns and problems that may arise as a block schedule program is established.

I am attaching a short proposal and a hard copy of the survey for you to review. I am anticipating completing the data collection in early February. I would be more than happy to send you a copy of my dissertation. I would appreciate you permission to contact the above principal in order to continue my study. Should you have any questions or concerns, please contact me at the number below. I look forward to hearing from you.

Sincerely,

Rhonda Dunham, Principal

Appendix D

Research Study Statistics, Traditional Schedule vs. A/B Block Schedule, February, 2009

Survey criterion – Demographic

	Response	Traditional Schedule	A/B Block Schedule	Total
1.	Gender			
	Male	20.8% (10)	33.3% (11)	25.9% (21)
	Female	79.2% (38)	66.7% (22)	74.1% (60)
2.	Yrs. Employed in district			
	0-2	16.7% (8)	14.7% (5)	15.9% (13)
	3-6	18.8% (9)	35.3% (12)	25.6% (21)
	7-10	25.0% (12)	17.6% (6)	22.0% (18)
	11-13	4.2% (2)	11.8% (4)	7.3% (6)
	13+	35.4% (17)	20.6% (7)	29.3% (24)
3.	Total yrs. Teaching			
	0-2	10.4% (5)	11.8% (4)	11.0% (9)
	3-6	12.5% (6)	23.5% (8)	17.1% (14)
	7-10	12.5% (6)	8.8% (3)	11.0% (9)
	11-13	12.5% (6)	14.7% (5)	13.4% (11)
	13+	52.1% (25)	41.2% (14)	47.6% (39)

4.	Total yrs. in present schedule			
		0	8.3% (4)	5.9% (2)	7.3% (6)
		1	27.1% (13)	8.8% (3)	19.5% (16)
		2	10.4% (5)	11.8% (4)	11.0% (9)
		3	4.2% (2)	2.9% (1)	3.7% (3)
		4	12.5% (6)	8.8% (3)	11.0% (9)
		5	4.2% (2)	20.6% (7)	11.0% (9)
		6+	33.3% (16)	41.2% (14)	36.6% (30)
1	Currently teaching in				
		Traditional	100% (48)		58/5% (48)
		A/B Block		100% (34)	41.5% (34)

Research Study Statistics, Traditional Schedule vs. A/B Block Schedule, February, 2009

Survey criterion – Student Achievement

	Traditional Schedule	A/B Block Schedule	Response Total

7.	assisting students absent or behind			
		1	34.0% (16)	14.7% (5)	25.9% (21)
		2	27.7% (13)	5.9% (2)	18.5% (15)
		3	29.8% (14)	35.3% (12)	32.1% (26)

4	6.4% (3)	23.5% (8)	13.6% (11)
5	2.1% (1)	20.6% (7)	9.9% (8)

8. helping lower achieving students

1	36.2% (17)	12.1% (4)	26.3% (21)
2	27.7% (13)	6.1% (2)	18.8% (15)
3	25.5% (12)	12.1% (4)	20.0% (16)
4	2.1% (1)	42.4% (14)	18.8% (15)
5	8.5% (4)	27.3% (9)	16.3% (13)

11. knowing individual strengths/weaknesses

1	21.7% (10)	6.1% (2)	15.2% (12)
2	28.3% (13)	3.0% (1)	17.7% (14)
3	26.1% (12)	9.1% (3)	19.0% (15)
4	15.2% (7)	33.3% (11)	22.8% (18)
5	8.7% (4)	48.5% (16)	25.3% (20)

16. opportunity for enrichment/advanced study

1	25.5% (12)	2.9% (1)	16.0% (13)
2	40.4% (19)	5.9% (2)	25.9% (21)

	3	17.0% (8)	26.5% (9)	21.0% (17)
	4	10.6% (5)	17.6% (6)	13.6% (11)
	5	6.4% (3)	47.1% (16)	23.5% (19)
17. applying concepts to real world				
	1	14.9% (7)	0.0% (0)	8.6% (7)
	2	25.5% (12)	2.9% (1)	16.0% (13)
	3	40.4% (19)	47.1% (16)	43.2% (35)
	4	12.8% (6)	26.5% (9)	18.5% (15)
	5	6.4% (3)	23.5% (8)	13.6% (11)
20. needs of special education students				
	1	23.4% (11)	6.3% (2)	16.5% (13)
	2	25.5% (12)	3.1% (1)	16.5% (13)
	3	27.7% (13)	28.1% (9)	27.8% (22)
	4	12.8% (6)	40.6% (13)	24.1% (19)
	5	10.6% (5)	21.9% (7)	15.2% (12)
33. students get better grades	1	24.4% (11)	3.1% (1)	15.8% (12)
	2	28.7% (12)	6.3% (2)	18.2% (14)

	3	37.8% (17)	37.5% (12)	37.7% (29)
	4	11.1% (5)	31.3% (10)	19.5% (15)
	5	0.0% (3)	21.9% (7)	9.1% (7)
34. deeper understanding of subjects	1	22.2%(10)	6.3%(2)	15.6%(12)
	2	31.1%(14)	6.3%(2)	20.8%(16)
	3	35.6%(16)	21.9%(7)	29.9%(23)
	4	8.9%(4)	34.4%(11)	19.5%(15)
	5	2.2%(1)	31.3%(10)	14.3%(11)
35. low achieving and special education students experience success				
	1	31.1% (14)	6.3% (2)	20.8% (16)
	2	33.3% (15)	6.3% (2)	22.1% (17)
	3	24.4% (11)	43.8% (14)	32.5% (25)
	4	8.9% (4)	21.9% (7)	14.3% (11)
	5	2.2% (2)	21.9% (7)	10.4% (8)
36. better for top achieving students				
	1	26.7% (12)	6.3% (2)	18.2% (14)
	2	15.6% (7)	3.1% (1)	10.4% (8)
	3	42.2% (19)	43.8% (14)	42.9% (33)

	4	13.3% (6)	12.5% (4)	13.0% (10)
	5	2.2% (1)	34.4% (11)	15.6% (12)
37. opinion about schedule				
	Strongly Non-support	26.7% (12)	6.3% (2)	18.2% (14)
	Non-support	25.4% (11)	9.4% (3)	18.2% (14)
	Neutral	35.6% (16)	15.6% (5)	27.3% (21)
	Support	13.3% (6)	25.0% (8)	18.2% (14)
	Strongly support	0.0% (0)	43.8% (14)	18.2% (14)

Research Study Statistics, Traditional Schedule vs. A/B Block Schedule, February, 2009

Survey criterion – Instructional Strategies		Traditional	A/B Block	Response Total
12. individual instruction				
	1	23.4% (11)	8.8% (3)	17.3% (14)
	2	42.6% (20)	2.9% (1)	25.9% (21)
	3	21.3% (10)	17.6% (6)	19.8% (16)

4	8.5% (4)	35.3% (12)	19.8% (16)
5	4.3% (2)	35.3% (12)	17.3% (14)

14. more alternative assessment approaches

1	21.3% (10)	2.9% (1)	13.6% (11)
2	29.8% (14)	2.9% (1)	18.5% (15)
3	36.2% (17)	29.4% (10)	33.3% (27)
4	8.5% (6)	23.5% (8)	14.8% (12)
5	4.3% (2)	41.2% (14)	19.8% (16)

15. higher-level thinking activities

1	14.9% (7)	5.9% (2)	11.1% (9)
2	27.7% (13)	0.0% (0)	16.0% (13)
3	36.2% (17)	14.7% (5)	27.2% (22)
4	14.9% (7)	29.4% (10)	21.0% (17)
5	6.4% (3)	50.0% (17)	24.7% (20)

18. diversity of instructional delivery methods

1	21.3% (10)	3.0% (1)	13.8% (11)
2	27.7% (13)	3.0% (1)	17.5% (14)

3	31.9% (15)	24.2% (8)	28.8% (23)
4	12.8% (6)	15.2% (5)	13.8% (11)
5	6.4% (3)	54.5% (18)	26.3% (21)

19. active and hands on teaching strategies

1	19.6% (9)	2.9% (1)	12.5% (10)
2	30.4% (14)	2.9% (1)	18.8% (15)
3	28.3% (13)	2.9% (1)	17.5% (14)
4	13.0% (6)	32.4% (11)	21.3% (17)
5	8.7% (4)	58.8% (20)	30.0% (24)

23. hands-on activities

1	2.2% (1)	0.0% (0)	1.3% (1)
2	37.8% (17)	12.5% (4)	27.3% (21)
3	17.8% (8)	12.5% (4)	15.6% (12)
4	24.4% (11)	34.4% (11)	28.6% (22)
5	17.8% (8)	40.6% (13)	27.3% (21)

24. lecture

1	6.8% (3)	6.3% (2)	1.3% (1)

2	44.4% (20)	6.3% (2)	28.6% (22)
3	13.3% (6)	25.0% (8)	18.2% (14)
4	28.9% (13)	46.9% (15)	36.4% (28)
5	11.1% (5)	21.9% (7)	15.6% (12)

25. performance evaluation

1	2.2% (1)	0.0% (0)	1.3% (1)
2	44.4% (20)	6.3% (2)	28.6% (22)
3	13.3% (6)	25.0% (8)	18.2% (14)
4	28.9% (13)	46.9% (15)	36.4% (28)
5	11.1% (5)	21.9% (7)	15.6% (12)

26. cooperative or small groups

1	0.0% (0)	0.0% (0)	0.0% (0)
2	26.7% (12)	9.7% (3)	19.7% (15)
3	22.2% (10)	12.9% (4)	18.4% (14)
4	35.6% (16)	51.6% (16)	42.1% (32)
5	15.6% (7)	25.8% (8)	19.7% (15)

27. worksheets or study guides

1	15.6% (7)	12.5% (4)	14.3% (11)
2	11.1% (5)	46.9% (15)	26.0% (20)
3	33.3% (15)	15.6% (5)	26.0% (20)
4	33.3% (15)	21.9% (7)	28.6% (22)
5	6.7% (3)	3.1% (1)	5.2% (4)

28. relating classroom content to student

1	0.0% (0)	6.3% (2)	2.6% (2)
2	25.0% (11)	12.5% (4)	19.7% (15)
3	29.5% (13)	21.9% (7)	26.3% (20)
4	40.9% (18)	37.5% (12)	39.5% (30)
5	4.5% (2)	21.9% (7)	11.8% (9)

29. content for purpose other than remembering

1	2.2% (1)	3.1% (1)	2.6% (2)
2	17.4% (8)	6.3% (2)	12.8% (10)
3	37.0% (17)	25.0% (8)	32.1% (25)
4	37.0% (17)	40.6% (13)	14.1% (11)
5	6.5% (3)	25.0% (8)	14.1% (11)

30. technology in class				
	1	9.1% (4)	3.1% (1)	6.6% (5)
	2	34.1% (15)	12.5% (4)	25.0% (19)
	3	27.3% (12)	15.6% (5)	22.4% (17)
	4	18.2% (8)	34.4% (11)	25.0% (19)
	5	11.4% (5)	34.4% (11)	21.1% (16)
31. in-depth discussion				
	1	6.5% (3)	0.0% (0)	3.8% (3)
	2	30.4% (14)	6.3% (2)	20.5% (16)
	3	28.3% (13)	25.0% (8)	26.9% (21)
	4	30.4% (14)	56.3% (18)	41.0% (32)
	5	4.3% (2)	12.5% (4)	7.7% (6)
32. variety of activities				
	1	6.7% (3)	0.0% (0)	3.9% (3)
	2	31.1% (14)	6.3% (2)	20.8% (16)
	3	28.9% (13)	18.8% (6)	24.7% (19)

	4	26.7% (12)	40.6% (13)	32.5% (25)
	5	6.7% (3)	34.4% (11)	18.2% (14)

Research Study Statistics, Traditional Schedule vs. A/B Block Schedule, February, 2009

Survey criterion – Professional Development

		Traditional Schedule	A/B Block Schedule	Response Total
9. adequate preparation				
	1	31.9% (15)	5.9% (2)	21.0% (17)
	2	34.0% (16)	14.7% (5)	25.9% (21)
	3	19.1% (9)	26.5% (9)	22.2% (18)
	4	6.4% (3)	29.4% (10)	16.0% (13)
	5	8.5% (4)	23.5% (8)	14.8% (12)
10. formal meeting time				
	1	55.3% 26)	8.8% (3)	35.8% (29)
	2	23.4% (11)	11.8% (4)	18.5% (15)
	3	8.5% (4)	17.6% (6)	12.3% (10)
	4	6.4% (3)	38.2% (13)	19.8% (16)

5	6.4% (3)	23.5% (8)	13.6% (11)
13. sufficient and useful in-service			
1	14.9% (7)	0.0% (0)	8.6% (7)
2	17.0% (8)	11.8% (4)	14.8% (12)
3	44.7% (21)	67.6% (23)	54.3% (44)
4	14.9% (7)	8.8% (3)	12.3% (10)
5	8.5% (4)	11.8% (4)	9.9% (8)
21. new skills staff development programs			
1	10.6% (5)	3.0% (1)	7.5% (6)
2	10.6% (5)	12.1% (4)	11.3% (9)
3	44.7% (21)	48.5% (16)	46.3% (37)
4	25.5% (12)	27.3% (9)	26.3% (21)
5	8.5% (4)	9.1% (3)	8.8% (7)
22. visit other teachers' classrooms			
1	45.7% 21)	18.8% (6)	34.6% (27)
2	19.6% (9)	9.4% (3)	15.4% (12)
3	19.6% (9)	46.9% (15)	30.8% (24)

4	8.7% (4)	15.6% (5)	11.5% (9)
5	6.5% (3)	9.4% (3)	7.7% (6)

APPENDIX E

OPEN-ENDED RESPONSES

QUESTION 38

Describe any professional development you have found to support teaching in you current schedule.
(1 = Traditional, 2 = A/B Block Schedule)

I am currently teaching in...	Open-Ended Response
2	PLTW meetings and training for new subjects and how to implementation...
1	Marzano strategies.
1	strategy instruction through Special School District; technology skills provided by staff within the school
1	I have found none other than taking days off to do it. This entire year I feel that I am behind and cannot catch up.
1	I'm too busy doing prep during my planning period to do professional development...other than the very productive and helpful Q&A sessions
	I've had with the Assistant Principle.
1	?
2	none
1	n/a
1	None
1	I attend seminars and workshops outside the district
1	not sure that there has been
1	The professional development that I have found is Aimsweb training.

1	n/a
2	technology math cadre
2	none
2	Math cadre meetings
2	lots of tech training to help with different delivery methods. not a whole lot on the actual block schedule and how to use it
2	Cooperative Learning, Behavioral interventions, multi-intelligences, differentiation
2	We had PD classes a couple of years ago before school started.
2	We have a common team plan and individual plan daily. We focus on looking at student work and assessment as well as teaching strategies. It is so helpful to have this time to work with a team of collegues who are collectively responsible for the same group of students.

Question 39

What have you found to be the most difficult aspect of your current schedule?
(1 = Traditional, 2 = A/B Block Schedule)

I am currently teaching in...	Open-Ended Response
2	Keeeping A and B day kids on same "page" work ,instruction, and activities.
2	meeting with peers
2	learning how to do lesson planning
2	need more professional development
1	Lack of contact with other teachers.
2	I am tired and struggle doing extra things.
1	not having a time to meet with teachers--Team time
1	Collaborating in curriculum and with SSD has been next to impossible!
1	I have not experienced any schedule related difficulties.
1	time to meet with fellow teachers to discuss any issues we may be having with students. Students are falling through the cracks on this schedule.
1	keeping absent missing students on time with regards to peers and lab work
1	No team time
1	Time to plan and collaborate with the general educators and providing additional time to assist students in areas of weakness
1	Not enough planning time....a lot of outside time used to plan and prepare for classes and labs
1	individualizing
2	no-time/ to communicate with teachers

1	No time for discussion with other teachers.
1	No collaboration time with grade level
1	That we lost our teaming time - now kids slip through cracks because teachers have no time to collaborate with each other.
1	no team time
1	There is little time to meet with other teachers regarding student progress or issues.
1	I can't really leave for lunch as classes come to the library all periods.
1	Non meeting time with teachers, students, and parents.
1	Currently there is not enough time for collaborative grade level meetings.
1	time restraints and if there are special programs that interfere with class then we lose that time
1	discussing student needs
1	Less time devoted to teaching, more time devoted to paperwork and computer items, keeping up with emails, phone messages, benchmark & other curricular items.
1	no team or like curriculum planning time
1	I'm a first year teacher. I think the most difficult aspect for me is keeping up with the data collection and assessments.
1	no teams or team time
1	Lack of time to collaborate with other teachers on student issues.
1	Teachers have too little time to reflect on teaching, analyze data, collaborate.
1	I like the schedule
2	Longer classes mean longer planning is required but we get the same planning time as a teacher teaching 50 minute classes does (50 min). We have 90 min. each day but 45 of those minutes are used on team planning/ team meetings that don't let you plan for your individual classes. Teach longer periods, but with less prep time doesn't exactly make sense.

2	I don't see the whole band everyday. The students need the repitition and they do not get it by having class 2-3 times a week.
2	alternating every other Friday and too many meetings
2	need more professional development
2	too much time in team plan, more time needed for grading
2	managing difficult or unmotivated students
2	At first, creating lesson plans with lots of variety to hold interest for 90 minutes.
2	helping students learn and remember content and new concepts.
2	Can’t meet with job alike person because her plan time isn't the same as mine
2	making sure you have enough variety to keep the short attention span middle school students on task the whole time.
2	Ensuring all students remember material having class every other day
2	Occasionally we won't see a set of classes for a week because of holidays and/scheduling
2	student absence
2	My students need reading and math everyday to maintain and reinforce content concepts. Block scheduling does not allow for all subjects to be taught daily. Student do not have the attention span to attend for 90 minutes even when activities are varied.
1	Not enough time to do everything necessary for learning and practicing material taught
1	Preparation for two classes
1	time
1	meeting with peers and collegues

Vita

Rhonda Dunham was born in Cape Girardeau, Missouri on August 7, 1955. She has been a life-long resident of this town. After completing her undergraduate degree in elementary education, Rhonda went on to complete her Masters Degree at Southeast Missouri State University. Following this degree she began her Specialist degree stopping long enough to begin her doctorate degree as part of a cohort with Southeast Missouri State University and University of Missouri – Columbia. Rhonda was a teacher of fifth, sixth, seventh, and eighth grades at St. Joseph School in Scott City, Missouri for five years. She transferred to Jefferson Elementary in Cape Girardeau as a sixth grade teacher and was there for five years. Currently, she is a principal at Franklin Elementary School in Cape Girardeau where she has held that position for eight years. Rhonda and her husband, Tim, have two children, one grandchild and two granddogs.