THE EFFECT OF THE FLEXIBLE MODULAR SCHEDULE ON STUDENT ACADEMIC ACHIEVEMENT, STUDENT BEHAVIOR, AND STUDENT DEVELOPMENT

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By:

ROBERT J. KROLL JR.

Dr. James Sottile, Dissertation Supervisor

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

THE EFFECT OF THE FLEXIBLE MODULAR SCHEDULE ON STUDENT ACADEMIC ACHIEVEMENT, STUDENT BEHAVIOR, AND STUDENT DEVELOPMENT

Presented by Robert Kroll,

a candidate for the degree of doctor of education in educational leadership and policy analysis, and hereby certify that, in their opinion, it is worthy of acceptance.

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Dr. James Sottile

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Dr. Cynthia MacGregor

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Dr. Kim Finch

_____

Dr. Tracey Glaessgen

_____

Dr. Ximena Uribe-Zarain

DEDICATION

To my wife, Tal, my gift from God, who as has sacrificed, encouraged and empowered me to pursue my dreams. I love her with all my heart.

To my daughter Ella and son Wilson who have waited patiently for their daddy to finish this journey.

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Robert Kroll

Dr. James Sottile, Dissertation Supervisor

ABSTRACT

The purpose of this case study was to examine the effect the flexible modular schedule had on student achievement, student behavior, and student development. This study contained three questions that evaluated the effect flexible modular scheduling had upon academic [standardized testing analysis] and student behavior [student suspension analysis] as well as the developmental impact [faculty interviews] the schedule had on students within a particular school. A mixed methods approach was used to conduct a case study that allowed an in-depth analysis of both the qualitative and quantitative data. Quantitative findings of significance provide answers to the research questions as well as qualitative themes such as inconsistent stakeholder buy-in, student access: opportunities and challenges, and developmental outcomes, which offer insight into the impact the flexible modular schedule has had on student development. This study sought to examine the necessity for educational leaders to consider the developmental needs of students ahead of the allocation of time when structuring the school day. Recommendations for practice are presented to both the school district and high school employing the flexible modular schedule.

Keywords: School Schedules, Flexible Scheduling

CHAPTER ONE

INTRODUCTION TO THE DISSERTATION

Introduction to the Background of the Study

The American public school's calendar has a major impact on the lives of its citizens. Rakoff (1999) stated, the "school clock mirrors the time displayed by other clocks in our society" (p. 5). Over the last 100 years, the schedule has become a part of the fabric of America (National Center for Educational Statistics, 2016). Something with such impact on so many is worthy of scrutiny. As stated by the National Education Commission (1994), "the problem with our schools is not that they are not what they used to be, but that they are what they used to be" (p. 21). This dissertation aims to examine an alternative to the traditional approaches to the high school schedule and assess its effectiveness.

Throughout the 19th century, the Carnegie unit (Fain, 2015) has driven secondary education in the United States. This unit represents the required amount of time a student must actively participate in a course, and if a student reaches a high enough level of achievement at its conclusion, they officially earn credit toward their high school graduation (Tompkins & Gaumnitz, 1954). Education has seen many changes over the last 100 years (National Education Commission, 1994), but the measure of student time dedicated to a course of study remains the standard of accreditation. The most straightforward system of students acquiring credit, the traditionally scheduled school day, is daily dividing time into six or seven equal periods over the length of a school year. While educational leaders have long analyzed this factory style model due to its inflexibility, the traditional scheduling model remains the frontrunner in today's secondary schools, rivaled only by the block scheduling movement (Carroll, 1990). The block schedule, with its longer class times, fewer courses per day, and overall alternative approach to dividing the school day, still remains a "prisoner of time" (National Education Commission, 1994, p. 7). Like the past, it continues to be the role of educational leaders to assess the

advantages and disadvantages of these systems, and search for ways to provide flexibility and the customization needed to ensure student success in today's world (Horn & Staker, 2014).

The flexible modular schedule (FMS) is one method high school leaders have found gives desired flexibility, but it comes at a cost (Trump, 1963). The FMS, developed in 1959 by J. Lloyd Trump, opened doors the traditional schedule could not offer (Canady & Rettig, 1995). These merits include class times customized to instructional need, time built into the school day for students to connect with teachers for remediation or enrichment, and variety for students instead of the factory approach repeating the same schedule day after day (Canady & Rettig, 1995). This schedule is not as straightforward as the traditional or block scheduling approach. The FMS is complex; for example, one Missouri high school schedule is a 17 period school day. Along with other factors, this schedule is challenging to understand and create. This schedule also places demands on a school designed for traditional class sizes of approximately 25 – 30 students as the FMS varies from large lecture hall sized classes to small study groups. These examples and others are shared, challenging educational leaders to consider if the pros outweigh the cons when adopting this model.

Statement of Problem

During the 1980's and 1990's, schools were confronted with national reports aimed on the inefficient and ineffective use of school time (Canady & Rettig, 1995). *A Nation at Risk* (Gardner, 1983*)* was published initiating concerns of United States students as compared to countries across the globe, raising questions of how time is being used in schools (Canady & Rettig, 1995). In 1994, the National Education Commission on Time and Learning released their findings, one of which charged schools to reinvent around learning, not time (Canady & Rettig, 1995). Leaders, then and today, feel an urgency to prevent struggling students from falling

through the cracks and find ways to better tailor learning to each individual's needs (Horn & Staker, 2014). Research abounds (Carroll, 1990; Canady & Rettig, 1995; Gargis, 2013) regarding the advantages and disadvantages of the traditional and block schedule model, but an examination of the FMS is limited (Goldman, 1983; Pederson, 2001). Due to this gap in literature, this study was designed to provide educational leaders a picture of the FMS at a Midwest high school and provide a comparison school for the small number of schools around the country which employ this model. This case study explores this high school's attempt to rethink the use of time throughout the school day by the use of the FMS.

Problem of Practice

Educational leaders within the K-12 setting are faced with a variety of accountability standards. Looking through Bolman and Deal's (2017) framework of the differing perspectives within an organization, one could argue that stakeholders from the political, structural, human resource, and symbolic frames all have expectations and measures to which they hold K-12 education. From higher education institutions, parents, students, community leaders, business leaders, and state and federal government officials, everyone has an opinion of what schools need to be successful. Societal demands on students continue to change, and with these changes, educators are forced to ask themselves the question, are we doing all we can to prepare our students for their futures in society? Students today are faced with a future of employment in a global economy and the growing importance of knowledge-based work skills such as abstract reasoning, problem solving, communication and collaboration skills (Education Commission of the States, 2005). An analysis was conducted of one school's response to the many stakeholders and their efforts to take a significant step in changing the way they operate and manage time

within their school and determine if these efforts make an impact on student behavioral and academic achievement.

Existing Gap in the Literature

Numerous scholarly and practitioner explorations of high schools transitioning from a traditional schedule to the block schedule (Canady & Rettig, 1995; Carroll, 1990; Gargis, 2013; Pisapia & Westfall, 1997) exist in the literature. Specifically, since the late 1980s, following *A Nation at Risk* report, educational scholars have analyzed repeatedly the straightforward traditional approach along with the block scheduling methods (Gardner, 1983). These researchers have assessed aspects such as student GPA, national standardized testing scores, and student/teacher satisfaction rates (Carroll, 1990; Canady & Rettig, 1995; Gargis, 2013; Pisapia & Westfall, 1997).

While traditional and block schedules are certainly the prominent options in scheduling, a gap in literature exists concerning the FMS and its effects on student academic and behavior over the last 30 – 40 years. Goldman (1983) reviewed a number of research studies, mainly dissertations, on the FMS, from the 1960's and 1970's. During this era, Goldman's (1983) review succinctly summarizes these studies, deducing the FMS failed to show significant difference in a variety of academic and behavioral variables, measured quantitatively. Consequently, Goldman (1983) found the qualitative research indicated FMS success, but he concluded these findings were inflated. Goldman's (1983) report is the only research exploring the FMS's effect on academic achievement and student behavior in over 30 years. Summaries of the FMS are included in studies of the traditional or block schedule, but no research specifically examined the impact of the FMS. Because this alternative to the traditional and block schedule is used in only a few schools across the country and the only research examining its validity is

over 40 years old, this study provides educational leaders adequate perspective when considering the FMS in their high schools.

Purpose of the Study

The purpose of this dissertation was to identify the consequences switching to a FMS had on the school setting. In particular, this study aimed to explore the impact of this radically different schedule on achievement, attendance, and discipline in a Midwest high school. Since school leaders are held accountable for student achievement, it is not uncommon to review and evaluate all aspects of the school day. The structure of a school is one of many variables to be considered when striving for improvement. For this study, a gap in research regarding the FMS was found. While the FMS is not new to secondary education, it is rare to find schools that seek to personalize the student day in this way. It is the challenge of school leaders to engage students in a learning environment personalized to individual student needs and help them succeed (Horn & Staker, 2014). The research questions that this dissertation is designed to explore regarding the FMS are described in the following section.

Research Questions

The research questions of this study are as follows:

1. To what extent, if any, has the flexible modular schedule impacted the achievement scores of high school students?
2. To what extent, if any, has the flexible modular schedule impacted the suspension rates of high school students?
3. What impact does the flexible modular schedule have on student development?

Conceptual Framework

When creating the framework for this study of high school scheduling and the subsequent effectiveness of traditional, block, and flexible modular approaches, student developmental needs are the primary factor. When building a system in which students interact with the educational institution, it is clear content completion and accreditation are paramount, while a more flexible approach to scheduling, one which allows for the development of student and teacher relationships, may be needed (Canady & Rettig, 1995). School leaders search for the silver bullet to create, reform, and promote academic achievement, but few take the time to consider what we already know regarding human development theory, and more specifically, student development theory (Chickering, 1969). The basis of this theoretical framework is to first prioritize the developmental needs of the student and then identify which scheduling structure best accommodates this psychosocial and academic development. The goal of this study was to assess psychological and student developmental theory and specifically examine the relational needs of high school students and why educational leaders should consider these theories when designing the daily schedule of a student.

A variety of human developmental researchers were analyzed to develop this conceptual framework. Erikson's (1959) human development research laid the groundwork by examining the impact of relationships during the high school age of development. Piaget's (1953) work regarding the cognitive development evidence of a student helps further develop the framework. Building upon Erikson's (1959) human development, Marcia (1966) also provided further analysis of the adolescent stage identifying the importance of structure in a student's development. While these researchers offer the basis for the framework, Carroll (1963), Chickering (1969), Astin (1970), Tinto (1975), Pascarella (1985), and Pascarella & Terenzini

(1991) are assessed as studies in which psychosocial development is considered a factor in student performance in their educational pursuits. These development theories emphasize the need a high school student has for a schedule that takes their developmental need for relationships into account.

A foundational theory of this framework was Erikson's (1959) epigenetic principle, which states "anything that grows has a ground plan, and out of that ground plan parts arise, each part having its time of special ascendancy, until all parts have arisen to form a functioning whole" (p. 92). The implications of this principle are that biological and psychological development happen sequentially, and environment plays a major role in this development. It is this theory which laid the groundwork for the conceptual framework. Erikson's (1959) epigenetic principle clearly connects development to environmental factors, which would include the structure of the school day that can account for nearly 50% of an adolescent's daily life. Erikson (1959) goes on to further develop this idea through the creation of his theory of the eight stages of human development explaining how, within each of these stages, we face moments of crisis. These crises are not moments in which we face an emergency, but, instead, a time of decision requiring serious consideration or choice at developmental stages (Pascarella & Terenzini, 1991). These eight stages begin at birth and conclude with crisis found in senior adults (Pascarella & Terenzini, 1991). It is important to note that choice made by the individual at each phase of development determines the progression, regression, or stasis through Erikson's stages (Pascarella & Terenzini, 1991). Through the examination of Erikson's stages, a conceptual framework was developed that emphasized a school's structural environment (in the form of the daily schedule) plays an important role in the students' ability to develop psychosocially (Erikson, 1959).

During Erikson's (1963) initiative versus guilt stage, he explains it is at this place in a child's development that they are most ready to learn quickly and avidly. While a child in this stage remains several years from the typical age for secondary education, it should be noted that adults, specifically teachers, are looked to as prototypes of emulation (Erikson, 1963). The influence of the primary year's educator is significant in shaping a child's future, as these interactions often transform into the future goals of a child (Erikson, 1963). It is here in initiative versus guilt stage where Erikson (1963) connects a child's educational experience and their development. It is stage four, industry versus inferiority, in which children first begin to shape their identity in regard to the success they feel they are having within their environment (Erikson, 1963). The society becomes more significant in allowing the child to see or not see his or her place, often assessed through their view of how they related in family and school (Erikson, 1963). Erikson (1963) draws a connection between a child's perceived success and connection to school to their development. Erikson (1963) explains the importance of the role adults play in shaping this perception of a child's identity.

Erikson's (1963) next stage, identity versus role confusion, refers most directly to the years of development in a child during their high school and college years. While the exact age of this stage is debatable, it is generally accepted as the time between childhood and adulthood and often referred to as "adolescence" (Erikson, 1963). Children in this phase are in search of a new sense of continuity and sameness, ready to install lasting idols and ideals as guardians of their new identity (Erikson, 1963). It is during this stage that the adolescent begins to form cliques, drawing lines between themselves and others (Erikson, 1963). This phase is a powerful time in the life of a person, as they begin to lay the foundation for their future self. Identity versus role confusion identifies the developmental stage of high school students. Understanding

students' developmental needs during this stage are critical to educational leaders when creating systems in which they function.

It is at stage five of Erikson's work that many psychosocial developmental theories find their origins. Jean Piaget's theory of cognitive development, comprised of several stages including (a) sensorimotor, (b) preoperational, (c) concrete operational, and (d) formal operational (Piaget & Inhelder, 2013), reinforces Erikson's stages of development. Piaget's framework explains the process of how children take an active role in their learning through assimilation, accommodation, and equilibration (Piaget, 1953). In the formal operational stage, the final stage of cognitive development, a child begins to use abstract thought and hypothetical reasoning to find creative solutions to problems (Piaget & Inhelder, 2013). It is within this stage that Piaget explains the development of hypothetico-deductive reasoning (less concrete operations of thought and more abstract thinking) and metacognition (the analysis of people and the world) (Piaget, 1953). This stage of cognitive development takes place within what Erikson (1959) called adolescence, giving additional insight to the psychosocial perspective. It is in this stage of development that both Piaget (1953) and Erikson (1963) find relational connections as impactful to a child's development or lack of development. Adolescence is a critical stage in which social factors with adults other than parents become influential in the psychological development of a child (Erikson, 1963).

Adding to Erikson's psychosocial work and Piaget's analysis of cognition in development, Marcia (1966) further explored this stage of ego identity crisis. Marcia (1966) classified adolescent development into two tasks: first as the crisis or choice between meaning and competing alternatives, and, second, occupational and ideological commitments. Marcia (1966) identified four responses an adolescent has during this stage: (a) identify–confusion in

which an individual has neither experienced crisis nor made commitments, (b) foreclosed, in which an individual has not experienced crisis, but has made commitments, (c) moratorium status, in which a person is in the process of crisis and forming commitments, and (d) identity, which is achieved during the final status when a person has undergone crisis and finalized occupational and ideological commitments. After an examination of Erikson's (1959) stages, one is better able to understand how these social interactions impact the psychological aspects of the adolescent and their development. Marcia's (1966) responses to crisis and commitment during identity help explain the importance of the systems at work within the life of a high school student, further reinforcing the influence of interpersonal relationships and environmental impact.

However, it is Arthur Chickering's (1969) work which draws the connections between these developmental theories and connects them to the business of educating students. School does, indeed, play an important role within the psychosocial development of an adolescent student. Looking through the lens of Erikson's (1959) identity versus role confusion crisis and Marcia's (1966) moratorium status within this stage, Chickering's (1969) seven vectors of student development begin to draw the connection to the role of educational institutions, specifically four-year colleges, in this developmental process. Chickering (1969) does not describe growth through these vectors in terms of maturation, but a response to a stimulus. While all of Chickering's (1969) vectors are insightful to understanding the needs of students, his third vector, known as the "development of autonomy", starts the most relevant research for this study. During the third vector, the student disengages from parents and the need for their approval in order to develop relationships based upon mutual respect and helpfulness as they confront the growing desire for personal independence while beginning to understand and

develop their sense of interdependence (Chickering, 1969). Chickering (1969) stated that it is during this development of autonomy that the "relationships with sympathetic teachers and other adults provide support and foster perspective during this period of disengagement" (p. 62).

Development of autonomy leads to the fourth vector in which a student establishes their identity. Chickering (1969) explained how the concept of identity as a "solid sense of self" (p. 80) is a time when students begin to see much of their college work as "meaningless", and instead finding value in the socialization within the educational system (p. 82). This study would pose the question: When a student reaches this stage, how is the daily scheduling accommodating this need in a student's development? Where is the time in the traditional factory model of education allowed for a teacher to nurture a student's need for socialization? The fifth of seven vectors is called "freeing interpersonal relationships"; these relationships have developed to a level in which there is an increased tolerance, difference in respect, and a shift in the quality of relationships (Chickering, 1969). Chickering (1969) found that it is within this vector that a person is now able to have a difference of opinion with someone and maintain a strong sense of relationship. Chickering's (1969) findings specifically identify teachers as a likely relationship influence. Vectors three, four, and five highlight the role educational systems can play within the student development. Chickering's (1969) vectors have caused colleges to undergo structural and philosophical changes, such as the implementation of learning communities (Chickering & Gamson, 1987). These learning communities allow for the fostering of relationships between students as well as students and faculty (Chickering & Gamson, 1987). While Chickering's (1969) theory was designed to provide a framework to assess the college student, one could easily see these vectors play out in the lives of high school students, thereby

increasing the need in precollege settings to assess the impact current structures are having on students' academic achievement and behavior.

Student change theory, commonly known as "impact models," (Pascarella & Terenzini, 1991) also seeks to assess the process and origins of change, while the previously identified theories of Erikson (1959), Marcia (1966), and Chickering (1969) focus more on the internal process taking place within an individual (Pascarella & Terenzini, 1991). The three impact models of student change that help provide a framework for this research study are those of Astin (1970), Tinto (1975), and Pascarella (1985). Astin (1970) theorized that students learn by becoming involved. This hybrid of psychological and sociological theory has five parts, and suggests that psychological development is enhanced when the educational institution provides an environment in which students are given a variety of opportunities for encounters with other ideas and people. Tinto's (1975) work, while focused mainly upon college student retention, concluded that greater retention took place when students experienced "integration" in their academic and social systems. This integration is characterized through both the formal and informal interactions a student has within the institutional environment, and it should be noted that, while positive interactions promote college retention, negative interactions and experiences reduce integration and lead to withdrawal (Tinto, 1975). Tinto (1975) reaffirmed Erikson's (1963) epigenetic principal connecting development and the environment. Both Tinto (1975) and Astin's (1970) works force educational leaders to design educational systems which allow for students and adults to go beyond the formal exchanges of the classroom and take student development needs into consideration. This must include the structure of a daily schedule. Pascarella and Terenzini (1991) stated Tinto's work "offers significant opportunities both to researchers who wish to study the college student change process and to administrators who seek

to design academic and social programs and experiences intended to promote students' educational growth" (p. 53). Likewise, high school leaders should take note and adopt a daily schedule, which takes these basic student developmental needs into consideration.

When assessing students, both Astin (1985) and Tinto (1975) provided psychological evidence to educational institutions for the incorporation of socialization and relational interactions. Pascarella's (1985) model for assessing change further validated Tinto's (1975) and Astin's (1985) research, finding the interactions between students and faculty are one factor believed to have an indirect influence on student development. Higher education has responded with living learning community models, while high school scheduling models have seen little change. When considering these developmental theories, one must begin to ask the question: Do educational institutions consider psychological developmental needs when creating the systems in which they operate?

Learning and time are indisputably linked within all of education (Carroll, 1963). Carroll's (1963) model for school learning, a three-part framework, explained, "The learner will succeed in learning a given task to the extent that he or she spends the amount of time that he or she needs to learn the task" (p. 725). Carroll's (1963) theory emphasized the need for personalized education. Carroll (1963) explained how the amount of time a student needs to engage in learning varies from learner to learner and much of his theory focuses upon the examination of the student and determining the amount of time they individually need. Carroll's (1963) research asks the educator to examine the needs of the student. Carroll (1963) concluded his work with thoughts regarding future research in which he stated a need for further exploration into educational psychology. Carroll's (1963) findings should cause educational leaders to consider time as a resource not only for dividing curriculum evenly, but also to

effectively develop the student. Consequently, this study sought to examine the necessity for educational leaders to consider the developmental needs of students ahead of the allocation of time when structuring the school day.

The National Education Commission (1994) stated, "Learning in America is a prisoner of time" (p.7). This federal commission examined the connection between time and learning and the story of education over the past 150 years has changed very little in the way time is used and argued that schools essentially tell the students to "learn what you can in the time we make available" (National Education Commission, 1994, p.7). No one is surprised, bright, hard-working students do reasonably well, but what about everyone else? Time is indeed the primary focus when creating the American high school daily schedule; "The degree to which today's American school is controlled by the dynamics of clock and calendar is surprising, even to people who understand the school operations" (National Education Commission, 1994, p. 7). When one considers how much we know regarding the human developmental process, both psychologically and cognitively, it is hard to believe the school day is still run with such an emphasis around time. Canady and Rettig (1995) stated, "nowhere is the observation that "time is learning's warden" more true than in the assembly line we call the American high school" (p. 1). Canady & Rettig (1995) expounded upon the many problems with the way schools allocate time, specifically taking issue with the traditional scheduling model and the promotion of the block-scheduling model. Furthermore, Canady and Rettig (1995) discussed several reasons the traditional schedule is a system failing students, the primary problem being that "single-period schedules contribute to the impersonal nature of high schools" (p.5). Carroll (1990) stated, "At no other time, whether at school or work, is anyone placed in such an impersonalized, unproductive, frenetic environment" (p. 365). Carroll (1990) continued to question, "Whether

the American high school is responding to the alleged innate, hyperactive characteristics of teenagers or exacerbating those characteristics" (p. 365).

Canady and Rettig (1995) suggested teachers also express they are unable to adequately interact with the large number of students they are assigned to teach on a daily basis. Teachers prepare for five or six classes daily, with class sizes between 20 and 30 students, totaling between 100 to 180 students daily (Canady and Rettig, 1995). When examining the daily schedule of both students and teachers, Canady and Rettig (1995) asked the question: Are American high schools subject centered or child centered? They contended that not even the most intentional of teachers would be able to develop and build relationships that can begin to address the intellectual and emotional needs of students (Canady & Rettig, 1995). Canady and Rettig (1995) explained how teachers feel they are managers and not teachers, left to "direct traffic" (p. 7). These schedules, in which time is the primary driver, create stressful environments for the adults and the students.

In addition, the student perspective is important to consider. Traditional high school schedules are equally as impersonal for students as they face the challenge of adapting to six or seven different teaching styles and varying academic expectations each day (Canady & Rettig, 1995). Canady and Rettig (1995) called for an empathetic approach and asked their readers to consider a working environment in which they changed offices or desks six or seven times a day, reported to a different boss with each transition, and were required to focus upon a completely new assignment or task with each move. While it is plausible to consider that few individuals would willingly enter a job with these requirements, students face this challenge each day. It is within these systems they are asked to develop and learn. It is within these frantic schedules we expect the students and teachers to work together, yet we wonder why so many students struggle.

Much of the human developmental theory indicates the importance for students to have not only formal interaction with adults, but also informal interactions (Erikson, 1965, Chickering, 1969). Canady & Rettig (1995) concluded, when assessing the traditional scheduling model and use of time in many American high schools, "it is nearly impossible for them to develop close relationships" within these systems (p. 6). It is understandable why student discipline rates are higher in these settings as teachers have little time to build rapport and help solve problems through dialogue. Regardless of what is known about student needs at a time in history in which the American high schools are as diverse as ever, schools still follow a 90-year-old system that many would argue is obsolete and not meeting the needs of students (Canady & Rettig, 1995).

Using the psychosocial lens, literature was assessed examining the effectiveness of high school schedules through academic achievement and student behavior. This study sought to determine whether the FMS had an impact on student development in regards to academics and behavior at school. Finally, the study aimed to find quantitative association and qualitative themes when examining academic achievement and student behavior regarding the FMS at Monett High School. These findings were reported by measuring the schedule's effect on academic achievement and student behavior as well as psychological impact.

Design of the Study

This study was designed to evaluate the effect flexible modular scheduling (FMS) had upon academic achievement and student behavior as well as the psychological impact the schedule had on students within a particular school. A mixed methods approach was used to conduct a case study. Because the FMS is not being used at any other high school in Missouri at the time of this study (Cox, 2015), Monett High School was a bounded system in which this case

study took place, allowing an in-depth analysis of both the qualitative and quantitative data (Merriam & Tisdell, 2009). This was accomplished using a particularistic examination of how the schedule affected academic and behavioral outcomes. By means of this heuristic approach, the conceptual framework helped draw connections between the resource time within the schedule and its ability to help the educators of the school meet the psychosocial needs of students through the deepening of relationships (Merriam & Tisdell, 2009). The qualitative assessment focused on how the relational opportunity provided in this schedule impacts academics and behavior as well as psychological development, while the quantitative analysis was used to examine school historical data to determine the program's academic and behavioral impact. The researcher agreed with Merriam and Tisdell (2009) in that, "the uniqueness of a case study lies not so much in the methods employed as in the questions and their relationship to the end product" (p. 44).

Setting

A case study at Monett High School was conducted in Monett, Missouri. The city of Monett is in Southwest Missouri and has a population of 8,954 (Data USA: Monett, Missouri) of which 71.2% is White and 26.8% is Hispanic. Monett also has a non-English speaking population of 25.1%, and 90% of those living in Monett are U.S. Citizens (Data USA: Monett, Missouri). Monett's poverty rate is 28.9%, which is higher than the 14% national average (Data USA: Monett, Missouri). Of those living in poverty in Monett, 49.1% are White and 34.3% are Hispanic (Data USA: Monett, Missouri). Monett's economy, driven mainly through manufacturing, employs 31% of their workers (Data USA: Monett, Missouri). In all, Monett has a high percentage of Hispanic and Spanish speaking individuals, which is unique when compared

to the surrounding region. Thus, it becomes challenging to compare Monett to other cities and school districts using similar data.

Monett High School is the only public high school in the city of Monett. The school followed the traditional scheduling model for many years, but in the 2014 – 2015 school year fully implemented the FMS (Cox, 2015). This change came about through a collaboration between building leadership and teachers visiting schools out of state. The schools the staff visited follow the FMS schedule and were used to help Monett High School determine a variation of the schedule to best serve their students.

Monett High School underwent considerable change in their demographic enrollment over the previous 10 years. Table 1 indicates Monett High School's total enrollment has grown by 18.8% since 2008 (Missouri DESE: Missouri comprehensive data system, 2017). This enrollment trend also aligns with the steadily growing Hispanic student population within the school (Missouri DESE: Missouri comprehensive data system, 2017). In 2008, 19.6% of the student population of Monett High School was Hispanic and reached 28.1% in 2016, but the Hispanic student population grew over 4% in 2017 to 32.5% (Missouri DESE: Missouri comprehensive data system, 2017). With this increase in the Hispanic population, the percentage of White students dropped from nearly 80% in 2008 to 62.2% in 2017 (Missouri DESE: Missouri comprehensive data system, 2017). Using statistical analysis, differences in academic and behavioral data were observed to determine if subgroups enrollment changes have had an influence on the high school. The demographic data regarding students who followed the traditional schedule as compared to students who followed the flexible modular schedule was used to draw meaningful conclusions regarding the FMS.

Table 1

Enrollment Percentages by Race

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Enrollment (number)	617	612	639	613	637	654	651	721	709	733	763
Hispanic	19.6	18.0	19.4	20.2	23.5	23.9	24.9	25.8	28.1	32.5	36.7
White	79.1	80.4	78.4	76.3	72.4	71.4	70.8	68.9	66.7	62.2	57

(Missouri DESE: Missouri comprehensive data system, 2017)

In addition to the noteworthy enrollment trends mentioned above, the students eligible for a free and reduced-priced lunch also increased. Students qualify for these lunch prices if their family's income is below the federal poverty line. It is common among educational practitioners to use the free and reduced-priced lunch rates to measure the socio-economic level of a school (Missouri DESE: Missouri comprehensive data system, 2017). As reported in Table 2, the level of Monett High School students living in poverty grew over 17% in the 10 year span from 2007 to 2017 (Missouri DESE: Missouri comprehensive data system, 2017).

Table 2

Students Eligible for Free or Reduced-Priced Lunch

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Percent	37.3	37.6	37.5	40.6	41.1	48.3	49.2	48.2	48.8	51.3	54.5
Number	224	226	223	252	246	302	316	304	330	345	383

(Missouri DESE: Missouri comprehensive data system, 2017)

In summary, Monett High School is a unique demographic for Southwest Missouri with its unusually high level of Hispanic and non-English speaking students. Coupled with a free and reduced-priced lunch rate over 50% (Missouri DESE: Missouri comprehensive data system, 2017), Monett High School has a distinctive set of challenges. It was these challenges and questions raised by community leaders who encouraged the staff to explore other ways to structure the school day. In 2014, Monett High School staff began to travel to schools across the country, observing alternative scheduling models (Cox, 2015). After visiting several schools who use the FMS model, the staff and district leadership collaborated and voted to implement the FMS in the fall of the 2014-2015 school year (Cox, 2015). Because the demographics of Monett High School are so unique as compared to the surrounding schools, a case study approach was selected to complete this investigation of FMS.

Participants

The participants of the case study were students, teachers, counselors, and administration of Monett High School and Monett School District. While stakeholders such as parents and community members also play an important part in the decision of using such an innovative

schedule, these groups were not a part of this study. While data was collected from both students and faculty, not all participants were examined using the same methods.

Students. Students were only a part of this study using their unidentifiable student level data provided by the school district. In addition, students were only represented in this case study in a quantitative fashion. Students were analyzed using two distinctions, those who only followed the traditional schedule at Monett High School and those who only followed the flexible modular schedule. The traditional schedule student cohort was represented using assessment and discipline data from the 2012, 2013, and 2014 school years. The FMS student groups were represented using the assessment and discipline (suspension) data from the 2015, 2016, 2017, and 2018 school years. For the quantitative analysis, these two student groups' academic and behavioral data were compared to measure the impact the FMS made on student achievement. When examining the academic data, the traditional schedule student group examined accounted for 933 student assessments, while the FMS student groups contained 1,064 students' exams. When examining student behavioral data, this study examined 1,942 students' behavioral data representing the traditional schedule student group and 2,205 students in the FMS student group. The quantitative portion of this dissertation case study was a comparison of the student groups representing the traditional and FMS.

Teachers, Counselors, and Administrators. Teachers, counselors, and administrators were interviewed individually after IRB approval was recieved. Interviews were used to measure the impact the FMS had upon academic achievement and student behavior as well as student development. To gain this understanding, nine professional staff members (teachers and administrators) were interviewed at Monett High School. These participants made-up approximately 23% of the professional staff working at Monett High School in the 2018-19

school year. Six of the nine participants were female, three participants were male, and all participants were white. Six of the participants taught a variety of courses the high school offered, while one participant was a counselor, and two of the participants were school administrators. Finally, of these nine participants, seven of them worked at Monett both before and after the implementation of the FMS, while the other two participants came post-implementation. These participants were selected as they have experienced both scheduling models at Monett High School. The participants perceptions about the effect the FMS played in student development were used to determine differences in students before and after the implementation of the FMS.

Data Collection Tools

Institutional Review Board (IRB) approval was attained for the case study at Monett High School, as well as University of Missouri permission to conduct research prior to any data collection or analysis. Once the IRB was completed, permission was granted and overseen from the dissertation supervisor during data collection. Additionally, in preparation for the research, the Collaborative Institutional Training Institute (CITI) course was completed. Insight from this course as well as the principles of the American Educational Research Association (AERA) Code of Ethics (2011) were used when conducting research.

This case study followed a convergent parallel mixed method design. This study "converged quantitative and qualitative data in order to provide a comprehensive analysis of the research problem" (Creswell & Creswell, 2014, p. 219). In this postpositivist research design, the qualitative and quantitative data were collected simultaneously and the data were integrated for analysis to determine effects and outcomes of the program within a bounded system (Creswell & Creswell, 2014). This observational case study design was used to review one local

high school currently utilizing the FMS measuring the independent variables of a student group from the traditional schedule and a student group from the FMS. A quantitative approach was combined with a qualitative analysis interviewing teachers, counselors, and administrators regarding the student academic achievement and behavior. The impact the FMS had upon student development was also assessed during the interviews to provide a "thick" understanding of the impact of FMS (Merriam & Tisdell, 2009).

Data were gathered by conducting individual interviews of faculty members at open times during their school day at Monett High School. Prior to conducting the qualitative interviews, each participant signed an Interview Informed Consent form (Appendix A). This form gave participants an overview of the research and the option to participate in the study. The same interview protocol was used for teachers, counselors, and administrators (Appendix B), which was directly tied to the research questions as an instrument of qualitative data collection. The interview protocol was used to inquire about challenges faced prior to the FMS, unexpected advantages and disadvantages, how the resource of time was used, and drew connections to the conceptual framework of development in relation to time and behavior. As this was a case study, experiences and perceptions of staff members were limited only to the FMS at Monett High School. Despite this limitation, the data analysis could be used in a larger scope to assess the effectiveness of the FMS on academic achievement and student behavior as well as the psychological impact it made on students.

The quantitative approach was a statistical examination of the school's assessment, standardized testing outcomes and discipline. The Associate Superintendent of Monett School District granted approval for the case study to be conducted and agreed to provide the

unidentifiable student data via collaboration with the Monett School District Core Data and MOSIS (Missouri Student Information System) contact.

Data Analysis

Quantitative analysis. To measure the academic and behavioral effects of the FMS, data were requested from 2012 through 2017 from the Monett School District. As the FMS was implemented in 2015, the data were divided by year and two student groups were compared. These two student groups were carefully examined over the time span of three years to ensure no overlap in student assessment results. Student level data from these two student groups were examined as the 2012 - 2014 student group was comprised of students who only followed the traditional scheduling model and the 2015 - 2018 student group only followed the flexible modular schedule model. Academic and behavioral data from these groups were analyzed to drawing comparisons between the traditional schedule student group and the FMS student group. The two demographic categories used to examine these two student groups were race and lunch status.

The study examined academic effectiveness of the traditional and FMS student groups by looking at Missouri Assessment Program (MAP) end of course (EOC) exam scores. These are standardized assessments given statewide to students upon conclusion of the following courses: Algebra I, Biology, Social Studies/Government, and English II. Student level data used were first stripped of any identifying information and used the academic testing scores to run statistical analysis. As Monett High School traditionally gave the Algebra I EOC to freshman, 2012 and 2015 Algebra I data were compared. Because sophomores traditionally take the Biology and English EOC exams, 2013 EOC exams were compared to the 2016 EOC exams. Finally, as Monett High School gives juniors the Government EOC exam, 2014 exams were

compared to the 2017 results. Using this approach, the study ensured the traditional schedule student groups did not overlap with the FMS student group.

Behavioral data were also analyzed using quantitative analysis. Two demographic groups, race and lunch status, were used when examining the traditional and FMS student groups. The behavioral variable used to compare students in the traditional and FMS student groups were suspension counts. Student suspension count data were reflected in two forms. First, discipline data were analyzed in a count of in-school suspensions (ISS), and, secondly, through a count of out-of-school suspensions (OSS). In-school suspensions are designated consequences for minor disciplinary infractions a student commits, while out-of-school suspensions are consequences designated for more severe disciplinary incidents. First, a comparison of traditional and FMS student groups were examined, then the study expanded these counts between the student groups using race and lunch status, seeking to determine if differences exist as a result of the impact caused by a change in schedule.

Using the IBM Statistical Package for the Social Sciences (SPSS), the quantitative data were analyzed. While a T-Test was the original plan for comparison between the two student groups using student assessment scores, instead, because the data were not available in score format, but categorized groups, the researcher used an alternative statistical analysis. The four categories in which the testing data were divided were (a) below basic, (b) basic, (c) proficient, and (d) advanced, making a Kruskal Wallis H test to test for significant differences a better option. This test was chosen because it converted these categories into ranks and the mean rank for each group was used to indicate a level of significance.

Unlike the assessment scores, a non-parametrical test was employed to analyze discipline data. Although the suspension data did impose some limitations, a chi-square goodness-of-fit

was used to determine if the suspension rates (OSS and ISS) corresponded to the enrollment rates. To conduct this test, the enrollment data and suspension data were imported into a chi-square test calculator for a contingency table. The study not only analyzed the overall enrollments of the traditional student group to the FMS student group, but also analyzed these suspension counts by race and lunch status using three separate chi-square contingency tables. This analysis allowed for any statistical significance between these student groups' suspension rates to be identified.

Qualitative analysis. To further understand the FMS, a qualitative analysis was conducted through the use of an interview protocol consisting of questions directly tied to the three research questions. Nine one-on-one interviews were conducted with teachers, counselors, and administrators of Monett High School. These participants made up approximately 23% of the professional staff working at Monett High School in the 2018-19 school year. Six of the nine participants were female, three participants were male, and all participants were white. Six of the participants currently teach a variety of courses the high school offers, while one participant is a counselor, and two of the participants are school administrators. A diverse sample of the certified staff were interviewed at Monett High School giving a well-rounded perception of the FMS.

To measure the academic achievement and student behavioral effect on students, interview questions aimed at seeking the academic or behavioral concerns that prompted the implementation of the FMS. Similarly, questions were asked to examine how the FMS impacted academics and behavior. To measure the third research question regarding how the FMS has impacted student development, the interview protocol included questions seeking any differences that had been observed in students since the implementation of the FMS as compared to students

in the traditional scheduling model. These one-on-one interview questions also allowed the researcher to understand the positive and negative effects the FMS made on students. Open-ended questions were used in a one-on-one setting, in which notes were made and dialogue was recorded allowing for full interview transcriptions. Once these interviews were conducted, the opening coding methods were employed in search of themes and converged the quantitative and qualitative data, ensuring a comprehensive analysis of the research questions. The transcriptions were used to first create fourteen initial categories. After further analysis of the original coding, three overarching themes were developed to summarize the qualitative findings.

Content analysis was used to analyze the qualitative data. This process began by transcribing the nine approximately 30 – 40 minute long interviews into manuscripts. These manuscripts were first used to identify fourteen categories of data, then further organized into segments to answer the research questions. As these segments of data were identified, the study simultaneously used the process of category construction by making notations in the margins summarizing and categorizing the units of data (Merriam & Tisdell, 2009). At the conclusion of this open coding method, notations were examined for schemes or findings that finally condensed and separated into themes. Names were selected for these themes in such a way as to ensure congruency with the conceptual framework and the research questions. Content analysis was used to simultaneously code teacher, counselor, and administrative interview data and construct categories that captured relevant characteristics that related to the research questions of the study.

Data were kept within the bounded system and compared the results of Monett High School students in the traditional schedule group and the FMS group, limiting the number of disqualifying variables, which would lead to greater validity in results. Comparing the themes

through a side-by-side comparison of the qualitative analysis with the results of the quantitative findings, the study was able to triangulate the data to better understand the FMS (Creswell & Creswell, 2014).

Pre-Existing Data

During the proposal phase of the research study, existing data were accessed from the Missouri Department of Secondary and Elementary Education comprehensive data system online. This pre-existing public data provided context and insight allowing general observations to Monett High School, but it did not provide an in-depth picture the study aimed to attain through a more thorough quantitative approach to answer the research questions. This preliminary data were used to gain insight into the pending research, but it did not contribute to the findings.

Table 3 displays two options to review Monett High School's ACT data. First, the composite score is the average of all students taking the ACT at Monett High School. From 2010 – 2017 an observable decline in the composite score is noted. Secondly, Monett's senior graduates' ACT results are compared to the national average. With exception to 2017's data, the percentage of graduates scoring above the national average was increasing. While the researcher originally sought to examine ACT data, specifically gender, race, and student lunch status, the data were not accessible for statistical analysis. This observational data did indicate the composite score of the ACT going down from 2011 (21.9) to 2017 (18.7). Although ACT data were not accessible, Table 3 did provide some insight into other standardized testing data at Monett High School both pre and post implementation of the FMS.

Table 3

Graduate ACT data

	2010	2011	2012	2013	2014	2015	2016	2017
Graduates	154	150	148	157	128	166	162	163
Graduates at or above national level	*	*	34	48	35	41	60	37
Percent of graduates at or above national level	*	*	23	30.6	27.3	24.7	37	22.7
Percent of graduates tested	65.6	69.3	61.5	58	64.1	72.9	92	91.4
Composite score	21.1	21.9	21	21	20.9	20.5	19.7	18.7

* = *data unavailable* (Missouri DESE: Missouri comprehensive data system, 2017)

In addition, Table 4 includes Monett High School's MAP data. At the high school level, this assessment is also known as the (EOC) exams. Because the state of Missouri adjusted their approach to assessing high school students between 2009 and 2010, the best comparable data is 2010 – 2017 due to little changes made to these tests. Students in Monett and across the state take EOC exams during high school at the conclusion of their English II, Algebra I, Biology I, and Government courses. Students scoring "proficient" and "advanced" for each of these assessments can been seen in Table 4. MAP's four performance tiers, starting from lowest performers to highest performers are "below basic", "basic", "proficient", and "advanced." When making observational examinations of assessment data in Table 4, no trends in Monett's MAP data were identified before the statistical examination.

Table 4

Percent of students in the district scoring advanced or proficient on end of course exams, by subject, by year

	2010	2011	2012	2013	2014	2015	2016	2017
ELA/E2	64.8	70.3	68.8	72.3	37.4	60.8	74.8	*
Math/A1	31.4	36.4	34.4	41.8	37.4	100	46.7	*
Science/B1	60	63	47.4	72.8	59.3	64.4	59	60.9
SS/GV	48.5	60.6	57.4	41.9	56	61.3	54.4	53.7

* = *no testing data* (Missouri DESE: Missouri comprehensive data system, 2017)

In addition to the academic measures previously mentioned, the behavioral effects of the FMS were also examined. One behavioral factor the study wanted to assess was student attendance. Examining the data from Table 5, it is clear no major changes have taken place in the overall attendance of Monett High School. A more thorough examination of attendance data in Table 6 gives insight into the subgroups' attendance within the school population. The proportional attendance rate is defined as the attendance targets of individual students' attendance rate and set the expectation that 90% of the students are in attendance 90% of the time (Missouri DESE: Missouri comprehensive data system, 2017). This rate allows schools to assess student groups who may go unnoticed when only looking at whole school attendance rates. These early and general examinations of Monett High School's data imply the FMS is not showing noticeable changes in attendance data. Due to constraints in accessing student data, Monett was unable to provide attendance data in a timely manner that would allow for student level statistical analysis. The pre-existing data provided the only insight into the effect the FMS made on student attendance. While Table 5 did not indicate any noteworthy observational

changes, Table 6 did show possible significant changes in attendance trending downward after the implementation of the FMS.

Table 5

Annual attendance percentages

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Missouri	94	94.4	94.3	94.4	94.7	94.6	95	94.8	95	94.8
Monett	94	94.3	93.9	94.3	94.6	93.5	93.9	94.9	93.3	92.5

(Missouri DESE: Missouri comprehensive data system, 2017)

Table 6

Proportional attendance percentages

	2010	2011	2012	2013	2014	2015	2016	2017
Hispanic	89.5	93.4	91	86.6	83.4	84.2	75.5	86.6
White	84.9	90.5	87.5	84.1	83.6	85.4	83.7	77.7
Female	87.7	92.1	91.5	84.2	81.3	84.8	83.1	77
Male	83.2	90.2	85.8	84.7	85.7	84.8	80.7	76.7
Free/Red.	78.6	87.8	83.2	77	77.9	81.7	75.4	70.1
Limited English proficient	93.3	93.9	91.6	84.7	85.7	84.9	78.3	75
Special Education	76.6	80.7	68.6	61.2	70	81.7	70	68.6

(Missouri DESE: Missouri comprehensive data system, 2017)

The data as seen in Table 7 gave some preliminary insight in the discipline changes both before and after the implementation of the FMS. This data lacked much of the needed information to draw conclusions regarding the impact of the FMS. As many are hesitant to adopt the FMS due to the variable of school discipline, student behavior is an important consideration in addition to academic achievement when uncovering the effect the FMS had on Monett High School. Unfortunately, the pre-existing data available did not allow conclusions to be drawn and would not be helpful to school principals or superintendents if they are looking at this data as they consider the FMS for their school. Instead, individual student data were compared, suspension rates (both in-school and out-of-school suspensions), before and after the implementation of the FMS.

Table 7

Reported discipline incidents

	2010	2011	2012	2013	2014	2015	2016	2017
Enrollment	639	613	637	654	651	721	709	733
Total number of incidents	10	5	3	1	3	10	13	22
Incident rate (per 100 students)	1.6	.8	.5	.2	.5	1.4	1.8	3
In-school suspension (number)	0	0	0	0	0	0	0	0
Out of school suspension (number)	10	5	3	1	3	10	13	22
Expulsion (number)	0	0	0	0	0	0	0	0
10 consecutive days (number)	10	5	3	1	3	10	13	22
More than 10 consecutive days (number)	0	0	0	0	0	0	0	0

(Missouri DESE: Missouri comprehensive data system, 2017)

While the pre-existing data did provide some insight into the effectiveness of the FMS at Monett High School, more data were needed to answer the research questions. Regarding the qualitative research, no determinations could be made from the pre-existing data to determine the impact the FMS on student development. Therefore, a full investigation of the behavioral and academic effect of the FMS as well as the impact the FMS made upon student development was conducted.

Limitations, Assumptions, and Design Controls

When examining the FMS, this study faced the realization that limited working examples of this schedule exist across the country (Cox, 2015). At the time of this study, only a handful of schools across the country used the FMS (Cox, 2015). With limited access, Monett High School's model was selected as a case study to compare the FMS data to their previous data as a traditional schedule high school. Due to the lack of sample size, this study relies heavily upon the fidelity of the Monett High School's implementation of the FMS.

Another limitation of this study was restricting the qualitative interviews to staff only. While opinions and perceptions of the students, parents, and community members are valued, the research questions were adequately answer using faculty interviews only, as the research questions focused on student behavioral and academic achievement and staff perception of psychological development impact. Further studies could be conducted to gain more stakeholder insight, thereby creating an opportunity for future research.

Definitions of Key Terms

Block Schedule

This traditional scheduling model divides the school day into four 90-minute blocks of time. Students attend the same four classes each day for one semester when following a four-block schedule and begin a new set of classes with the start of a new semester. An alternating block schedule also requires students to attend four 90-minute classes each day; the difference is students attend a different set of classes the following day. Students on a four-block schedule take EOC exams at the end of each semester. Students on an alternating block take end of course exams at the end of the academic school year (Canady & Rettig, 1995).

Flexible Modular Schedule

Also known as a modular schedule, the school day is divided into seventeen periods (mods) which are twenty-five minutes in length. These periods are referred to as "mods" and a class may last, one, two, three or four mods. One of the student's mods are reserved for lunch. For example, a student who takes Algebra would meet daily for two mods (50 minutes), while classes like Agriculture Construction meet two times a week for four mods (100 minutes) each meeting. This allows for classes to be tailored based upon the need of the course instead of being driven by the traditional scheduling model. The flexible modular schedule also operates on a rotation. Instead of students going to the same classes each day, their schedule is different for five consecutive days. At Monett High School, this schedule follows an A, B, C, D, E day rotation.

Free and/or Reduced Lunch

This is a student demographic status commonly used to identify students in poverty. A student qualifies for free and/or reduced lunch if a family's income is below state and federally mandated standards. For example, families with one student living in the home qualify for free lunch if their annual income is less than $15,782, monthly income is less than $1,316, or weekly income is less than $304. Reduced lunch eligibility for a family with one student living in the home are incomes below $22,459 annually, $1,872 monthly, or $432 weekly. These income levels adjust depending upon the number of students living in the household (Missouri DESE: Missouri comprehensive data system, 2017).

Missouri Assessment Program (MAP)

Summary and detailed results from MAP exams are provided for each school and district. Disaggregated results for various subgroups of students are also provided, as required by federal

law (Missouri DESE: Missouri comprehensive data system, 2017). Within the state of Missouri, high schools give EOC exams as part of the Missouri Assessment Program. The four assessments used to measure effectiveness in this study are the Algebra I, English, Social Studies/Government, and Biology exams. These assessments are given each year to students enrolled in these courses. At Monett High School students in grade nine traditionally take the Algebra I exam, students in grade 10 take the Biology and English exam, and students in grade 11 take the Government exam.

Student Academic Achievement

For the purpose of this study, student academic achievement is defined through an analysis of student Missouri Assessment Program (MAP) or EOC exam scores. These scores were first analyzed by comparing the traditional and FMS student groups to identify a measure of student academic achievement.

Student Behavior

To measure behavior in this study, student suspension rates were investigated. Suspensions are divided into two categories: a) in-school suspensions and b) out-of-school suspensions. In-school suspensions are used by school administration to address minor disciplinary actions such as tardiness, truancy, disorderly conduct, and other minor student actions. In contrast, out-of-school suspension is reserved for either major disciplinary infractions such as fighting, possession of a weapon, drug violations or an excessive accumulation of minor disciplinary actions. In and out-of-school suspension rates were examined separately to determine if scheduling impacts on this manifestation of behavior.

Student Development

The conceptual framework of this research aimed to identify if child development should be considered when creating the daily high school schedule. For the purpose of this study, development was measured academically through standardized testing variables and behaviorally through disciplinary suspension rates. Additionally, student development was also measured through staff perceptions, as participants were asked about differences in students in the FMS as compared to the traditional schedule approach. The data was coded (Merriam & Tisdell, 2009) and shared to give their perception of student development.

Traditional Schedule

This scheduling model typically divides the day into six, seven, or eight periods. These periods are approximately 50 minutes in length. Students follow the same schedule every day for the length of a full academic school year.

Significance of Study

Scholars such as Erikson (1959) have long argued the psychosocial needs of children as the primary consideration when educating children. Although few would debate the developmental theories of Erikson (1959, 1963), Marcia (1966), and Piaget (1953), these findings are not considered when educational practitioners create systems in which children operate on a daily basis. The practitioner cannot afford to ignore the scholarly findings regarding the psychosocial needs of students while on a mission to ensure the proper number of minutes are completed allowing a student to earn an accredited diploma from high school.

While many scholars, such as Canady and Rettig (1995), have conducted robust research studies on the benefits of the block schedule, little research was found that considers the psychosocial needs of students and high school schedules and how FMS affects behavioral and

academic achievement. This schedule is of particular interest as it allows for a considerable amount of formal and informal opportunities for students and teachers to interact. Within the Monett High School case study, this time is referred to as resource time. Faculty perceptions are of particular interest to this study as resource time and its subsequent impact on achievement as well as their fidelity in using this time to collaborate with students outside of the formal structured classroom setting is an important aspect of the conceptual framework. Due to the opportunities the FMS allows versus the block and traditional schedule, this case study could yield significant findings to both the practitioner and the scholar.

Summary

The FMS is an under-examined high school scheduling model with the potential to significantly influence student academic achievement and behavior. Because the FMS is an uncommon approach taken by high schools within the United States, this study chose to assess the pre-implementation and post-implementation data at Monett High School. The data were collected to answer the research questions assessing the schedule's effect on both academic achievement and student behavior, as well as seeking staff perceptions regarding if a psychological impact had taken place. Using a conceptual framework based upon psychosocial development, insight into student cognition, interdependence to their environment, and social impacts was gained. These findings of qualitative interviews as compared with the statistical analysis of the schools assessment, discipline, and attendance data gave basis to determine the success or lack thereof of the FMS at Monett High School. It was the hope of this study to provide findings that both practitioners and scholars could use to measure the effectiveness of the FMS.

CHAPTER TWO

PRACTITIONER SETTING FOR THE STUDY

The researcher conducted a case study on Monett High School in Monett, Missouri. Unlike other schools in Southwest Missouri, Monett High School has experienced an enrollment growth of approximately 100 students over the last ten years, with a total of over 700 students (Missouri DESE: Missouri comprehensive data system, 2017). To better educate and accommodate their students, Monett High School chose to make a change to the school daily schedule, creating opportunities for student, but also creating challenges. These issues, the historical context, and leadership analysis will be evaluated in this section.

History of Organization

Monett High School operates within the Monett School District in Southwest Missouri. This town of nearly 9,000 people can be described as a "friendly town" ("Small town approach to Immigration", 2011) with a 34.3%, Hispanic population, which is above average for the region (Ninenetwork of Public Media , 2011). Monett was founded as a railroad town in the late 1800s and built their first school in 1888 ("Monett from Goodspeed 1888 History of Missouri"). Despite Monett's high employment rate, the town has a high poverty rate (Ninenetwork of Public Media, 2011) making the setting of Monett High School very diverse (PBS Media, 2011).

Monett High School has made great efforts in the last 18 years to provide diversity awareness and training, especially in the Hispanic culture, as many of the staff self-identify as White (PBS Media, 2011). For example, in 2000-2001, even though 20% of the school population self-identified as Hispanic, only two or three Hispanic students actually graduated (Ninenetwork of Public Media, 2011). During diversity training, the high school staff learned that, in the Hispanic culture when students turned age 16, they were encouraged to stop school in order to support their families by entering the workforce (Ninenetwork of Public Media, 2011). As a result of learning more about the Hispanic culture, Monett High School has worked hard to

re-acculturate families to encourage their child's persistence to graduation and, as a result, have seen a large increase in the number of Hispanic graduates (Ninenetwork of Public Media, 2011).

In early 2014, the Monett High School principal and teachers visited a school out of state that operated using the flexible modular schedule (FMS). At the time, Monett High School followed the traditional eight period day model (Cox, 2015). The school had previously followed a seven period day, but with rising enrollment, chose to add an additional period to lower student class sizes. While the move from seven to eight periods decreased the number of students in classes, the Monett High School's principal of 13 years felt more could be done to prepare students for their college and careers. Former Monett principal David Stewart stated, "This time and space isn't working for today's kids, from kindergarten to high school, they are not given choice, so when they do have choice, they don't know what to do with it" (Cox, 2015, p. 19). He further explained that leaders from the professional workforce constantly emphasize the need to prepare students to manage time better (Cox, 2015). These comments compelled the Monett High School leadership to seek out other ways to arrange schedules (Cox, 2015). In January of 2014, after searching for scheduling models, Monett High School leadership and teachers journeyed to Omaha, Nebraska, to visit Westside Community School District, whose high school has operated using the FMS since the 1960's (Cox, 2015). This initial visit was followed by additional FMS site visits at Westside Community School District and two other schools located in Wisconsin. These exploration visits consisted of teachers, administrators, counselors, district leaders, and members of the board of education. After these site visits, the staff and district leadership collaborated and voted to implement the FMS in the fall of the 2014-2015 school year (Cox, 2015).

The decision to implement the FMS was more than simply adjusting the way time was used in Monett High School; rather, it was a transformative decision. For example, large classrooms were needed to accommodate lecture style classes of up to 90 students. Classrooms were made larger by removing walls between classes (Bishoff, 2014). Programs such as Agriculture Construction and other hands on classes were now able to take on an entirely new environment for student learning. Instead of meeting for 45 minutes a day, those same classes were now going to be able to meet twice a week for 100 minutes at a time allowing students to experience new types of instruction time (Bishoff, 2014). In some instances, teachers were sharing classes with one another, thus forcing higher levels of collaboration. For example, students may have one teacher for government on certain days, and other days they may have a different teacher for the same class. During the summer, teachers were provided time to create plans for how they would be collaborating throughout the year (Bishoff, 2014). To tackle the task of maintaining accurate attendance with these larger resource classes, the students checked into classes by scanning their nametags as they enter classrooms. This automated attendance system did not work as well as hoped when first implemented, creating significant challenges for the school to overcome (Bishoff, 2014). Similarly, the previous automated computer program, which created student schedules automatically, was incompatible with the FMS to its complexity, thereby leaving the scheduling of approximately 700 students to be created by hand (Bishoff, 2014). This handmade schedule, which could previously be accomplished by counselors in a matter of days, now required a significant amount of time to create. The first two years of the schedule, Monett High School principal, David Stewart, created the schedule, but as he accepted a position in another district, the school chose to subcontract staff members to create the schedule. For year three of the flexible modular schedule, a math teacher was responsible for

building the master schedule, and years four and five, one of Monett High School's counselors created this schedule.

Only months after implementation, additional teachers were needed to keep class sizes manageable, and at semester, the Monett school board agreed to provide an additional teacher (Bishoff, 2014b). In addition, student grades were low, but leadership insisted it was an implementation issue and improvement would increase (Bishoff, 2014a). Some students were simply unsuccessful in the loosely structured college style schedule. To improve support, Monett High School formed Project RISE (Reinforcement and Intervention in Student Education), a resource period for students finding the transition to the FMS challenging (Bishoff, 2015). Project RISE allowed teachers to refer students to an intervention team, which determined if the problem was academic or behavioral. After these determinations were made, the student was given specific interventions. In its first few months of program implementation, Monett High School experienced a 45% decrease in falling grades (Bishoff, 2015). One teacher responsible for Project RISE described much of the student issues as learning how to effectively managing their resource time and building positive relationships (Bishoff, 2015).

After four years of the FMS, Monett had seen several leadership changes. The principal responsible for leading the implementation moved to a leadership role in another district. Similarly, the superintendent and associate superintendent in place at the time of implementation and supported the change have moved on to new positions outside of Monett. Finally, several school board members, who fully supported the FMS in 2013-14, are no longer a part of the school board. These changes in leadership put the continued use of the FMS at Monett High School in jeopardy, as the board of education originally gave the high school a five-year pilot period. Now in year five of operation, Monett High School continues to move forward with their

FMS, but not without the scrutiny of the Monett school board members who shared harsh criticisms of how the FMS had been implemented (Bishoff, 2017). Monett High School administrators responded by not only acknowledging the flaws, but they also shared strategies and solutions to fine-tune the schedule for greater student success in the future (Bishoff, 2017). For example, one area in particular administrators believe can improve is the need to add more structure to underclassmen and provide more time opportunities for student and teacher interaction, as resource modules were not always effectively utilized (Bishoff, 2017). Board members' greatest concern was dealing with the time conflicts that take place within the schedule (Bishoff, 2017). Within the FMS, there are times in which classes overlap with one another, and in some cases, a student may be scheduled to be in two places at one time. Students were encouraged to communicate the conflict to their teachers and resolve the conflict throughout the year. Board members expressed their dislike for this flaw and pushed for a "no conflict policy", but school administrators explained how this problem, though challenging, caused students to take and learn greater responsibility (Bishoff, 2017). Monett High School continues the use of the FMS in the 2018-2019 school year (year five of implementation), but the board of education did implement new policies regarding the schedule. For example, the board required that a core content (mathematics, science, social studies, and English) classes meet for a minimum of ten mods per week and five days a week. In addition, if a conflict arose in a student schedule, the teachers, student, and parents have to sign an agreement regarding the conflict ahead of time. Finally, the A through E day schedule would now be assigned to a day of the week instead of rolling over to the next day as it had been in years one through four of implementation. Now every Monday is an A day and every Friday is an E day on the board-

modified schedule. The school board will re-evaluate the schedule at the conclusion of the 2018-2019 school year and make a determination on its continued use at Monett High School.

Organization Analysis

Board of Education Model. Analyzing Monett School High School and Monett School District through the structural lens, the vertical coordination of authority (Bolman & Deal, 2017) could be used to describe the board of education model. The way in which the school district seeks to harmonize the efforts of individuals is through providing the Monett Board of Education with the final authority (Bolman & Deal, 2017). Furthermore, French and Raven (1959) classified the use of power, such as in this instance, as one of legitimacy. The board of education is elected by the residents of Monett, Missouri, to oversee the work of the superintendent and, consequently, act as the final authority in decisions regarding the school district. This divisional form of organization structure is one in which the board of education is at the top followed by the superintendent (Mintzberg, 1979). The superintendent is selected by the board of education and is charged with creating, implementing, and maintaining written administrative procedures to provide guidance on policy implementation to the district observed ("Monett R-I MSBA online policy", 2018). The superintendent does have the authority to make modifications to procedures without school board approval unless otherwise instructed by the school board, but is still accountable to the school board for all aspects of administration ("Monett R-I MSBA online policy", 2018). Although the overall responsibility of accountability to the school board lies upon the superintendent, the role of the assistant superintendent exists to delegate many of the responsibilities for the school districts operation. While ultimately the organizational hierarchy of management places the superintendent at the top, the assistant superintendent is delegated the

task of providing direct support, supervision, and evaluation of the district's principals and directors.

Acting with the approval of the superintendent, the principal of Monett High School acts as the school's chief administrator and is accountable for the actions of students, teachers, and support staff ("Monett R-I MSBA online policy", 2018). Furthermore, the principal must oversee the management and direction of the staff and the students, as well as the maintenance of the Monett High School. Finally, the principal must ensure not only school board policies, rules, and processes, but also the directives of the superintendent ("Monett R-I MSBA online policy", 2018).

The organizational growth, as previously noted in the enrollment data and the adoption of the FMS, have not resulted in a change of organizational structure at the district or school level. This divisional structure (Mintzberg, 1979) continues to operate under the board of education model. In regard to the FMS, the board of education allowed for a five-year pilot of this model within the school (Bishoff, 2014a). Monett High School is entering into year five of this pilot in the 2018-19 school year. Based on the study's findings, suggestions regarding the structural organization of the high school to better accommodate the needs of students and teachers in the FMS is advised.

Leadership Analysis

Northouse (2016) described leadership as the process whereby an individual influences a group of individuals to achieve a common goal. Northouse (2016) further explained how leadership is a transactional event that happens between the leader and the followers. Therefore, the focus of this leadership analysis is the transactions between the leader and followers during the adoption or implementation of the FMS.

Through the analysis of the FMS implementation, the characteristics of team leadership practices are identified (Levi, 2015). The principal did not issue the directive of changing the schedule, instead a variety of stakeholders, including administrators, board members, and teachers, traveled to schools operating with this schedule to learn and assess the value of this scheduling model within the construct of Monett High School (Cox, 2015). Likewise, when the time came to determine if the school would transition from the traditional schedule to the FMS, a vote was taken and the staff made the decision together (Cox, 2105). Similar to Hill's model (Northouse, 2014) for team leadership, the decision of the leader was not to decide if the school would become a FMS school; rather, the decision of the leader was to identify when to intervene and how to guide the team through this decision making process. Levi (2015) explained how difficult it can be to build a team culture within an organization, but it appears a team-approach culture was already in place at the time Monett High School entered into the adoption of the FMS. The Monett staff exhibited unity in their clear, engaging direction by enabling structure and context, adequate resources, and expert coaching (Hackman, Walton & Goodman, 1986). This change within Monett High School was enabled by the hard work the leader had already done of building a team culture.

The leadership analysis also reveals elements of adaptive leadership. Transitioning from the traditional schedule, which had been in place for many years, Monett's leadership embraced these adaptive challenges not in the executive suite, but by using the collective intelligence of all levels and across many boundaries (Heifetz and Laurie, 1997). As is clear from not only the adoption and implementation that adaptive leadership was necessary, but also, when the schedule was underway, it was necessary to respond to the adaptive challenges to learn and to offer solutions (Heifetz & Laurie, 1997). In fact, moving into year five of implementation, adaptive

changes are still being made to the schedule to ensure the success of students (Bishoff, 2017). Navigating through such an enormous and heavily scrutinized program's implementation, the leadership team of Monett High School demonstrated high levels of adaptability.

Implications for Research in the Practitioner Setting

When assessing the implications for research at Monett High School, the FMS had some obvious impacts on the structural design of the school (Bolman & Deal, 2017). Although the FMS is complex, Monett High School had addressed two central structural design questions, including: a) how to allocate or differentiate the work, and b) how to coordinate or integrate the many operational responsibilities of the schedule (Bolman & Deal, 2017). The FMS had posed challenges for the vertical and horizontal coordination (Bolman & Deal, 2017) structure of the organization. Within the horizontal coordination, the authority structure had not changed, but rules, policies, planning, and control systems have seen changes (Bolman & Deal, 2017). These changes of policies and planning have come mainly in the form of student accountability. Given the traditional schedule, the vertical coordination ensures every student had a place to be at each set time within the school day. Many practices and policies from attendance to discipline revolve around the schedule structure. While the traditional and block schedules provide a clear framework of structure and student accountability, the FMS does not draw these clear lines. Students may have modules of time without a class and are responsible for going from class to class without bells serving as symbolic timekeepers. Since the teacher does not start class recording attendance, students scan their identification badges as they enter. These vertical coordination factors (Bolman & Deal, 2017) must be considered when weighing the adoption of the FMS.

Likewise, lateral coordination within the school's structure is altered; teacher collaboration, meetings, and the coordinating roles all undergo changes when moving from the traditional to block schedule (Bolman & Deal, 2017). At times, teachers must co-instruct classes, thereby creating collaboration challenges and schedule conflicts for students. While there are many considerations and challenges in addressing these structural concerns, Monett High School demonstrated that, with a team approach to implementation an adaptive approach to problem solving, the substantial structural concerns can be overcome. The decisive question, which leads to implications for practice, is to consider: what are the benefits of these efforts?

When considering the benefits of the FMS, the psychosocial needs of students are paramount. While the structural designs are obvious, the more important implication is the benefits the FMS could have on the human resource aspects of the school (Bolman & Deal, 2017). If the most important asset within an organization is our people (Bolman & Deal, 2017), then we should consider the needs of the people within our organization when creating the structure. Maslow (1943) provided the framework for looking at human need with the physiological foundation. Maslow's (1943) research led the way for many educational reforms such as the provision of school breakfast, lunch, and counseling programs. Theorists have built upon Maslow's (1943) work and that of Erikson's (1959) child development research to make great strides in meeting the needs of students within the school setting (Pascarella & Terenzini, 1991). Therefore, the consideration of Bolman and Deal's (2017) human resource framework should be taken into account when determining the schedule of a school. Chickering (1969) found that as students reach adolescent stages of child development, they begin to search for other adults to provide support and perspective, emphasizing the importance of the teacher's role. Astin (1970) and Tinto (1975) further supported these ideas as their work emphasized the

integration of formal and informal interactions between a student and their educational environment, finding these interactions positively promote student achievement. Therefore, just as Canady and Rettig (1995) called the practitioner to consider these implications for the advancement of the block schedule, this study would now call school leaders to consider this study's theoretical framework and ask the question: is the schedule centered the need of the Carnegie unit or psychosocial need of the student? The researcher urges practitioners to consider these implications when considering the FMS or any program implementation at their school.

Summary

Monett's School District and High School are deeply rooted in the community. The Monett School District Board of Education oversees all operations of the school district through a divisional hierarchy (Mintzberg, 1979) placed under the control of the superintendent and assistant superintendent and then the direct control of the high school principal. With the endorsement of the high school principal and superintendent, the FMS was implemented through a team leadership approach and has been maintained through an adaptive leadership style (Heifetz & Laurie, 1997). The board of education agreed to provide support for this system for a five-year pilot of the program. This schedule provides not only structural implications (Bolman & Deal, 2017) of the daily management for school leaders to consider, but also the potential for meeting psychosocial needs of students that could lead to improvement in student achievement (Chickering, 1969).

CHAPTER THREE

SCHOLARLY REVIEW FOR THE STUDY

Introduction

Public education in the United States has greatly evolved over the last century. Starting with its independent roots in the 1800's, a more formalized approach began to take shape with the implementation of the Carnegie Unit in the early 1900's. Now, after a century, public education in the United States is guided by stringent guidelines such as mandated curriculum, standardized testing, in-depth teacher evaluation models, and governmental oversight at the state and federal levels. Over the last 100 years, many have examined schedules of a student day and year in hopes of discovering more effective methods of academic achievement. The high school level is of particular interest, as it serves as the entryway into the higher education system. High schools throughout the country have explored alternative methods in which to divide the students' time and curriculum. This section provides a review of literature that examines the history of the high school schedule, the common variations to the high school schedule, research regarding academic achievement and student behavior as it relates to high school scheduling.

Review of the Extant Scholarship

A History of Scheduling

While public education and the high school schedule have changed dramatically over the last century, some common threads exist. One example, the Carnegie Unit, "also known as the credit hour, became the basic unit of measurement both for determining students' readiness for college and their progress through an acceptable program of study" (Silva, White, & Toch, 2015, p. 3). Silva, White, and Toch (2015) explained how, over time, the Carnegie Unit gradually became the foundation of American education, serving as the basis for everything from daily school schedules to graduation requirements, faculty workloads, and eligibility for federal financial aid. "Today, the Carnegie Unit is under intensifying critique from educators and

education policymakers who want to make student performance more transparent and the delivery of education more flexible" (Silva, White, & Toch, 2015, p. 3). Educators seeking change to high school students' day see the Carnegie Unit as a significant impediment to the reform. The educational reformers seek and advocate for innovations that support transparency and flexibility, including competency-based education models to replace the inflexible Carnegie Unit.

The Carnegie Unit found its origins at the turn of the century when Andrew Carnegie, considered the wealthiest person in the world, established a foundation and provided ten million dollars to begin a pension program for college professors (Silva, White, & Toch, 2015). While in modern context it may seem a straightforward task, colleges of the day were largely ill defined; Silva, White, and Toch (2015) cite, "many colleges demanded little more than elementary levels of geography, arithmetic, grammar, reading, and spelling of their applicants" (p. 3). Due to these inconsistencies in American high school education, a standard was created, and colleges interested in taking advantage of the pension program were required to meet a higher standard for admittance. Questions arose regarding what one needs to complete at the high school level for preparation. The Carnegie Foundation, General Education Board, and the State of New York's Regents Board collaborated to set criteria and define college as well as set requirements at the high school level and determined "admission not less than the usual four years of academic or high school preparation, in addition to the pre-academic or grammar school studies" (Raubinger, Rowe, Piper, & West, 1969, p. 81), be in place, as well as a completion of blocks of time referred to as "counts" (Silva, White, & Toch, 2015). Furthermore, college admittance would not be considered unless a student had accomplished 120 sixty-minute hours in all major subjects (Shedd, 2003). This block of time became known as the "Carnegie Unit"

and quickly grew to be widely accepted in 1909 (Shedd, 2003). Kreplin (1971) stated, "in the counting the fundamental criterion was the amount of time spent on a subject, not the results attained" (p.2). Shedd (2003) expounded that, due to the desire of colleges to qualify for the pension plan, many adhered to these requirements and by 1910, almost all high schools measured student course work in accordance with the Carnegie unit.

The Carnegie unit was not accepted without reservation. Gerhard (1955) sited prominent leaders of the day argued the credit system made the university into a banking system. A century later, many argued, while the Carnegie unit set the foundation of minimal requirements and a system of academic bookkeeping, their empirical validity as predictors of student learning has not been demonstrated (Harris, 2002). Not only has the unit fallen short as a predictor of student learning, but critics also say it is a barrier to more flexible forms of academic programs that award credits based upon learning achievements rather than time in class (Silva, White, & Toch, 2015). While the unit falls under scrutiny, it remains the determining factor on how federal financial aid is distributed regarding student performance and attendance (Fain, 2015). Despite the criticism, the Carnegie Foundation for the Advancement of Teaching responded that, "the Carnegie Unit's time-based standard certainly had a substantial impact on the design and delivery of American education, educational institutions—especially in higher education—already have considerable flexibility in the format and delivery of instruction" (Silva, White, & Toch, 2015, p. 6).

While the Carnegie unit heavily influenced the use of time in schools, other factors have played a role in the generally accepted school year and school day in the United States. Rakoff (1999) explained how compulsory school attendance laws, first introduced in Massachusetts in 1852, set the stage for states to determine a minimum number of days a child must attend in a

year and the length of a school day. While the number of days and hours a child must attend school varied among states as they gradually introduced the same legislation, most states adopted and maintained a standard six-hour school day and 180-day year in the United States (National Education Commission on Time and Learning, 1994). Rakoff (1991) pointed out the "school clock mirrors the time displayed by other clocks in our society" (p.5), suggesting schoolchildren go to work Monday through Friday, simulating a workweek. Regardless of a person's viewpoint on the public school's calendar year or day, the time in which a student attends school now drives many aspects of our society. It has become embedded into the fabric of America, as over 55 million elementary and secondary aged students attend public schools (National Center for Educational Statistics, 2016).

Ultimately, the Carnegie Unit, at the K-12 level of education, translates into a 180-day school year with an approximate six to seven hour school day. After the 1910 consensus to adopt the use of the Carnegie unit, promotion of four years of high school soon became generally accepted. To complete the required units, it was determined a student must take a total of 120 hours in each subject translating to 40 to 60 minute classes four to five days a week for approximately 180 school days (Tyack & Cuban, 1995). It was at that time in public education, the traditional schedule originated. Gargis (2013) defined traditional scheduling as a "six, seven, or eight periods that meet approximately 50 minutes per day on average throughout the entire school year. Students have five to seven different teachers and textbooks" (p.13). While the origins of this schedule are traced back to the formalization of public education in 1910, many schools still practice this schedule today. According to a study from the University of Michigan, the most commonly used schedule in high schools today is the traditional schedule (Underwood, 2014). Table 8 provides a visual example of a student schedule in the traditional seven period

day. The traditional schedule is also common in six and eight day format as well. Table 8 provides a basic framework of the daily schedule.

Table 8

Traditional seven-period model

Period	Monday	Tuesday	Wednesday	Thursday	Friday
1	History	History	History	History	History
2	English	English	English	English	English
3	Phys. Ed	Phys. Ed	Phys. Ed	Phys. Ed	Phys. Ed
4	French	French	French	French	French
5	Science	Science	Science	Science	Science
6	Math	Math	Math	Math	Math
7	Band	Band	Band	Band	Band

(Williams, 2011, p. 15)

Traditional scheduling remained the exclusive form of high school scheduling practice until J. Lloyd Trump developed an alternative schedule in 1959 called flexible modular scheduling (Canady & Rettig, 1995). Canady and Rettig (1995) explained, "Trump's Plan, as it came to be known, sought to eliminate the rigid class schedule of the traditional high school and replace it with instructional session of varying length (p.14). The Trump Plan called for flexible scheduling approaches to be taken, putting the needs of the student and the teacher first when arranging time (Reames & Bradshaw, 2009). In a FMS, classes could range anywhere from 20 minutes to 140 minutes depending upon need and students are given up to 40% of the school day for independent study or resource time (Gargis, 2013). This resource time can be used as a time

for students to seek out assistance from teachers during the school day or work on homework or projects. Canady and Rettig (1995) shared a biology example in which students might meet for two 40-minute lectures, one 100-minute lab, and one 20-minute help session over the course of five instructional days. Table 9 illustrates a FMS model in which five instructional days are divided into 21 20-minute modules (mods). The five instructional days rotate and may not align with the traditional Monday – Friday approach. A student schedule is unique for five consecutive days when following the flexible modular model.

Table 9

Flexible modular scheduling model

Mods	A Day	B Day	C Day	D Day	E Day
Mod 1	English	History	English	History	History
Mod 2	English	History	English	History	History
Mod 3	English	Resource	English	Resource	Science
Mod 4	Resource	French	Resource	English	Science
Mod 5	Band	French	Band	English	English
Mod 6	Band	French	Band	English	English
Mod 7	Math	Resource	Math	Science	Phys. Ed
Mod 8	Math	Resource	Math	Science	Phys. Ed
Mod 9	Math	Resource	Math	Science	Phys. Ed
Mod 10	Resource	Phys. Ed	Resource	Phys. Ed	French
Mod 11	Resource	Phys. Ed	Resource	Phys. Ed	French
Mod 12	Resource	Phys. Ed	Resource	Phys. Ed	Resource
Mod 13	Science	Math	Resource	Resource	Resource
Mod 14	Science	Math	French	Math	Math
Mod 15	Science	Math	French	Math	Math
Mod 16	French	Band	History	Band	Resource
Mod 17	French	Band	History	Band	Resource
Mod 18	Resource	Resource	Resource	French	Band
Mod 19	History	Science	Resource	French	Band
Mod 20	History	Science	Resource	Resource	Band
Mod 21	History	Science	Resource	Resource	Resource

Pulaski Flex Mod Schedule (n.d.)

Rettig (1995) reported an estimated 15 percent of American high schools began utilizing the FMS during the late 1960's and early 1970's, and, while it was receiving positive reviews

and was preferred over the traditional schedule by students and teachers, parents and community members were less supportive. Nevertheless, schools were being built to accommodate the unique design of this model (Pedersen, 2001). While the FMS allowed for individualization of learning, often these schedules provided students with growing amounts of independent student time. This time was perceived to be in a direct relation to growing school discipline issues, and, when coupled with a lack of conclusive evidence that academic performance improved under the FMS in comparison to traditional scheduling, most high schools returned to the traditional scheduling model (Canady & Rettig, 1995). Goldman (1983) stated some form of flexible, adapted scheduling is a sophistication that should not be overlooked; the lesson to be learned from the flexible modular scheduling experience is that such flexibility must be real, must produce significantly better results than any system it replaces, and must not cause more problems than it solves (Goldman, 1983). As Goldman predicted, flexible modular scheduling soon faded throughout the 1970's, and by 1981, only three percent of American high schools still followed the FMS model (Pedersen, 2001).

In 1983, The National Commission on Excellence in Education released *A Nation at Risk: The Imperative for Education Reform*. This report detailed the international ranking of the American educational system and student achievement with other major countries around the world. Conclusions drawn from this report indicated American high schools were in need of higher standards for students to reach to levels of foreign counterparts (Gargis, 2013). Joseph Carroll, former Massachusetts school superintendent, stated after the release of the national report of public schools, *A Nation at Risk*, "Never in my memory have public school systems been so severely criticized" (Gargis, 2013, p. 18). This report caused many shifts in the American educational system and once again the allocation of time used to instruct students was

challenged (Gargis, 2013). Joseph Carroll, motivated by the harsh governmental criticism, worked to challenge the existing traditional schedule and became widely recognized as the founder of the modern block-scheduling model (Pedersen, 2001). Carroll (1990) called his plan the "Copernican Plan," naming it after Nicolas Copernicus who theorized that the sun, not the earth was the center of the universe. This simple change in perspective was thought to be incorrect and dangerous to accept at the time. Carroll (1990) intended for the Copernicus Plan to provide an alternative perspective to challenge the educational authorities of the day and to free the American education system from the bonds of a century old structure. Though Carroll insisted his plan was not about block scheduling, but rather the relationship between time and learning, the modern block schedule became known as a major product of his work (Pedersen, 2001). Although not an entirely new scheduling phenomenon, as American high schools began to experiment with block scheduling in the 1960's, Carroll's efforts propelled the block schedule into a prominent model of scheduling in the late 1980's (Pedersen, 2001).

From Carroll's (1990) Copernicus Plan evolved several variations of the block schedule. Canady and Rettig (1995) defined block scheduling as having at least part of the daily schedule organized into larger blocks of time (more than 60 minutes) to allow for flexibility and varied instructional activities. The variations included, but were not limited to, the 4x4 block schedule, an alternating block A day/B day schedule, and a modified block schedule, described as a block schedule one day and traditional schedule the next day (Pedersen, 2001). Gargis (2013) reported that in 2008 over 52 different versions of the block schedule were being implemented among American high schools, with the two most common forms of block scheduling being the 4x4-block schedule and the alternating block A day/B day schedule. The 4x4-block schedule divides the year into two semesters, with the school day sectioned into four blocks that are

approximately 90 minutes in length (Williams, 2011). Students attend four classes each day for a semester and then four different classes the following semester, equating to eight total courses per year. Similarly, the alternating block A day/B day schedule is also sectioned into four blocks approximately 90 minutes in length, but students attend eight courses over two consecutive days ("A day" and "B day") alternating throughout the year (Underwood, 2014). Below, Tables 10 and 11 illustrate the 4x4-block schedule and the alternating block schedule.

Table 10

4x4 block schedule model

	Semester	
Block	Fall	Spring
1	Math	Science
2	History	French
3	Band	Band
4	Phys. Ed	English

(Williams, 2011, p. 15)

Table 11

Alternating block schedule (A day/B day)

Block	A day	B day	A day	B day
1	History	French	History	French
2	English	Phys. Ed	English	Phys. Ed
3	Band	Science	Band	Science
4	Math	Band	Math	Band

School reform continued throughout the 1990's as The National Council for Time and Learning released their report titled, *Prisoners of Time* (1994). This report detailed the effects of the Carnegie Unit by breaking it down into five assumptions about learning: (a) all students arrive at school prepared to learn, (b) academic time can be used for nonacademic purposes with no effect on learning, (c) the notion that if the scheduling approach was good enough in my day it is good enough to use today, (d) school transformation can be attained without giving teachers the time they need to retool themselves and reorganize their work, and (e) is it reasonable to expect world class academic performance from our students within a time-bound system that is already failing them (National commission for time and learning, 1994, pp. 6-7). These five assumptions coupled with the desire of schools to carry out student centered learning, propelled many school systems across America to review block scheduling and excelled its spread throughout the 1990's (Scroggins, 1995). Wronkovich (1998) concluded that the block-scheduling movement had the potential to become a real reform and is more than any other educational fad.

While reconfiguring the daily schedule of high schools had been a major focus to enact academic change, Farbman and Kaplan (2005) examined Massachusetts schools, which modified their school day and year. Farbman and Kaplan (2005) reported Massachusetts also provided extended-time schools and argued that more learning time in school is common sense, as more time equals more learning. Their research shows by extending the school day and year, teachers and students spend more time on task, can go deeper to reinforce learning, provide teachers greater opportunity for professional development and experiential learning experiences, and finally allow for stronger adult-child relationships (Farbman and Kaplan, 2005). Therefore, while school schedules are not the only factor to consider when analyzing student achievement,

it can have a tremendous impact on the instructional environment of a school (Canady & Rettig, 1995). Canady and Rettig (1995) provided three reasons why it is important to focus on scheduling: a) ensures effective utilization of resources, b) solve problems related to the delivery of instruction, and c) facilitates the institutionalization of desired programs and instructional practices. Considering these factors, one must not rule out the impact of the school schedule on student achievement.

Academic Achievement: Shifting from Traditional to Block Scheduling

The most prominent data used to measure academic achievement was the use of standardized testing data. Pedersen (2001) explained how standardized tests are good to disaggregate data to identify gaps in student achievement and curriculum. In addition, these tests serve well to identify specific demographic groups, ensuring all students, regardless of their gender, race, socio-economic status, or ability group, are learning the curriculum. When reviewing student achievement through the lens of standardized testing, Pedersen (2001) found studies comparing traditional scheduling and block scheduling for high schools have yielded mixed results. Further research indicates the majority of studies analyzed academic impacts of school schedules concerning the shift from the traditional schedule to a form of the block schedule (Pedersen, 2001). The majority of this research took place in the 1990's as many schools across the United States began experimenting with alternative scheduling approaches and the insurgence of the block schedule as it was viewed as the first sustainable challenge to the traditional Carnegie-based schedule of the 1900's (Reames & Brandshaw, 2009). It was during this time that school leaders began to make changes to class schedules in hopes of academic progress.

Veal and Schreiber's (1999) assessment focused on nationally normed standardized tests as their basis for academic achievement. They found non-significant results when assessing nationally standardized achievement scores such as the SAT (Scholastic Achievement Test) and AP (Advanced Placement) related to schools that shifted to the block approach (Veal & Schreiber, 1999). In a similar comparison between a school that implemented block scheduling, the Preliminary Scholastic Aptitude Test (PTSA) showed nothing of statistical significance, but verbal SAT results showed increases and math SAT results showed a decrease in academic performance (Evans, Tokarczyk, & Rice, 2002).

Pisapia and Westfall (1997) examined the shift that Virginia high schools made from the traditional schedule to a block schedule structure. Their mixed methods approach aimed to assess academic gains based upon their analysis of student grade point average (GPA), Scholastic Achievement Test (SAT) scores, Advanced Placement (AP) results, and the Test for Achievement and Performance (TAP), which is a standardized assessment similar to the Iowa Test of Basic Skills (Pisapia & Westfall, 1997). When comparing these school's pre-block and post-block scheduling academic data, it was found that overall student GPA's increased (Pisapia & Westfall, 1997). The quantitative findings also indicated positive increases in student grades when moving from the traditional to the block schedule (Pisapia & Westfall, 1997). Regarding the schools' SAT scores, 85% increased on the verbal portion of the SAT over a four year span, but only 25% showed an increase in math scores on the SAT over the same 4-year span (Pisapia & Westfall, 1997). They found AP scores declined, and, while the TAP showed increases in 38% after year one, only 25% maintained this increase for the full duration of the four year study (Pisapia & Westfall, 1997).

In a similar study, Lewis, Dugan, Winokur, and Cobb (2005) examined four Colorado high schools who went through a similar transition as schools in Pisapia and Westfall's (1997) investigation underwent. Lewis et al. (2005) assessed the shift from a traditional to block schedule in high schools using a quantitative design looking for statistical significance when comparing student standardized test data before and after the change. Lewis et al. (2005) concluded, while math scores increase after moving to the block schedule, no statistical significance was found regarding these gains. On the other hand, Lewis et al. (2005) did find statistical significance in student reading gains when a school changed from a traditional schedule to a block schedule format. Again, while no statistical significance was identified with the math data sets, Lewis et al. (2005) did determine schools that followed a form of block scheduling out performed traditional schedule schools on state and national standardized tests.

Not all research supports the block schedule. Thomas (1999) found students in block schedule schools in New York had lower passing rates on state exams than did students in traditionally schedule schools. Skrobarcek, Chang, Thompson, Johnson, Atteberry, Westbrook, and Manus (1997) reported students taking Algebra I in the block schedule consistently had higher failure rates than those of traditional schedules. Thomas (2001) argued while much of the response to the *Prisoner of Time* report heralds block scheduling as the key to escape this prison, changing the schedule merely changes the kind of prison. Thomas (2001) illustrates this point by stating, "block schedules may give students more freedom within a day for discussion of ideas and concepts, but less time over the course of the year to develop and internalize concepts as part of a larger whole" (p. 75).

Veal and Schreiber (1999) concluded no schedule is significantly better than another for student achievement regarding reading and language on the Indiana assessment (ISTEP+) scores

and the schedule did not positively or negatively influence student scores. These findings align with the results of other similar research projects that analyzed and assessed block scheduling and state standardized testing achievement, including Cobb, Abate, and Baker (1999) and Holmberg (1996). Meanwhile several researchers such as Veal and Schreiber (1999), Cobb et al. (1999), and Smith and Camara (1998) who represent College Board AP Testing all found that high school students' scores on AP test were significantly higher than those on a traditional schedule as opposed to the block schedule. However, Pisapia and Westfall's (1997) findings are contrary to the findings previously mentioned and Williams (2011) concluded that despite researching regions across the United States, "the research and literature regarding student achievement and various scheduling models present a mixed bag of results" (p. 21).

Advantages and Disadvantages of Block Scheduling

An abundance of advantages and disadvantages were found for educational leaders to consider when making the shift from a traditional schedule to an alternative schedule. Some advantages to the block schedule include involving laboratory or hands-on components, which allow for more time for immersion and in-depth study using the block schedule as it can result in higher quality instruction (Queen, 2000). Queen (2000) also noted the amount of time students spend transitioning from class-to-class on the traditional schedule as compared to a reduced amount of time on the block schedule; in-turn, this saved time allowed for a re-investment of these minutes to be devoted to instruction. Skrobarcek at el. (1997) reported that the block schedule provided for more individualized attention from teachers. Queen and Isenhour (1998) in their book, *The 4 x 4 Block Schedule*, give 10 advantages to the block schedule over the traditional schedule: a) lengthened classes reduce instructional time spent on classroom administration, b) lessons can be extended and maintained with greater continuity, c) discipline

improves in direct response to the reduced number of class changes, d) a less fragmented schedule allows students to focus on fewer courses at one time, e) teacher benefit from additional planning time, f) when absent, student have fewer courses in which to make up work, g) student who need remedial assistance or who fail a course during the first semester have the opportunity to repeat the course during the second semester, h) advanced students have the opportunity for acceleration and enrichment, i) most schools using block scheduling are able to offer a wider variety of elective courses, and; j) additional class time enables teachers to engage students in interactive learning.

Thayer and Shortt (1999) reported disadvantages to the block schedule, such as content information lost as time between sequential courses could be a semester in length. This impact was most identified by foreign language teachers, as Rettig and Canady (1995) explain how performing arts programs saw limiting a class to one semester significantly hurt the quality of performance. The solution was to sign-up for the class all year when a 4 x 4 block schedule was employed, but this, in turn, limited the students' ability to experience other extracurricular or related arts classes. Students' absences posed a major concern when employing the block scheduling approach as well. Queen (2000) reported missing one day of class on a block schedule is equivalent to missing several days of class on a traditional schedule; hence, a school is forced to take a stance on creating policies that allow for students to make-up missing work. While block scheduling had become a popular method to implement student classes, matching schedules and assigning credits is extremely difficult, and students may not be able to complete courses as planned, especially when a student transfers (Thayer & Shortt, 1999). Finally, regarding teachers' ability to implement coursework, Hackman and Waters (1998) shared from their transition to the longer teaching blocks, teachers require extensive professional

development in varied instructional approaches, finding differentiation of instruction is needed instead of relying heavily upon lecture.

Successful transitions entail preservice planning and training. Thomas (2001) indicated there are three key pieces to the block schedule that are often overlooked: a) appropriate subject material, b) appropriate teaching styles, and c) appropriate level of cognitive development. Thomas (2001) continued to explain how some subjects benefit from longer blocks, while others suffer. Thomas (2001) also pointed out that administrators must know their staff and identify if the teachers are ready or able to employ alternative methods of instruction. Finally, Thomas (2001) explained that not all students' cognitive development benefits from longer blocks. Mature students tend to do better in these settings, while under maturated students do not find the same success, and instead, they actually do worse. Thomas (2001) summarizes his finding in stating, "Block scheduling is neither the savior of education nor the great threat to education that opponents have made it to be" (p. 77). Instead, it is another tool that, when used properly and discriminately, can assist educators in individualizing programs to ensure success for all students (Thomas, 2001).

Advantages and Disadvantages of Traditional Scheduling

Moving from a traditional schedule to a block schedule poses challenges for teachers. Shortt and Thayer (1997) indicated that teachers rarely cover as much material in their first year of the block schedule as they were previously able to cover using the traditional approach. This issue alone caused many schools to revert to the traditional model as students and teachers felt students were not as prepared for end of course assessments due to the lessened content coverage (Shortt & Thayer, 1997). Honeycutt's (2009) research found schools who transitioned from a traditional to block schedule did not show academic achievement due to the over reliance of

teachers on direct instructional methods, such as lecture. They found teachers felt the need to teach twice as much content in a block setting and tend to "over-rely on lecture" to teach students (Honeycutt, 2009, p.26). Hackman, Walton, and Goodman (1986), while a proponent of block scheduling, agreed that a disadvantage of block schedules is due to a teachers' lack of diverse teaching methods as teachers continue to relying upon direct instruction as the only means to teach the curriculum. Hackman, Walton, and Goodman (1986) continued his assessment of schools who attempted to make the transition from traditional to block schedules citing the failure to emphasize pedagogy. Rikard and Banville (2005) found, due to these teaching methods, the block scheduling approach was less desirable to students due to boredom. Underwood (2014) concluded the impacts of block scheduling on student achievement were mixed, but the impact block scheduling had on school culture is more defined.

Student teacher relationships have long been an argument for block schedule pointing to the fact that on a 4 x 4 block schedule teachers see half the number of students over the course of a semester (Canady & Rettig, 1995). These lower student-teacher ratios are believed to provide greater opportunity for students and teachers to have informal interactions (Canady & Rettig, 1995). Similarly, students have a harder time connecting to their teachers when they may have six to eight teachers on a traditional schedule daily versus four to five teachers daily on a block schedule (Canady & Rettig, 1995).

Cushman (1989) emphasized traditional schedules do not provide the setting for which students are prepared to think critically. Instead, the traditional schedule emphasizes the punctuality, obedience to authority, and tolerance of repetition. Edwards (1991) argued that students' ability to learn and think at deeper levels were neither taught nor expected before, but, as times change, so must our structures and practices.

Academic Achievement: Flexible Modular Scheduling

The body of research assessing the FMS is limited to the analysis of the apex of this approach to organize schools in the 1960's and 1970's. Early literature seems to support that the FMS, while late 1970's and Goldman's (1983) findings provided little support of this approach. The majority of findings indicate an insignificant change in student achievement (Albers, 1973; Van Mondfrans, 1972). Canady and Rettig (1995) reported that students who follow the FMS performed poorly or the same as students from traditional schools. Some argue the schedule shows better results once students learn the radically different approach to school, stating it is not uncommon for freshmen or transfer students who are first introduced to the FMS to show a drop in grades (Dunlop & Hintergardt, 1967). Goldman's (1983) robust research found students in 15 schools showed no statistically significant difference between achievement before or after the implementation of the FMS. His research did find that, while 13 schools did improve, only four schools' improvements were statistically significant (Goldman, 1983). Goldman's (1983) study additionally reported dropout rates among students of traditional scheduled high schools were similar to that of FMS high schools. Much of the positive data regarding the FMS dates back to the early 1960's, which directly correlates to the height of FMS reaching 15% of United States public schools in the 1960's and 1970's (Goldman, 1983). This percentage had dwindled to a mere two to three percent by the time of Goldman's (1983) research. No other academic research was found assessing the link between student academic achievement and the FMS.

Advantages and Disadvantages of Flexible Modular Scheduling

From start to finish, the implementation of the FMS is a heavy burden for high schools to make due to the overwhelmingly different scheduling structure. J. Lloyd Trump (1968), often credited with the creation of the FMS, even calls this a "big step" for principals and teachers who

adopt the schedule. While a traditional high school schedule can be challenging to develop, design, and assign, the FMS is even more so. Often due to the various time modules, needed courses can overlap, creating conflicts in the student day (Dunlop & Hintergardt, 1967). Despite the added complexity, Trump (1968) stated the schedule allowed classes to range in size from 100 to 10 or less. Math classes can meet for shorter times daily, while a science lab can meet weekly or bi-weekly for longer periods of time (Shockloss, 1973). The FMS does not insist classes be given daily for a 50-minute time slot, but can meet only as much as needed throughout the course of the week (Trump, 1968). While many praise the flexibility allowed within the school day, Dunlop and Hintergardt (1967) found this complexity very time consuming on the school counselors in particular, as they are often in charge of developing and assigning student schedules. Another practical implementation of the FMS schedule is found in the keeping of accurate attendance records. While state and federal monies are tied to these records, schools found it challenging to maintain accurate attendance using the FMS (Goldman, 1983). Ultimately, one must weigh the goal of FMS and what it can attain for students and teachers; the goal necessarily is to return to teachers and students as much freedom as is reasonable in the use of time, space, numbers, and content for instruction (Trump, 1968).

Goldman (1983) pointed out that the FMS permits a more diversified student schedule and more course offerings to students over the course of their high school career. This process allows graduating students to acquire more credits than a student whose school follows the traditional or block schedule. Due to the high number of modules or periods throughout the day with the FMS, students often find they are scheduled open time slots to work with teachers and/or homework. This independent time is a major benefit for the FMS (Popenfus, Paradise, & Wagner, 1978). Not only does the availability of time provide time in the school day for a

student to seek out assistance, but it also teaching students to use unstructured time wisely. Popenfus et al., (1978) found students and staff believe they did use this time wisely, but Goldman (1983) expressed this view was overstated and the use of independent time was not used wisely. Goldman (1983) also found teachers often over-represented the amount of student contact time, but that relationships between students and teachers improved when using the FMS. Cavanagh (1971) found students did not display the maturity needed to utilize the independent study time the schedule allowed. Goldman (1983) also cited an increase in minor discipline as student modules could be as short as ten minutes and students were constantly in the hallways. Finally, Dieterich (1971) identified the need for more student accountability regarding attendance and poor use of independent time as a reason for the FMS failure, ultimately causing many students to revert to the traditional schedule.

Due to this lack of accountability, schools still interested in the FMS found a way to maintain the flexibility, but it depended less upon the responsibility of the students. The Remediation-Enrichment-Optional (REO) flexible modular schedule was adapted to replace the independent time of students with assigned remediation or enrichment classes students would be assigned in what were previously open modules (DeLucia, 1977). The REO and the traditional FMS are different in that teachers are responsible for providing instruction or assistance to students during what were open modules, but now REO time (DeLucia, 1977). This adaptation of the FMS does remove much of the freedom previously highlighted as a strength, but also removes much of the contenders of the FMS claim as a downfall. DeLucia (1977), a principal who incorporated this schedule, found that they were allowed many of the open modules to return to student choice instead of remediation or enrichment if the student was deemed responsible and chose to use his/her time wisely.

Cavanagh (1971) found inadequate resources regarding facilities became an issue, as the spaces needed to sustain the schedule are uniquely different from that of a traditional school setting. Goldman (1983) suggested the FMS had a high cost of implementation and maintenance. Goldman (1983) also reported facilities had to be built or retrofitted to accommodate the unique needs the FMS places on a school building. These physical resources play a role in the decision school leaders must consider when considering the FMS in their schools.

Like the block schedule movement of the 1990's, the FMS requires teachers to alter instructional approaches and design for differing lengths of time. Although Shockloss (1973) cites the FMS's ability to meet the need to individualize instruction by allowing students to make decision pertaining their education, ultimately teacher practices regarding instruction must change as well. While some school districts who implemented the FMS succeeded in creating a flexible schedule, many failed in their flexibility with pedagogy (Goldman, 1983).

Student Behavior and Scheduling

Wolk (2002) defined classroom management as the "teacher's classroom structure, implicit and explicit rules and expectations, and their philosophy to teaching and learning" (p. 3). Student behavior is also categorized as school climate. When reviewing overall discipline, Canady and Rettig (1995) reported that traditional schedules can lead to more discipline problems and emphasized a reduction in these problems when schools implement a block schedule. Deuel's (1999) work summarized much of the findings regarding discipline rates between traditional and block scheduling formats in that no significant difference between suspensions reported. Balsimo's (2005) nine-year analysis found discipline did indeed decrease in the schools after the transition to the block, but not enough to show any statistical significance.

Griffin and Nicholson's (2002) study of two Mississippi high schools found after moving from a traditional to block schedule that the number of in-school suspensions decreased (minor disciplinary infractions), but out-of-school suspensions increased. Dow and George's (1998) research, however, showed significant differences when going from traditional to block scheduling, with a 63% reduction in discipline referrals. Khazzaka (1997) found schools that implemented the block schedule in place of the traditional schedule showed a 4% decrease in truancy, 45.5% decrease in reports of violence, and a 57% decrease in office referrals. Nevertheless, in this study, reports of tardiness did increase by 17% (Khazzaka, 1998). Deuel (1999) reported a decrease in student discipline and hall infractions with the implementation of the block schedule. Yet Veal (1999) and Liu and Dye (1998) spotlighted an increase in overall discipline after moving to the block schedule. Liu and Dye (1998) connected the increase in discipline with a sense of fatigue from students due to longer classes.

When considering Liu and Dye's (1998) thoughts regarding student fatigue, Ratcliff, Pritchard, Knight, Costner, Jones, and Hunt (2014) found no significant differences between block and traditional schedule in inappropriate behavior, although they did find that, at, the 36-minute mark, students became more likely to rebel with both schedule types. It was also found that, 72 minutes into a classroom lesson, student rebellion again increased with the block schedule (Ratcliff et al., 2014). Ratcliff et al. (2014) added this loss of 18 minutes of instructional time daily equaled the loss, on an average, of one instructional day each five-day week.

Furthermore, Canady and Rettig (1995) reported it is due to the high frequency of class transitions on a daily basis when following a traditional schedule that may lead to discipline problems. One study indicated an increase in discipline issues as much as 20%, and 57% in

another study due to factors found in traditional scheduling (Marquez, 2016). McCoy and Taylor (2000) examined 21 high schools after transitioning from a traditional to a semester block schedule and found teachers perceived student academic performance and discipline improved. Schedules did not affect the number of major discipline infractions such as violations for weapons or drugs, but the overall number of referrals and suspensions reduced at each of the 12 schools they assessed (Pisapia & Westfall, 1997). Finally, in a qualitative study, Stader and DeSpain (1999) found that both administrators and teachers perceived attendance improved and that teacher/student relationships improved. They also found that hall disruptions and disciplinary problems decreased after transitioning from traditional to block scheduling (Stader and DeSpain, 1999). Stader and DeSpain (1999) accredited much of this to the lower level of stress the block schedule places on students and teachers.

When assessing attendance rates, the research indicated slight increases, but little significance (Balsimo, 2005). Balsimo (2005) reported an increase in attendance from 91.1% to 93.1% after the schools moved from a traditional to a block schedule. Khazzaka (1998) also found attendance improved 13.5% after the schedule transition. Griffin and Nicholson (2002) saw increases, but nothing significant. Geismar and Pullease (1996) saw an increase in student and teacher attendance and concluded this attendance increase was due to the amount of work and time missed on the block schedule and their desire to avoid large amounts of make-up work.

Summary

In conclusion, high school scheduling has seen many changes over the last 150 years. From the institution of the Carnegie Unit and traditional schedule, to the attempts of many to replace this repetitive system with the FMS and block schedules. Many extensive research projects were identified comparing traditional and block schedules in American educational

systems. The bulk of the research regarding high school schedules revolved around drawing comparisons between the block and traditional schedules; while some find the block schedule superior to the traditional, and others finding the contrary. These comparisons stretch from academic to behavioral, ultimately resulting in a "mixed bag of results" (Pisapia & Westfall, p. 21). While many have compared the traditional and block schedules' effect on academic and behavioral variables to determine best practice for high schools to organize time, few have examined the effect of the FMS. While limited literature was found regarding the FMS and its effect on academic and behavioral performance of students. This study aimed to fill the gap in the scholarly field and provide sound research regarding the FMS.

CHAPTER FOUR

CONTRIBUTION TO PRACTICE

Introduction

For the contribution to practice, a presentation was created for the Monett Board of Education. This presentation includes an overview of the study, but it focus mainly upon the findings, discussion, and conclusions of the study. The Monett Board of Education is comprised of seven members who function to set student-focused policy and provide supportive leadership. These members are committed to the district vision: The purpose of Monett R-1 District is to prepare students for their future. The most tenured member and president of the board has served since 2011. The vice president of the board, the second most tenured member, has served since 2012 and is the only other member of the board who served at the time of the implementation of the flexible modular schedule at Monett High School. Two of the remaining five members joined the board of education in 2016, two others became a part of the board in 2017, and one was voted to the board of education in 2018. Each member of the board was appointed to ensure the district remains "student focused and future driven" as measured by the Monett R-I Profile of a Graduate (Appendix C).

Executive Summary

The American public school's calendar has a major impact on the lives of its citizens. Rakoff (1999) stated, the "school clock mirrors the time displayed by other clocks in our society" (p. 5). Over the last 100 years, the schedule has become a part of the fabric of America (National Center for Educational Statistics, 2016). Something with such impact on so many is worthy of scrutiny. As stated by the National Education Commission (1994), "the problem with our schools is not that they are not what they used to be, but that they are what they used to be" (p. 21). Societal demands on students continue to change, and with these changes, educators are forced to ask themselves the question, are we doing all we can to prepare our students for their futures in society? Students today are faced with a future of employment in a global economy and the growing importance of knowledge-based work skills such as abstract reasoning, problem solving, communication and collaboration skills (Education Commission of the States, 2005). In 2013, Monett R-I School District leadership began to seek ways in which they could respond to these demands, specifically through the arrangement of the high school schedule. It is the purpose of this case study to examine the academic achievement and student behavior of the flexible modular schedule as well as its impact on student development at Monett High School since its implementation in the 2014-2015 school year.

Research Questions:

- To what extent, if any, has the flexible modular schedule impacted the achievement scores of high school students?
- To what extent, if any, has the flexible modular schedule impacted the suspension rates of high school students?
- What impact does the flexible modular schedule have on student development?

Design of Study

- A mixed methods (quantitative and qualitative) research approach was used to conduct a case study.
- To measure academic achievement, an analysis of Missouri Assessment Program (MAP) End of Course Examination (EOC) data were analyzed comparing traditional scheduling students groups to flexible modular schedule student groups.
- One method used to measure student behavior, suspension counts (in-school suspension and out-of-school suspension) were analyzed comparing traditional scheduling students groups to flexible modular schedule student groups.
- To measure student development and student behavior, nine faculty members of Monett High School were interviewed. These participants included six teachers, two administrators, and one counselor at Monett High School. These interviews were conducted in October of 2018.

Findings

- When measuring academic achievement, there were no statistically significant differences in academic achievement between the traditional and flexible modular schedule.
- When measuring student behavior from a quantitative perspective using student suspension counts, nothing of statistical significance was found regarding out-of-school suspension data, in-school suspension counts were significantly higher after the implementation of the flexible modular schedule.
- When interviewing teachers, three themes emerged: inconsistent stakeholder buy-in, student access: opportunities and challenges, and student. These three themes provided

insight into the increase of in-school suspensions and developmental effect of the flexible modular schedule.

Conclusions

- Based upon the data, it is the recommendation of this study that Monett High School continue the use of the flexible modular schedule. Due to the lack of student development and increased behavioral issues in ninth-grade students, it is the recommendation of this study that a freshman academy model be employed to provide students the needed assimilation and accommodation allowing for a successful transition to the flexible modular schedule and high school.

Complete Report

For a copy of this research study, please contact Robert Kroll at rkroll@spsmail.org. This report is a result of a dissertation written by Robert Kroll. The following individuals served on the dissertation committee: Dr. James Sottile, Dr. Cynthia MacGregor, Dr. Kim Finch, Dr. Tracey Glaessgen, and Dr. Ximena Uribe-Zarain.

Presentation to the Monett Board of Education

The Effect of the Flexible Modular Schedule On Student Academic Achievement, Behavioral Achievement, and Student Development

Rob Kroll

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Background

It is the role of educational leaders to assess the advantages and disadvantages of the systems within our schools, and search for ways to provide flexibility and customization needed to ensure student success in today's world (Horn & Staker, 2014).

Three most prominent high school schedules:

- Traditional
- Block
- Flexible Modular Schedule

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Flexible Modular Scheduling

- Flexible Modular Schedule
  - At Monett High School this schedule:
    - Consists of 17 periods called “mods”
    - Each period is 25 minutes long
    - 5 Day Rotation (A - E Day)
    - Allows for course length and frequency to vary and adapt to the need of the curriculum
    - Students are provided open mods for intervention and student work time

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Statement of the Problem

In 1994, the National Education Commission on Time and Learning released their findings charging schools to reinvent around learning and not time (Canady & Rettig, 1995).

So how should schools reinvent the school day around learning?

Prior to and after this report was released researchers (Carroll, 1990; Canady & Rettig, 1995; Gargis, 2013) drew many comparisons between the traditional and block schedules.

Research regarding the flexible modular schedule is limited (Goldman, 1983).

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Gap in Literature

- Scholarly and practitioner comparisons between the traditional and block schedule abound.
  - Carroll, 1990
  - Canady & Rettig, 1995
  - Gargis, 2013
  - Pisapa, Westfall, & Lynn, 1997

  A gap in literature exists regarding the effect the flexible modular schedule has on student academic and behavioral achievement.
  - Goldman, 1983

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Conceptual Framework

- When building a system in which students interact with the educational institution, it is clear content completion and accreditation are prominent, while a more flexible approach to scheduling which allows for the development of student and teacher relationships may be needed (Canady & Rettig, 1995).
- Canady & Rettig (1995) make an appeal to educational leaders to consider the system in which we educate students and consider the scheduling systems we employ upon students.
- Through the research of Erikson (1959, 1963) and Piaget (1953), Chickering (1969) and others, this study looks to student developmental needs as the primary consideration when developing a high school schedule.

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Literature Review

- Traditional Scheduling Origins (Silva, White, & Toch, 2015)
- Flexible Modular Scheduling Origins (Trump, 1968)
- Block Scheduling Origins (Carroll, 1990)
- Behavioral & Academic Scheduling Comparisons
  - Block Advocates (Canady & Rettig, 1995; Queen, 2000; Thayer & Short, 1999)
  - No Significant Differences (Honeycutt & Friedman, 2009; Thomas, 2001)
- Flexible Modular Scheduling Evaluation (Canady & Rettig, 1995; Goldman, 1983)

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Research Questions

1. To what extent, if any, has the flexible modular schedule impacted the achievement scores of high school students?
2. To what extent, if any, has the flexible modular schedule impacted the suspension rates of high school students?
3. What impact does the flexible modular schedule have on student development?

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Methodology

Mixed Method Approach (Convergent Parallel)

- The literature review revealed mixed results when analyzing the block and traditional schedules from a quantitative approach only.
- The researcher hopes the qualitative data will provide more insight into the developmental effects of the flexible modular schedule.

Case Study of Monett High School

- Monett Missouri: 8,954 (Data USA: Monett, Missouri)
- Monett High School (2017)
  - 733 students
    - 62.2% White
    - 32.5% Hispanic

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Methodology

Participants

- Traditional Schedule Group of Students
  - (2012 -2014) Non Identifiable student level data
- Flexible Modular Schedule Group of Students
  - (2015 - 2017) Non Identifiable student level data
- Nine teachers, counselors & administration who have experienced both the traditional and flexible modular schedule were interviewed.

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Quantitative Methodology

- The following data was used to assess academic achievement:
  - Missouri Assessment Program Student Scores
    - Algebra I, Biology, Government, English 2

The following data was used to assess behavioral achievement:

- In-School Suspension Counts
- Out of School Suspension Counts

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Quantitative Methodology

- Academic Achievement:

Kruskal Wallis H Test

- A one way ANOVA that converts scores into ranks and creates a mean score to determine significance.
  - Traditional Schedule Student Group
  - Flexible Modular Schedule Student Group

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Academic Findings

Years Compared	Test Subject	Mean Rank	*n*	*p*
2013 & 2016	English II	195.75	184	.743
2014 & 2017	Government	181.84	184	.869
2012 & 2015	Algebra I	124.89	125	.045*
2013 & 2016	Algebra I	138.82	98	.517
2013 & 2016	Biology	193.31	180	.007**
2014 & 2017	Biology	169.34	162	.141

* = Flexible Modular Scheduling Group Significantly Better
** = Flexible Modular Schedule Group Significantly Worse

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Quantitative Methodology

- Behavioral Achievement:
  - Chi Square Goodness of Fit
    - Contingency Tables
      - In-School Suspension Rates
      - Out-of-School Suspension Rates
  - Traditional Schedule Group
    - 2012 - 2014
  - Flexible Modular Schedule Group
    - 2016-2018

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Behavioral Findings

Years Compared	Traditional Schedule Group 2012-2014	Flexible Modular Schedule Group 2016-2018
Out-of-School Suspensions	114	131
Total Enrollment	1942	2205
Rate Per Student	0.05	0.06

Results of Chi Square Goodness of Fit: p = .9275

No statistical significance found between the two student groups.

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Behavioral Findings

	Traditional Schedule Group 2012-2014	Flexible Modular Schedule Group 2016-2018
In-School Suspensions	1844	2641
Total Enrollment	1942	2205
Rate per student	0.95	1.20

Results of Chi Square Goodness of Fit: p <.001

In-school suspension rates were significantly higher in the flexible modular schedule student group.

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Behavioral Findings

Subgroups	Traditional Schedule Group 2012-2014	Flexible Modular Schedule Group 2016-2018	Flexible Modular Schedule ISS Statistically Higher? Yes or No
White ISS	1291	1527	Yes
White Enrollment	1389	1364	
Rate Per White Student	0.93	1.12	
Hispanic ISS	484	1051	Yes
Hispanic Enrollment	468	717	
Rate Per Hispanic Student	1.03	1.46	
Free/Red. Lunch ISS	493	1234	Yes
Free/Red. Lunch Enrollment	922	1126	
Rate Per Free/Red. Lunch Student	0.53	1.10	
Full Pay ISS	1244	1407	No
Full Pay Enrollment	1020	1079	
Rate Per Full Pay Student	1.22	1.31	

Quantitative Methodology

- Behavioral Achievement:
  - In-School Suspension rates were found to be signifcantly higher in the following subgroups:
    - White
    - Hispanic
    - Free & Reduced Lunch
  - In-School Suspension rates were not found to be significantly higher in the full pay student lunch subgroup.

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Qualitative Methodology

- Interviews
  - Teachers
  - Counselors
  - Administration
- Interview Protocol
  - Focus on research questions
  - Specific impact on student development

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Qualitative Methodology

- <u>Interview Protocol & Student Development:</u>
  - In what ways, if any, has the FMS impacted student academics/behaviors?
  - In what ways, if any, has the FMS impacted student grades in your classes?
  - What differences, if any, do you see in students in the FMS as compared to the traditional schedule?
  - Do you feel the FMS is positively/negatively affecting students?

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Qualitative Methodology

- Using Content Analysis (Merriam, 2009)
  - Transcribe interviews
  - Identify segments of data
  - Categorizing the data segments
  - Develop themes
  - Assess for congruency with the conceptual framework

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Qualitative Findings

- Three themes emerged during the analysis of qualitative interview:
  - Inconsistent Stakeholder Buy-In
  - Student access: Opportunities and Challenges
  - Student Development: Thriving or Hiding

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Qualitative Findings

- Inconsistent Stakeholder Buy-In:
  - Ultimately, stakeholder consensus has been a substantial challenge to maintain at Monett High School.
  - Due to turnover in staff, administration, and board of education, the stakeholder consensus has waned.
  - Initial implementers of the flexible modular schedule still support it, while those who have come on board since implementation are less supportive.

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Qualitative Findings

- Student access: Opportunities and Challenges:
  - Resource time was the major component to the implementation of the flexible modular schedule, as accessing students for needed intervention before and after school is limited for so many students.
  - Resource time is still highly valued, but poses substantial challenges due to increase student to teacher ratios and increased management issues.
  - Management issues seem to be mainly with ninth grade students (less developed students).
  - Special Education and English Language Learners (ELL) highly benefit from this increased in student access.
  - The development of relationships can take place with the increase of student access that the flexible modular schedule provides, but due to management issues, it is not always positive.

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Qualitative Findings

- Student Development: Thriving or Hiding:
  - The flexible modular schedule causes soft skill development that the traditional schedule did not accomplish.
  - Younger students, specifically ninth grade students, seem to struggle in this schedule more than others both behaviorally and academically due to lower levels of development.

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Discussion

- Academic findings were similar to previous studies
  - Albers (1973); Van Mondfrans (1972); DeLucia (1977); Goldman (1983); Canady & Rettig (1995).
  - No statistically significant differences in achievement scores.
- Behavioral findings were similar to previous studies.
  - Although the researcher did not find quantitative studies on behavior, only qualitative. DeLucia (1977)
  - Decrease in student accountability correlates to minor behavioral issues.
  - Ninth grade students specifically struggle.

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Discussion continued...

- Developmental findings:
  - Students who are less developed learn to hide in the flexible modular schedule. These students are more often ninth grade students. The flexible modular schedule has a polarizing effect on students, causing many to thrive, but also many to hide.
  - Special Education, English Language Learners, college bound, and students with higher levels of development thrive in this schedule due to the increase in access to accommodations and opportunities the schedule allows for higher level coursework, dual enrollment, work study, and the ability to take more coursework due to conflicts.

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Recommendations to Monnett Board of Education

- Maintain the flexible modular schedule. This schedule does a better job of developing students overall as aligned to the Monett R-I Profile of a Graduate.
- Create a ninth grade academy model that strategically targets under developed students.
  - Piaget (1953) accomodation, assimilation, and equilibrium
  - Erikson (1968); Chickering (1969) establishment of identity
  - DeLucia (1977) Remediation, Enrichment, Optional (REO) model
  - Emmett & McGee (2012) elements of freshman academy model

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Recommendations to Monnett Board of Education

- The Flexible Modular Schedule Aligns to the Monett R-I "Profile of a Graduate".

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Limitations to Current Study

- Not interviewing students
- Only 3 years of Flexible Modular Scheduling Data
- Monett High School is such a unique setting and the flexible modular schedule is so uncommon this study is only of one school. (Case Study)
- Changes in the Missouri Assessment Program create challenges in measuring achievement data
- Limited access to student data

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Recommendations for Future Research

- Continuing to analyze more current standardized test data
- Seek student feedback.
- Further analyze student in-school suspension rates by grade level, subgroups…
- Research and/or hire a consultant to discuss the benefits of starting a freshman academy model
- Conduct further teacher interviews to assess buy-in & morale regarding the flexible modular schedule

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Thank you for allowing me to conduct my research on your unique and innovative school district!

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CHAPTER FIVE

CONTRIBUTION TO SCHOLARSHIP

To Be Submitted to:

The High School Journal

Authors:

Robert Kroll

James Sottile

Cynthia MacGregor

Ximena Uribe-Zarain

Kim Finch

Tracey Glaessgen

Abstract

The purpose of this case study was to examine the effect the flexible modular schedule had on student achievement, student behavior, and student development. This study contained three questions that evaluated the effect flexible modular scheduling had upon academic [standardized testing analysis] and student behavior [student suspension analysis] as well as the developmental impact [faculty interviews] the schedule had on students within a particular school. A mixed methods approach was used to conduct a case study that allowed an in-depth analysis of both the qualitative and quantitative data. Quantitative findings of significance provide answers to the research questions as well as qualitative themes such as inconsistent stakeholder buy-in, student access: opportunities and challenges, and developmental outcomes, which offer insight into the impact the flexible modular schedule has had on student development. This study sought to examine the necessity for educational leaders to consider the developmental needs of students ahead of the allocation of time when structuring the school day. Recommendations for practice are presented to both the school district and high school employing the flexible modular schedule.

Keywords: School Schedules, Flexible Scheduling

THE EFFECT OF THE FLEXIBLE MODULAR SCHEDULE ON STUDENT ACADEMIC ACHIEVEMENT, STUDENT BEHAVIOR, AND STUDENT DEVELOPMENT

The American public school's calendar has a major impact on the lives of its citizens. Rakoff (1999) stated, the "school clock mirrors the time displayed by other clocks in our society" (p. 5). Over the last 100 years, the schedule has become a part of the fabric of America (National Center for Educational Statistics, 2016). Something with such impact on so many is worthy of scrutiny. As stated by the National Education Commission (1994), "the problem with our schools is not that they are not what they used to be, but that they are what they used to be" (p. 21). Societal demands on students continue to change, and with these changes, educators are forced to ask themselves the question, are we doing all we can to prepare our students for their futures in society? Students today are faced with a future of employment in a global economy and the growing importance of knowledge-based work skills such as abstract reasoning, problem solving, communication and collaboration skills (Education Commission of the States, 2005). This study aims to examine an alternative to the traditional approaches to the high school schedule and assess its effectiveness.

Before assessing the school schedule, it is important to understand its origin. Throughout the 19th century, the Carnegie unit has driven secondary education in the United States (Fain, 2015). This unit represents the required amount of time a student must actively participate in a course, and if a student reaches a high enough level of achievement at its conclusion, they officially earn credit toward their high school graduation (Tompkins & Gaumnitz, 1954). Education has seen many changes over the last 100 years (National Education Commission, 1994), but the measure of student time dedicated to a course of study remains the standard of accreditation. The most straightforward system of students acquiring credit, the traditionally

scheduled school day, is daily dividing time into six, seven, or eight equal periods over the length of a school year. While educational leaders have long analyzed this factory style model due to its inflexibility, the traditional scheduling model remains the frontrunner in today's secondary schools, rivaled only by the block scheduling movement (Carroll, 1990). Even with the block schedule's longer class times, fewer courses per day, and overall alternative approach to dividing the school day, it too remains a "prisoner of time" (National Education Commission, 1994, p. 7). Like the past, it continues to be the role of educational leaders to assess the advantages and disadvantages of these systems, and search for ways to provide flexibility and the customization needed to ensure student success in today's world (Horn & Staker, 2014).

When creating the framework for this study of high school scheduling and the subsequent effectiveness of traditional, block, and flexible modular approaches, this study sought to examine student developmental needs as the primary factor. When building a system in which students interact with the educational institution, it is clear content completion and accreditation are paramount, while a more flexible approach to scheduling, one, which allows for the development of student and teacher relationships, may be needed (Canady & Rettig, 1995). School leaders search for the silver bullet to create, reform, and promote academic achievement, but few take the time to consider what we already know regarding human development theory.

Literature Review

Canady and Rettig (1995) reported an estimated 15 percent of American high schools began utilizing the FMS during the late 1960's and early 1970's, and, while it was receiving positive reviews and was preferred over the traditional schedule by students and teachers, parents and community members were less supportive. Nevertheless, schools were being built to accommodate the unique design of this model (Pedersen, 2001). While the FMS allowed for

individualization of learning, often these schedules provided students with growing amounts of independent student time. This time was perceived to be in a direct relation to growing school discipline issues, and, when coupled with a lack of conclusive evidence that academic performance improved under the FMS in comparison to traditional scheduling, most high schools returned to the traditional scheduling model (Canady & Rettig, 1995).

Academic Achievement: Flexible Modular Scheduling

The body of research assessing the FMS is limited to the analysis of the apex of this approach to organize schools in the 1960's and 1970's. Early literature seems to support that the FMS, while late 1970's and Goldman's (1983) findings provided little support of this approach. The majority of findings indicate an insignificant change in student achievement (Albers, 1973; Van Mondfrans, 1972). Canady and Rettig (1995) reported students who follow the FMS performed poorly or the same as students from traditional schools. Some argue the schedule shows better results once students learn the radically different approach to school, stating it is not uncommon for freshmen or transfer students who are first introduced to the FMS to show a drop in grades (Dunlop & Hintergardt, 1967). Goldman's (1983) research found students in 15 schools showed no statistically significant difference between achievement before or after the implementation of the FMS. His research did find that, while 13 schools did improve, only four schools' improvements were statistically significant (Goldman, 1983). Goldman's (1983) study additionally reported dropout rates among students of traditional scheduled high schools were similar to that of FMS high schools. Much of the positive data regarding the FMS dates back to the early 1960's, which directly correlates to the height of FMS reaching 15% of United States public schools in the 1960's and 1970's (Goldman, 1983). This percentage had dwindled to a

mere two to three percent by the time of Goldman's (1983) research. No other academic research was found assessing the link between student academic achievement and the FMS.

Advantages and Disadvantages of Flexible Modular Scheduling

From start to finish, the implementation of the FMS is a heavy burden for high schools to make due to the overwhelmingly different scheduling structure. J. Lloyd Trump (1968), often credited with the creation of the FMS, even calls this a "big step" for principals and teachers who adopt the schedule. While a traditional high school schedule can be challenging to develop, design, and assign, the FMS is even more so. Often due to the various time modules, needed courses can overlap, creating conflicts in the student day (Dunlop & Hintergardt, 1967). Despite the added complexity, Trump (1968) stated the schedule allowed classes to range in size from 100 to 10 or less. Math classes can meet for shorter times daily, while a science lab can meet weekly or bi-weekly for longer periods of time (Shockloss, 1973). The FMS does not insist classes be given daily for a 50-minute time slot, but can meet only as much as needed throughout the course of the week (Trump, 1968). While many praise the flexibility allowed within the school day, Dunlop and Hintergardt (1967) found this complexity very time consuming on the school counselors in particular, as they are often in charge of developing and assigning student schedules. Another complication to the practical implementation of the FMS schedule can be found in keeping of accurate attendance records. While state and federal monies are tied to these records, schools found it challenging to maintain accurate attendance using the FMS (Goldman, 1983). Ultimately, one must weigh the goal of FMS and what it can attain for students and teachers; the goal necessarily is to return to teachers and students as much freedom as is reasonable in the use of time, space, numbers, and content for instruction (Trump, 1968).

Goldman (1983) pointed out that the FMS permits a more diversified student schedule and more course offerings to students over the course of their high school career. This process allows graduating students to acquire more credits than a student whose school follows the traditional or block schedule. Due to the high number of modules or periods throughout the day with the FMS, students often find they are scheduled open time slots to work with teachers and/or homework. This independent time is a major benefit for the FMS (Popenfus, Paradise, & Wagner, 1978). Not only does the availability of time provide time in the school day for a student to seek out assistance, but it also teaching students to use unstructured time wisely. Popenfus et al., (1973) found students and staff believe they did use this time wisely, but Goldman (1983) expressed this view was overstated and the use of independent time was not used wisely.

Due to this lack of accountability, schools still interested in the FMS found a way to maintain the flexibility, but it depended less upon the responsibility of the students. The Remediation-Enrichment-Optional (REO) flexible modular schedule was adapted to replace the independent time of students with assigned remediation or enrichment classes students would be assigned in what were previously open modules (DeLucia, 1977). The REO and the traditional FMS are different in that teachers are responsible for providing instruction or assistance to students during what were open modules, but now REO time (DeLucia, 1977). This adaptation of the FMS does remove much of the freedom previously highlighted as a strength, but also removes much of the contenders of the FMS claim as a downfall. DeLucia (1977), a principal who incorporated this schedule, found that they were allowed many of the open modules to return to student choice instead of remediation or enrichment if the student was deemed responsible and chose to use his/her time wisely.

Cavanagh (1971) found inadequate resources regarding facilities became an issue, as the spaces needed to sustain the schedule are uniquely different from that of a traditional school setting. Goldman (1983) suggested the FMS had a high cost of implementation and maintenance. Goldman (1983) also reported facilities had to be built or retrofitted to accommodate the unique needs the FMS places on a school building. These physical resources play a role in the decision school leaders must consider when considering the FMS in their schools.

Review of Scheduling Research

Although research regarding the FMS is limited, research analyzing the traditional and block schedule abound. Williams (2011) summed up many of these studies researching regions across the United States in stating, "the research and literature regarding student achievement and various scheduling models present a mixed bag of results" (p. 21). Underwood (2014) drew similar conclusions finding the impact of block scheduling on student achievement revealed mixed results, but notes the impact block scheduling had on school culture is more defined. Thomas (2001) summarized his finding in stating, "Block scheduling is neither the savior of education nor the great threat to education that opponents have made it to be" (p. 77). Instead, it is another tool that, when used properly and discriminately, can assist educators in individualizing programs to ensure success for all students (Thomas, 2001).

Research Questions

Given the overview of the flexible modular schedule and traditional schedule in relation to student academic achievement, student behavior, and student development, the three guiding research questions were as follows:

1. To what extent, if any, has the flexible modular schedule impacted the achievement scores of high school students?
2. To what extent, if any, has the flexible modular schedule impacted the suspension rates of high school students?
3. What impact does the flexible modular schedule have on student development?

The Flexible Modular Schedule

In a flexible modular schedule, classes could range anywhere from 20 minutes to 140 minutes depending upon need, and students are given up to 40% of the school day for independent study or resource time (Gargis, 2013). This resource time can be used as a time for students to seek out assistance from teachers during the school day or work on homework or projects. Table 1 illustrates a student's week following the FMS model similar to that of Monett High School, in which five instructional days are divided into 17 25-minute modules (mods). The five instructional days may rotate and may not align with the traditional Monday – Friday approach. A student schedule is unique for five consecutive days when following the flexible modular model.

Table 1

Flexible Modular Scheduling Model

Mods	A Day	B Day	C Day	D Day	E Day
Mod 1	English	History	English	History	History
Mod 2	English	History	English	History	History
Mod 3	English	Resource	English	Resource	Science
Mod 4	Resource	French	Resource	English	Science
Mod 5	Band	French	Band	English	English
Mod 6	Band	French	Band	English	English

Mod 7	Math	Resource	Math	Science	Phys. Ed
Mod 8	Math	Resource	Math	Science	Phys. Ed
Mod 9	Math	Resource	Math	Science	Phys. Ed
Mod 10	Resource	Phys. Ed	Resource	Phys. Ed	French
Mod 11	Resource	Phys. Ed	Resource	Phys. Ed	French
Mod 12	Resource	Phys. Ed	Resource	Phys. Ed	Resource
Mod 13	Science	Math	Resource	Resource	Resource
Mod 14	Science	Math	French	Math	Math
Mod 15	Science	Math	French	Math	Math
Mod 16	French	Band	History	Band	Resource
Mod 17	French	Band	History	Band	Resource

Case Study Context

The researcher examined Monett High School, in Monett, Missouri, a city in Southwest Missouri with a population of 8,954 (Data USA: Monett, Missouri). Monett High School had seen a considerable change in their demographic enrollment over the previous 10 years. Table 2 indicates Monett High School's total enrollment grew by 18.8% since 2008 (Missouri DESE: Missouri comprehensive data system, 2017).

Table 2

Enrollment Percentages by Race

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total Enrollment	617	612	639	613	637	654	651	721	709	733
Hispanic	19.6	18.0	19.4	20.2	23.5	23.9	24.9	25.8	28.1	32.5
White	79.1	80.4	78.4	76.3	72.4	71.4	70.8	68.9	66.7	62.2

(Missouri DESE: Missouri comprehensive data system, 2017)

In addition to the noteworthy enrollment trends mentioned above, the number of students eligible for a free and reduced-priced lunch also increased. As reported in Table 3, the level of Monett High School students living in poverty grew over 17% in the 10 year span from 2007 to 2017 (Missouri DESE: Missouri comprehensive data system, 2017).

Table 3

Students Eligible for Free or Reduced-Priced Lunch

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Percent	37.3	37.6	37.5	40.6	41.1	48.3	49.2	48.2	48.8	51.3	54.5
Number	224	226	223	252	246	302	316	304	330	345	383

(Missouri DESE: Missouri comprehensive data system, 2017)

Monett High School followed the traditional scheduling model for many years, but in the 2014 – 2015 school year fully implemented the FMS (Cox, 2015). Much of this process began due to the changes taking place in Monett and the high school. In 2014, Monett High School staff traveled to schools across the country to observe alternative scheduling models (Cox, 2015). The Monett School District Board of Education approved the decision to allow a five-year pilot of the FMS program. At the time of this study, Monett High School was in its fifth year of the FMS implementation.

Methods

A mixed methods approach was used to conduct the case study. Because the FMS is an uncommon scheduling approach in the United States, Monett High School serves as a bounded system in which this case study took place, allowing an in-depth analysis of both the qualitative

and quantitative data (Merriam & Tisdell, 2009). Using a heuristic approach, the conceptual framework helped draw connections between the resource time within the schedule and its ability to help the educators of the school meet the psychosocial needs of students through the deepening of relationships (Merriam & Tisdell, 2009). The qualitative assessment focused on how the relational opportunity provided in this schedule impacts academics and behavior as well as psychological development, while the quantitative analysis was used to examine school historical data to determine the program's academic and behavioral impact.

Participants

Students, teachers, counselors, and administration of Monett High School were the focus of this case study. Non-Identifiable student level assessment data were examined, and staff members were interviewed individually for this study.

Students. Unidentified students were only represented in this case study in a quantitative fashion. Students were examined using two distinctions, those who only followed the traditional schedule at Monett High School and those who only followed the flexible modular schedule. The traditional schedule student cohort was represented using assessment and discipline data from the 2012, 2013, and 2014 school years. The FMS student groups were represented using the assessment and discipline (suspension) data from the 2015, 2016, 2017, and 2018 school years. The quantitative analysis compared the two student groups' academic and behavioral data to measure the impact the FMS had on student achievement. When examining the academic data, the traditional schedule student group examined accounted for 933 student assessments, while the FMS student groups contained 1,064 students' exams. When examining behavioral data, the study examined 1,942 students' representing the traditional schedule student group, and

2,205 students in the FMS student group. The quantitative portion of this dissertation case study was a comparison of the student groups representing the traditional and FMS.

Teachers, counselors, and administrators. Teachers, counselors, and administrators were interviewed one-on-one after IRB approval was received. The interviews were then used to measure the perceived impact the FMS had upon academic achievement and student behavior as well as student development. To gain this understanding, nine professional staff members (teachers and administrators) of Monett High School were interviewed. These nine participants, seven of them worked at Monett both before and after the implementation of the FMS, while the other two participants came post-implementation. These participants were selected as they have experienced both scheduling models at Monett High School to gain insight from their perceptions about the effect the FMS played in student development to determine differences in students before and after the implementation of the FMS.

Quantitative analysis. To measure the academic and behavioral effects of the FMS, data was acquired from 2012 through 2017 from the Monett School District. As the FMS was implemented in 2015, the data was divided by year and two student groups were compared. This study examined student level data from these two student groups, as the 2012 - 2014 student group was comprised of students who only followed the traditional scheduling model and the 2015 - 2018 student group only followed the flexible modular schedule model. Academic and behavioral data was examined from these groups drawing comparisons between the traditional schedule student group and the FMS student group. The two demographic categories used to examine these two student groups were race, and lunch status.

Academic effectiveness of the traditional and FMS was measured by examining Missouri Assessment Program (MAP) end of course (EOC) exam scores. These are standardized

assessments given statewide to students at the conclusion of the courses: Algebra I, Biology, Social Studies/Government, and English II. As Monett High School traditionally gives the Algebra I EOC to freshman, the 2012 and 2015 Algebra I results were compared with one another. Because sophomores traditionally take the Biology and English EOC exams, the 2013 EOC exams were compared with the 2016 EOC exams. Finally, as the Monett High School gives juniors the Government EOC exam, the 2014 exams were compared with the 2017 results. Using this approach, the study ensured the traditional schedule student groups did not overlap with the FMS student group.

The behavioral data of suspension counts were analyzed, and to draw further conclusions demographic variables such as race and lunch status were examined comparing traditional and FMS student groups. Student suspension count data were reflected in two forms. First, discipline data were analyzed in a count of in-school suspensions (ISS), and, secondly, through a count of out-of-school suspensions (OSS). In-school suspensions are designated consequences for minor disciplinary infractions a student commits, while out-of-school suspensions are consequences designated for more severe disciplinary incidents.

Unlike the assessment scores, non-parametric tests were used to analyze discipline data. Although the suspension data did impose some limitations, a chi-square goodness-of-fit was used to determine if the suspension rates (OSS and ISS) corresponded to the enrollment rates. Enrollment data and suspension data were imported into a chi-square test calculator for a contingency table. Overall enrollments of the traditional student group were compared to the FMS student group. In addition to these comparisons, suspension counts by race and lunch status were also compared using three separate chi-square contingency tables.

Qualitative analysis. An interview protocol was developed consisting of questions directly tied to the three research questions. Nine one-on-one interviews were conducted with teachers, counselors, and administrators of Monett High School. These participants made up approximately 23% of the professional staff working at Monett High School in the 2018-19 school year. Six of the nine participants were female, three participants were male, and all participants were white. A diverse sample of certified staff were used as six of the participants taught a variety of courses the high school offers, while one participant was a counselor, and two of the participants were school administrators.

The interview protocol included questions to participants on how the FMS impacted academics and behavior, and to measure the third research question regarding how the FMS impacted student development. Questions were posed to discover differences observed in students since the implementation of the FMS as compared to students in the traditional scheduling model. Participant responses were used to gain understanding of how the FMS made positive or negative effects on students. Once these interviews were conducted, open coding methods were employed in search of themes and converged the quantitative and qualitative data ensuring a comprehensive analysis of the research questions.

Findings

A mixed methods approach was conducted to collect both quantitative and qualitative data from the Monett School District. In this chapter, statistical analysis findings of the academic end of course (EOC) examination data, as well as behavioral suspension data were compared. The data from the qualitative interviews were organized and summarized to further assess behavioral and academic achievement, as well as developmental impacts of the FMS.

These qualitative findings were divided two themes: student access: opportunities and challenges, and developmental outcomes.

Quantitative Findings

To answer the research questions, a quantitative analysis of standardized testing data and discipline data were conducted. Missouri Assessment Program, EOC examination data, were studied to make determinations regarding the impact the FMS had on student academic achievement. Similarly, Monett High School in-school and out-of-school suspension rates were analyzed to determine the impact of the FMS on student behavior at Monett High School.

Academic achievement. To answer the research question regarding the flexible modular schedule's (FMS) impact on academic achievement, EOC examination data were analyzed, these standardized tests are given to high school students across the state as part of the Missouri Assessment Program. The Monett School District provided unidentifiable student level Algebra I, English II, Biology, and Government results divided into four categories: below basic, basic, proficient, and advanced. These tests have been traditionally administered to students in the following sequence: ninth-grade students take the Algebra I EOC, tenth-grade students take the English II and Biology EOC, and eleventh-grade students take the Government EOC.

The quantitative analysis first compared ninth-grade EOC traditional schedule students' Algebra I scores to FMS students' Algebra I scores. This was completed by comparing the 2012 and 2015 Algebra I scores as well as the 2013 and 2016 Algebra I scores. Similarly, tenth-grade student data was analyzed using biology and English II scores by comparing 2013 and 2016 assessment data. Due to the availability of assessment data, the researcher chose to conduct an additional biology comparison of 2014 and 2017. Finally, eleventh-grade student data were analyzed using the Government EOC scores and comparing the 2014 and 2017 data.

A Kruskal-Wallis H test was used to determine if there was a statistically significant difference in subject scores between the different types of schedules. The Kruskal-Wallis H test first converts scores into ranks and the mean rank for each group was compared to a level of significance. To interpret the scores of the Kruskal-Wallis H test, the following values are needed: Chi-Square ($\chi 2$) value, the degrees of freedom (*df*), and the significance level. A significance level less than .05 would indicate a statistically significant difference in the continuous variables, which in this case are below basic, basic, proficient, and advanced scores. The mean rank is used to inform the researcher which student group had the highest overall ranking. The table below provides the Chi-square scores, degrees of freedom, *p* values, and mean rank scores for each comparison by subject and year.

Table 4

Kruskal-Wallis H Test Summary Table Comparing EOC Results Between Traditional Schedule Student Groups and Flexible Schedule Student Groups

Years compared	EOC exam	Traditional mean rank	Traditional *n*	FMS mean rank	FMS *n*	*χ2*	*df*	*p*
2013 v 2016	English II	195.74	184	192.42	203	0.108	1	0.743
2014 v 2107	Government	181.84	184	180.13	177	0.027	1	0.869
2012 v 2015	Algebra I*	124.89	125	142.90	143	4.026	1	0.045
2013 v 2016	Algebra I	138.82	98	132.81	171	0.420	1	0.517
2013 v 2016	Biology*	193.31	180	165.54	178	7.406	1	0.007
2014 v 2017	Biology	169.34	162	184.38	192	2.170	1	0.141

Note. * Significant at < .05

When analyzing Algebra I student groups, mixed results were found. The 2015 FMS group scored significantly higher (p = 0.045) on the Algebra I EOC than the 2012 traditional schedule groups, however, the 2016 FMS and the 2013 traditional schedule groups had similar EOC Algebra scores. The Kruskal-Wallis H test showed no statistical significance in the Government EOC test results between 2014 (traditional student group) and 2017 (FMS student group), but did find that the 2013 traditional student group scored significantly better in the Biology EOC when compared to 2016 with an output of, $\chi 2(1) = 7.406$, p = .007, with a mean rank score of 193.31 for 2013 traditional student group and 165.54 for the 2016 FMS student group. Table 4 shows the results of the academic statistical analysis for all EOC exams. Due to these mixed findings, further statistical analysis of gender, race, and lunch status data were not conducted.

Student Behavior. To answer the research question regarding the FMS impact on suspension rates of high school students, 2012 – 2018 unidentifiable student level discipline data were requested and examined. The Monett School District provided student level suspension data for both in-school suspension (ISS) and out-of-school suspension (OSS) over the seven-year period. This data included the race, gender, and lunch status of each suspension assigned. Because these data were unidentifiable, the study was unable to determine if a single student was responsible for multiple disciplinary counts. This factor created complications as the ISS and OSS rates were provided, but the data may be skewed by a few students with many disciplinary incidents. Although these data did provide some limitations, a chi-square goodness-of-fit was used to determine if the suspension rates (OSS and ISS) corresponded to the enrollment rates. Enrollment data and suspension data were imported into a chi-square test calculator for a

contingency table. Due to the rise in enrollment of Monett High School over the last seven years, 2012 – 2104 enrollment (traditional schedule years) data and the 2016 – 2018 enrollment (FMS years) data were compared to the ISS and OSS counts from those years. The enrollment and suspension counts from 2015 were omitted as this was the first year of implementation of the FMS. Using the chi-square test of goodness-of-fit, a significant difference was found in suspension rates. Table 5 illustrates the data imported into the chi-square contingency table.

Table 5

Chi-Square Goodness-of-Fit Contingency Table (Traditional and FMS ISS Counts)

	2012 – 2014 (traditional)	2016-2018 (FMS)
In-school suspensions	1,844	2,641
Total enrollment	1,942	2,205
Rate per student	0.95	1.20

When a chi-square of goodness-of-fit was performed on ISS rates the findings were significant. Students from the FMS student group had significantly higher in-school suspension counts than those from the traditional schedule student group, $\chi 2$ (1) = 28.573, $p < .0001$. When the same analysis (chi-square test of goodness-of-fit) was completed to compare the OSS counts, the outcome was, $\chi 2$ (1) = 0.0083, $p = .9275$. The OSS counts did not yield any significant differences between the traditional schedule student group and the FMS student group. Due to these findings, further analysis of OSS counts were not conducted.

Table 6

Chi-Square Goodness-of-Fit Comparison of Traditional Schedule Student Group In-School Suspension Counts and FMS Student Group Suspension Counts

Demographic group	Traditional ISS *n*	Traditional *n*	Traditional ratio	FMS ISS *n*	FMS *n*	FMS ratio	$\chi 2$, *df*, *p*
White	1,291	1,389	0.93	1,527	1,364	1.12	12.017, 1, < .001
Hispanic	484	468	1.03	1051	717	1.46	18.638, 1, < .001
Free and Red. Lunch	493	922	0.53	1,234	1,126	1.10	108.49, 1, < .001
Full Pay Lunch	1,244	1,020	1.22	1,407	1,079	1.31	1.307, 1, 0.252

Note: Traditional years = 2012-2104 and FMS years = 2016-2018

When in-school suspension rates were further analyzed by demographic groups, more significant differences were found. White (p = .000527), Hispanic (p = .000016), and students eligible for free-and-reduced lunch (p = <.0001), all had significantly higher counts of in-school suspension when the FMS was employed as compared to these demographic groups in the traditional schedule. The only demographic group not found to be significantly different was the full-pay lunch student group.

Qualitative Findings

To gain practitioner insight into the daily operations of working in the FMS, qualitative analysis was conducted. Nine professional staff members (teachers and administrators) of Monett High School were interviewed to gain understanding of student developmental impacts. These participants represented 23% of the professional staff working at Monett High School in the 2018-19 school year. Six of the nine participants were female, three participants were male, and all participants were white. Six of the participants taught a variety of courses the high school

offers, while one participant was a counselor, and two of the participants were school administrators. Finally, of these nine participants, seven of them worked at Monett both before and after the implementation of the FMS, while the other two participants came post-implementation. The interview protocol used in this study is available in Appendix A.

During the course of the qualitative analysis, two major themes surfaced: (a) student access: opportunities and challenges, and (b) student development: thriving or hiding. These themes, when unpacked, provided insight into the rationale for adopting the FMS, the changes made to the FMS since implementation and how this affected stakeholder buy-in.

Student access: opportunities and challenges. A lack of teacher access to students for intervention was identified as a major reason the traditional schedule was found ineffective leading the staff to the adoption of the FMS at Monett High School. Participants repeatedly indicated, due to before and after school responsibilities of students and teachers, it was becoming increasingly challenging to provide students with the necessary intervention and assistance needed to be successful in coursework.

> We have so many students that work, so many students that do sports, and so many kids that don't have transportation after school if they do want to stay, that it just provided them that opportunity to receive tutoring during the day. I mean, it just gave teachers access to the kids during the school day, because we all know how hard it is to get kids willing to stay after or come early.

One participant indicated they coach athletics after school, explaining how they were not available to help students with their courses after school if they have questions or need assistance on coursework. Another participant explained how students now have jobs to support their families, are responsible for younger siblings, and their only means of transportation is the

school bus, all creating barriers to before or after school student access. Student access was found was a major factor in the school's decision to convert to the FMS.

> I had noticed that it was becoming much more difficult to get students to stay after school or come in before school. That was part of this transition, and I've noticed more kids working to support the family, more kids babysitting their siblings, and I was having difficulty if a student needed additional help getting them that extra help. We tried several things, but it just wasn't working.

When asked about the access to students as compared to the traditional schedule, one respondent stated, "bottom line, we are able to help more kids throughout the day than we were before."

While the FMS provides educators access to students the traditional schedule cannot provide, it does not come without its challenges. One challenge to this high level of student access is setting and maintaining teacher and student expectations in resource rooms. Resource time, a major, and for some, the most important aspect of the FMS, was designed to provide in-school academic intervention, tutoring, and opportunity for the developing of student teacher relationships. When asked about the expectations of resource time at Monett High School, one participant stated the teacher should be "up and moving around the room engaging with students," but acknowledged that it is not always the case, as sometimes teachers are seated at their desks unengaged with students. A participant shared, resource time should be more than "just a study hall," instead, a time of "deliberate intervention."

Resource time expectations of students and teachers have a direct impact on the ability or lack of ability to build student and teacher relationships. One factor in setting consistent expectations is due in part to the lack of predictability to resource time. "Resource times can be very unpredictable," one participant stated, "as far as who is coming and how long they are

coming, and who you are going to see and who you won't see that day." This participant shared the challenge at times also depends on the size of the class sharing, "some days I have resource times where I've got 13 kids who are real eager to work, and its been very manageable, but this year for some reason, I'm in there with 40 kids."

Another aspect of student access found during interviews was the rise of management issues in resource time during 2018-2019 school year. When asked why they feel these resource room's behavioral issues have been greater in the fifth year of implementation, several pointed to the policy changes made by the board of education to the FMS. One participant explained the reasons the board of education increased class time was to reduce the opportunities for misbehavior of students who cause problems, but now with fewer sections of resource time, the student teacher ratio had drastically changed. While teachers still have access to students, the quality of resource time had changed.

Student development: thriving or hiding. The final qualitative theme that surfaced during the collection of data regarding the effect of the FMS had on student development were three developmental observations. These developmental observations are the effect the FMS had on students' soft skills, the impact the FMS had on underclass-students, and the polarizing effect the FMS had on students who thrive and those who hide within the structure of such a complex scheduling model. The findings of these three developmental observations pertaining to the research question regarding the effect the FMS had on student development.

As participants were interviewed, the concept of soft skill development was explained and the term "soft skills" was mentioned in two different interviews. Clarifying questions were asked to participants on what was meant by this term, and the researcher constructed a definition for soft skills based upon those responses. The study defined soft skills as, a person's attributes

that allow him/her to effectively interact with others and function as a productive person in society. The examples participants provided when questioned about soft skills include: communication ability, time management, responsibility, and motivation. It should be noted, the Monett Board of Education endorsed these soft skills by including them on the Monett R-I Profile of a Graduate document. This document (Appendix B) outlines the academic, personal, and social outcomes each student should attain for graduation, and of these eleven outcomes, ten of them would be defined as soft skills. One participant pointed out, "Basically, we asked teachers, students, parents, and community members what they wanted to see in a graduate. High test scores were not the only thing. It was part of it so we have to concentrate on that, but we also need to teach responsibility and communication skills all along the way." When participants were asked if the FMS was achieving its goal, the participant responded, "It does, absolutely." Soft skill development is a major factor in the continued use of the FMS at Monett High School. A participant shared when comparing the FMS to the previously used traditional schedule, "We weren't training our students to be responsible, with the mod schedule you are putting a lot of the responsibility on the student for keeping up with their education through time management." The participant went on to explain about time management, "Students are learning that lesson, that if two mods of resource, unscheduled time, they need to use it to complete homework, to go get tutored, work on projects, and they have the same learning process as I did my first year in college." Time management was not the only soft skill developed in the FMS, but student collaboration skills were impacted. One participant stated, "I almost think they are better collaborators and the reason for that is with the resource time they are able to sit, meet with their friends, work together, maybe even multitask." This intentional

push to student accountability of the FMS emphasizes is showing a direct correlation to the development of student soft skills.

While this schedule does provide the potential for soft skill development, it was found that several participants observed these skills may be too advanced for younger students to adopt. Repeatedly, participants referred to the struggling underclassmen, particularly freshman, have acclimated to the FMS. One participant stated, "The seniors, most of them, have become pretty adept using resource time to reassess and get extra help, whereas freshman still have not quite understood this is not a time for a game or free time, that they are supposed to be working." Another participant stated, "You see these kids, they're freshman, with resource time they are constantly on games, you have to really be on them to know that resource time isn't free time, and usually by the time they are seniors they figure that out better. So that's definitely a work in progress." Monett teachers have found that the use of unstructured time is challenging for these younger students.

The final student developmental observation that emerged from the student development: thriving or hiding them was the polarizing effect that the FMS schedule had upon students as some thrive and others hide. Focusing first on the students who thrive, findings revealed that college bound students, special education students, and English language learners appeared to thrive in the FMS. One respondent who works closely with English language learners (ELL) at Monett High School explained the responsibility of ELL students improves, but also "language-wise, they (ELL students) seem to be a little stronger, even more confidence levels seems to have improved."

Regarding the college-bound students, the FMS was found to provide opportunities that the traditional schedule could not provide. One participant shared a story of a student who went to college and wrote to share their gratitude for the FMS:

> The college transition has been really easy because I'm use to the skills that I'm needing for college about time management, and how my schedule looks different every day, and how I use my free time, and how I use my off time.

Another participant explained they felt the college-bound students learn skills needed for success in college.

Not all students seemed to find success in the FMS. While some take advantage of the opportunities this schedule provides, others take advantage of the hiding places the FMS provides. For these hiders, the high amount of unstructured time, less seat time in classes, and lower levels of accountability are simply too tempting to stay engaged in their education. Motivation was found to be a major factor in the students' success in the FMS. One participant put it this way, "I think a lot of it comes back on the responsibly of the kid. If the kid doesn't want the help, or is actively trying not to get help, I think this schedule can help them do that even more. We had a lot of this the first year, they (students) would skip class." Another participant shared how resource time allows for these students to slip by without notice, "They (students) just go through their day and can just hide, just sit in the back of the room (resource room), be quiet, if nobody talks to them, they don't have to talk." These two perspectives show that a student can actively hide and passively hide within the FMS. It was found that as the resource time and class sizes have increased in the 2018-2019 school year, the hiding places for the passive students have increased.

Discussion

This study set out to answer three research questions regarding the use of the flexible modular schedule at Monett High School. These questions aimed to identify impact in the areas of academics, behavior, and student development. These questions were:

1. To what extent, if any, has the flexible modular schedule impacted the achievement scores of high school students?
2. To what extent, if any, has the flexible modular schedule impacted the suspension rates of high school students?
3. What impact does the flexible modular schedule have on student development?

Research Question One

When attempting to answer the first research question, to what extent, if any, has the FMS impacted achievement scores of high school students, a lack of statistically significant standardized testing differences were found when comparing high school student scores pre-implementation and post-implementation of the FMS. Student academic data were varied in results, leading to inconclusive findings. While the findings do not support moving to the FMS in search of improving achievement data, it should be noted that the findings do no indicate the FMS schedule causes academic achievement to decrease. Nothing of statistical significance was found with enough consistency to make assumptions regarding the FMS's impact on academic achievement scores of students.

Through the qualitative analysis, it was discovered that the FMS provided some students with more academic opportunities than what they would find in the traditional schedule. These opportunities are not reflected in Algebra I, English, government, or biology end of course examination data, which aligns with Goldman's (1983) findings that reveal no statistically

significant difference in achievement after the implementation of the FMS. Despite a lack of qualitative data to support academic achievement, teachers, counselors, and administration cited expanded opportunity for students to take more advanced coursework, dual enrollment college classes, and work-study style courses within the FMS. Due to the schedule's flexibility, participants voiced the FMS impacted student achievement through expanded experiences, even if it does not consistently show in the achievement scores of the school.

Research Question Two

When attempting to answer the second research question, to what extent, if any, has the flexible modular schedule impacted the suspension rates of high school students, mixed results were found. First, out-of-school suspension counts were examined by comparing totals both before and after the implementation of the FMS. Out-of-school suspension counts were selected to identify more severe discipline problems and answer the question: does the FMS increase or decrease major disciplinary incidents? Upon the evaluation of these counts, nothing of significance was found in the out-of-school suspension data. Due to these findings it was determined that the FMS had no impact on student behavior when considering incidents that would cause a student to be suspended out-of-school. Secondly, in-school suspension counts were examined both before and after the implementation of the FMS. In-school suspension counts were selected to identify a difference in minor disciplinary problems, and significant differences were found in these data. These findings suggest the FMS does have an impact on minor disciplinary infractions, increasing a student's chances of being suspended.

When examining the overall in-school suspension counts from 2012-2014 (pre-FMS) to the 2016-2018 (after FMS), it was found that students in the FMS had statistically significant higher ISS counts. It was also found that white, Hispanic, and students who receive free or

reduced lunch all are more likely to have in-school suspension in the FMS than the traditional schedule. The only subgroup examined that did not yield statistically significant results were full pay lunch students. It was concluded that these findings were consistent with the qualitative findings discovered during the interview process with staff members who have worked both the traditional and FMS at Monett High School. Participants revealed an increase in minor disciplinary infractions associated with students who are less psychologically developed, more specifically ninth-grade students.

Research Question Three

The final research question, what impact does the flexible modular schedule have on student development, was assessed through individual Monett High School staff member interviews, and were expounded upon in the "student development: thriving or hiding" theme. It was found the FMS provided a greater chance for the students to develop psychologically, but not all students took advantage of these opportunities. In fact, the study divided students' development stating, some students "thrive" while other students "hide" within the FMS. Among those "thrivers," research revealed ELL students, special education students, and students who exhibit the desire to continue to college seem to thrive in the FMS. For these students, the schedule provides the right amount of time, accommodation, and opportunity. While some thrive, it was also found that some "hide" within the FMS. These findings coincide with the increase in minor behavioral problems that have grown after the implantation of the FMS.

The researcher suggests these students struggling in the FMS have yet to begin to establish their identity. It is in this time of identity formation that the choice of an occupation or career becomes significant (Erikson, 1968). It is for this reason that some adolescents prefer not

to work at all for a while rather than be forced into an otherwise promising career which would offer success without the satisfaction of functioning with unique excellence (Erikson, 1968). A ninth-grade student who is yet to reach this stage of development, coupled with the lack of support and accommodation is likely to struggle in the educational setting. When layering the complexity of the FMS into the ninth-grade experience, an underdeveloped student's chances of becoming a "hider" increase and can manifest itself in behavioral issues. Placing supports around students to assist with the assimilation process to FMS is necessary for success.

The FMS did show a positive impact on two student groups, who traditionally struggle in school, developmental skills. The qualitative data showed ELL and special education students thrive in the FMS due to the increased ability to provide accommodations and the intentional supports placed around these students for assimilation. The FMS allows these students more time for intervention, overcoming the language barriers and learning disabilities that typically cause these students to struggle in school. The FMS was found to provide an environment allowing these students to these students to develop certain soft skills, such as questioning, conversational skills, and self-advocacy. These findings lead the study to conclude the FMS does have the potential to increase in student developmental skills when accommodations are in place for struggling students.

Conclusion

Based upon the findings of this study, the removal of the FMS is not supported as the schedule creates too many opportunities to disregard. Instead, elements of DeLucia's (1977) remediation-enrichment-optional (REO) model, freshman academy model, and the FMS should be taken into consideration to create a separate ninth-grade program focused upon the assimilation, accommodation, and equilibrium (Piaget, 1953) of students to high school and the

FMS. This adaptation of a freshman academy model, "small learning communities within large comprehensive high schools that isolate ninth-graders and establish a more intimate program" (Fulco, 2009), would be utilized to meet the dynamic needs of ninth-grade students. Combining the freshman academy with a version of the FMS referred to by DeLucia (1977) as the REO model addresses the lack student accountability during resource time.

The REO model is an adaptation of the FMS that allows for more differentiation between the mature student who could use free time wisely and the less mature student who does not use free time wisely. DeLucia (1977) explained the REO model schedule is a "FMS model that attempts to incorporate both individualized instruction and appropriate teacher accountably within the instructional process" (DeLucia, 1977, p. 116). The acronym remediation-enrichment-optional (REO) represents the way in which resource time should and can take place (DeLucia, 1977). The student choice open modules (resource time) would instead become assigned time for remediation and enrichment. If needed, the resource time could also be assigned to students to pursue optional non-instructional undertakings if academic goals are being met. A distinction between the REO and the FMS is that resource time is not considered open choice time for students. Resource time is more structured and assigned into the students' weekly schedule and teachers are responsible for ensuring these expectations are met and therefore a higher level of student accountability is maintained (DeLucia, 1977).

Additionally, this separate ninth-grade model would contain time each day for strategic teaching of developmental-skills or soft-skills (See Appendix B) to students to promote their psychological development. Just as the FMS was able to provide strategic intervention which positively impacted ELL and special education students, causing an increase in their development, the study suggests a ninth-grade academy model can have the same impact on

students, increasing academic performance, decreasing behavioral issues, and promoting a sense of identity or student development. The separate ninth-grade model would not abandon the FMS, but use structural ideas from the REO model to incorporate a first-year experience class aimed to restructure resource time. An additional element of this ninth-grade model would be a time for common teacher collaboration focused on ninth-grade students to monitor their development to ensure students earn necessary credits needed to become a sophomore significantly increasing their chances of graduating in four years (Fulk, 2003). All of these functions of this ninth-grade FMS model would aim to allow students to promote to the tenth, eleventh, and twelfth-grade with the developmental skills needed for success.

Freshman academy model. The idea of a separate academic setting for ninth-grade students is not a new one. Former Secretary of Education, Richard Riley, referenced the challenges faced by America's ninth-grade students, explaining how they leave smaller primary settings and find themselves in much larger "impersonal high school" (Riley, 1999). Riley presented the concept of small learning communities for ninth-graders to find their way in high school by proposing a program to assimilate ninth-grade students through regular collaboration with the same group of teachers, counselors, and the implementation of transition courses (Riley, 1999). This idea developed into several models used across the United States and is often referred to as freshman academies, ninth-grade academies, or ninth-grade centers, all centered around idea of creating a smaller learning community within the larger comprehensive high school (Fulco, 2009). The study suggested adopting a form of the freshman academy model, while maintaining the FMS structure, which addresses the developmental concerns of ninth-grade students to provide strategic transitional accommodation and intervention to students at Monett High School.

While the need for a transitional program is necessary for ninth-grade students to show success in the complexity of the FMS, a transitional program of all ninth-grade students into any high school scheduling model is needed. Too many high school students are failing courses and not persisting to graduation due to the lack of accommodation during this pivotal time of disequilibration. Fulk (2003) stated during the ninth-grade year that many students, for the first time, have to earn passing grades in core courses. Furthermore, these courses are often considered the more challenging classes a student takes while in high school (Smith, Akos, Lim, and Wiley, 2008). While the pressure of transitioning to the FMS and showing successful in high school may be challenging for a ninth-grade student, the data does not support the removal of the FMS due to the extensive opportunities the schedule provides as compared to the traditional schedule.

Freshman academy framework. West High School's framework provides an exemplary design for the development of a ninth-grade FMS model. Emmett and McGee (2012) identified West High School's elements of their freshman academy model: (1) empowering the right people, (2) constructing a sustainable design, (3) building a culture of collaboration, (4) creating connections at West High School, (5) a proactive approach to discipline, and 6) doubling the effort in year two. These six elements provide a comprehensive framework and considerations when developing a ninth-grade transitional program.

Using Emmett and McGee's (2012) framework as guiding principles at Monett High School, three strategic aspects were recommended when implementing a freshman academy model. First, significantly reducing the number of resource times for ninth-grade students and restricting ninth-grade student choice in resource time classes. This restriction would place ninth-grade students in resource time classes with only teachers who are part of the ninth-grade

academy ensuring relational connection, reducing behavioral issues. Second, replacing much of the current ninth-grade resource time with a required course focused upon identity development (Erikson, 1968). This would begin with revamping the current ninth-grade seminar class, which the data found was not impactful or relevant to students. Developing curriculum strategically targeting the psychological developmental skills of students to align with the Monett R-I Profile of a Graduate (Appendix B) and examining how this curriculum can include an onboarding process for how to be successful in the FMS. After a semester, freshman academy teachers would examine student's grades, attendance, and behavioral incidents to determine next steps student accommodations.

The final aspect of the freshman academy model at Monett High School would be strategic focused teacher collaboration. These teachers would teach teams of ninth-grade students to monitor development, to ensure students remain on track to graduate in four years (gain necessary credits). The school would set apart a group of teachers who would teach only ninth-grade students in mathematics, science, English, and social studies. Likewise, a counselor and administrator would be assigned to this academy as well. These teachers, administrator, and counselor would have common collaboration times while students are in specialty classes to discuss student assimilation and equilibrium, customize and personalize the ninth-grade development course curriculum, and discuss accommodations to assist ninth-grade students at Monett High School. This part of the implementation would be directly linked to Emmett and McGee's (2012) essential elements of their freshman academy model of building a culture of collaboration, creating connections, and a proactive approach to discipline. Utilizing a consistent and cohesive staff collaboration structure around the ninth-grade students would significantly increase their chances for success in high school.

Summary of changing the first-year experience. While the use of a ninth-grade transitional program is not a new idea to high school practitioners, the data suggested a need to assist these students in their assimilation into the high school. Transitioning to high school is already a challenge for students, but the findings indicate transitioning from a traditional middle school setting to an FMS in high school is too much for underdeveloped ninth-grade students. This model is creating obstacles for teachers who manage resource rooms of ninth-grade students, spending the majority of their time managing inappropriate behaviors. These early high school interactions are often creating barriers that are challenging to overcome when these same students enter their classes in later years with only these negative interactions in regards to the teacher. Creating a standalone ninth-grade FMS transitional program for students would provide the needed developmental accommodations enabling successful assimilation into high school.

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Appendix A

Interview Protocol

Introductory Question:

1. What is your role at Monett High School and how long have your worked here?

Transition Question:

2. Describe the difference between your day before and now after the implementation of the flexible modular schedule.

Key Questions:

3. What academic concerns, if any prompted the implementation of the flexible modular schedule?
4. What behavioral concerns, if any prompted the implementation of the flexible modular schedule?
5. In what ways, if any, has the flexible modular schedule impacted student academics?
6. In what ways, if any, has the flexible modular schedule impacted student behavior?
7. In what ways, if any, has the flexible modular schedule impacted student grades in your classes? (Teacher Only Question)
8. What difference if any do you see in students in the flexible modular schedule model as compared to students in the traditional schedule?

Ending Question:

9. Do you feel the flexible modular schedule is positively affecting students? Explain.
10. Do you feel the flexible modular schedule is negatively affecting students? Explain.
11. What else would you like to share with me about your experiences with the flexible modular schedule?

Wrap-Up

Thank you for taking the time to discuss your experiences with me.

Appendix B

MONETT R-I
PROFILE OF A GRADUATE

ACADEMIC

Academically Proficient
(Including Personal Finance)
Problem Solver/Critical Thinker
Creator/Innovator

PERSONAL

Hard Worker
Dependable/Responsible
Reliable
Respectful
Willing to Learn

SOCIAL

Team Player
Collaborator
Communicator

STUDENT FOCUSED...FUTURE DRIVEN

High School Journal Writing Guidelines

All journal submissions should be written using American English and limited to 30 pages. This 30-page limit does not include the title page, references, appendices, tables, and figures. Submissions are to use current APA style for all text, headings, tables, citations, and references. Additionally, qualitative submissions must cite all quotations in-text from interviews as (name of participant, personal communication, date). These citations are not included in the reference list.

General sections for the manuscript include, but are not limited to: introduction (no heading is used for this section); literature review; methods; results/findings; discussion; limitations; and conclusions.

A 200-word limit abstract should be included as a summary of the paper. A list of suggested keywords should be included. ERIC's thesaurus should be used to find keywords relevant to the journal submission.

Tables should be submitted as editable text within the document. Figures should be submitted in a separate document, but if possible as an editable text. If it cannot be an editable text, an indication of the placement of the figure should be marked with < Insert Figure 1 about here > ("University of North Carolina at Chapel Hill School of Education", 2017).

Once the manuscript has undergone peer review, the editorial board will use the review to make a collective decision and the researcher will receive one of the following notifications: accept, minor revisions, major revisions, reject and resubmit, or reject.

CHAPTER SIX

SCHOLARLY PRACTITIONER REFLECTION

Dissertation in Practice Reflection

In this chapter of my dissertation in practice, I reflect on the knowledge I have gained, the transformation of my practice, and my journey toward scholarship. Specifically, I aim to answer how the dissertation has influenced my practice as an educational leader, and how the process of completing this dissertation has influenced me as a scholar. This portion of the dissertation is a reflection of this journey.

How Has the Dissertation Influenced Your Practice as an Educational Leader?

When considering the ways in which this dissertation process has influenced my practice as an educational leader, I would first start with my confidence as a leader. Starting my coursework in 2013, I was simultaneously starting a new job as the principal of Jarrett Middle School. These two significant life changes were challenging to manage, but with each class I attended, I learned something new, looked at situations differently, and began to approach my work from the perspective of a researcher. I was able to weekly collaborate with others in similar roles, which provided a wonderful support system, and sparked lasting relationships. Additionally, these weekly classes allowed me to starting making decisions based upon literature, and I began to use adult learning theories, specifically social cognitive theory (Merriam & Bierema, 2018). This adult learning theory specifically influenced how I conducted staff meetings and led meetings, as I sought to create social environments that allowed for observation and the acquisition of knowledge from peers. The collaboration model I now use has allowed for the modeling of behavior, the creation of a common academic language, and established a culture in which each teacher joins in a shared ownership of our students' education. Likewise, when training my staff, I look and ask for research, both quantitative and qualitative, before jumping with both feet into an initiative. Co-workers and fellow students

began to mention the difference they saw in my practice, my speech, and my writing the longer I was a part of the program, and my confidence as an educational leader began to grow.

Starting the dissertation process, I must admit, I was naive. I thought I would have it completed in a few short months, and it would not be long until I was completing the program. I could not have been more wrong. This process took all I knew and did not know, and reconstructed my idea of what it means to earn the title Ed.D. Every aspect of this dissertation caused me to consider, develop, and construct ideas. I found myself discussing my dissertation research findings with my teachers, and started to insist our school consider the ideas found with the flexible modular schedule (FMS). While I knew my school would not soon utilize the FMS, I took multiple teams of staff members to Monett High School for brainstorming sessions with the goal of thinking innovatively about how we can build flexibility and time for students within our traditional scheduling model. An outcome of these visits was that our school developed a time in the middle of the school day, 20 minutes, based completely off the resource time we observed at Monett High School that allows our students work time and flexibility. This student work time idea has now been implemented by four other middle schools within my school district, greater broadening the influence this dissertation has had upon my professional community. Sharing these ideas, watching colleagues adopt these ideas, being asked to share the research supporting these ideas, and the benefits to student development have caused me to grow in my overall confidence as an educational leader.

Another way in which this dissertation has influenced my practice as an educational leader is through the growth of my knowledge of high school education. As mentioned, I am a middle school principal and I quickly learned these are two very different worlds. Prior to becoming a middle school principal I served as a Kindergarten through eighth-grade assistant

principal, and before that experience, I was a seventh grade teacher. While I have had the privilege to serve a diverse range of students, I have no experience or knowledge of leading in a high school. This dissertation took me into the trenches of the high school experience as I analyzed the origins of high school scheduling, accreditation, and graduation requirements. I was able to conduct candid interviews with high school teachers, counselors, and administration, providing me incredible insight into this different level of education. Being able to analyze the impact a schedule can have on a school's morale, pedagogy, and achievement was important for me to see as I strive to become a better leader. This newfound insight has helped me make more well-rounded decisions as a leader at my school.

It is not uncommon within the middle school setting to partake in discussions regarding student motivation. These conversations typically include a statement referring to the high school system, and the acquisition of credits as the key to student accountability. This dissertation not only provided me data and research to which I can cite to explain the flaws to this way of thinking, but it also equipped me with data and research pointing to effective methods of student accountability and instructional practices. Having a better understanding of high school has caused me to no longer shy away from the leaders within the high schools my students attend and seek to collaborate to find ways in which we can better prepare and transition students. Recently I worked with a high school principal to develop a plan to better assimilate students from my school to their future high school. This collaboration was prompted by the ideas developed during the discussion section of my research study.

Finally, the conversations I have had with my dissertation supervisor and members of my dissertation committee have caused significant growth in my thinking. Bruffee (1999) said, "Education initiates us into conversation, and by virtue of that conversation initiates us into

thought" (p. 133). His statement here could not be more true of the conversation with those members of my dissertation team. Each conversation opened a new door of consideration and ideation. These treasured interactions cause me to now desire to provide the same experiences for those I have the chance to mentor and supervise. The evaluation process of my school is no longer a simple observation and scoring process, but a conversation, reflection, and consideration of practice and the constant search for ways in which we can grow. This is dissertation and doctoral program have forever impacted the way in which I approach all aspects of my role as an educational leader.

How Has the Dissertation Process Influenced You as a Scholar?

When I reflect on how the journey of this dissertation has influenced me as a scholar, I would begin with the way I start a process of problem solving. I have learned it is not only helpful and informative, but I would go so far as to say critical to examine scholarly literature prior to starting most educational endeavors. This process has taught me to think like a scholar. One example of this would be that I have learned a scholar seeks first to know as much as they can about the problem at hand prior to acting. This approach is not always popular methodology in the practitioner world in which I live, as action is sometimes valued over results. I have learned good decisions are supported by data and grounded in peer-reviewed research, and I have come to learn that scholarly literature does not have as many gaps in research as the practitioner would like to believe, you just have to know how to search and how to synthesize ideas to create connections to your work.

Additionally, I find that I am in constant search for scholarly frameworks to support decisions I desire to make. For example, within this dissertation, the framework for the ninth-grade program is based upon Piaget's (1953) developmental theories of assimilation,

accommodation, and equilibrium. I have found, when I am able to connect ideas to widely accepted scholarly research, it not only provides rationale for the work I desire to accomplish, but it also helps people conceptualize the ideas to others. This approach allows for greater buy-in as my faculty are able to see the goal and reach it with greater clarity. Having the ability to see and connect initiatives and ideas to a framework has greatly strengthened my leadership and propelled my desire to grow in my capacity as a scholar.

Another way in which the dissertation process has caused me to grow as a scholar is my new found appreciation for qualitative research. So often we in the practitioner world we seek only the bottom line from a numerical perspective. If someone's numbers are good, replicate it at all costs. If someone were to look at my dissertation from only a quantitative perspective, they would miss out on so many important aspects of what we are attempting to accomplish as educators. My dissertation showed the academic data were not significant and the behavioral data actually became worse, but upon digging deeper through a qualitative approach, my recommendations, if accepted, potentially salvage the many advantageous opportunities the FMS provides students. The qualitative data informed and gave meaning to the quantitative data. This is a significant lesson I learned, because when I began this process, I did not want to conduct qualitative research, I only wanted to analyze the quantitative data. Regardless of the time I spent learning of the importance of qualitative research, it was only my experience in this dissertation process that solidified the importance it plays in the scholarly field.

Regarding quantitative research, this is something I now have learned to examine and understand in a different way. When I read a research study, I now look for more than the quantitative results, but how did they assess significance, what methodology was used, and seeking to understand the conceptual framework. I have also learned an ethical researcher goes

to great lengths to clearly communicate not only the findings of a study, but also the limitations of a study. Quantitative findings can easily be manipulated by a savvy statistician with an agenda, but quality research aims to answer the research question at hand, giving the reader all the information needed to make good decisions and duplicate the research if they so desire. When assessing quantitative research, I have learned the importance of peer reviewed studies, as this accountability of the scholarly community now plays a major role in the decisions I make as an educational leader.

Conclusion

This dissertation process has enabled me to find deeper value in both the role of practitioner and scholar. I have learned the need for balance in the educational setting, and how each group is dependent upon one another. I have learned the effective practitioner should look to the scholarly field to inform decisions with researched based approaches, while the scholar would find himself or herself without research if practitioners were not daily seeking out innovative ways to solve problems. It is collaboration between the two that creates the potential to for significant findings, and it is equilibrium within myself that I hope brings practitioners and scholars together for the advancement of students. As I complete this dissertation, I am excited to see how I can play a role in building bridges between these two groups, and make a lasting impact upon the educational system and my community.

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Appendix A

Interview Informed Consent Form

Consider carefully before deciding to participate in this research.

Description: I am an EdD student at the University of Missouri – Columbia in the Educational Leadership and Policy Analysis program, and I am interviewing teachers, counselors, and administration of Monett High School regarding the flexible modular schedule.

Purpose of the research: To demine if the flexible modular schedule has an effect on student academic and student behavior.

What you will do in this research: If you choose to participate, you will be interviewed about your experiences, perceptions, and challenges regarding the flexible modular schedule. With your permission, I will record the interview to allow me to focus on our conversation.

Time required: The interview will take approximately 25 minutes.

Risks: No risks anticipated.

Benefit: To assess the effectiveness the flexible modular schedule has on student academic achievement and student behavior.

Confidentiality: Your responses to interview questions will be kept confidential. At no time will your identity be reveal. With your written permission, excerpts from the interview may be included in my dissertation in practice or other later publications.

Participation and withdrawal: Your participation is voluntary, and you may refuse to participate or withdraw from the study at any time. To withdraw you may contact me at any time (no questions will be asked). Additionally, you may skip any question during the interview.

To contact the researcher: If you have any questions, comments or concerns about this researcher, please contact: Rob Kroll, 417-848-4524, rkroll@spsmail.org. You may also contact the faculty member supervising this work: Dr. James Sottile, MU-MSU EdD Site Coordinator, 417-836-4428, JamesSottile@MissouriState.edu.

Agreement: This research project has been sufficiently explained, and I agree to participate in this study. I understand that I am free to withdraw any time.

Signature: _____ Date: _____

Name (print): _____

Appendix B

Interview Protocol

Introductory Question:

1. What is your role at Monett High School and how long have your worked here?

Transition Question:

2. Describe the difference between your day before and now after the implementation of the flexible modular schedule.

Key Questions:

3. What academic concerns, if any prompted the implementation of the flexible modular schedule?
4. What behavioral concerns, if any prompted the implementation of the flexible modular schedule?
5. In what ways, if any, has the flexible modular schedule impacted student academics?
6. In what ways, if any, has the flexible modular schedule impacted student behavior?
7. In what ways, if any, has the flexible modular schedule impacted student grades in your classes? (Teacher Only Question)
8. What difference if any do you see in students in the flexible modular schedule model as compared to students in the traditional schedule?

Ending Question:

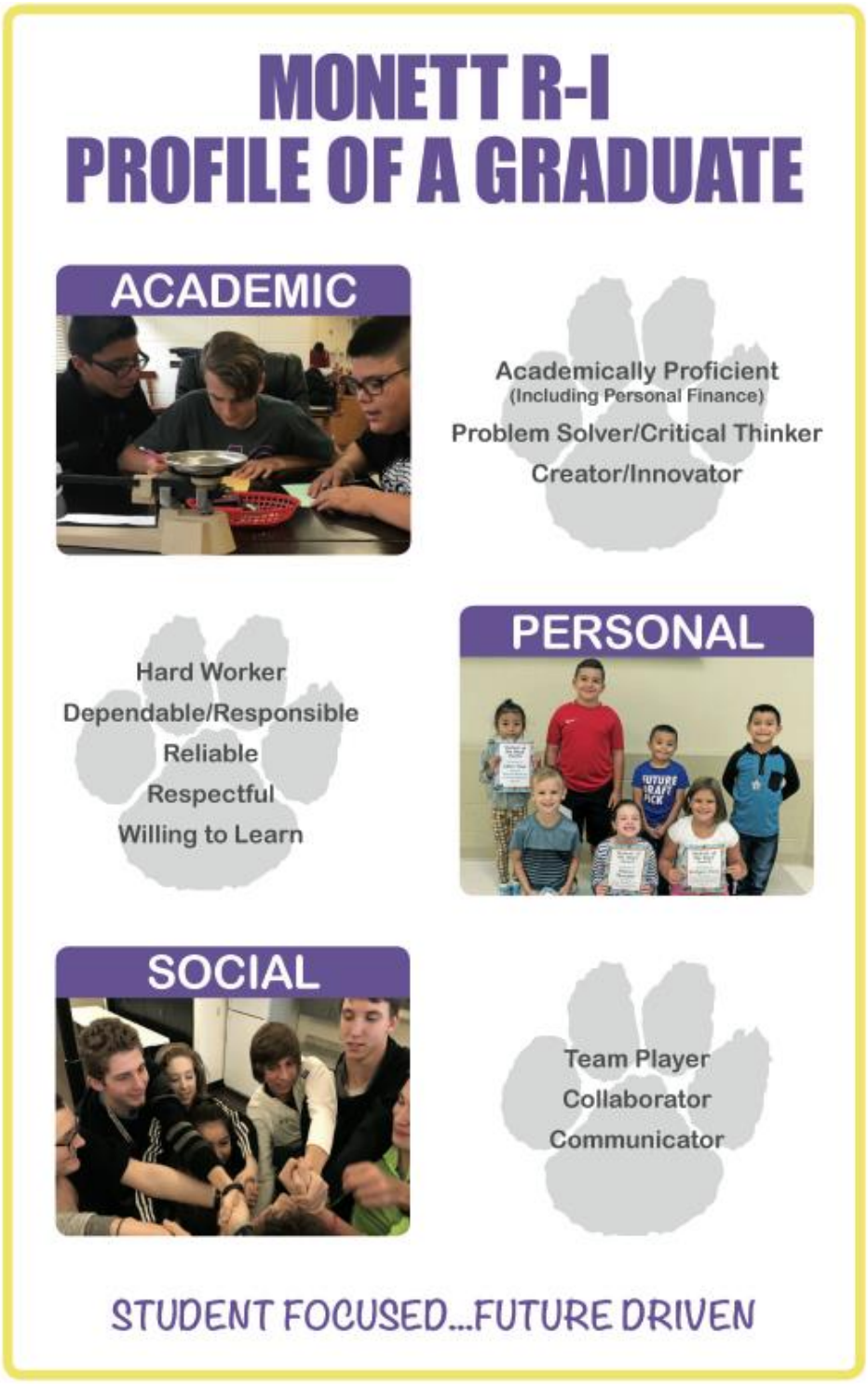
9. Do you feel the flexible modular schedule is positively affecting students? Explain.
10. Do you feel the flexible modular schedule is negatively affecting students? Explain.
11. What else would you like to share with me about your experiences with the flexible modular schedule?

Wrap-Up

Thank you for taking the time to discuss your experiences with me.

Appendix C

Monett R-I Profile of a Graduate



Appendix C

Comprehensive Findings, Discussion, and Limitations

Findings

Using a mixed methods approach, quantitative and qualitative data were collected from the Monett School District. In this section, statistical analysis of the academic end of course (EOC) examination data were used, as well as behavioral suspension data to report findings regarding traditional schedule students as compared to flexible modular schedule (FMS) students. These data were then organized and summarized to further assess behavioral and academic achievement, as well as developmental impacts the FMS made on students. Initially, the data were coded into fourteen categories, but after further analysis, it was consolidated into three themes: inconsistent stakeholder buy-in, student access: opportunities and challenges, and developmental outcomes. These three qualitative themes along with the quantitative statistical findings provide the necessary data to answer the research questions of this study regarding the effectiveness of the FMS on academic achievement and student behavior and the impact the FMS had upon student development.

Quantitative Findings

To answer the study's questions, a quantitative analysis of standardized testing data and discipline data were used. Missouri Assessment Program EOC examination data were analyzed to make determinations regarding the impact the FMS had on student academic achievement. Monett High School's in-school and out-of-school suspension rates were evaluated to determine changes in student behavior by the FMS.

Academic Achievement. To answer the research question regarding the flexible modular schedule's (FMS) impact on academic achievement, EOC examination data were requested. These standardized tests, given to high school students across the state as part of the Missouri

Assessment Program, provided a normalized assessment score for statistical analysis. The Monett School District provided unidentifiable student level Algebra I, English II, Biology, and Government results divided into four categories: below basic, basic, proficient, and advanced. These tests have been traditionally administered to students in the following sequence: ninth-grade students take the Algebra I EOC exam, tenth-grade students take the English II and Biology EOC exam, and eleventh-grade students take the Government EOC exam. While there are occasional exceptions to the administration of these examinations, this information was used to organized and compare student groups from the traditional and FMS. Because Monett High School began the implementation of the FMS in 2015, this study organized EOC exam results to ensure student data in the traditional student group did not receive instruction in the FMS and students data in the FMS student group did not receive instruction in the traditional schedule. One factor that limited further analysis of Monett's EOC exam data was that state-level data were unavailable for Algebra I and English II in 2017.

The quantitative analysis began by first comparing ninth-grade EOC traditional schedule students' Algebra I results to FMS students' Algebra I results. This was done by comparing the 2012 and 2015 Algebra I results as well as the 2013 and 2016 Algebra I results. Similarly, tenth-grade student data were compared using Biology and English II results by examining 2013 and 2016 assessment data. Due to the availability of assessment data, the study conducted additional statistical analysis of Biology comparison of 2014 and 2017. Finally, eleventh-grade student data were compared using the Government EOC results and using the 2014 and 2017 data. Using these years and test combinations, the study ensured no student would be assessed two times, and students representing the traditional schedule and FMS would have been instructed in the assessed areas in their respective schedules.

A Kruskal-Wallis H test was used to determine if there was a statistically significant difference in subject scores between the different types of schedules. The Kruskal-Wallis H test first converts scores into ranks and the mean rank for each group is compared to indicate a level of significance. To interpret the results of the Kruskal-Wallis H test, the following values are needed: Chi-square ($\chi 2$) value, the degrees of freedom (*df*), and the significant level. A significance level is less than .05 would indicate a statistically significant difference in the continuous variables, which in this are below basic, basic, proficient, and advanced scores. The mean rank was used to inform the researcher which student group had the highest overall ranking. The table below provides the chi-square scores, degrees of freedom, p values, and mean rank scores for each comparison by subject and year.

Table 12

Kruskal-Wallis H Test Summary Table Comparing EOC Results Between Traditional Schedule Student Groups and Flexible Schedule Student Groups

Years compared	EOC exam	Traditional mean rank	Traditional *n*	FMS mean rank	FMS *n*	$\chi 2$	*df*	*p*
2013 v 2016	English II	195.74	184	192.42	203	0.108	1	0.743
2014 v 2107	Government	181.84	184	180.13	177	0.027	1	0.869
2012 v 2015	Algebra I*	124.89	125	142.90	143	4.026	1	0.045
2013 v 2016	Algebra I	138.82	98	132.81	171	0.420	1	0.517
2013 v 2016	Biology*	193.31	180	165.54	178	7.406	1	0.007
2014 v 2017	Biology	169.34	162	184.38	192	2.170	1	0.141

Note. * Significant at < .05

When analyzing Algebra I student groups, mixed results were found. The 2015 FMS group scored significantly higher ($p = 0.045$) on the Algebra I EOC than the 2012 traditional schedule groups, however, the 2016 FMS and the 2013 traditional schedule groups had similar EOC Algebra I scores. The Kruskal-Wallis H test showed no statistical significance in the Government EOC test results between 2014 (traditional student group) and 2017 (FMS student group), but did find that the 2013 traditional student group scored significantly better in the Biology EOC exam when compared to 2016 with an output of, $\chi 2(1) = 7.406$, $p = .007$, with a mean rank score of 193.31 for 2013 traditional student group and 165.54 for the 2016 FMS student group. The results found in Table 12 indicate the academic statistical analysis showed

mixed results. Due to these mixed findings, further statistical analysis of gender, race, and lunch status data were not conducted.

Student Behavior. To answer the research question regarding the FMS impact on suspension rates of high school students, the study requested 2012 – 2018 unidentifiable student level discipline data. The Monett School District provided student level suspension data for both in-school suspension (ISS) and out-of-school suspension (OSS) over the seven-year period. This data included the race, gender, and lunch status of each suspension assigned. Because these data were unidentifiable, the study was unable to determine if a single student was responsible for multiple disciplinary counts, creating challenges to conduct valid statistical analysis. Although these data did provide some limitations, a chi-square goodness-of-fit test was determined suitable to evaluate suspension rates (OSS and ISS) as they corresponded to enrollment rates and these data were imported into a chi-square test calculator for a contingency table. Due to the rise in enrollment of Monett High School over the last seven years, the study compared the 2012 – 2104 enrollment (traditional schedule years) and the 2016 – 2018 enrollment (FMS years) to the ISS and OSS counts from those years. The researcher decided to omit the enrollment and suspension counts from 2015, as this was the first year of implementation of the FMS. Using the chi-square test of goodness-of-fit, it was determined there was a significant difference in suspension rates. Table 13 illustrates the data imported into the chi-square contingency table.

Table 13

Chi-Square Goodness-of-Fit Contingency Table (Traditional and FMS ISS Counts)

	2012 – 2014 (traditional)	2016-2018 (FMS)
In-school suspensions	1,844	2,641
Total enrollment	1,942	2,205
Rate per student	0.95	1.20

When a chi-square of goodness-of-fit was performed on in-school suspension rates in Table 13, the findings were significant. Students from the FMS student group had significantly higher in-school suspension counts than those from the traditional schedule student group, $\chi 2$ (1) = 28.573, $p < .0001$. When the same analysis (chi-square test of goodness-of-fit) was completed to compare the OSS counts, the outcome was, $\chi 2$ (1) = 0.0083, p = .9275. The OSS counts did not yield any significant differences between the traditional schedule student group and the FMS student group. Due to these findings, accessible data were used to analyze the ISS counts further, but because there was no significance in OSS comparisons, further analysis was not conducted. Table 14 illustrates they study's findings of ISS.

Table 14

Chi-Square Goodness-of-Fit Comparison of Traditional Schedule Student Group In-School Suspension Counts and FMS Student Group Suspension Counts

Demographic group	Traditional ISS *n*	Traditional *n*	Traditional ratio	FMS ISS *n*	FMS *n*	FMS ratio	$\chi 2$, *df*, *p*
White	1,291	1,389	0.93	1,527	1,364	1.12	12.017, 1, < .001
Hispanic	484	468	1.03	1051	717	1.46	18.638, 1, < .001
Free and Red. Lunch	493	922	0.53	1,234	1,126	1.10	108.49, 1, < .001
Full Pay Lunch	1,244	1,020	1.22	1,407	1,079	1.31	1.307, 1, 0.252

Note: Traditional years = 2012-2104 and FMS years = 2016-2018

When ISS rates were further analyzed by demographic groups, more significant differences were found. White ($p < 0.00$), Hispanic ($p < 0.00$), and students eligible for free-and-reduced lunch ($p < 0.00$), all had significantly higher counts of in-school suspension when the FMS was employed as compared to these demographic groups in the traditional schedule. The only demographic group not found to be significantly different was the full pay lunch student group.

Qualitative Findings

Qualitative analysis was used in the study to gain practitioner insight into the daily operations of working in the FMS in hopes of learning more about the academic and behavioral impact of the FMS and determine its impact on student development. To gain this understanding, nine professional staff members (teachers and administrators) of Monett High School were interviewed. These participants made-up approximately 23% of the professional staff working at Monett High School in the 2018-19 school year. Six of the nine participants

were female, three participants were male, and all participants were white. Six of the participants taught a variety of courses the high school offers, while one participant was a counselor, and two of the participants were school administrators. Finally, of these nine participants, seven of them worked at Monett both before and after the implementation of the FMS, while the other two participants came post-implementation. The interview protocol used in this study is available in Appendix C.

During the course of the qualitative analysis, three major themes emerged (Merriam & Tisdell, 2009): (a) inconsistent stakeholder buy-in, (b) student access: opportunities and challenges, and (c) student development: thriving or hiding. These themes, when unpacked provide insight into the rationale for adopting the FMS, the changes made to the FMS since implementation, and how this affected stakeholder buy-in. These themes also reveal the impact of increased teacher access to students through resource time, both benefits and challenges. Finally, the researcher shares polarizing developmental observations the participants suggested regarding the use of the FMS at Monett High School.

Inconsistent stakeholder buy-in. A major component of this case study is a comparison between the traditional schedule and FMS, and it became clear that inconsistent stakeholder buy-in was a major factor when examining the impact the FMS. Because the FMS and the traditional schedule are distinctly different both structurally and philosophically, gaining and sustaining stakeholder consensus regarding the FMS has shown to be challenging. Interview participants indicated the challenges the FMS revealed about gaining and sustaining consistent stakeholder consensus over the five years of implementation.

It was found that staff members who were employed during the exploration and implementation stages of the FMS at Monett High School have a higher buy-in than those who

were employed after the decision to implement. One participant spoke about buy-in and stated, "I would say initially, it was really high. We didn't move unless we had full support from our staff, now I would say it's probably decreased since then." When asked why support of the FMS dropped, the participant shared, "That could be new teachers coming in who have never taught under it [FMS] before, not being here when it [FMS] was implemented to know why we are doing what we are doing." Participants revealed that teachers, administrators, and board of education members were all involved in the exploration process, understood the challenges of adopting the FMS, and valued the benefits the schedule would offer in spite of these complications. One participant stated, "before we made the decision to jump to mod [FMS], lots of people had reservations." Regardless, when it came time to decide if the school was going to make the move and shift to the FMS, participants indicated, "It was wholehearted." Challenges to the FMS posed were: (a) accepting the complexity of the schedule, (b) teachers no longer having their own classrooms, (c) having a shared office space, and (d) moving from room to room to teach. One participant's recollection of the first year of implementation was, "Students were grumbling, teachers were grumbling, because it was different. It was just different. Now it's just kind of the way we do things." Despite these changes, stakeholder buy-in remains relatively high; one staff member stated, "70% staff buy-in," while another staff member shared that they felt it was, "80% teacher buy-in." Participants interviewed who worked at Monett High School when the program first began still believe the advantages, which allowed flexibility and the access the FMS allowed teachers to students during the school day, still outweigh the disadvantages.

The board of education approved the staff's decision to implement the FMS in 2014-15, beginning a five-year pilot of the program. One participant explained, "We did a lot of studying;

we did a lot of discussion; there was a lot going on to make sure this was what we wanted to do." Staff members present at implementation went through the challenges of changing to the FMS together. Participants expressed the comradery established amongst the staff through a challenging time of change. Although participants indicated the majority of teachers favored the change to the FMS, those same teachers indicated less overall buy-in after four years and several participants question if the schedule will continue, citing a lack in overall stakeholder support; "I think those who have only been here, like if this is their first year or second year, they may not be sold on it because there are some disadvantages… but most of us feel like the advantages far outweigh the disadvantages." When asked about their personal buy-in to the FMS, one participant responded, "If you would have asked that question last year or any of the years before, I would have enthusiastically said yes." When asked about their shift in support of the FMS, they said, "With the changes this year, I would still say yes, but not as enthusiastically as before. I do feel like we still have to have a way to reach those kids that can't stay before or after school." These responses reveal a low point in support for the FMS in the 2018 – 2019 school year.

Upon noticing the lack of support during the 2018- 2019 school year, it was found that Monett High School FMS model had undergone several structural adjustments over the last four years. Some adjustments were made to reduce truancy, as the tracking of student attendance during resource time is challenging. Although the school itself made minor alterations to the FMS during its first four years, participants explained these changes were intentionally minor to maintain the benefits of the FMS. Despite some stakeholders desire to maintain the FMS, there was a growing consensus of stakeholders who disapproved of the schedule as well. As the board of education members terms ended, new board members were elected who held less favorable

views of the FMS. Leading into the final year (2018 – 2019) of the FMS pilot at Monett High School, board of education members held stakeholder meetings to inquire about the effectiveness and perceptions of the schedules success. The board enacted several policies to the schedule moving into year five: (a) requiring a minimum number of modules a class must have, (b) eliminating 25-minute classes, (c) assigning the A-E day rotation to align consistently with a day of the week, (d) requiring multiple permissions for student course conflicts, and (e) insisting upon the reduction of classes with conflicts and teachers shared courses. One participant stated, "Some need a historical context" before making changes to the schedule, explaining the amount of work that went into the consideration of the FMS sharing, "to go back after all that is a discredit [of] our efforts." Another participant shared that due to the changes made by the board of education in 2018 - 2019, the current schedule could no longer be considered a true FMS, stating, "They are ruining it."

One change the Monett Board of Education mandated was an increase in time courses were required to meet. Participants indicated that this change to the FMS had a direct impact upon the highly valued resource time. Despite the support of the founders of the FMS at Monett High School, most participants indicated support for the schedule was trending down. One teacher shared, "Because we've taken away some of the mod characteristics, I would say the buy-in might be lower." This trend and the increase in the involvement of the board of education caused one participant to express, "Mod is not really completely mod anymore," leaving some to believe this reduced stakeholder buy-in is going to lead to the return of the traditional schedule. When faced with this possibility, one participant stated, "I can't imagine going back. I'm terrified. I don't want to go back."

The findings regarding inconsistent stakeholder buy-in reveal the challenge of sustaining support for the FMS at Monett High School. When combining staff, administrative, and board of education turnover with the challenge of community understanding, stakeholder consensus was waning. One participant shared community member comments, such as, "we've got some people who are going to be dead set against it because it doesn't look like school did in 1990, so it's not anything they're ever going to go for. While you have other people who support it, and others want to see the data." Stakeholder consensus proved to be a challenge, both in the school and in the community.

Student access: opportunities and challenges. As mentioned in the previous theme, the lack of teacher access to students for intervention was a major reason for the adoption of the FMS at Monett High School. Participants repeatedly indicated, due to before and after school responsibilities of students and teachers, it was becoming increasingly challenging to provide students with the necessary intervention and assistance needed to be successful in coursework.

> We have so many students that work, so many students that do sports, and so many kids that don't have transportation after school if they do want to stay, that it just provided them that opportunity to receive tutoring during the day. I mean, it just gave teachers access to the kids during the school day, because we all know how hard it is to get kids willing to stay after or come early.

One participant indicated that they coach athletics after school, explaining how they were not available to help students with their courses after school if they have questions or need assistance on coursework. Another participant explained how students now have jobs to support their families, are responsible for younger siblings, and their only means of transportation is the

school bus, all creating barriers to before or after school student access. Student access was found as a major factor in the school's decision to convert to the FMS.

> I had noticed that it was becoming much more difficult to get students to stay after school or come in before school. That was part of this transition, and I've noticed more kids working to support the family, more kids babysitting their siblings, and I was having difficulty if a student needed additional help getting them that extra help. We tried several things, but it just wasn't working.

When asked about the access to students as compared to the traditional schedule, one respondent stated, "bottom line, we are able to help more kids throughout the day than we were before."

This student access comes in the form of resource time in a student's schedule. As students' classes are not all aligned, a gap is created in schedules. These gaps provided intervals, or mods of time, in which a student may receive help on work by going to a resource room. These resource rooms are divided by subject and have at least one staff member assigned to them at all times giving students the opportunity to subject-specific assistance. The resource times also provide access to counselors and other staff members to intervene with students while not interrupting their time in class. One participant stated, "resource time eliminates many of the excuses students previously gave for not being able to be successful academically." Another participant shared, "They can get extra help (in resource time) and they can go talk to those teachers in the subject areas that they may be struggling in." When asked about how this increase in student access impacted the school, one participant shared that due to the ability to complete homework in school with subject-specific assistance, some students are now able to be involved in afterschool extracurricular as where before they could not participate stating the FMS "opens time" for these students. This participant also shared how this time is now available

after school and allows students to spend more time with family and not working on schoolwork at home. Student access and its opportunities and challenges were a reoccurring theme during the interview process when explaining support for the FMS's implementation and continued use.

While the FMS provides educators access to students the traditional schedule cannot provide, it did not come without its challenges. One challenge to this high level of student access is setting and maintaining teacher and student expectations in resource rooms. Resource time, the major reason Monett High School adopted the FMS, was designed to provide in-school academic intervention, tutoring, and opportunity for the developing of student teacher relationships. When asked about the expectations of resource time at Monett High School, one participant stated the teacher should be "up and moving around the room engaging with students," but acknowledged that it is not always the case, as sometimes teachers are seated at their desks unengaged with students. A participant shared, resource time should be more than "just a study hall." Instead, it should be a time of "deliberate intervention." This same participant shared when reflecting on the school as a whole, "We've got some of it (deliberate intervention) in some places, we don't in others." These teacher behaviors manifest in resource room expectations, having a direct impact on the students' behaviors in resource time as well. One participant shared, "Resource rooms have inconsistent expectations," as some rooms give the impression of "free time" or "fun" and other rooms have the "reputations for being a place a student can quietly work." Another participant explained resource rooms stating, "Some are doing better than others, and I think this is the big frustration with everybody, is what it [resource time] looks like." This participant explained how one resource room is "very quiet" and "that's how they are supposed to keep it. They [teachers] know that". The same participant continued to explain how other resources rooms were louder and how some, but not all students were

working. When talking about these resource rooms, the participant said, "I don't know how you could concentrate in that environment." It is clear that resource room expectations are a major factor in their perceived success, or lack thereof.

Resource time expectations of students and teachers have a direct impact on the ability or lack of ability to build student and teacher relationships. One factor in setting consistent expectations is due in part to the lack of predictability to resource time. "Resource times can be very unpredictable," one participant stated, "as far as who is coming and how long they are coming, and who you are going to see and who you won't see that day." This participant shared the challenge at times also depends on the size of the class sharing, "some days I have resource times where I've got 13 kids who are real eager to work, and its been very manageable, but this year for some reason, I'm in there with 40 kids." Several participants cited an increase in resource room sizes and the impact this is having on management and therefore the ability to build relationships with students. When asked about student behaviors, one participant said, "dealing with the resource room, it seems like behavior has gotten worse." When asked, why they thought that was happening, they shared, "I'm dealing with a less structured environment, which tends to lend itself to more problems. We closely monitor our resource rooms, so it sometimes creates confrontation when kids don't want to work and a teacher is asking them to work." When asked to elaborate more on this issue, the participant explained how the size of a resource class had a "big impact on it" stating, "the more kids you have, the more problems you have and who decides to come to your resource room can have a big impact on it too."

Another issue noted was that students would create behavioral issues in one resource room and then "jump room to room, get in trouble in one room, be told to leave, then they go to cause problems in another room. They can do that all day because there are different teachers

there all day long." As these management issues grow, teachers find they spend much of the time intended for "deliberate intervention" with students instead of a time of correcting unacceptable behaviors. One participant shared, "At graduation last year there were some kids that sought me out due to the relationship I developed even though I was never technically their teacher" explaining how the relationship between the teacher and student was developed completely during their interactions in resource time. This same participant explained,

> On the flip side, I primarily teach juniors and seniors. Some interactions I have with some freshmen and sophomores are negative like telling them to get on task, get to work, put your cell phone away, setting up a negative relationship their junior year when they have me and I have to spend the first couple months in class trying to overcome that.

This increase in correcting behaviors led one participant to share, "Everyday interactions with kids (in resource time) sometimes feels overall negative." The participant further explained the student perception being, "The teacher's just getting on to me," because they do not have the student in class. Their entire perception of that teacher is how they are the one who is always telling me to get off my phone, stop talking, and get to work during resource time." As a teacher, this participant shared "trying to find the right balance in resource time of being kind and nice, but still being firm" to maintain the expectation of this time is very challenging to maintain and foster relationships.

Staff members such as counselors, special education teachers, English language learner program teachers shared the FMS provides them more access and more opportunities to work with students during the day, allowing greater impact on their ability to develop relationships with students. Counselors explained with resource time, they no longer have to disrupt instruction to provide students services. English Language Learner teachers gave similar

responses, sharing how resource time provides them more opportunities to provide needed interventions with their students, and opportunities for these students to seek out assistance from their teachers. Special education teachers explained how resource time provides them more time than the traditional schedule to provide academic support for their students throughout the day. These teachers and counselors all expressed the benefits resource time provides from their perspective.

Despite the benefits of this increased student access, management issues were perceived to have increased in the 2018-2019 school year. When asked why they feel these resource room's behavioral issues have been greater in the fifth year of implementation, several pointed to the policy changes made by the board of education to the FMS. It was found that the increase in modules a class must meet had reduced the number of overall sections of resource time a student can have, thereby increasing the number of students in resource rooms when these times become available. One participant explained the reasons the board of education increased class time was to reduce the opportunities for misbehavior of students who cause problems, but now with fewer sections of resource time, the student teacher ratio had drastically changed. While teachers still had access to students, the quality of resource time had changed. One participant reported that previously "you would have maybe 20 or so students in a resource room, and now you sometimes have up to 40." These large-sized resource rooms are posing challenges for teachers to manage, one going as far to state, it has become a "zoo." While one could argue student access is still available to teachers, it may not be having the same impact. One participant explained,

> I've been here when it's 10 or 15 kids and it's great, I could really help kids and check in on them, but when it's 40, it almost feels like crowd control. I don't feel like I'm doing a

good job, just because I feel like I'm doing less tutoring and more crowd control, versus when there were fewer kids in there it's a lot more effective I would say.

Overall, participants agreed that the primary place teachers and students build and develop relationships is during assigned class time and not resource time. One participant summarized the difference in interactions between students and teachers during class time and resource time stating, "The level of respect between teacher and student isn't there [during resource time], because you don't always have the relationship. You try to build the relationship [during resource time], but it's really hard when a random kid walks into the room and you don't know them. Trying to get them to do what they need to do can be tricky." While resource time did allow more familiarity with students and teachers across Monett High School, it did not always equate to the development of relationships that promote positive developmental outcomes.

Student development: thriving or hiding. The final qualitative theme that emerged during the collection of data regarding the effect of the FMS had on student development were three developmental observations. These developmental observations are the effect the FMS had on students' soft skills, the impact the FMS had on underclass-students, and the polarizing effect the FMS had on students who thrive and those who hide within the structure of such a complex scheduling model. The findings of these three developmental observations pertain to the research question regarding the effect the FMS had on student development.

As participants were interviewed, the concept of soft skill development was explained and the term "soft skills" was mentioned in two different interviews. Clarifying questions were asked to participants on what was meant by this term, and the researcher constructed a definition for soft skills based upon those responses. This study defined soft skills as, a person's attributes that allow him/her to effectively interact with others and function as a productive person in

society. The examples participants provided when questioned about soft skills include: (a) communication ability, (b) time management, (c) responsibility, and (d) motivation. It should be noted the Monett Board of Education endorsed these soft skills by including them on the Monett R-I Profile of a Graduate document. This document Appendix C outlines the academic, personal, and social outcomes each student should attain for graduation, and of these eleven outcomes, ten of them would be defined as soft skills. One participant pointed out,

> Basically, we asked teachers, students, parents, and community members what they wanted to see in a graduate. High test scores were not the only thing. It was part of it so we have to concentrate on that, but we also need to teach responsibility and communication skills all along the way.

When participants were asked if the FMS was achieving this goal, one participant responded, "It does, absolutely." Soft skill development was a major factor in the continued use of the FMS at Monett High School. A participant shared when comparing the FMS to the previously used traditional schedule, "We weren't training our students to be responsible, with the mod schedule you are putting a lot of the responsibility on the student for keeping up with their education through time management." The participant expounded about time management, "Students are learning that lesson, that if two mods of resource, unscheduled time, they need to use it to complete homework, to go get tutored, work on projects, and they have the same learning process as I did my first year in college."

Another perspective on time management as compared to the traditional schedule was pointed out,

> I think they [students] are much better managers of their own time. FMS has taught them responsibility to plan for themselves as opposed to regimented fifty minutes every single

> day. We've kind of given them time and the responsibility to manage that time. When they are done, I think they are a good two, three steps ahead of their peers that come from a traditional schedule.

Another participant explained it by saying, "Students aren't on auto-pilot anymore. Their schedules are different almost every day and they have to pay attention to it. They have to be mindful of what they are doing in the day." Time management was not the only soft skill developed in the FMS, but student collaboration skills were impacted. One participant stated, "I almost think they are better collaborators and the reason for that is with the resource time they are able to sit, meet with their friends, work together, maybe even multitask." This intentional push to student accountability of the FMS emphasizes is showing a direct correlation to the development of student soft skills.

While this schedule does provide the potential for soft skill development, it was found that some participants believe these skills may be too advanced for younger students to adopt. Repeatedly, participants referred to the struggling underclassmen, particularly freshman, as having not yet acclimated to the FMS. One participant stated, "The seniors, most of them, have become pretty adept using resource time to reassess and get extra help, whereas freshman still have not quite understood this is not a time for a game or free time, that they are supposed to be working." Another participant stated,

> You see these kids, they are freshmen, with resource time they are constantly on games, you have to really be on them to know that resource time isn't free time, and usually by the time they are seniors they figure that out better. So that's definitely a work in progress.

Monett teachers have found that the use of unstructured time is challenging for these younger students.

The unstructured time also poses much of the management issues presented in the student access: opportunities and challenges theme. One participant stated the management of resource time is "mostly centered around the freshmen who are trying to figure everything out." Most participants voiced how freshman appeared to struggle in the FMS and expressed a need to better orient or teach skills to these younger students. One participant said, "they [freshmen] go from middle school into mod scheduling, if we were to create the ideal school, we would have a freshman transition building leading into the mod for upperclassmen." During the qualitative interviews it was reported that Monett High School did offer a freshman advisory class in which students are taught about the development of soft skills, but it was suggested the curriculum is not taught with fidelity by all teachers, lessening the impact the program could have on these younger students.

The final developmental observation that emerged from the student development: thriving or hiding theme was the polarizing effect that the FMS schedule had upon students as some thrive and others hide. Focusing first on the students who thrive, it was found that the college bound student, special education, and English language learners appear to thrive in the FMS. One respondent who works closely with English Language Learners (ELL) at Monett High School explained the responsibility of ELL students improves, but also "language-wise, they [ELL students] seem to be a little stronger, even more confidence levels seems to have improved. They tend to advocate for themselves more because they have that opportunity to actually go and talk to a teacher." Similar to students with English language barriers, students who exhibit learning disabilities are provided more developmental opportunity in the FMS. The

resource mods provide these students the chance to check in with their special education teacher more regularly for accommodations and modifications. One teacher who works closely with Special Education students stated, "It just allows us a little more flexibility to catch kids as far as prior to this [traditional schedule]." In addition, combined with the special education teacher working with the counselors, a student's schedule can be customized to provide very detailed points of contact allowing for higher student success.

Regarding the college-bound students, the FMS was found to provide opportunities that the traditional schedule could not provide. One participant shared a story of a student who went to college and wrote to share their gratitude for the FMS. "The college transition has been really easy because I'm used to the skills that I'm needing for college about time management, and how my schedule looks different every day, and how I use my free time, and how I use my off time." One participant, a teacher, shared the story of their child's experience in the FMS. They expressed how their child "thrived in mod" and how much of this was due to the fact they had "goals beyond high school" and how the FMS opportunities for their child to take more honors and higher level classes, provided the chance to earn more college credit than the traditional schedule offered students. Because the FMS does allow classes to overlap, creating conflicts in the schedule, students development is put to the test, leaving them the task of working out the details of these issues with the teachers. The participant explained how this was a major growth opportunity for their child to manage a real-life situation.

Not all students seemed to find success in the FMS. While some students take advantage of the opportunities this schedule provides, other students take advantage of the hiding places the FMS provides. Unstructured time, less seat time in classes, and lower levels of accountability

are simply too tempting for some students to stay engaged in their education. Motivation was found to be a major factor in the students' success in the FMS. One participant put it this way,

> I think a lot of it comes back on the responsibly of the kid. If the kid doesn't want the help, or is actively trying not to get help, I think this schedule can help them do that even more. We had a lot of this the first year, they (students) would skip class.

Another participant shared how resource time allows for these students to slip by without notice, "They (students) just go through their day and can just hide, just sit in the back of the room (resource room), be quiet, if nobody talks to them, they don't have to talk." These two perspectives show that a student can actively hide and passively hide within the FMS. It was found that as the resource time and class sizes have increased in the 2018-2019 school year, the hiding places for the passive students have increased. "Those who are not diligent, kind of the middle of the road students, are able to fall through the cracks a lot easier, a lot more easily."

Unlike these passive hiders, active hiders capitalize on the difficulty the school had on accountability and attendance and have looked for opportunities to skip class and leave school. During interviews, it was found that some participants attribute the active hiding with low levels of motivation explaining, "Students who are motivated will come and seek out help, while unmotivated students, who don't want help, hide easily by jumping from resource room to resource room, looking busy, but not actually being busy." The school made modifications to address these active hiders by changing the attendance software, but the persistent students "find their way around it." Overall, it was found that the FMS provides opportunities that the traditional schedule did not provide for both the thriving student and the student who wishes to hide.

Discussion

This study set out to answer three research questions regarding the use of the flexible modular schedule at Monett High School. These questions aimed to identify impact in the areas of academics, behavior, and student development. These questions were:

1. To what extent, if any, has the flexible modular schedule impacted the achievement scores of high school students?
2. To what extent, if any, has the flexible modular schedule impacted the suspension rates of high school students?
3. What impact does the flexible modular schedule have on student development?

This study took a mixed methods approach when attempting to answer these questions. First, a statistical analysis of both academic and behavioral data comparing Monett High School prior to implementation of the flexible modular schedule and after implementation was used. Then, staff members of Monett High School were interviewed to learn about the academic, behavioral, and developmental impact of the FMS.

Research Question One

When attempting to answer the first research question; To what extent, if any, has the FMS impacted achievement scores of high school students, consistent statistically significant standardized testing data were not found when comparing high school student scores pre-implementation and post implementation of the FMS. Student academic data were varied in results, leading to inconclusive findings. While the findings do not support moving to the FMS in search of improving achievement data, it should be noted that the findings do not indicate the FMS schedule causes academic achievement to decrease. Nothing of statistical significance was found with enough consistency to make assumptions regarding the FMS's impact on academic

achievement scores of students. This study cannot make claims regarding the impact the FMS had on achievement scores.

Through the qualitative analysis, it was discovered that the FMS provided some students with more academic opportunities than what they would find in the traditional schedule. These opportunities are not reflected in Algebra I, English, government, or biology end of course examination data, which aligns with Goldman's (1983) findings that reveal no statistically significant difference in achievement after the implementation of the FMS. Despite a lack of qualitative data to support academic achievement, teachers, counselors, and administration cited expanded opportunity for students to take more advanced coursework, dual enrollment college classes, and work-study style courses within the FMS. Due to the schedule's flexibility, participants voiced the FMS had impacted student achievement through expanded experiences, even if it does not show in the achievement scores of the school.

Research Question Two

When attempting to answer the second research question; To what extent, if any, has the flexible modular schedule impacted the suspension rates of high school students, mixed results were found. First, out-of-school suspension counts were examined, comparing these counts both before and after the implementation of the FMS. Out-of-school suspension counts were selected to identify more severe discipline problems and answer the question, does the FMS increase or decrease major disciplinary incidents. Upon the evaluation of these counts, nothing of significance in the out-of-school suspension data were found. These findings lead the researcher to believe the FMS had no impact on student behavior when considering incidents that would cause a student to be suspended out-of-school. Secondly, in-school suspension counts, both before and after the implementation of the FMS, were examined. In-school suspension counts were selected to identify a difference in minor disciplinary problems, and significant difference

in these data were found. These findings lead the researcher to believe the FMS did have an impact on minor disciplinary infractions.

When examining the overall in-school suspension counts from 2012-2014 (pre-FMS) to the 2016-2018 (after FMS), it was found students in the FMS had statistically significant higher ISS rates ($p < .001$). Furthermore, it was found White ($p = .000527$), Hispanic ($p = .000016$), and students who receive free or reduced lunch ($p < .0001$) are all more likely to have in-school suspension in the FMS than the traditional schedule. The only subgroup examined that did not yield statistically significant results were full pay lunch students ($p = .2527$). These findings were consistent with the qualitative findings discovered during the interview process with staff members who have worked with both the traditional and FMS at Monett High School. Participants revealed an increase in minor disciplinary infractions associated with students who are less psychologically developed, more specifically ninth-grade students.

These in-school suspension data reveal a significant rise in all student groups analyzed with the exception of full pay lunch students. While the study did not have access to data explaining the relationship between socio-economic levels and psychological development, the data did suggest students at higher levels of socio-economic status may have higher levels of equilibrium, accommodations, and assimilation which Piaget (1953) connects with student identity and higher levels of child development. These higher levels of psychological development may be a contributing factor to lower discipline rates. Along with these lower levels among higher socio-economically advantaged students, the qualitative research suggest ninth-grade students are a major behavioral factor. These data lead the researcher to conclude that these less psychologically developed students are contributing to the increased in-school suspension rates within the FMS due to their inability to assimilate (Piaget, 1953). The study did

find evidence suggesting the FMS had an impact upon the suspension rates of students at Monett High School, but only in less psychologically developed students.

Research Question Three

The final research question, what impact did the flexible modular schedule have on student development, was assessed through one-on-one Monett High School staff member interviews. These findings were expounded on in the "student development: thriving or hiding" theme, as it was found the FMS provided a greater chance for the students to develop psychologically, but not all students took advantage of these opportunities. In fact, the study divided students' development stating, some students "thrive" while other students "hide" within the FMS. Among those "thrivers," research revealed English language learner (ELL) students, special education students, and students who exhibit the desire to continue to college seem to thrive in the FMS. For these students, the schedule provides the right amount of time, accommodation, and opportunity. While some thrive, it was also found that some "hide" within the FMS. These findings coincide with the increase in minor behavioral problems that have grown after the implantation of the FMS. Although the study did not have access to the data that specifies the age, grade, or location of the students with the highest amount of discipline issues, qualitative findings suggest these incidents occurred during resource time. The qualitative and quantitative findings suggest these behaviors are lower socio-economic students in the ninth-grade. These findings lead the study to conclude that the FMS did have a developmental impact upon ninth-grade students. The qualitative findings lead the study to conclude ninth-grade students who are not successful in the FMS go on to continued "hiding" within the schedule model.

This study suggests students struggling in the FMS have yet to begin to establish their identity. It is in this time of identity formation that the choice of an occupation or career

becomes significant (Erikson, 1968). It is for this reason that some adolescents prefer not to work at all for a while rather than be forced into an otherwise promising career which would offer success without the satisfaction of functioning with unique excellence (Erikson, 1968). A ninth-grade student who is yet to reach this stage of development, coupled with the lack of support and accommodation, is likely to struggle in the educational setting. When layering the complexity of the FMS into the ninth-grade experience, an underdeveloped student's chances of becoming a "hider" increase and can manifest itself in behavioral issues. Placing supports around students to assist with the assimilation process to FMS is necessary for success.

Chickering (1969) identified this time in which an adolescent establishes their identity as the primary element in constructing a solid sense of self for developmental tasks of competence, emotions, and autonomy. He explained how this time in life, in which an adolescence establishes identify, provides a framework for interpersonal relationships, purposes, and integrity (Chickering, 1969). All of these skills are needed and necessary for success in life as well as success in high school, especially a school using the FMS. Erikson (1968) stated this time of identity is the amassing of experiences (competence, emotions, and autonomy) and is what allows a person to continue to later stages of development. This theory, along with the qualitative findings, lead the study to conclude that students who have yet to begin to establish identity are the students with lower psychological development skills and struggle to find behavioral success in the FMS (hiders). Consequently, students who have yet to begin to establish their identity struggle in most high school settings, especially the FMS.

It was found that the FMS positively impacted and improved developmental skills of two groups of students who traditionally struggle in school. The qualitative data showed ELL (English language learners) and special education students thrive in the FMS due to the increased

ability to provide accommodations and the intentional supports placed around these students for assimilation. The FMS allows these students more time for intervention, overcoming the language barriers and learning disabilities that typically cause these students to struggle in school. It was found that the FMS provided an environment allowing these students to develop certain soft skills, such as questioning, conversational skills, and self-advocacy. These findings lead to the conclusion that the FMS does have the potential to increase in student developmental skills when accommodations are in place for struggling students. Additionally, the study concludes that, with strategic intervention, the "hiders," can be successful and experience greater opportunities that the FMS provides. While DeLucia (1977) and Goldman (1983) found the schedule lacked accountability, giving "hiders" too many options, Popenfus, Paradise, and Wagner (1978) found students did use time wisely. This literature, along with the data from this study indicate that student development can be impacted, especially in these ninth-grade students, leading to greater success at all grade levels both academically and behaviorally.

Developmental Findings

The researcher sought to compare the findings of this study to the findings of similar studies of the past. When comparing the academic impact findings of this study of the FMS to previous research, the data were consistent, concluding an insignificant change in student academic achievement (Albers, 1973; Van Mondfrans, 1972). Canady and Rettig (1995) reported students who follow the FMS performed poorly or the same as students from traditional schools, and this research study found, in some students, using the FMS scored significantly higher, significantly lower, and not statistically significant different than students following the traditional schedule. Finally, when comparing to other academic achievement findings, Goldman's (1983) research that found 15 schools showed no statistically significant difference

between academic achievement before or after the implementation of the FMS, which would align with the findings of this study.

When comparing the behavioral findings of this study to similar research, DeLucia (1977) cited the lack of student accountability as a major obstacle. Similarly, due to the lack of student motivation, teachers within this study also found it challenging to hold students accountable for behavior and academics. DeLucia (1977) suggested modifications to the schedule that rely less upon the responsibility of the students, replacing the independent time of students with assigned remediation or enrichment classes. This adaptation of the FMS did remove much of the student choice previously highlighted as a strength but also removes much of the contenders of the FMS claim as a downfall. While several interview participants voiced their disagreement to similar modifications made by the administration and the board of education at Monett High School to the FMS, similar changes were made to the schedule to account for the lack of student responsibly. Several participants argued these attempts to add more structure into an intentionally flexible schedule reduced the benefits the FMS can provide. DeLucia's (1977) modifications to the FMS, influenced by student behavior and lack of responsibility, would align to the increase of in-school suspension rates after the implementation of the FMS at Monett High School. DeLucia's (1977) findings of the FMS not only spoke to the behavioral concerns posed in the findings, but also to the developmental question posed in that student responsibility is put to the test in the FMS.

While the FMS did not show statistically significant academic or behavioral data improvements, it was found students in the FMS have greater opportunity to take advanced and dual college enrollment coursework, participate in job/career training, and seek out assistance allowing higher involvement in extracurricular participation. In addition, in the traditional

schedule, students had to choose between classes offered with conflicting times, but with the FMS, these students could enroll in both classes, regardless of the conflict. While challenging for the student, these conflicts in the schedule provided more course offerings, and greater developmental growth opportunities, as students learn critical thinking and collaboration skills with teachers as they worked through these conflicts. It was found older students are more likely to benefit from these advantages, specifically tenth, eleventh and twelfth-grade students. Although the data did reveal a statistically significant increase of in-school suspension counts, qualitative findings suggest it would be due to the lack of psychological development of ninth-grade students. DeLucia's (1977) FMS modification, which changed open modules to assigned remediation or enrichment of students who act irresponsibly and students deemed responsible where able to choose how they spend their resource time, is supported by the findings, this study would suggests a more strategically focused intervention of ninth-grade students only.

Changing the first-year experience

Based upon the findings of this study, the removal of the FMS is not supported as the schedule creates too many opportunities to disregard. Instead, elements of DeLucia's (1977) remediation-enrichment-optional (REO) model, freshman academy model, and the FMS should be taken into consideration to create a separate ninth-grade program focused upon the assimilation, accommodation, and equilibrium of students to high school and the FMS. This adaptation of a freshman academy model, "small learning communities within large comprehensive high schools that isolate ninth-graders and establish a more intimate program" (Fulco, 2009), would be utilized to meet the dynamic needs of ninth-grade students. Combining the freshman academy with a version of the FMS, referred to by DeLucia (1977) as the REO model, addressed the lack of student accountability during resource time.

The REO model is an adaptation of the FMS that allows for more differentiation between the mature student who could use free time wisely and the less mature student who did not use free time wisely. DeLucia (1977) explained the REO model schedule is a "FMS model that attempts to incorporate both individualized instruction and appropriate teacher accountably within the instructional process" (p. 116). The acronym remediation-enrichment-optional (REO) represents the way in which resource time should and can take place (DeLucia, 1977). The student choice open modules (resource time) would instead become assigned time for remediation and enrichment. If needed, the resource time could also be assigned to students to pursue optional non-instructional undertakings if academic goals are being met. A distinction between the REO and the FMS is that resource time is not considered open choice time for students. Resource time is more structured and assigned into the students' weekly schedule and teachers are responsible for ensuring these expectations are met and therefore a higher level of student accountability is maintained (DeLucia, 1977).

Additionally, this separate ninth-grade model would contain time each day for strategic teaching of developmental-skills or soft-skills (see Appendix C) to students to promote their psychological development. Just as the FMS was able to provide strategic intervention which positively impacted ELL and special education students, causing an increase in their development, the study suggests a ninth-grade academy model can have the same impact on students, increasing academic performance, decreasing behavioral issues, and promoting a sense of identity or student development. The separate ninth-grade model would not abandon the FMS, but use structural ideas from the REO model to incorporate a first-year experience class aimed to restructure resource time. An additional element of this ninth-grade model would be a time for common teacher collaboration focused on ninth-grade students to monitor their

development to ensure students earn necessary credits needed to become a sophomore, significantly increasing their chances of graduating in four years (Fulk, 2003). All of these functions of this ninth-grade FMS model would aim to allow students to promote to the tenth, eleventh, and twelfth-grade with the developmental skills needed for success.

The researcher would suggest maintaining the FMS for Monett High School, but, for ninth-grade students, adding the strategic approach of the REO model, along with the use of a separate ninth-grade academy model. Erikson (1968) described this time in the life of an adolescent as a "social jungle of human existence" in which a student will resist when encountered with attempts to keep them from discovering their identity (p.130). While ninth-grade students benefit from a separated setting devoted to their success, this study contends the environment should not completely deprive them of the FMS or the high school experience. Instead, it would be suggested to create a separate ninth-grade program, aimed at providing more structure and student accountability in which the goal is the assimilation of students to their environment, with strategic accommodations intended to promote the development of student's identity formation, increasing their success in the FMS, therefore improving their high school experience. This would come mainly through the use of current resource time and utilizing it to instill developmental instructional practices.

Freshman academy model. The idea of a separate academic setting for ninth-grade students is not a new one. Former Secretary of Education Richard Riley referenced the challenges faced by America's ninth-grade students, explaining how they leave smaller primary settings and find themselves in much larger "impersonal high school" (Riley, 1999). Riley presented the concept of small learning communities for ninth-graders to find their way in high school by proposing a program to assimilate ninth-grade students through regular collaboration

with the same group of teachers, counselors, and the implementation of transition courses (Riley, 1999). This idea developed into several models used across the United States and is often referred to as freshman academies, ninth-grade academies, or ninth-grade centers, all centered around idea of creating a smaller learning community within the larger comprehensive high school (Fulco, 2009). The researcher suggests adopting a form of the freshman academy model, while maintaining the FMS structure, which addresses the developmental concerns of ninth-grade students to provide strategic transitional accommodation and intervention to students at Monett High School.

It was found that as students psychologically develop, their ability to thrive in the FMS schedule increased, while students who are less psychologically developed are less likely to show success (hide) in the FMS. These less successful students, mainly ninth-graders, have yet to develop in what Erikson (1963) would call, identity versus role confusion, a powerful time in the life of a person, as they begin to lay the foundation for their future self and gain a better understanding their developmental needs. Emmett and McGee (2012) state ninth-grade academy models are designed

> (1) to provide the personalization to support the social and emotional needs of students during the transition from middle school to high school, and (2) to offer targeted remediation for students who enter high school with academic deficiencies that inhibit access to the curriculum of high school. (p. 75)

For a student to show success in the FMS, ninth-grade students need a transitional time, ranging from one semester to a full year, in which they are given the proper structure, support, and training, to become more aware of themselves, their goals, and their identity. The goal of this first-year program would be to help a student determine their future steps after obtaining a more

developed sense of identity and at the completion of their ninth-grade year, a student would have acquired the needed credits to keep them on the path of attaining a high school diploma. Upon the completion of this ninth-grade first year programming strategy, a student's sense of identity will be more developed allowing them to rise above the glass ceiling of the traditional schedule and take advantage of the opportunities of the FMS.

The continuation of the FMS with the ninth-grade model not only benefits the continued development of ninth-grade students, but also provides great opportunity for learner relevance. The FMS allows for higher degrees of autonomy and more experiential opportunities and also promotes learner relevance, creating greater opportunities for student to find intrinsic motivation (Shoben, 1966). Chickering (1969) noted the importance of students finding their learning relevant, explaining how at one point in American society a student's identity was given and the primary role of education was socialization. Now, in a society of "conflicting values, diverse behaviors, and mutually exclusive models combine to offer multiple alternatives from which a particular identify must be constructed, and then reconstructed again in the light of new opportunities or new frustrations" (Chickering, 1969, p. 92). No other high school scheduling model embeds these futuristic elements like the FMS and at no time in history are its ideas on society and identity truer; the role of education is more than socialization, but identity formation (Chickering, 1969). The FMS has shown it can aid in the formation of identity of students due to the greater amount of autonomy and relevance it can provide than in the traditional schedule.

A ninth-grade transitional program separate from the rest of the high school could provide support for students that could do even more than simply prepare students for the FMS. Piaget's (1953) framework supported such a model explaining how children who take an active role in their learning through assimilation, accommodation, and equilibration grow

developmentally. A first-year program for ninth-grade students would find its psychological foundation upon Piaget's (1953) theory. First, students would experience a more traditionally structured version of the FMS to allow for a state of equilibrium to take place upon entering high school. This version of the FMS would contain resource modules with required locations and coursework aimed at the development of ninth-grade students. After a student's equilibrium is attained through the developmental coursework taught in place of resource time, this model begins to transform into more of an FMS model, allowing students to experience more choice during these resource modules to gradually become aware of their shortcomings that causes disequilibration. This slower assimilation with built-in accommodations, coupled with the small learning community, will help students work through these transitional struggles. These smaller learning communities would divide students into teams in which a group of teachers would have the same students, similar to the middle school teaming model. This more gradual approach into the FMS will allow students to adopt a more sophisticated identity, providing them the soft skills necessary to overcome shortcomings and reach a more stable psychological equilibrium to be successful in the FMS. Chickering (1969) further supports this approach through his explanation of how the concept of student identity as a solid sense of self is necessary within an educational system to allow for student educational persistence and success.

While the need for a transitional program is necessary for ninth-grade students to show success in the complexity of the FMS, a transitional program of all ninth-grade students is needed into any high school scheduling model. Too many high school students are failing courses and not persisting to graduation due to the lack of accommodation during this pivotal time of disequilibration. Fulk (2003) stated during the ninth-grade year that many students, for the first time, have to earn passing grades in core courses. Furthermore, these courses are often

considered the more challenging classes a student takes while in high school (Smith, Akos, Lim, & Wiley, 2008). These two factors have equated to ninth-grade students having the lowest grade point average of all grade levels in high school, the most missed classes, the majority of failing grades, and more misbehavior referrals than any other high school grade level (Fritzer & Herbst, 1996). Kennelly and Monrad (2007) found that up to 40% of ninth-grade students repeat courses because of poor grades, and of those students only 10% to 15% who repeat classes in the ninth-grade go on to graduate. These statistics, along with the findings of this research study magnify the need for a ninth-grade intervention within the complex and developmentally demanding FMS. While the pressure of transitioning to the FMS and showing success in high school may be challenging for a ninth-grade student, the data did not support the removal of the FMS due to the extensive opportunities the schedule provides as compared to the traditional schedule.

Freshman academy framework. Emmett and McGee (2012) described West High School's implementation of their freshman academy model. This model should be strongly considered, as their pre-implementation data, in 2007, shows West High School only promoted 78% of freshman to the tenth-grade and only 81% of ninth-grade students attained enough credits needed for promotion to the tenth-grade in 2008. While year one (2009) of the freshman academy implementation did not yield significant results, with 84% of students earning the needed credits to be promoted to the tenth-grade, year two of implementation (2010) did show noteworthy results with 95% of ninth-grade students earning the needed credits to be promoted to the tenth-grade (Emmett & McGee, 2012). West High School's framework should be emulated when developing a ninth-grade FMS model. Emmett and McGee (2012) identified the critical elements of their freshman academy model: (a) empowering the right people, (b) constructing a sustainable design, (c) building a culture of collaboration, (d) creating connections

at West High School, (e) utilizing a proactive approach to discipline, and (f) doubling the effort in year two. These six elements provide a comprehensive framework and considerations when developing a ninth-grade transitional program.

Using Emmett and McGee's (2012) framework as guiding principles at Monett High School, three strategic aspects should be considered with the introduction of a freshman academy model. First, Monett High School should significantly reduce the number of resource times for ninth-grade students and restrict ninth-grade student choice in resource time. This restriction would place ninth-grade students in resource time classes with only teachers who are part of the ninth-grade academy ensuring relational connection, reducing behavioral issues. Second, the Monett High School should replace much of the current ninth-grade resource time with a required course focused upon identity development (Erikson, 1968). This would begin with revamping the current ninth-grade seminar class, which the data found was not impactful or relevant to students as it serves as more of a study hall than student development class. By developing curriculum strategically and targeting the psychological developmental skills of students to align with the Monett R-I Profile of a Graduate (Appendix C) and examining how this curriculum can include an onboarding process, students will find success with the FMS. This class, grounded in Erikson's (1963) epigenetic principal connecting development and the environment, and Piaget's (1953) child development regarding equilibrium, assimilation, and accommodation, should be offered daily for ninth-grade students during the first semester. After a semester, freshman academy teachers would examine student's grades, attendance, and behavioral incidents to determine the next steps for student accommodations. If a student shows signs of successful assimilation and equilibrium through passing grades, no behavioral issues, and a high rate of attendance, along with a growing sense of identity as determined by the

freshman academy teachers, they would be allowed to experience more personalization and choice in determining how to best utilize resource time. This integration could allow students deemed ready by the freshman academy team of teachers, counselors, and administration to participate in resource time with the tenth, eleventh, and twelfth-grade students. In contrast, students deemed to have not yet found equilibrium by the team based on the criterion of grades, behavior, attendance, and identity development, would remain in this transitional course during resource time, continuing to receive accommodations needed for successful assimilation to high school and the FMS. These students who are slower to assimilate and grow developmentally will continue to remain in these more structured resource times to ensure success their ninth-grade year. Additionally, ninth-grade students who fail to show the necessary skills for success in high school at the conclusion of their time in the academy model may continue their tenth-grade school year in this structured academy setting for resource time or have a teacher or student mentor assigned to them as an additional layer of support.

The third and final aspect of this freshman academy model at Monett High School would be strategic focused teacher collaboration of ninth-grade students to monitor development to ensure students remain on track to graduate in four years. The school would set apart a group of teachers who would teach only ninth-grade students in mathematics, science, English, and social studies. Likewise, a current counselor and administrator would be assigned to this academy as well. These teachers, administrator, and counselor would have common collaboration times while students are in specialty classes to discuss student assimilation and equilibrium, customize and personalize the ninth-grade development course curriculum, and discuss accommodations to assist ninth-grade students at Monett High School. This part of the implementation would be directly linked to Emmett and McGee's (2012) essential elements of their freshman academy

model of building a culture of collaboration, creating connections, and a proactive approach to discipline. Utilizing a consistent and cohesive staff collaboration structure around the ninth-grade students would significantly increase their chances for success in high school.

Summary of changing the first-year experience. While the use of a ninth-grade transitional program is not a new idea to high school practitioners, the data suggest a need to assist these students in their assimilation into the high school. Transitioning to high school is already a challenge for students, but the findings indicate transitioning from a traditional middle school setting to an FMS in high school is too much for underdeveloped ninth-grade students. This model is creating obstacles for teachers who manage resource rooms of ninth-grade students, spending the majority of their time managing inappropriate behaviors. These early high school interactions are often creating barriers that are challenging to overcome when these same students enter their classes in later years with only these negative interactions in regards to the teacher. Creating a standalone ninth-grade FMS transitional program for students would provide the needed developmental accommodations, enabling successful assimilation into high school.

Limitations

It is important to consider the data this study did not possess. First, when considering academic data, this study was only able to examine the first three years of the FMS academic data due to the timeline in which the state releases assessment results. This is important to note as the qualitative research revealed the school sought to continually make improvements upon the FMS in hopes to show academic improvement. It should be taken into consideration that no conclusions were able to be drawn from the academic achievement of 2018 or 2019 (years four and five of implementation). Secondly, when considering the behavioral data (suspension

counts), the study was unable to identify if a student was a repeat offender, the year in school of the offender, or the type of offense. These three factors would allow this study to make more distinct conclusions regarding the FMS and its impact on behavior. Finally, while a considerable amount of qualitative data were gathered from staff members, other stakeholder (students, parents, and board of education members) input would have allowed for a more triangulated qualitative study. These limitations should be taken into consideration when considering the recommendations of this study.

As previously stated, due to the limitations to the data assessed to answer the research questions, it would be the recommendation of this study to further analyze the academic and behavioral data of ninth-grade students both before and after the implementation of the FMS. If the assumptions and conclusions made by this study regarding the transition to the FMS are supported by further qualitative and quantitative research, a recommendation to the Monett High School would be to examine the implementation of a separate FMS for ninth-grade students.

VITA

Robert Kroll is the principal of Jarrett Middle School in Springfield, Missouri. He has served in this role for six years. Prior to his time as principal of Jarrett Middle School, he worked as the assistant principal of Pershing School overseeing Kindergarten through eighth grade students, faculty, and staff for three years. Robert also taught seventh-grade for seven years at Reed Middle School teaching science, social studies, and literacy courses. Robert holds a Bachelor's of Science in Middle School Education from Missouri State University; a Master's of Education in Secondary Administration from Missouri State University; and defense of the present dissertation will meet the remaining requirements for 2019 completion of his Doctorate of Education in Leadership and Policy Analysis from the University of Missouri – Columbia. Robert resides with his wife and two children in Springfield, Missouri. In his free time, he enjoys hunting, exercising with his wife, serving in his church, and spending quality time with his family.