Ninth-grade interventions and the impact on high school graduation rates

Shannon McBrady
Ninth-Grade Interventions and the Impact on High School Graduation Rates

by

Shannon McBrady

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Dissertation Committee:

Ronald Williamson, EdD, Chair

Jaclynn Tracy, PhD

Muralidharan Nair, PhD

Gary Marx, EdD

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Ypsilanti, Michigan
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ABSTRACT

There is a need to become economically sensible when deciding on new school initiatives and reforms. This is partly due to increasing accountability and tightening school budgets. Hertzog & Morgan (1999) found the freshman year sets the tone for a student’s entire high school career. Yet, frequently, ninth-graders struggle to feel connected to school and therefore experience failure. Often times this period of failure is related to the developmental process the ninth-grader experiences. Many ninth-graders struggle in various areas including behavioral growth, social pressures, and adjusting to the rigidity of high school (Mizelle & Irvin, 2000). Researchers have found that personalizing high school for the developmentally unique ninth-grader can lead to academic success (Klem & Connell, 2004).

This study examined 15 specific interventions based on recommendations and strategies offered by Breaking Ranks II (NASSP, 2004). Principals of Michigan high schools of similar size and geography were asked to respond to a survey indicating their participation and implementation date of specific ninth-grade interventions. The data were analyzed through frequency tables, paired t-tests, repeated measures ANOVA, Pearson Product-Moment correlations, and a multiple regression analysis. Demographic data were also considered. Results indicate that participating schools generally implement some ninth-grade interventions. However, implementation does not necessarily result in a positive change in graduation rates. The results indicate a statistically significant relationship between transition program interventions and graduation rates and a marginally significant relationship between the looping interventions and graduation rates. Grouping interventions do not necessarily impact graduation rates. Results indicate that the year prior graduation rate is the largest predictor of graduation rates and that per pupil expenditure is a marginally significant predictor of graduation rates.
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CHAPTER I
INTRODUCTION AND BACKGROUND

Introduction

American schools today face greater challenges than ever before. Schools can no longer prepare only a few to earn higher degrees or focus on training an industrial workforce as they have for the last 100 years, particularly as schools may be training students for jobs that may not exist in the near future (Marx, 2006, Sizer, 1984). New challenges for educators include preparing students to compete and succeed in the 21st century global job market (Friedman, 2005). The elements of multiple language fluencies, learning styles, and aptitudes confront teachers. The staff in high schools must contend with those student characteristics while facing strict national and state accountability measures. With all of the changes impacting education, too many high schools are not responsive to the present reality that many students do not find academic success in high school (Lachat, 2001). Consequently, school dropout rates have become a serious national crisis.

For decades, educational scholars, professors, and business people have struggled to reform the American high school (Harvey & Housman, 2004). They realize that the factory style school is not beneficial for most children. However, American schools still employ antiquated measures such as a curriculum that lacks relevance, earning credits, a traditional grading scale, skill and drill techniques, and bells that regulate class time (Boyer, 1983; Sizer, 1984; Zemelman et al., 1998). High schools tend to be large and bureaucratic, which leads to depersonalization and a lack of a sense of community (Lee & Smith, 2001). Thus, the traditional school and traditional teaching does not meet the needs of some children (Zemelman, Daniels, & Hyde, 1998), and students are leaving high school without a diploma (Balfanz & Legters, 2004).
A variety of research-based school reform initiatives and interventions exist. Sizer (1984), for example, concurred with other researchers that high schools should be simple and flexible and that schools should create an environment where teachers and students know each other by being organized in small communities focused on learning and continuous improvement (Lee & Smith, 2001; Marx, 2006). Other advocates for school reform have agreed that high schools must be student-centered, intellectually rigorous, and have a personalized program and support services for each student (Breaking Ranks II, National Association of Secondary School Principals [NASSP], 2004, Harvey & Housman, 2004).

Specifically, when considering school reform, strong relationships between and among students and teachers are important elements in student achievement (Darling et al., 2002). Having teachers who care about their students is a key to student success (Harvey & Housman, 2004). Additionally, Klem and Connell (2004) suggested that providing a caring school environment, relationship building, and personalization as interventions positively increases student academic performance. Therefore, many of the school reform initiatives which school districts have begun to implement are interventions that concentrate on personalizing the high school environment by creating a positive school culture for students.

Research regarding school reform would be incomplete without discussing school organization, as it affects the entire schooling experience (Frank, 1998). Possibly more significantly, research indicated that the way a school is structured and organized affects student dropout rates (Fitzpatrick & Yoels, 1992). School organization can be conceptualized through several lenses – academic organization, student organization, leadership, and so forth. However, the social organization of schools is most important because if the school is socially organized into a community promoting a cooperative environment, students have greater academic success.
(Lee, Dedrick, & Smith, 1991; Rosenholtz, 1991; Rutter, 1986). Therefore, it is meaningful to discuss the social organization of high schools.

One factor impacting today’s schools, compared to those of 20 years ago, is the emphasis on high standards for all students (Lachat, 2001). For instance, educational mandates such as No Child Left Behind (NCLB) dictate that all children achieve at a high level. NCLB requires that districts show a minimum prescribed level of growth in student achievement by the 2013-2014 school year (United States Department of Education, 2008). In addition, many states have affirmed that preparing students for college is a necessity rather than a luxury in today’s world, and therefore have required a more rigorous high school experience. Many states, including Michigan, have mandatory college preparatory entrance exams such as the American College Test (ACT), which students must take during their junior year (Michigan Department of Education, 2008). Teachers are now held responsible by district administrators for how their students perform on these high stakes exams. All of the national and state accountability reforms have occurred simultaneously as the need increases for children to learn more and better compete with people outside of the United States (Marx, 2006; Ryan, 2004).

Related to these challenges of school reform, school organization, and increased standards is a specific issue that many school administrators are currently addressing: the growing number of students who fail one or more classes their freshman year. Research indicated a disappointing nationwide trend of ninth-graders struggling academically (Ryan, 2004). Nationally, 30% of ninth-grade students fail one or more classes (McIntosh & White, 2006) a higher percentage of failure than at any other grade of school (Cauley & Jovanovich, 2006). Some ninth-graders simply are not adjusting to the academic demands of high school
(Kemple & Hering, 2004), and statistics indicate that the ninth-grade year is crucial in predicting student success and high school graduation rates (Allensworth & Easton, 2007).

One reason high school presents such a challenge for some ninth-graders is that ninth-grade students differ developmentally from students in other grades (Reinhard, 1997). According to Alspaugh (1998), the developmental process is one component that causes high failure rates in the ninth-grade and can lead to students dropping out of high school. There are several developmental areas in which ninth-graders differ from other high school students. Physical changes can lead to hormonal transformations that cause moodiness (Reents, 2002). Cognitively, ninth-graders tend to be immature and irresponsible (Riera, 2004), which can lead to struggles with coursework. Emotionally, unlike many older students, ninth-graders are extremely focused on themselves (Elkind, 1967; Scales, 2003). Also, freshmen participate in more risk-taking behavior than other children. However, they feel invulnerable to punishment and underestimate the likelihood they will get caught (Craig and Baucum, 2002). Ultimately, many students in the ninth-grade experience a decrease in their academic performance (Reyers, Gillock, Kobus, & Sanchez, 2000) due to developmental changes. Where some ninth-graders can handle these changes while attending traditional public schools, others struggle and need more organized support.

Because ninth-grade students have been identified as a group that require extra attention due to their unique developmental qualities and the recognized importance placed on the ninth-grade year, many schools across the nation have developed transition interventions focused on personalization aimed at addressing one or more developmental concerns of ninth-grade students (McIntosh & White, 2006). Research has shown that interventions, even for students who are just below average, have an impact on high school graduation rates (Allensworth & Easton,
2007). These ninth-grade interventions vary in terms of structure, and each program depends on available resources and community acceptance. Each intervention is designed to address at least one of the following developmental factors of the ninth-grader: social, emotional, environmental, physical, and academic (Fields, 2005). Hertzog et al. (1996) found that schools with transition programs and interventions had significantly fewer student failures and lower dropout rates than schools without transition and interventions programs. This clearly indicates a need for extra support for the ninth-grade student.

Reforming the American high school can be difficult for many reasons. One reason is that there are many steps in the change process (Beer & Nohria, 2000), and educators occasionally seem resistant to many of the steps. In addition, school change can be overwhelming to a staff (Reeves, 2009) because change can occur on many different levels (Fullan, 1994). Another reason change in schools is sometimes a challenge for staff is that there are a variety of ways to do it. Teachers frequently resist change if they do not understand the value or need for that change. One way to combat this resistance is for school decision-makers to acknowledge the need for developing a knowledge base among their teachers and thus create the understanding necessary to carry out the reform or change (Liker & Meier, 2007).

Although there are numerous suggestions for school reform, American high schools in general have changed little since the 1950s. They still offer traditional courses, lecture-based classrooms and lessons, and inflexible scheduling (Sizer, 1984; Zeleman et al., 1998). Prompted by No Child Left Behind, high schools today are faced with increased accountability and increased graduation requirements. The archaic high school organization and additional standards coupled with the complicated physical and psychological development process occurring during adolescence have made high school challenging for many students, specifically
ninth-grade students (Eccles & Wigfield, 1997). Educators have seen an increase in ninth-grade failures, and high school graduation rates suffer subsequently (Jerald, 2006). The increase in ninth-grade failures is particularly important because the ninth-grade year is a predictor of graduation rates (McIntosh & White, 2006). Thus school reform and change (while varying in structure, levels of use, time implemented, and understanding) has taken place in the form of ninth-grade interventions. Several interventions have been put in place to support ninth-grade students. Specifically, efforts have been made by many schools to personalize high school so that students may find success their freshman year and beyond.

The Conceptual Model

The impact of external factors on the school affects student outcomes and the internal structure of school (Schmoker, 1999). Student outcomes (depending on achievement levels) sometimes determine a need for reform (Dudley, Wiest, & Cusick, 2002). School reform will affect the structure of a school, which can determine the student outcomes (Fullan, 1994). If student outcomes are not acceptable, the entire process may continue. This study was designed to determine if selected interventions (reform), which would ultimately impact the organization of school, affect student outcomes. In other words, which of the selected ninth-grade interventions schools are implementing affect graduation rates?

External factors such as state and federal mandates, adolescent development, student ethnicity, student socio-economic status, and a school’s per-pupil expenditures are largely beyond the control of the school, yet all influence and shape the internal structure of school and student outcomes (Schmoker, 1999). Often, the way a school is organized is due to the external factors. As a secondary consideration, this study recognizes that certain demographic
characteristics (or external factors) directly affect the organization of a school and consequently can affect student outcomes.

Student performance outcomes may or may not create a need for school reform. Researchers and school leaders have various definitions of student outcomes (Lee et al., 1993). Student outcomes may be described in terms of grade point averages, attendance rates, or discipline referrals. For the purpose of this study, student outcomes are measured by graduation rates. When a school has consistently low graduation rates, decision-makers may insist on implementing school reforms to improve those graduation rates.

If reform takes place in schools due to low student outcomes, it will affect the internal structure of a school (Lee et al., 1991, Fitzpatrick & Yoels, 1992; Rutter, 1983). Research revealed that schools implement ninth-grade interventions as a school reform measure to improve graduation rates (Allensworth & Easton, 2007). In addition, when reform is implemented, the internal structure of a school, or how a school is socially organized, can affect student outcomes (Fitzpatrick & Yoels, 1992, Marks, 2000; Rutter, 1983). This study, as expressed by the research questions, examined the specific organizational reforms (in the form of ninth-grade interventions and groupings of ninth-grade interventions) a school implements to determine if they affect student outcomes as measured by graduation rates. In addition, this study examines external characteristics of student ethnicity, student poverty rate, and a school’s per-pupil expenditure to determine if those characteristics are related to graduation rates. A conceptual framework for this study is illustrated in Figure 1 and is supported by prior research (Lee & Burkam, 2003).
Figure 1. Conceptual Framework for the study of ninth-grade interventions and their impact on graduation rates.

Statement of Problem

There are many research-based school reform initiatives that suggest interventions to increase the success of students. However, because of the risks of potential problems with transitioning, from eighth to ninth-grade being more notable than any other schooling transition (Cauley & Jovanovich, 2006), many high schools have concentrated reform on ninth-graders. Lower attendance rates, more common for ninth-graders than students in other grade levels (Fields, 2005), are a direct predictor of academic performance (Allensworth & Easton, 2007).
Additionally, students in the ninth-grade have the highest number of discipline incidents because they sometimes engage in risk taking behavior (Strauch, 2003), which can lead to detentions and suspensions (more time out of school). Further, ninth-graders have the highest retention rate of any other grade (Chmelynski, 2003), and only 10-15% of those repeaters go on to graduate (Balfanz & Letgers, 2004). Perhaps most significantly, about 30% of students nationwide fail one or more classes in the ninth-grade (McIntosh & White, 2006). These facts contribute to an even more disappointing trend – low graduation rates.

The national average of students who graduate from high school is about 68% (Heckman & LaFontaine; 2008, Swanson, 2004). In larger cities about 50% of high schools graduate less than half of their ninth-grade class in four years (Balfantz & Letgers, 2004). These numbers relate directly to how a student performed in his or her freshman year because the averaged freshman graduation rate (a measure of the percentage of the incoming freshman class that graduates four years later) can be used as a measure of the percentage of public high school students who graduate on time (Department of Education, 1996). In addition, high school dropout rates can be determined by the schools’ success with ninth-grade students (Roderick & Cameron, 1999). Alspaugh (1998) found that the highest dropout rates occur before the tenth grade, and most dropouts fail at least 25% of their ninth-grade courses. Furthermore, schools are seeing more students drop out of high school between the ninth and tenth grade years than ever before (Viadero, 2004). In Michigan, more students drop out in ninth-grade than any other year (National Center for Educational Statistics, 2005). Thirty percent of ninth-graders do not graduate with their high school classes (DiMartino & Clarke, 2008).

High school graduation statistics are relevant because students who do not graduate stand little chance of sustaining themselves or a family in today’s economy (Turner, 2007). Adults
without a high school diploma are twice as likely to be unemployed, dropouts account for 70% of United States prison inmates, and a dropout’s life expectancy is almost 10 years lower than that of a high school graduate (United States Department of Education, 2006). In addition, increasing the graduation rate by only 5% could lead to a savings of almost $280 million each year per state by reducing crime related cost (Alliance for Excellent Education, 2008).

Ultimately, freshman performance sets the stage for eventual graduation from high school and, it could be argued, success in life (Allensworth & Easton, 2007).

Purpose of Study

*Breaking Ranks II* (NASSP, 2004) offers educators 31 recommendations along with relevant strategies to increase student achievement. Among these, three recommendations and their corresponding 15 strategies are focused on personalizing high school (NASSP, 2004): 10 – “High schools will create small units in which anonymity is banished,” (p. 83), 13 – “Every high school student will have a Personal Adult Advocate to help him or her personalize the educational experience,” (p. 83), and 14 – “Teachers will convey a sense of caring so that students feel that their teachers share a stake in student learning.” (p. 85). The strategies include advisories, student-led conferences, freshman orientation, freshman academies, looping, students remaining with the same group of peers, smaller learning communities, separate space, flexible schedules, peer mentors, adult mentors, career academies, transition programs into adult life, use of data to make decisions, and an active guidance counselor.

Other research on high schools favors the concept that a perceived supportive environment must be formed for a freshman student to have academic success (Dudley et al.,
The 15 strategies offered by *Breaking Ranks II* (NASSP, 2004) used for ninth-grade students may or may not lead to higher graduation rates.

The purpose of this study was to examine the relationship between ninth-grade interventions and high school graduation rates. Assuming that more focused school interventions impact the success of students, the researcher examined the relationship between *Breaking Ranks II* (NASSP, 2004) recommendations, 10, 13, and 14, and high school graduation rates to identify practices most likely to maximize student success. Demographic data were also discussed.

**Significance of Study**

American public high schools are faced with increasing academic issues (*Breaking Ranks II*, 2004). The ninth-grade has presented a challenge for some students by being more than simply a transitional year during their adolescence. Research reveals that it is perhaps the most important school year for students and has thus drawn the attention of reformers (Cauley & Jovanovich, 2006). Further research is needed to learn about this very important year. Extensive interventions for ninth-graders offer potential for long lasting impact on a student’s future.

As a part of the school reform process, many public schools across the country are implementing ninth-grade interventions focused on personalization to improve the success of their ninth-grade students. School leaders are concerned that only about 70% of all high school students who start ninth-grade actually graduate (Greene & Forster, 2003). This study examined selected ninth-grade interventions associated with personalizing the high school experience for ninth-graders to determine which intervention had the most impact on high school graduation rates.
Research Questions and Null Hypotheses

The following questions and null hypotheses served to guide this study:

1. Do ninth-grade interventions increase graduation rates?
   Null hypothesis: There will be no statistically significant relationship between ninth-grade interventions and graduation rates.

2. Do categories or subgroups of ninth-grade interventions increase graduation rates?
   Null hypothesis: There will be no statistical relationship between the categories of ninth-grade interventions (school, peer, adult, structure) and graduation rates.

3. Do school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure) impact the implementation of ninth-grade interventions?
   Null hypothesis: There will be no statistical relationship between ninth-grade interventions and school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure).

4. Do school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure) impact the implementation of the categories of interventions (peer, structure, school, adult)?
   Null hypothesis: There will be no statistical relationship between the four categories of ninth-grade interventions (peer, structure, school, adult) and school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure).

5. Can graduation rates be predicted by ninth-grade interventions, the year before graduation rate, students with free or reduced lunch, student ethnicity, or per-pupil expenditure?
Null hypothesis: There will be no statistical relationship between the multiple independent variables (ninth-grade interventions, the year before graduation rate, students with free or reduced lunch, student ethnicity, or per-pupil expenditure) and graduation rates.

**Study Design**

In this non-experimental, quantitative study, the researcher collected survey data to determine whether ninth-grade interventions impact graduation rates, specifically, whether ninth-grade interventions implemented during one year to one cohort of students (the ninth-grade) in each participating school increased high school graduation rates for those students four years later. The researcher determined the graduation rate for a specific cohort on the basis of when any intervention was implemented in any school. Each intervention and when it was implemented varied in terms of implementation year both within each school and from school to school. Data from a control group were used to determine if there was an increase in graduation rates. Comparison data were collected on the class that graduated before the selected ninth-grade that experienced the intervention (or on a class that did not receive the intervention) at the same high school.

A paired t-test was used in this quantitative study to answer the first research question. A paired t-test is appropriate to use because the test determined if the difference between the means of the two groups (the graduation rate four years after the intervention was first implemented and the graduation rate of the class before the intervention was implemented) is statistically significant (Johnson & Christensen, 2008). The independent variables for this study were fifteen common interventions used to personalize high school for ninth-graders. The dependent variables were the subsequent graduation rates for the participating ninth-graders.
After data were collected and paired $t$-test applied, the interventions were organized into four subgroups: adult interventions, peer interventions, structure interventions, and system interventions. A repeated measure analysis of variance test was used to determine if a combination of interventions had an impact on graduation rates.

Although not the primary focus of the study, the following demographic data were collected: ethnicity, as measured by the percentage of students who are Black or Latino; poverty level, as measured by the percentage of students who receive free or reduced lunch; and per-pupil expenditure. Patterns in data around student ethnicity, student poverty, and per-pupil expenditure from the schools where the ninth-grade interventions were implemented were examined. These external variables were analyzed to determine their impact on the ninth-grade interventions implementation and their impact on graduation rates by generating a multiple regression analysis of variance and Pearson Product-Moment correlations. These tests are useful to determine relationships between related dependent variables (Lauer, 2006).

Finally, county level, statewide, and national graduation rates were analyzed. After the data were collected, the researcher was able to provide a descriptive analysis of the interventions that schools were implementing in terms of personalizing high school for their ninth-graders.

Participants

The population of this study consisted of 99 invited public high schools in Michigan from Macomb County, Oakland County, and Wayne County (excluding Detroit Public Schools). Of the 99 invited public schools, 62 of the schools participated. All schools examined were comprehensive four-year public institutions. High school principals completed the voluntary survey, and all results were kept confidential.
Definitions of Terms

While reading a research text it is necessary to understand important words and concepts, as they may be unclear. In addition, words or concepts may have a particular meaning to a study that would otherwise be unknown if the researcher did not provide a definition (Charles, 1995). The following definitions provides a working knowledge of several concepts used in this study.

*Intervention* – a new strategy for instruction, system organization, or behavior modification intended to help a student or a group of students improve performance (Howell et al., 2008).


* Adolescents - children in the age range of 16-19 (Craig and Baucum, 2002).

* Ninth-grade students* - students not retained at any point before the ninth-grade year are aged 14-15 (United States Department of Education, 2006).

*High school* – most schools containing grades 9-12 (United States Department of Education, 2006).

Limitations

Factors that occur outside of the researcher’s control may affect data collection. (Charles, 1995). The findings of this study may be limited by the following factors:

1. The researcher recognizes that many factors may influence high school graduation rates other than ninth-grade interventions, the ethnicity of students, the percentage of students who receive free or reduced lunch, and the per-pupil expenditures.

2. The researcher recognizes there are many other ninth-grade interventions that can impact high school graduation rates other than those identified in this study.

3. The researcher cannot require participation. Thus, the study used voluntary responses from school officials.
4. The researcher assumed the answers from the principals were accurate and truthful.

Delimitations

The researcher may impose restrictions in order to focus their study (Charles, 1995). The following are the delimitations of this study:

1. Data were collected only from public high schools from Michigan in Macomb County, Oakland County, and Wayne County, excluding Detroit Public Schools.
2. Data were collected from four-year, comprehensive, public institutions.
3. Data were gathered during the 2008-2009 school year.

Summary

This chapter introduced the study by providing background on various challenges that public educators face including the growing demand for students to attend college, higher accountability of schools, their teachers and administrators, and the need to personalize every student’s curriculum to maximize each student’s learning (Breaking Ranks II, NASSP, 2004). In addition to the challenges regarding high school reform and school organization, federal and state governments have increased the standards for schools, thus creating an even more difficult situation for public schools. One specific issue currently being addressed by many school administrators is the growing number of ninth-grade students who fail one or more classes in their freshman year. This is important because success in ninth-grade impacts how well a student will perform for the rest of his or her high school experience (McIntosh & White, 2006) and therefore influences high school graduation rates.
To address the growing number of ninth-grade failures, schools are providing interventions for their ninth-grade students so that the students have a greater chance at success throughout high school (Dudley et al., 2002). Ninth-grade interventions are often implemented to address the developmental needs of the unique ninth-grade student. More specifically, research shows that students perform better when they are personally connected to school (Klem & Connell, 2004), and interventions are often designed to address the need for increased personalization. To determine the most effective strategies for increasing high school graduation rates, this study examined three recommendations found in *Breaking Ranks II* (NASSP, 2004) that are related to personalizing the school environment: a) create small units to banish anonymity, b) assign personal adult advocates, and c) establish a sense of caring between students and their teachers (NASSP, 2004). Current research relevant to the concepts discussed in this study will be presented in Chapter II, followed in subsequent chapters by the methodology that was used in this study, results, and conclusions and implications.
CHAPTER II
REVIEW OF RELATED LITERATURE

Introduction

With increasing accountability, more challenging standards, new graduation requirements, and tightening school budgets comes an increased need to be economically sensible when deciding on new school initiatives and reforms. It is therefore necessary for school officials to explore all possible options when looking for the most effective way to increase overall student achievement. Current research indicated that a focus on freshman students and the organization of ninth-grade will lead to the greatest gains in terms of both student achievement and graduation rates.

Over the last few decades, many schools have moved the ninth-grade from the middle school into the high school. Most districts house sixth-, seventh-, and eighth-graders together, thus grouping ninth through twelfth graders in the high school (Viadero, 2004). The shift of ninth-grade students to the high school level has created challenges for educators (Dudley et al., 2002) and for often overwhelmed ninth-graders. Research about the transition to ninth-grade is important as it draws attention to the new problems high schools face in trying to educate the developmentally different fourteen-year-old student.

By high school, as many as 40 to 60% of students become disengaged from school (Klem & Connell, 2004), as evidenced by students increasingly failing classes in their freshman year. It is reported that many students experience a decrease in their academic achievement and grade point average during a school year following a transition (Reyers et al., 2000). Today, about 30% of students nationally fail one or more classes in the ninth-grade (McIntosh & White, 2006). Fuligni, Eccles, Barber, and Clements (2001) found that students’ grades, self-esteem, and sense
of academic efficacy are likely to decline after the transition to high school. Perhaps more significantly, the success or failure during the freshman year sets the tone for a student’s entire high school career (Hertzog & Morgan, 1999). Ultimately, only about 70% of all high school ninth-graders will graduate (Greene & Forester, 2003). These reports of ninth-grade failure rates and graduation rates suggest a study of needed high school reforms should be focused on this year of school.

To combat the ninth-grader’s decline in grades and self-esteem and his or her general disengagement from high school, various interventions are currently used in some high schools (Dudley et al., 2002). Investigation of the research indicated that relationship building and personalization are keys for ninth-grade success (Klem & Connell, 2004). Breaking Ranks II (NASSP, 2004) made recommendations and suggested strategies to reform the American high school so that it can be more favorable for students and, more specifically, the struggling ninth-grade student.

A synthesis of the research on topics relating to this study is presented in this chapter, beginning with a general discussion about the importance of high school reform, school organization, and the increase of state and federal educational mandates. Next, the researcher examined literature about development in the early adolescence period and adolescence period and the relevance of that development to schooling. Further, three recommendations and strategies for creating a personalized high school detailed in Breaking Ranks II are considered. Recommendation 10: “High schools will create small units in which anonymity is banished”; Recommendation 13: “Every high school student will have a Personal Adult Advocate to help him or her personalize the educational experience”; and Recommendation 14: “Teachers will convey a sense of caring so that students feel that their teachers share a stake in student learning”
(NASSP, 2004, p. 83, 85). Concluding the chapter, research about change theory and how it relates to change in public schools is presented.

High School Reform and School Organization

Research clearly indicated a need for high school reform. Researchers found that there are problems with the internal organization of a comprehensive high school (Darling-Hammond, Ancess, & Ort-Wichterle, 2002; Lee & Smith, 1993; Marx, 2006; Rosenholtz, 1991; Sizer, 1984; Zemelman et al., 1998). For example, in the traditional high school, teachers have a difficult time responding to individual student needs, teachers themselves are dissatisfied, students are bored and disengaged, and the curriculum in general is disjointed. In addition, students rarely have the opportunity for group work, teachers have a tendency toward autonomy, time is limited to re-teach material, and there is infrequent teacher collaboration. These deficiencies often lead to student and teacher isolation, which, in turn, can lead to student and teacher dissatisfaction. Although the current bureaucratic model of the American high school was designed to provide for student choice, it has not been successful. This is evidenced by the high school drop out rates that remain high (National Center for Education Statistics, 2005).

One way to increase academic achievement is to focus reform on the school as an institution because the organization of a school matters (Fitzpatrick & Yoels, 1992). If the American high school is clearly not functioning at an acceptable level, the organization of the school must be examined because school organization can affect student performance and teacher satisfaction (Lee et al., 1991). Similarly, Rutter (1983) held that when determining school changes that increase student learning, decision-makers must look at the qualities of successfully organized schools.
Organizational features have been a focus of educational research to explain various educational phenomena. Such organizational features as structure, leadership, and size have been a focus of study. However, because of the need for social connectedness by teachers and students to function at a high level, the focus on reforming school organization should be the social organization of school (Johnston, 1992). Successful schools function with a clear set of organizational goals, which ultimately creates a social agreement among the staff about the academic mission (Fuller & Izu, 1986; Rosenholtz, 1991). This social agreement about the academic mission and goals provides clarity about the educative process and the relationship between teachers and students.

Human interaction becomes more formal as organizations grow (Weber, 1947) and, therefore, human connections become less personal. This is one way to describe the American public high school because they are typically organized into large, bureaucratic institutions (Lee & Smith, 1993). Bureaucracies tend to be impersonal, and disconnections occur at every level, not an ideal structure for learning. In spite of this, on a very basic level, schools are inherently social systems with relationships defining the very structure of the institution. This means that the social organization of schools (usually bureaucracies) conflicts with the human desire to interact. To illustrate this, researchers have found that the functioning of a school as a social organization ultimately affects student attendance, student behavior, and student attitude (Rutter, 1983). In fact, best practice in the classroom should be to design lessons that are social and collaborative (Zemelman et al., 1998) so that students are working and learning together. Sinner (2004) said that every organization, specifically schools, depends on personal relationships.

Reforming how teachers work in schools – or the social organization of school – can improve how students learn. Research indicated that schools should be organized as communal
organizations rather than as bureaucracies because teachers are more satisfied in communal organizations, which affects student learning. Lee and Smith (1996) found that greater teacher cooperation and support among the staff leads to students performing better. Best practice in reforming schools has indicated that decision-makers must focus on creating a collaborative culture where teachers can work together as a community (Fullan, 1994; McLaughlin & Talbert, 2001). Rosenholtz (1991) found that if high schools are socially organized with a strong emphasis on teacher collaboration and community, students will perform at higher rates. Newmann & Wehlage (1996) found that to improve student learning, teachers must be socially organized into groups so that many people (as opposed to individuals) are responsible for student learning. In addition, researchers have found that when designing a curriculum, students will learn more and better if the lessons are intended to be social and communal (Zemelman et al., 1998). Thus, when discussing school reform it is necessary to study how the school is socially organized and to focus reform on the relationships of teachers and students. By examining relationships among people, the process through which students are affected can be understood (Frank, 1998).

State and Federal Educational Mandates

Coupled with the need for organizational change and reform in the American high school, federal and state governments have demanded it. Due to legislation such as No Child Left Behind (NCLB) and additional state-level measures, high schools today have a greater accountability than ever before (Ryan, 2004). NCLB mandates that every child must pass state assessments in math and reading (Gamble-Risley, 2006) and, further, that schools must show they are making progress, as measured by statewide measurements and graduation rates. More
than ever before, school administrators have been held accountable for student achievement (United States Department of Education, 2008).

Through NCLB, states must reach prescribed proficiency goals. For instance, Adequate Yearly Progress, as defined by NCLB, is the state’s measure of how well a school is performing. Graduation rates are factored into state-defined standards for measuring Adequate Yearly Progress. In addition, high school teachers and school officials must align their curriculum to state standards and benchmarks (Michigan Department of Education, 2008) and administer state required assessments on which students must reach a minimum level of proficiency. In Michigan, students in grades 3 through 9 must pass tests in the Michigan Education Assessment Program (MEAP), and students in grade 11 must pass the Michigan Merit Exam (MME); both tests are based on the Michigan Curriculum Framework (Michigan Department of Education, 2008). American high schools are confronted with the challenge of increasing curriculum standards, assuring that every student performs well on state and national exams, graduates from high school, and attends college.

Introduction of Adolescent Development

A study of adolescents in the context of reforming the organization of the traditional high school would be incomplete if it were not being grounded in research about ninth-graders’ unique development. Research on the topic is plentiful, and a broad review of the different aspects of development, as well as the varied stages within each aspect, is integral to the study.

Throughout life, the human being goes through many stages of cognitive, moral, social, physical, and emotional development (Craig & Baucum, 2002; Wood, 2007). Specifically, 6-19-year-olds go through many changes. On average, children begin puberty during the middle
school grades – girls around 10 years of age and boys around ages 12-13 (Craig & Baucum, 2002) – but maturation may continue for many years. Physical puberty usually ends for girls about age 14 and for boys a little later (Wood, 2007). However, the timing and pace of the development could vary from child to child (Craig & Baucum, 2002). In general, when children experience puberty, many transformations occur in terms of social, emotional, physical and cognitive maturity.

There are many children who do not have difficulty going through the developmental stages and therefore do not have problems adjusting to the different levels of schooling (Craig & Baucum, 2002). For instance, children who have support both at the family level and other areas such as friends and teachers may find the maturity process less painful (Sells, 2004). Other children simply go through the stages with ease (Lemer, 2007). Although child psychologists have identified stages, levels, and characteristics that children will experience during the maturation process, there are distinct differences in the timing of that process.

There is a particularly important period of time during a human being’s development that occurs around the ninth-grade (Riera, 2004). There are few other developmental periods as significant as those during the middle school to high school transition time period, with a multitude of changes occurring for each child (Eccles & Wigfield, 1997; Kellough & Kellough, 2008). Due to this developmental process, many ninth-grade students struggle in various areas including behavioral growth, social pressures, and adjusting to the rigidity of the traditional high school (Mizelle & Irvin, 2000). Ninth-graders often experience increased stress levels, heightened risk of maladjustment, and decreased self-esteem when going through the high school transition process (Alridrez & Weinstein 1993). Therefore, classrooms are often filled with students of the same age in years but who are very different in terms of maturity levels (Eccles &
Many times this causes difficulty for educators and students in the teaching and learning process. Overall, the maturation process for ninth-graders offers one reason that high school presents such a challenge for some students (Reinhard, 1997).

**Early Adolescent Development**

Early adolescence is a difficult, fragile, and confusing time for many pre-teens and teens (Reinhard, 1997). To further complicate things, this period of change is highly unpredictable (Eichorn, 1966; Scales, 2003) and can vary from child to child. If not retained at any point before the ninth-grade year, students at that grade level are aged 14-15 and fall into the early adolescence category of childhood development. Ninth-graders experience transformations in terms of cognitive changes, emotional development, physical growth, a new social structure, and new academic demands.

Early adolescents are cognitively different than older students (Mizelle & Irvin, 2000). Ninth-graders are not ready for the way other high school-aged children think and are taught. For the most part, ninth-graders prefer concrete, observable events. Although some like the challenge of complicated material, they are predominantly very literal in how they comprehend material (Stevenson, 2002; Wood, 2007) and have less retention and memory than older high school students. They also have weaknesses in basic skills such as reading and writing, and they have an extremely difficult time thinking about and planning for the future (Fields, 2005). Cognitively, ninth-graders are highly immature and irresponsible (Riera, 2004). This causes them to struggle with higher order thinking and makes completing their homework difficult. Many ninth-grade students do not have forethought or a plan for their own learning (DiMartino & Clarke, 2008).
This lack of cognitive ability and critical thinking skills combined with their immaturity can lead to high failure rates for many ninth-graders in the traditional high school.

Emotional development is delayed for 13-15 year olds, which regularly causes a higher risk of loneliness in this age group than in any other age (Uruk & Demir, 2003). This often leads to an increased feeling of isolation and low self-esteem (Riera, 2004). Many times, ninth-graders are in a state of mixed emotions filled with confusion, self-doubt, and conflict, which can affect their studies (Hertzog, Morgan, Diamond, & Walker, 1996, NASSP, 1985). In addition to the loneliness and a transition to a new school, motivational problems may occur in ninth-grade students (Eccles & Wigfield, 1997). Because of the emotional developmental adjustments ninth-graders often experience, it is difficult for many of them to endure the emotional pressures of adolescence as well as the change to a new school, and therefore some students struggle in the first year of high school.

It is generally accepted that there are greater physical growth differences in ninth-grade students than in other aged children (Reents, 2002). In fact, ninth-graders’ physical changes are so great that they affect every aspect of their schooling (NASSP, 1985). Along with the physical changes, ninth-graders also experience a high level of hormonal changes that produce increased sexual feelings and moodiness (Riera, 2004; Wood, 2007). Ninth-graders tend to be very energetic and loud and need a lot of exercise and sleep (Wood, 2007). These physical developmental transformations and hormonal adjustments affect the ninth-grader’s behavior in school because the change often complicates social interactions and schooling in general (Eccles & Wigfield, 1997).

Adding to the chaos that a child experiences during hormonal and physical changes, a ninth-grader also must contend with the new social structure when transitioning to high school.
(Kerr, 2002). Many times, ninth-graders are faced with new peers and a new social structure when transitioning from middle to high school, which some find problematical (Riera, 2004). For instance, freshmen frequently face a more diverse population when entering a large high school to which they are unaccustomed. This process involves a new environment and new behaviors for the students, including engaging in high-risk behaviors such as drug or alcohol use (National Institute on Drug Abuse, 2005; Wood, 2007). Students can become overwhelmed with the new population of students, as they do not have experience in managing a large group of people. When a student is challenged with new social pressures, he or she is less likely to focus on school-related material, more likely to be at risk to make poor ethical decisions, and more likely to pay attention to the social aspect of school (Kellough & Kellough, 2008). Friends are very important to ninth-graders. While they may desire adult connections, ninth-grade students are interested in fitting in with a new group of peers at school (Wood, 2007).

The new academic demands placed on the ninth-grade student by federal and state laws are challenging for some students (Kerr, 2002). They often fall behind in one or more courses and find it hard to catch up (Riera, 2004). Ninth-graders have a difficult time pursuing academic challenges when they feel overwhelmed; once ninth-graders fall behind, it is very likely they will give up. Often, ninth-graders, who do not develop as quickly as other students, become frustrated with high school as academic demands increase and thus, earn poor grades (Potter, Schliskey, Stevenson, & Drawdy, 2001). With cognitive weaknesses, the increase in academic demands, inability to persevere through difficult assignments, and the challenges of the developmental process, it is not unlikely for a ninth-grader to struggle in high school.
Adolescent Development

Adolescent developmental changes occur at varying times for different children, thus making their shift from childhood to adulthood a very confusing time for the child, the child’s family members, friends, and educators. In most cases, children of all ages shift in and out of developmental stages. Individual children move from one stage to another according to a combination of physical maturity, firsthand experiences working with concrete objects, and interactions with other people, especially other children (Stevenson, 2002). It is common for adolescents to function at one stage for some operations and at a different stage for others (Craig & Baucum, 2002). In addition, there are some children who never grow out of one or more of these stages, even into adulthood.

In general, 17-year-old students seem to be ready for the skills traditional high school classrooms require of them to be successful. Many children will naturally reach the developmental stage required of successful high school students on their own and without additional interventions and support (Craig & Baucum, 2002). However, as educators know, some students will not.

Cognitively, many 17-year-old students have abilities that early adolescent children do not possess. Adolescents have the ability to critically think about issues (Lerner, 2007). They have more memory than younger children and like to imagine what could be as opposed to learning concrete facts (Craig & Baucum, 2002). The older a child becomes, the more cognitive skills he or she develops naturally. For instance, the more mature child becomes more forward thinking – he or she can picture the future. More mature children can transfer information and they grow to be better problem-solvers. Overall, the more mature child – presumably the older
child – becomes a better planner and a better decision-maker and is more flexible (Craig & Baucum, 2002). These are many of the skills desired for a successful high school experience.

Socially and emotionally, later adolescent children become more adaptable in a social context. They can analyze their roles and what that means in terms of their place in society (Craig & Baucum, 2002). By age 16, children begin to be able to self-monitor, and the social aspect of school becomes less important. When teenagers grow older, they develop a stronger self-esteem and a sense of belonging (Lerner, 2007). These traits in adolescents usually mean that they will be less likely to engage in high-risk behavior and therefore will be less likely to get in trouble at school than 13-15-year-olds (Lerner, 2007). Therefore, educators see fewer suspensions and less time out of school in older high school students.

From about the age of 16 and beyond, adolescents have a larger understanding of the world (Lerner, 2007). The world becomes more complex, as opposed to being only about them. They can better take others’ feelings into consideration and they can begin to critically examine family, culture, and social institutions (Lerner, 2007).

Ultimately, older high school children have a greater chance for academic success than ninth-graders. Educational issues, such as disengagement from school and failure, sometimes occur when children do not naturally move from early adolescence to later adolescence. Without additional support, many children will likely struggle with the traditional high school.

The Transitioning Ninth-grader

Students experience a recognizable difference in academics from middle to high school. For the first time in their academic career, ninth-grade students earn grades that count toward something official. Usually, the ninth-grade year marks the first time that grades are entered on a
permanent transcript that others will evaluate, that may count toward college applications, and later apply to the search for employment (Akos & Galassi, 2004).

Despite the level of importance of high school, Cauley & Jovanovich (2006) found that ninth-grade students report they have concerns related to academic, procedural, and social issues during the transition process. These concerns are sometimes due to ninth-graders experiencing a larger, more competitive, and grade-oriented environment than the middle school (Eccles et al., 1984). Ninth-graders report feeling nervous and scared about transitioning to high school. As ninth-graders make the transition, they also report having a negative view of themselves (Hertzog et al., 1996). Some ninth-graders do not possess the skills needed, such as self-direction, to find success in high school.

Ninth-grade is more than simply a transitional year for developing adolescents because the risks of potential problems with transitioning to the ninth-grade are more notable than any other schooling transition (Cauley & Jovanovich, 2006). Therefore, placing a high level of importance on this year of schooling is essential for school officials in regard to both students’ self-perception and actual student performance.

**Breaking Ranks II Recommendations**

*Breaking Ranks II* (NASSP, 2004) offers 31 recommendations to high school decision-makers that include pragmatic solutions to the educational crisis of the alarming rate of students not graduating from high school. Each recommendation has a list of strategies and interventions that schools may implement. All recommendations fall into one of three categories:

1. **Collaborative Leadership and Professional Learning Communities**
2. **Personalization and the School Environment**
3. Curriculum, Instruction, and Assessment.

Research indicated that personalizing school can increase student achievement (Dudley et al., 2002). Therefore, for the purpose of this study, the researcher focused on three recommendations related to personalizing the high school (category number 2) and the set of strategies that may be adopted by schools that support each of the recommendations. *Breaking Ranks II* authors and other leading educational researchers indicated that creating a school where students perceive that they are cared about will increase student achievement. Teachers who have close relationships with students are better able to teach their students (*Breaking Ranks II*, NASSP, 2004).

Johnston (1992) found that early adolescents who do not connect with school or do not find a common bond with a teacher or counselor are more likely to drop out of school. He also stated that how an adolescent feels about school could determine whether or not he or she continues on in school. Thus, personalization of high school for the developmentally different ninth-grader must be a focus when implementing high school interventions and school reform. The three recommendations and the corresponding strategies used for this study are shown in Figure 2.
<table>
<thead>
<tr>
<th>Breaking Ranks Recommendations</th>
<th>Strategies used to implement recommendations</th>
</tr>
</thead>
</table>
| **Recommendation 10**: High schools will create small units in which anonymity is banished. | ● Student-led conferences  
● Freshman orientation  
● Looping  
● Students remaining with the same group of peers  
● Houses/clusters/school within a school  
● Peer mentors  
● Personal Adult Advocates  
● Freshmen academies  
● Career academies  
● Transition program to adult life |
| **Recommendation 13**: Every high school student will have a Personal Adult Advocate to help him or her personalize the educational experience. | ● Personal Adult Advocates  
● Flexible scheduling  
● Advisories  
● Personal plan for progress |
| **Recommendation 14**: Teachers will convey a sense of caring so that students feel that their teachers share a stake in their learning. | ● Team Teaching  
● Use of data to determine what programs are needed |

*Figure 2. Recommendations 10, 13, and 14 and their corresponding strategies (Breaking Ranks II, NASSP, 2004).*
Adolescents are faced with many changes including maturation, body and mind development, and brain functions. During the adolescent period, it matters how the student feels about school in terms of his or her academic success (Johnston, 1992). More recently, Dudley et al. (2002) found that a perceived supportive environment must be formed for a freshman student to have academic success. This is because the typical high school organization, usually a bureaucratic model, is a challenge for some freshman students. Therefore, various school interventions focused on the ninth-grade student are implemented to create a positive and personal school culture.

Although there are many interventions implemented by schools, one common theme among the ninth-grade interventions is the attempt to create a personalized high school experience for the ninth-grade student. Personalization, as suggested by *Breaking Ranks II* (NASSP, 2004), is created by focusing on a variety of strategies that include advisories, student-led parent-teacher conferences, freshman orientation, looping, ninth-grade academy, career academy, a transition program, flexibility within a student’s schedule, smaller learning communities, using data to make decisions, peer mentors, adult mentors, counselor for the ninth-grade, students remaining with their peers, or a separate wing, hall, or space within the building. Additional research available on the 15 specific intervention strategies recommended in *Breaking Ranks II* (NASSP, 2004) gave further support to their importance.

**Advisories Interventions**

Advisory class periods allow students and teachers to meet at various times throughout the freshman year. This is one way schools attempt to create a more personalized schooling environment for their ninth-graders. Clarke (2003) found that advisories could be used to
increase student motivation, guide class selection, and celebrate student achievement.

Advisories can be used as a way to combat some of the feelings of isolation that ninth-graders so often feel when transitioning to a high school (Riera, 2004). In addition, advisory teachers may use the time to teach study skills, allow time for homework completion, or simply act as a mentor to their students. Darling-Hammond et al. (2002) found that advisories increase student personal support. This can be helpful when students struggle with the new academic standards implemented in high school. Another benefit to student advisories is that they may increase teacher-parent communication (Darling-Hammond et al., 2002). In general, advisories can act as an intervention that attempts to connect students to teachers and teachers to parents.

**Student-Led Conference Interventions**

While peers can have a positive influence on ninth-graders, adult and parent support is needed, too. MacIver (1990) found that parents impact adolescent motivation, a problem for many ninth-graders. Assuring parent involvement in their ninth-grade child’s education through student-led conferences is an important aspect of student success (Akos & Galassi, 2004). Ninth-grade students in some schools are able to facilitate a conference between the teacher and parent about the progress the student is making, class assignments, and other school-related topics. This allows the ninth-grader some ownership in his or her learning. By improving relationships between school and the family, schools can positively impact student achievement (Martin et al., 2003). Student-led conferences are one way schools can improve that relationship and offer the ninth-grader more adult support.

**Transitional Program Interventions**

Research shows that transition programs into adult life, freshman orientations, and freshman academies, in general, reduce dropout rates and are beneficial to students (Cauley &
Jovanovich, 2006; Letgers & Kerr, 2001) because of the social connection these interventions can create between the school, the student, and the real world. When ninth-graders transition to the high school, new feelings of loneliness and isolation can occur that can adversely affect student achievement (Eccles & Wigfield, 1997). Transitional interventions help to prevent or at least lessen some of those feelings.

Transitional programs can be offered in a variety of ways. Some schools offer transitional programs for students to move into adult life. Other programs take the form of summer programs that occur even before the student enters high school. Freshman orientation programs may entail a freshman-only registration day or a freshman-only first day of school. Schools may call the cluster of programs that offer numerous activities “freshman academies.” Successful schools have programs that provide membership to their students (Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989); thus many of the interventions used for ninth-graders involve the cohesive programming of the above interventions.

**Varied Teaching Technique Interventions**

Personalized learning can increase student achievement for some ninth-graders. Teachers play a role in a ninth-grader’s success during his or her first year in high school by being responsive to student’s need (Fraser & Wahlberg, 1991). Flexible scheduling and varied teaching techniques such as team teaching and looping are recommended for ninth-grade teachers to create personalization (Cauley & Jovanovich, 2006; McIntosh & White, 2006; Stevenson, 2002). Team teaching, involving multiple teachers involved in the education of one classroom, increases the adult-to-student ratio in one class period. Looping is when a teacher follows a class to the next level, as when an eighth grade teacher teaches the same students the following year in ninth-grade. Clarke, Frazer, DiMartino, Fisher, & Smith (2003) suggested that educators should create
a personalized classroom using a variety of teaching techniques: by encouraging personal voice, allowing chances to work in groups, and offering opportunities to have choice in the classroom. Because of ninth-graders’ unique developmental process, they respond to and value techniques such as cooperative learning and team building (Kellough & Kellough, 2008, Wood, 2007).

Darling-Hammond et al. (2002) found that effective teachers offer a variety of teaching techniques during one class period to engage the students and to touch on various learning styles. Additionally, interactive lessons are important interventions for the ninth-grade student. For instance, Wood (2007) found that allowing for breaks in the class period assists the ninth-grader in learning. In their stage of development, some ninth-graders feel frustrated by the high school work load and may give up. Varied teaching techniques engage the ninth-grader and improve achievement by keeping the student connected to their class and to their school.

*Career Academy Interventions*

Career academies, or a systematic approach to developing career skills, positively impact student success (Turner, 2007). Schools where career academies are recommended to students describe it as a school-within-a-school program that can offer career related curricula based on a career theme, internships, academic coursework, and work experience through partnerships with local employers (What Works Clearinghouse, 2006). Other researchers have found that providing courses for ninth-graders that focus on future careers helps to connect ninth-graders to their high school, to build relationships with adults, and to encourage authentic learning by making learning applicable to the real world (Feller, 2003).

Some ninth-grade students struggle with thinking about and planning for the future and tend to be highly irresponsible (Fields, 2005; Riera, 2004). Career academies have been found to have positive effects on students’ decision to stay and progress in school (What Works
Career academies offer an explanation of careers available, the skills needed to find and keep a job, and other adult skills ninth-graders require. Used as an intervention, career academies address some of the unique developmental deficiencies of a ninth-grader.

**Data Interventions**

Providing feedback for a student can have a powerful influence (Rutter, Maughan, Mortimore, & Ouston, 1982), and sharing data about the student’s performance can ultimately increase test scores (Gamble-Risley, 2006). These data can include attendance reports, behavior reports, test scores, and overall achievement. Ninth-graders who have more personalized support that provides a descriptive picture of how they are doing in school will do better in their academics (Reinhard, 1997). Thus, sharing a student’s own data has positives benefits for that student and can be used as a ninth-grade intervention.

**Peer Mentor Interventions**

Researchers have found that there is a need for freshman students to be socially connected to other students (Riera, 2004), and that students possess a strong need to belong (Wood, 2007). Peers tend to be the most influential group for freshman students (Urak & Demir, 2003), indicating a need for peer mentors. Often, when students drop out of high school it is because they did not connect with the school and subsequently formed friendships with students who did not value education (Johnston, 1992). Therefore, one intervention is the use of peer mentors. Some schools have programs that allow time for older students to mentor the younger ninth-grader. During this mentorship, they may have conversations about academics, homework, or simply talk about the social aspect of school. Peer mentors can have a positive impact on the emotionally needy and peer dependent ninth-grader.
Adult Mentor Interventions

Lee and Burkam (2003) found that students are less likely to drop out of school when a positive relationship exists between teachers and students such as those intended by the use of adult mentors. Ninth-graders often crave adult connection (Woods, 2007) that can be provided by providing an adult mentor to every student. The adult advocates can offer advice, help keep the student organized, or be someone who will listen to the ninth-grader. When ninth-grade students have strong emotional connections and attachments to the school, they are more likely to have academic success (Johnston, 1992). In addition, Butts and Cruzewo (2005) found that connections to school keep students more engaged. Adult mentors act as a way to link the sometimes emotionally needy or isolated ninth-grader to the school.

Counselor Led Interventions

Dedicating a counselor to the ninth-grade students can be an effective intervention. Brigman and Campbell (2003) found that counselor-led interventions for ninth-graders had a positive effect on students. The ninth-grade counselor can be given extra time for ninth-grade scheduling so that the incoming student is appropriately placed into classes. Having an active counselor identify at-risk students prior to the students’ entry into the high school can be valuable as well (Cauley & Jovanovich, 2006). The counselor can also aid staff with academic and behavioral interventions (Darling-Hammond et al., 2002) and can facilitate meetings with students, parents, and teachers (Brigman & Campbell, 2003). The ninth-grade counselor can act as another adult with whom the ninth-grader may bond and can add another layer of connection and support to the ninth-grade student.
Smaller School Interventions

In the transition to a high school, some ninth-graders feel overwhelmed by the size of the new school and challenged with the new social pressures, causing their academics to suffer (Kellough & Kellough, 2008). One intervention to combat this feeling is to give ninth-graders their own space in a school or provide schools within schools (Lee, Smerdon, Alfeld-Liro, & Brown, 2000). Lee and Burkam (2003) found that smaller schools and remaining with peers positively impacted student success. The separate space can ensure stability and consistency for the ninth-grade student. Schools within schools (or smaller learning communities, as they are sometimes called) also provide a more socially supportive environment (Conley, 1993) that the ninth-grader so often desires. Compared to students in large schools, students in smaller schools feel safer and enjoy that they are known by staff members (Darling-Hammond et al., 2002). By providing ninth-graders their own space in a school building, student attendance increases, students exhibit better behavior, there is higher teacher morale, and teachers provide more parent contact. In addition, smaller schools or separate spaces often provide opportunities for better relationships between students and staff members, and students tend to be more serious about their learning (Newmann & Wehlage, 1995). Klonsky and Klonsky (1999) contended that students, taken as a whole, are more successful when they attend smaller schools, or at least schools within schools, because smaller schools can create a more personalized environment.

Theory of Change

Reform or changing the structure of any organization can be a difficult process and many times requires an entire change in the culture of an organization, as opposed to simply changing the structure (McAdams, 1997). In a school environment, cultural change can have
such an impact that researchers have found that the culture of a school is the single most
important factor that can drive beliefs and actions about student learning (Fullan, 2007). Further,
research has shown that a shift in culture is most beneficial when it moves from teacher isolation
to a communal organization (Fullan, 2007; Schmoker, 1999). Thus, it appears that a more
favorable school culture, for both staff and students, would be the result of a personalized school.

Changing a structure, and therefore the culture, that has been the norm in the American
high school for the past 100 years is extremely difficult (Goodson, 1983). Educators, who tend to
be most resistant to change (McAdams, 1997), often oppose change in school simply because
they have a lack of knowledge about why a change is needed and how the change will take place.
They are also programmed to continue to do what they have always done (Black & Gregersen,
2003). In fact, very few institutional reforms occur in public schools due to teacher resistance
(Fullan, 2007). While resistance to change is not always necessarily a negative, school leaders
must be ready for the resistance to occur (Van Loon, 2001). In addition, school administrators
ought to help their staff see the value of change by creating a knowledge base, a high level of
understanding of the intended change, and a clear vision of the change (Rowley, 2007).

School reform can be a difficult process because although change can occur on many
levels (Fullan, 1994), schools as organizations must be understood as an entire body wherein the
whole is greater than the individual levels (Hall, 2002). For the American high school to reform,
many steps must take place. Dissatisfaction must exist among the rank and file about how the
current process is functioning. The leader must have a model of the change plan that he or she
can clearly articulate, and there must be a realization by the leader that staff resistance may occur
(Beer and Nohria, 2000). Furthermore, the outcomes of the change process must be identified in
order for change to occur. Who will be involved and how the change is going to be implemented
must be defined, and sharing and refining the reform must take place. Different parts or levels of any organization, including a school, will respond differently to the proposed change. Therefore, school leaders must be prepared with a plan for various reactions to occur (Van Loon, 2001).

The change process is related to the implementation of ninth-grade interventions because simply participating in the reform may not have the desired impact; reform can be problematic. Understanding the reform is difficult; executing the specific intervention can be challenging, and reform that actually produces results by achieving total staff and student acceptance takes time and understanding.

The theory of change model related to ninth-grade interventions is illustrated in Figure 3. The theory of change model, which is most likely a shared understanding among many educators, offers an indication that if schools implement ninth-grade interventions focused on personalization in today’s political climate, it may be possible to increase graduation rates. The figure demonstrates that federal and state governments have increased standards and accountability. Ninth-graders have unique developmental characteristics unlike children at other ages, and there is a natural, potentially challenging, transition that occurs from the eighth to ninth-grade. Recognizing that other factors, such as student ethnicity, students’ socio-economic level, or even per-pupil expenditure, impact graduation rates, changing the school organization by implementing specific ninth-grade interventions focused on personalizing school could increase student achievement as measured by graduation rates.
Increased Accountability +
No Child Left Behind +
State standards, benchmarks, assessments (ACT), and graduation requirements +
Developmental changes in early adolescents

Traditional School Organization: Intense academic standards

Transition to the high school and the importance of ninth-grade

Breaking Ranks II
Recommendations and high school reforms

Ethnicity, percentage of students receiving free/reduced lunch, per pupil expenditure

School Organization:
Personalized, caring environment
1. Advisories
2. Peer mentors
3. Adult mentors
4. Separate wing
5. 9th Grade Academy
6. Career Academy
7. Team teaching
8. Remain with peers
9. Use of data
10. Freshman orientation
11. Teachers loop
12. 9th grade counselor
13. Transition programs
14. Student led conferences
15. Flexible schedules

Lower failure rates among ninth- graders?

Higher graduation rates?

*Figure 3. Proposed Theory of Change Model for implementation of ninth-grade interventions.*
Summary

American public high schools are faced with increasing academic concerns (*Breaking Ranks II*, NASSP, 2004). Public schools across the country that recognize the importance of the ninth-grade year are implementing interventions to improve the academic success of their ninth-grade students. Currently, many schools are creating a personalized school culture for ninth-graders through the use of various interventions and strategies. These changes could, in turn, affect the culture of the school.

Research is inconclusive regarding the most effective strategy for personalization of the school environment for ninth-graders. School administrators do not know which intervention in the ninth-grade has the most impact on a student’s successful passing to the tenth grade and later graduating from high school. This study examined selected ninth-grade interventions associated with personalizing the high school experience for ninth-graders to determine which intervention had the most impact on high school graduation rates.

A review of current literature regarding high school reform and school organization, federal and state educational mandates, adolescent development, an overview of various interventions used by schools concentrating on personalizing high school for the ninth-grade student and current research regarding changing an organization were presented in Chapter II. Subsequent chapters will include the research methodology used in this study, a summary of results, implications of the study, and recommendations for further research.
CHAPTER III
RESEARCH DESIGN AND METHODOLOGY

Introduction

Akos & Galassi (2004) asserted that there is a need for interventions at the ninth-grade level because of low student achievement, students dropping out shortly after entering high school, and students falling behind or failing to graduate. Literature suggested that ninth-graders are developmentally different than children of other ages, thus needing more focused attention at school (Cauley & Jovanovich, 2006). More research is needed to explore which of the many ways to personalize high school for ninth-graders has the greatest impact on high school graduation rates.

Many high schools are responding to the need to reform the organization of the traditional high school (Marks, 2000). Some schools across the nation are responding by implementing some form of ninth-grade intervention at the organizational level to address the difficult transition from middle to high school (Hertzog et al., 1996). For this study, the researcher examined whether a specific intervention implemented at a school had an impact on graduation rates. The study also considered demographic factors such as ethnicity of students, as measured by the percentage of students who are Black or Latino; poverty level, as measured by percent of students who receive free or reduced lunch; and per-pupil expenditures.

Researchers have found that students have more academic success when a high school is personalized by offering social support (Hertzog et al., 1996). The interventions tested in this study come from recommendations related to personalizing the school environment found in *Breaking Ranks II* (NASSP, 2004); specifically, the strategies related to Recommendation 10 – “High schools will create small units in which anonymity is banished” (p. 83); 13 – “Every high
school student will have a Personal Adult Advocate to help him or her personalize the educational experience” (p. 83); and 14 – “Teachers will convey a sense of caring so that students feel that their teachers share a stake in student learning” (p. 85). The use of these recommendations in the schools that are participating in this study will be examined to determine which strategies or interventions are the most effective to achieve the goal of increasing graduation rates.

The purpose of this chapter is to discuss the research design and methodology which address the research question of whether ninth-grade interventions increase graduation rates. Included in this chapter are sections that address the research tradition, research design, instrumentation and data collection, participants in the study, validity and reliability, procedures, limitations and delimitations, data analysis, and the importance of the findings.

Research Tradition

Qualitative research is useful in many cases, such as when collecting data for local situations, studying a limited number of cases, or when describing a particular behavior in a specific context (Johnson & Onwuegbuzie, 2004; Lauer, 2006). It is also used when describing and understanding experiences of people (Johnson & Christensen, 2008). The narrative description data in qualitative research are often found in observations of a particular circumstance because qualitative research can take place in natural settings and the subjects are not controlled (Lauer, 2006). Qualitative research is an inappropriate research method and not fitting for this study because it tends to be subjective and personal to the researcher (Johnson & Christensen, 2008). Further, the findings from qualitative research may be unique to a particular setting, the data collected may not be generalized, and it may be difficult to test hypotheses and
theories (Johnson & Onwuegbuzie, 2004). Hence, the researcher used the quantitative method of research to perform this study.

The quantitative research approach was appropriate for this study because the data are numbers and measurements, and therefore the results are objective (Johnson & Christensen, 2008; Lauer, 2006). In addition, in quantitative studies the research consists of studying a large number of people, the findings may be generalized, and the data can identify statistical relationships (Johnson & Christensen, 2008; Johnson & Onwuegbuzie, 2004). The goal of quantitative research is to describe, explain, and predict (Johnson & Christensen, 2008), which is what this study set out to achieve.

Research Questions and Null Hypotheses

The following questions and null hypotheses served to guide this study:

1. Do ninth-grade interventions increase graduation rates?

   Null hypothesis: There will be no statistically significant relationship between ninth-grade interventions and graduation rates.

2. Do categories or subgroups of ninth-grade interventions increase graduation rates?

   Null hypothesis: There will be no statistical relationship between the categories of ninth-grade interventions (school, peer, adult, structure) and graduation rates.

3. Do school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure) impact the implementation of ninth-grade interventions?

   Null hypothesis: There will be no statistical relationship between ninth-grade interventions and school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure).
4. Do school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure) impact the implementation of the categories of interventions (peer, structure, school, adult)?

Null hypothesis: There will be no statistical relationship between the four categories of ninth-grade interventions (peer, structure, school, adult) and school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure).

5. Can graduation rates be predicted by ninth-grade interventions, the year before graduation rate, students with free or reduced lunch, student ethnicity, or per-pupil expenditure?

Null hypothesis: There will be no statistical relationship between the multiple independent variables (ninth-grade interventions, the year before graduation rate, students with free or reduced lunch, student ethnicity, or per-pupil expenditure) and graduation rates.

Research Design

In this non-experimental, quantitative study, the researcher examined whether specific ninth-grade interventions increase high school graduation rates. The researcher collected data from schools about which ninth-grade intervention was implemented and the year it began. The researcher then collected the graduation rate of each school four years from when each intervention was implemented (the expected year of graduation). The graduation rates of the class before the freshman interventions were implemented (a class that did not receive the intervention) were collected and used as comparison rates. Collecting comparative data provided evidence to determine whether a change in graduation rates was due to the intervention implemented. Categories of interventions were also analyzed to determine if any appeared to have an impact on graduation rates.
Patterns around student ethnicity, students who received free or reduced lunch, and per-pupil expenditures were examined to determine if those external characteristics had an impact on the outcomes of the implementation of ninth-grade interventions and/or graduation rates.

Finally, on the basis of the data collected, the researcher offered a descriptive analysis of the ninth-grade interventions that were implemented by the participating schools, when the interventions were implemented, and demographic characteristics of students in schools that implemented interventions to make high school more personalized. In addition, countywide, statewide, and national trends regarding graduation rates were analyzed.

Instrumentation & Data Collection

Data regarding specific ninth-grade interventions were collected through the use of a survey (see Appendix A), a 15-item instrument that identified which (if any) interventions a school used for their ninth-graders. Each school high school principal was asked to identify if any of the interventions were implemented and the year each was implemented. The survey included questions regarding the strategies listed in Recommendations 10, 13, and 14 of *Breaking Ranks II* (NASSP, 2004). The strategies included advisories, student-led conferences, freshman orientation, freshman academies, looping, students remaining with the same group of peers, smaller learning communities, separate space, flexible schedules, peer mentors, adult mentors, career academies, transition programs into adult life, use of data to make decisions, and an active guidance counselor.

The survey was distributed via mail to the high school principal. Attached to the survey were an introductory letter (see Appendix B) and a consent letter explaining the study and ensuring confidentiality (see Appendix C). A self-addressed, stamped envelope was included to
further assure confidentiality. A follow-up email or phone call was made to some participants to encourage completion of the survey. Participation in the survey was voluntary.

Secondary data were also collected about the schools studied. Data about Michigan high school graduation rates were obtained from the Michigan Department of Education (available online at http://www.michigan.gov/mde). Although the graduation rate data were from the same source, the years vary due to the nature of the study (the interventions could have been implemented during various years at different schools). The additional data collected about students who received free or reduced lunch and per-pupil expenditures were obtained from the Michigan Department of Education. Data examined were from 2007. The additional data of student ethnicity were obtained from Standard and Poor’s Annual Report (available online at: http://ses.standardpoors.com). Data examined were from 2007. The supplementary data collected are public information and did not require permission to access. Descriptive statistics were used to evaluate the data from the survey and the secondary sources.

Participants

The population of this study consisted of 99 public high schools in Michigan from Macomb County, Oakland County, and Wayne County (excluding Detroit Public Schools). Of the 99 public schools invited, 62 of the schools participated. All schools examined were comprehensive, public, and four-year institutions. The principals of each participating high school completed the questionnaire on a voluntary basis.
Validity and Reliability

Validity is defined as the trustworthiness of the conclusions drawn from data (Eisenhart & Howe, 1992). Reliability refers to the consistency of the study (Guba & Lincoln, 1989). In this study, the participant sampling methods, the number of participants, the consistency of the procedures, and the survey allow for the results to be valid and reliable.

Sixty-two high school principals, all from the same geographic region, completed the identical survey. The survey asked the principals to indicate whether their school implements a specific intervention and what year the intervention first began. The interventions, at the various schools, could have affected hundreds of students. Consequently, study results may be generalized to schools of similar size and demographics.

The survey statements were pilot tested by ten high school officials during the 2007-2008 school year. All officials were able to understand and complete the survey by providing the necessary data of whether a school implemented a specific intervention and when the intervention was first implemented at their school. Results from this pilot test provided the type of data that would have been beneficial to the study.

Procedures

The researcher was granted permission to conduct this study from the Institutional Review Board for Human Subjects Research at Eastern Michigan University (see Appendix D). Data regarding the use of ninth-grade interventions were collected through surveying high school principals. The principals signed a consent form giving their permission to allow data to be collected. The attached letter assured confidentiality, and completion of the survey was voluntary. Further ensuring confidentiality, self-addressed, stamped envelopes were included so
that the completed survey and consent form could be easily returned. Some follow-up calls and emails were sent to encourage participation.

Once completed surveys were received by the researcher, each survey was coded for ease of identification, to assure anonymity, and entered into a computer. For each intervention strategy implemented, the school was given a “1.” If the school did not implement the intervention, an “0” was entered. The graduation rates of the year each specific intervention was implemented as well as the graduation rates of the year prior to implementation were determined and entered into the computer. Finally, student ethnicity, free or reduced lunch status, and per-pupil expenditures for corresponding schools were verified and entered into the computer. All data were collected during the 2008-2009 school year.

Limitations

Factors and circumstances may occur outside of the researcher’s control and influence (Charles, 1995). These factors may or may not affect data collection. The findings of this study may be limited by the following factors:

1. The researcher recognizes that many factors other than ninth-grade interventions may influence high school graduation rates, such as ethnicity of the students, poverty as measured by the percentage of students that receive free or reduced lunch, and per-pupil expenditure.

2. The researcher recognizes there are many other ninth-grade interventions other than the ones studied that can impact high school graduation rates.

3. The researcher cannot require participation. Thus, the study used voluntary responses from school officials.
4. The researcher assumes the answers from the principals were accurate and truthful.

Delimitations

Researchers often impose boundaries to narrow the study for researchability purposes (Charles, 1995). The following are the delimitations of this study:

1. Data were collected only from public high schools from Michigan in Macomb County, Oakland County, and Wayne County, excluding Detroit Public Schools.
2. Data were collected from four-year, comprehensive, public institutions.
3. Data were gathered during the 2008-2009 school year.

Data Analysis

All raw data collected about specific interventions to personalize high school, graduation rates, student ethnicity, the percentage of students who receive free or reduced lunch, and per-pupil expenditures, were sorted and entered into a computer program. The dependent variables for this study were high school graduation rates. The independent variables for this study were selected ninth-grade interventions used to personalize high school. SPSS statistical software was used for all data analysis.

Completed surveys from each school were coded and entered into a computer. Further, to avoid revealing any school, each intervention was coded “1” if implementing the intervention or “0” if not implementing the intervention. Graduation rates of the class that first received the intervention and the prior class that did not receive the intervention were determined and entered into the computer.
The researcher used a paired $t$-test to answer the initial research question of whether specific ninth-grade interventions increased graduation rates. The $t$-test was useful for this part of the study because it determined if the differences between the two graduation rates were statistically significant (Johnson & Christensen, 2008).

Once the initial data were collected data were categorized into four groups or types to compare effectiveness of the interventions as measured by graduation rates. These four groups included adult interventions, peer interventions, structure interventions, and system interventions (see Appendix E). The researcher used a repeated measures analysis of variance to determine if a combination of interventions had an impact graduation rates.

Supplemental data were analyzed using correlational statistics, which can be helpful in determining relationships (Lauer, 2006). Pearson Product-Moment correlations were produced to determine the relationships between the number of interventions implemented and the ethnic make-up of the schools, the number of interventions implemented and the number of students who received free or reduced lunch, and the number of interventions implemented and per-pupil expenditure. In addition, Pearson Product-Moment correlations were generated to determine the relationship between the demographics and the particular subgroups of interventions.

Last, a multiple regression analysis of variance test was used to gain a better understanding of the relationship between the dependent variable, graduation rates, and the independent variables (the number of interventions; ethnicity, as measured by the percentage of students who were Black or Latino; the poverty rate, as measured by the number of students who had free or reduced lunch; and the per-pupil expenditure). Multiple regression analysis research is helpful when trying to make predictions (Lauer, 2006) and therefore useful for this part of the study.
In addition, to the statistical tests, the need for further analysis became clear. The researcher analyzed the various countywide, statewide, and national trends regarding graduation rates. Finally, data analysis provided a description of what ninth-grade interventions were implemented in schools in three large counties in Michigan, when the interventions were implemented, and the demographic characteristics of schools that implement interventions to make high school more personalized.

Importance of the findings

School districts have limited resources to provide for school-wide initiatives. Therefore, districts must often use their resources sparingly. It may be beneficial for school leaders to know which of the numerous ninth-grade strategies regarding personalizing high school has the greatest impact on high school graduation rates when determining which ones to implement (especially since ninth-grade success can predict graduation rates). This study is helpful in determining which intervention or combination of interventions has the most impact on ninth-grade students. In addition, this study can provide a descriptive analysis regarding which specific interventions are being implemented within three large counties in southeast Michigan.

Summary

The research design and methodology used to address the research question was explained in Chapter III. Included in this chapter were discussions about the research approach, data collection instruments, population of the study, statistical tests, and importance of the findings. Results of the study are presented in Chapter IV, followed in Chapter V by conclusions of the study, the implications for practice, and the recommendations for further research.
CHAPTER IV
RESULTS

Introduction

The American public high school is in need of reform (Marx, 2006S). Schools must find ways to educate every student at a high level, partly due to strict national and state mandates and increasing curricular standards (Lachat, 2001). However, too many schools are not responsive to the present needs of many students. Consequently, declining high school graduation rates are becoming a serious national crisis (Heckman & LaFontaine, 2008) and yet another reason for the call to reform public high schools.

Current research indicates that a focus on freshman students and the organization of the ninth-grade will lead to the greatest gains in school reform. This is because many ninth-grade students, for a variety of reasons, such as the developmental process and the structure of a traditional high school, have difficulty in their freshman year of high school (Kemple & Hering, 2004). Some students struggle academically, socially, or behaviorally, and often drop out of high school (Alspaugh, 1998). This is important because how students perform academically during their freshman year can help to determine a high school’s graduation rate (Department of Education, 1996). Current research revealed that ninth-grade interventions focused on personalizing high school can be helpful in assisting students in their transition to high school and help them to have a successful freshman year (Klem & Connell, 2004). However, the impact that specific ninth-grade interventions have on graduation rates is not clear.

The purpose of this study was to determine what relationship exists between ninth-grade interventions and graduation rates. Presented in this chapter are the results of the data analysis performed to address the following research questions and null hypotheses of this study:
1. Do ninth-grade interventions increase graduation rates?
Null hypothesis: There will be no statistically significant relationship between ninth-grade interventions and graduation rates.

2. Do categories or subgroups of ninth-grade interventions increase graduation rates?
Null hypothesis: There will be no statistical relationship between the categories of ninth-grade interventions (school, peer, adult, structure) and graduation rates.

3. Do school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure) impact the implementation of ninth-grade interventions?
Null hypothesis: There will be no statistical relationship between ninth-grade interventions and school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure).

4. Do school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure) impact the implementation of the categories of interventions (peer, structure, school, adult)?
Null hypothesis: There will be no statistical relationship between the four categories of ninth-grade interventions (peer, structure, school, adult) and school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure).

5. Can graduation rates be predicted by ninth-grade interventions, the year before graduation rate, students with free or reduced lunch, student ethnicity, or per-pupil expenditure?
Null hypothesis: There will be no statistical relationship between the multiple independent variables (ninth-grade interventions, the year before graduation rate, students with free or reduced lunch, student ethnicity, or per-pupil expenditure) and graduation rates.
Participants

The sample for this study consisted of 99 public high schools in Michigan from Macomb County, Oakland County, and Wayne County (excluding Detroit Public Schools). Each principal was invited by the researcher to participate in the study. High school principals received a survey by mail to complete on a voluntary basis. All schools examined were comprehensive, four-year institutions. Data were gathered during the 2008-2009 school year.

Response Rate

There were 99 schools in the three counties, Macomb, Oakland, and Wayne, that were chosen for this study. Several schools, including Detroit Public Schools, were not chosen for this study because of factors such as size, perceived response rate, only being three-year institutions, and so on. Of the 99 schools invited, 62 of the school’s principals completed and returned the survey (62%). In Macomb County, 16 of the 22 surveys were completed and returned (72%); in Wayne County, 24 of the 38 surveys were completed and returned (63%); and in Oakland County, 22 of the 39 surveys were completed and returned (56%).

Instrumentation

Data were collected through the use of a 15-item survey sent to 99 high school principals. The survey asked principals to indicate if their school implemented a specific intervention and what year it was first implemented. The survey included questions regarding the strategies listed under *Breaking Ranks II* (NASSP, 2004) Recommendations 10, 13, and 14. The strategies or interventions are advisories, student-led conferences, freshman orientation, freshman academies, looping, students remaining with the same group of peers, smaller learning communities, a
separate freshman space, flexible scheduling, peer mentors, adult mentors, career academies, transition programs into adult life, use of data to make decisions, and a freshman only guidance counselor.

Upon receiving the surveys, the researcher identified which intervention each school implemented. If the school indicated yes for any of the interventions, it was given a 1. If the school indicated it did not implement an intervention, it was given a zero. After that, the researcher identified the graduation rate for the class who received the intervention and entered it into a computer. The graduation rate for the class before the implementation of the intervention (or a class that did not receive the intervention) was used as comparison data. This was done for each intervention from each school.

Next, the researcher created four categories, each containing several of the interventions. The subgroups were as follows:

1. structure interventions
   - freshman academy
   - career academy
   - transition programs into adult life
   - freshman orientation
2. system interventions
   - data-driven decision-making
   - flexible scheduling
3. adult interventions
   - adult mentor
   - advisory class
freshman only counselor

looping

4. peer interventions

peer mentor

staying with the same group of peers

smaller learning communities

a separate freshman space

Additional secondary data about participating schools were collected from public sources and entered into the computer. Data about Michigan high school graduation rates were obtained from the Michigan Department of Education (available online at http://www.michigan.gov/mde). Whereas the graduation rate data were from the same source, the years vary due to the nature of the study (the interventions could have been implemented during various years at different schools). The additional data collected of students who receive free or reduced lunch and per-pupil expenditures were obtained from the Michigan Department of Education. Data examined were from 2007. The additional data of student ethnicity were obtained from Standard and Poor’s Annual Report (available online at: http://ses.standardpoors.com). Data examined were from 2007.

Results

The data were analyzed with the help of SPSS software, version 14 for Windows. Descriptive data as well as demographic data are presented to illustrate the schools studied. Statistical data are presented to describe the tests that were run. The data were analyzed through frequency tables, paired t-tests, repeated measures analysis of variance, Pearson Product-Moment correlations, and a multiple regression analysis.
Null Hypothesis 1

There will be no statistical relationship between ninth-grade interventions and graduation rates.

A 2-tailed, paired $t$-test was generated to determine if the specific interventions had an impact on graduation rates. A 2-tailed, paired $t$-test is used to establish if the means of two paired scores differ significantly from each other (Johnson & Christensen, 2008). Two graduation rates (the graduation rate from a class that did not receive the intervention and the graduation rate for the class that did receive the intervention) were matched with each implementation of each intervention. In addition, a 2-tailed, paired $t$-test was generated to establish if combining all of the interventions differed from not combining all of the interventions. The difference of the two means is significant at the 0.05 level.

The results of the paired sample $t$-tests are found in the following 11 tables. Included in each table are the number of schools that implemented the specific intervention, the mean graduation rate before and after the implementation of the intervention, the standard deviation, the $t$ value, and the significance level. Graduation rates before and after transition program interventions were statistically significant. Graduation rates before and after looping interventions were marginally significant. No other intervention, as measured by graduation rates, led to statistically significant results. The correlation and $t$ could not be computed for the advisory intervention, the staying with the same group of peers intervention, and the separate space (or wing) intervention because the sum of caseweights is less than or equal to 1.
The results of the paired sample *t*-test displayed in Table 1 provides statistical evidence to reject the null hypothesis. There was a significant difference in graduation rates before the transition program intervention (M=89.82, SD=9.499) and the graduations rates after the transition program intervention were implemented (M=92.28, SD=7.130), conditions t(9)=2.311, p=.046.

Table 1

*Paired Sample t-Test for Transition Program Interventions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grad. rate before transition intervention</td>
<td>10</td>
<td>89.82</td>
<td>9.499</td>
<td>2.311</td>
<td>.046</td>
</tr>
<tr>
<td>Grad. rate after transition intervention</td>
<td>10</td>
<td>92.28</td>
<td>7.130</td>
<td>2.311</td>
<td>.046</td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level (2-tailed)*

The results of the paired sample *t*-test displayed in Table 2 provides statistical evidence to reject the null hypothesis. There was a marginally significant difference in graduation rates before the looping intervention (M=98.87, SD=.757) and the graduations rates after the looping intervention was implemented (M=99.41, SD=5.812), conditions t(1)=11.000, p=0.058.
Table 2

*Paired Sample t-Test for Looping Interventions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation rate before looping</td>
<td>2</td>
<td>98.87</td>
<td>.757</td>
<td>11.00</td>
<td>.058</td>
</tr>
<tr>
<td>intervention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduation rate after looping</td>
<td>2</td>
<td>99.41</td>
<td>.827</td>
<td>11.00</td>
<td>.058</td>
</tr>
<tr>
<td>intervention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level (2-tailed)

The results of the paired sample $t$-test displayed in Table 3 provides statistical evidence to fail to reject the null hypothesis. There was not a significant difference in graduation rates before the freshman academy interventions ($M=95.47$, $SD=1.845$) and the graduated rates after the freshman academy interventions were implemented ($M=93.66$, $SD=4.544$) conditions, $t(2)=-1.117$, $p=.380$.

Table 3

*Paired Sample t-Test for Freshman Academy Interventions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation rate before academy</td>
<td>3</td>
<td>95.47</td>
<td>1.845</td>
<td>-1.117</td>
<td>.380</td>
</tr>
<tr>
<td>intervention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduation rate after academy</td>
<td>3</td>
<td>93.66</td>
<td>4.544</td>
<td>-1.117</td>
<td>.380</td>
</tr>
<tr>
<td>intervention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level (2-tailed)
The results of the paired sample t-test displayed in Table 4 provides, statistical evidence to fail to reject the null hypothesis. There was a not significant difference in graduation rates before the adult mentor interventions (M=95.47, SD=1.845) and the graduations rates after the adult mentor interventions was implemented (M=93.66, SD=4.544) conditions, t(1)=-.179, p=.887.

Table 4

*Paired Sample t-Test for Adult Mentor Interventions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation rate before adult mentor intervention</td>
<td>2</td>
<td>95.47</td>
<td>1.845</td>
<td>-.179</td>
<td>.887</td>
</tr>
<tr>
<td>Graduation rate after adult mentor intervention</td>
<td>2</td>
<td>93.66</td>
<td>4.544</td>
<td>-.179</td>
<td>.887</td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level (2-tailed)*

The results of the paired sample t-test displayed in Table 5 provides statistical evidence to fail to reject the null hypothesis. There was not a significant difference in graduation rates before the career academy interventions (M=88.72, SD=5.452) and the graduations rates after the career academy interventions were implemented (M=94.44, SD=2.355) conditions, t(1)=2.311, p=.233.
Table 5

*Paired Sample t-Test for Career Academy Interventions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation rate before career academy intervention</td>
<td>2</td>
<td>88.72</td>
<td>5.452</td>
<td>2.607</td>
<td>.233</td>
</tr>
<tr>
<td>Graduation rate after career academy intervention</td>
<td>2</td>
<td>94.44</td>
<td>2.355</td>
<td>2.607</td>
<td>.233</td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level (2-tailed)*

The results of the paired sample t-test displayed in Table 6, provides statistical evidence to fail to reject the null hypothesis. There was not a significant difference in graduation rates before the freshman only counselor interventions (M=89.50, SD=6.541) and the graduations rates after the freshman only counselor interventions were implemented (M=93.62, SD=1.202) conditions, t(1)=1.093, p=.472.

Table 6

*Paired Sample t-Test for Freshman Only Counselor Interventions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation rate before counselor intervention</td>
<td>2</td>
<td>89.50</td>
<td>6.541</td>
<td>1.093</td>
<td>.472</td>
</tr>
<tr>
<td>Graduation rate after counselor intervention</td>
<td>2</td>
<td>93.62</td>
<td>1.202</td>
<td>1.093</td>
<td>.472</td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level (2-tailed)*
The results of the paired sample \( t \)-test displayed in Table 7, provides statistical evidence to fail to reject the null hypothesis. There was a significant difference in graduation rates before the transition program interventions (\( M=7.13, \ SD=2.255 \)) and the graduations rates after the transition program intervention were implemented (\( M=7.13, \ SD=2.255 \)) conditions, \( t(9)=2.311, \ p=.046 \).

Table 7

*\textit{Paired Sample} \( t \)-\textit{Test for Decisions Based on Data Interventions}*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>( t )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation rate before decisions intervention</td>
<td>18</td>
<td>90.50</td>
<td>4.445</td>
<td>-.931</td>
<td>.365</td>
</tr>
<tr>
<td>Graduation rate after decisions intervention</td>
<td>18</td>
<td>91.56</td>
<td>4.510</td>
<td>-.931</td>
<td>.365</td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level (2-tailed)*

The results of the paired sample \( t \)-test displayed in Table 8 provides, statistical evidence to fail to reject the null hypothesis. There was not a significant difference in graduation rates before the flexible scheduling interventions (\( M=95.48, \ SD=2.898 \)) and the graduations rates after the flexible scheduling interventions were implemented (\( M=94.88, \ SD=3.480 \)) conditions, \( t(3)=-.371, \ p=.735 \).
Table 8

*Paired Sample t-Test for Flexible Scheduling Interventions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation rate before scheduling intervention</td>
<td>4</td>
<td>95.48</td>
<td>2.898</td>
<td>-.371</td>
<td>.735</td>
</tr>
<tr>
<td>Graduation rate after scheduling intervention</td>
<td>4</td>
<td>94.88</td>
<td>3.480</td>
<td>-.371</td>
<td>.735</td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level (2-tailed)*

The results of the paired sample t-test displayed in Table 9, provides statistical evidence to fail to reject the null hypothesis. There was not a significant difference in graduation rates before the freshman orientation interventions (M=91.47, SD=5.365) and the graduations rates after the freshman orientation interventions were implemented (M=91.98, SD=5.812) conditions, t(23)=.433, p=.669.

Table 9

*Paired Sample t-Test for Freshman Orientation Interventions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation rate before orientation intervention</td>
<td>24</td>
<td>91.47</td>
<td>5.365</td>
<td>.433</td>
<td>.669</td>
</tr>
<tr>
<td>Graduation rate after orientation intervention</td>
<td>24</td>
<td>91.98</td>
<td>5.812</td>
<td>.433</td>
<td>.669</td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level (2-tailed)*
The results of the paired sample \( t \)-test displayed in Table 10, provides statistical evidence to fail to reject the null hypothesis. There was a significant difference in graduation rates before the peer mentor interventions \((M=90.08, SD=4.064)\) and the graduations rates after the peer mentor interventions were implemented \((M=87.59, SD=7.578)\) conditions, \(t(3)=-.828, p=.468\).

Table 10

*Paired Sample t-Test for Peer Mentor Interventions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>( t )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation rate before peer mentor intervention</td>
<td>4</td>
<td>90.08</td>
<td>4.064</td>
<td>-.828</td>
<td>.468</td>
</tr>
<tr>
<td>Graduation rate after peer mentor intervention</td>
<td>4</td>
<td>87.59</td>
<td>7.578</td>
<td>-.828</td>
<td>.468</td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level (2-tailed)*

The results of the paired sample \( t \)-test displayed in Table 11, provides statistical evidence to fail to reject the null hypothesis. There was not a significant difference in graduation rates before the smaller learning communities interventions \((M=93.28, SD=3.591)\) and the graduations rates after the smaller learning communities interventions were implemented \((M=92.96, SD=3.078)\) conditions, \(t(5)=-.181, p=.863\).
Table 11

Paired Sample t-Test for Smaller Learning Communities Interventions

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation rate before SLCs intervention</td>
<td>6</td>
<td>93.28</td>
<td>3.591</td>
<td>-.181</td>
<td>.863</td>
</tr>
<tr>
<td>Graduation rate after SLCs intervention</td>
<td>6</td>
<td>92.96</td>
<td>3.078</td>
<td>-.181</td>
<td>.863</td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level (2-tailed)

Data describing combining all interventions are found in Table 12. It is not statistically significant to combine all of the interventions as measured by graduation rates. Included in the table is the mean graduation rate before and after the implementation of the groupings, the standard deviation, the $t$ value, and the significance level. There was not a significant difference in graduation rates before the combination interventions ($M=91.76$, $SD=4.891$) and the graduations rates after the combination interventions were implemented ($M=91.99$, $SD=5.344$) conditions, $t(37)=.346$, $p=.731$. 
Table 12

*Paired Sample t-Test for Combining all Interventions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation rate before combination intervention</td>
<td>38</td>
<td>91.76</td>
<td>4.891</td>
<td>.346</td>
<td>.731</td>
</tr>
<tr>
<td>Graduation rate after combination intervention</td>
<td>38</td>
<td>91.99</td>
<td>5.344</td>
<td>.346</td>
<td>.731</td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level (2-tailed)*
Null Hypothesis 2

There will be no statistical relationship between the categories of ninth-grade interventions (school, peer, adult, structure) and graduation rates.

A repeated measures analysis of variance was generated for the four intervention groups to determine if one combination of interventions was more effective than other combinations of interventions. In this repeated ANOVA, the amount of change from before the intervention to after the intervention served as the within-subjects variables and the number of students graduated on average were the between-subjects variables. This test is appropriate because it examined the relationships between related dependent variables (Lauer, 2006). The difference of the means is statistically significant at the 0.05 level.

Results in Table 13 provide statistical evidence indicating that graduation rates do not differ according to the group of interventions used in schools. The four groups are as follows: adult interventions (adult mentor, advisory class, looping, and freshman only counselor), structure interventions (freshman academy, career academy, transition program, and freshman orientation), student interventions (peer mentor, smaller learning community, staying with the same peers, and a separate space), and school interventions (data-driven decision-making and flexible scheduling). In this analysis, student ethnicity, students with free or reduced lunch, and per-pupil expenditure served as covariates, and the graduation rates of the year before the intervention and the year after the intervention of the categories of interventions described above were within-subjects variables.

To examine the differences in changes in graduation rates between groupings, a repeated measures ANOVA was run. If groups influence graduation rates, then an interaction between
graduation rate change and groupings should emerge. The mean graduation rate for adult interventions was 93.99 prior to interventions and 95.44 after the interventions. The mean graduation rate for structural interventions was 91.21 prior to interventions and 92.31 after the interventions. The mean graduation rate for peer interventions was 91.98 prior to interventions and 91.33 after the interventions. The mean graduation rate for school interventions was 92.27 prior to interventions and 91.30 after the interventions. The ANOVA shows that these graduation rates did not increase systematically over time, F(3, 74)=.991, p=.402. In addition, the non-significant interaction of Time (before and after interventions graduation rates) and intervention group suggests that the intervention groups were not associated with increased graduation rates.

In the analysis on the covariate variables, student ethnicity, students with free or reduced lunch, per-pupil expenditure, and graduation rates, only one covariate was significant. In the analysis of free or reduced lunch and graduation rates, the main effect was significant F(1, 74) = 23.96, p=.000, ß=-.252, -.178. This means that schools with more students who have free or reduced lunch have lower graduation rates.
Table 13

Repeated Measures Analysis of Variance Summary Table

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>18.350</td>
<td>1</td>
<td>18.350</td>
<td>1.618</td>
<td>.207</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>7.850</td>
<td>1</td>
<td>7.850</td>
<td>.692</td>
<td>.408</td>
</tr>
<tr>
<td>Free or Reduced Lunch</td>
<td>22.189</td>
<td>1</td>
<td>22.189</td>
<td>1.956</td>
<td>.166</td>
</tr>
<tr>
<td>Per-Pupil Expenditure</td>
<td>17.082</td>
<td>1</td>
<td>17.082</td>
<td>1.506</td>
<td>.224</td>
</tr>
<tr>
<td>Groups</td>
<td>33.728</td>
<td>3</td>
<td>11.243</td>
<td>.991</td>
<td>.402</td>
</tr>
<tr>
<td>Error</td>
<td>839.406</td>
<td>74</td>
<td>11.343</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td>3.161</td>
<td>1</td>
<td>3.161</td>
<td>.101</td>
<td>.752</td>
</tr>
<tr>
<td>Free or Reduced Lunch</td>
<td>750.73</td>
<td>1</td>
<td>750.73</td>
<td>23.97</td>
<td>.000</td>
</tr>
<tr>
<td>Per-Pupil Expenditure</td>
<td>109.05</td>
<td>1</td>
<td>109.05</td>
<td>3.481</td>
<td>.066</td>
</tr>
<tr>
<td>Group</td>
<td>96.517</td>
<td>3</td>
<td>32.17</td>
<td>1.027</td>
<td>.386</td>
</tr>
<tr>
<td>Error</td>
<td>2318.33</td>
<td>74</td>
<td>31.33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Null Hypothesis 3

There will be no statistical relationship between ninth-grade interventions and school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure).

Pearson Product-Moment correlations were run to determine the relationships between the number of interventions implemented and the demographic variables. Pearson Product-Moment correlations were produced to determine the relationship between the number of interventions implemented and the ethnic make-up of the schools, the number of students who receive free or reduced lunch, and the per-pupil expenditure. Correlations were deemed significant at the 0.05 level.

The results of the Pearson Product-Moment correlation displayed in Table 14 provide statistical evidence to reject the null hypothesis. Pearson’s linear correlation is .427 with its associated p-value of 0.001 provides statistical evidence indicating that schools with a greater number of Black and Latino students are more likely to implement ninth-grade interventions.

Table 14

*Correlation is significant at the 0.05 level (2-tailed)
The results of the Pearson Product-Moment correlation displayed in Table 15 provide statistical evidence to reject the null hypothesis. Pearson’s linear correlation of .416, with its associated p-value of 0.001, provides statistical evidence indicating that schools with a greater number of students with free or reduced lunch are more likely to implement ninth-grade interventions.

Table 15

*Pearson’s Correlation Between Interventions Implemented and Free or Reduced Lunch* N=62

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention</th>
<th>Free or Reduced lunch</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>1.000</td>
<td>.416</td>
<td>.001</td>
</tr>
<tr>
<td>Free or reduced lunch</td>
<td>.416</td>
<td>1.000</td>
<td>.001</td>
</tr>
</tbody>
</table>

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

The results of the Pearson Product-Moment correlation displayed in Table 16 provide statistical evidence to fail to reject the null hypothesis. Pearson’s linear correlation of .199, with its associated p-value of 0.122, provides statistical evidence indicating that schools with a higher per pupil expenditure are not necessarily more likely to implement ninth-grade interventions.
Table 16

*Pearson’s Correlation Between Interventions Implemented and Per-pupil Expenditure N=62*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention</th>
<th>Per-pupil Expenditure</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>1.000</td>
<td>.199</td>
<td>.122</td>
</tr>
<tr>
<td>Per-pupil Expenditure</td>
<td>.199</td>
<td>1.000</td>
<td>.122</td>
</tr>
</tbody>
</table>

*Correlation is not significant at the 0.05 level (2-tailed)*
Null Hypothesis 4

There will be no statistical relationship between the four categories of ninth-grade interventions (peer, structure, school, adult) and school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure).

The following nine tables provide data regarding the correlation results between the groupings of interventions and school demographics. The Structure Group is not included because almost all schools implemented structural interventions.

The results of the Pearson Product-Moment correlation displayed in Table 17 provide statistical evidence to reject the null hypothesis. Pearson’s linear correlation of .258, with its associated p-value of 0.043, provides statistical evidence indicating that schools that implemented adult group intervention category tended to have a higher population of Black and Latino students.

Table 17

*Pearson’s Correlation Between Adult Grouping Interventions Implemented and Ethnicity N=62*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adult Group Intervention</th>
<th>Ethnicity</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Group Intervention</td>
<td>1.000</td>
<td>.258</td>
<td>.043</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>.258</td>
<td>1.000</td>
<td>.043</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (2-tailed)
The results of the Pearson Product-Moment correlation displayed in Table 18 provide statistical evidence to reject the null hypothesis. Pearson’s linear correlation of .315, with its associated p-value of 0.013, provides statistical evidence indicating that schools that implemented adult group intervention category tended to have a higher population of poorer students.

Table 18

*Pearson’s Correlation Between Adult Grouping Interventions Implemented and Free or Reduced Lunch  N=62*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adult Group Intervention</th>
<th>Free or Reduced lunch</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Group Intervention</td>
<td>1.000</td>
<td>.315</td>
<td>.013</td>
</tr>
<tr>
<td>Free or Reduced Lunch</td>
<td>.315</td>
<td>1.000</td>
<td>.013</td>
</tr>
</tbody>
</table>

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

The results of the Pearson Product-Moment correlation displayed in Table 19 provide statistical evidence to fail to reject the null hypothesis. Pearson’s linear correlation of .052, with its associated p-value of 0.691, provides statistical evidence indicating that schools that implemented adult group intervention category were not necessarily related to per-pupil expenditure.
Table 19

Pearson’s Correlation Between Adult Grouping Interventions Implemented and Per-pupil Expenditure  N=62

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adult Group Intervention</th>
<th>Per-pupil Expenditure</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Group Intervention</td>
<td>1.000</td>
<td>.052</td>
<td>.691</td>
</tr>
<tr>
<td>Per-pupil Expenditure</td>
<td>.052</td>
<td>1.000</td>
<td>.691</td>
</tr>
</tbody>
</table>

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

The results of the Pearson Product-Moment correlation displayed in Table 20 provide statistical evidence to reject the null hypothesis. Pearson’s linear correlation of .247, with its associated p-value of 0.053, provides statistical evidence indicating that schools that implemented peer group intervention category tended to have a higher population of Black and Latino students.
Table 20

Pearson’s Correlation Between Peer Grouping Interventions Implemented and Ethnicity N=62

<table>
<thead>
<tr>
<th>Variable</th>
<th>Peer Group Intervention</th>
<th>Ethnicity</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Group Intervention</td>
<td>1.000</td>
<td>.247</td>
<td>.053</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>.247</td>
<td>1.000</td>
<td>.053</td>
</tr>
</tbody>
</table>

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

The results of the Pearson Product-Moment correlation displayed in Table 21 provide statistical evidence to reject the null hypothesis. Pearson’s linear correlation of .340, with its associated p-value of 0.007, provides statistical evidence indicating that schools that implemented peer group intervention category tended to have a higher population of poorer students.

Table 21

Pearson’s Correlation Between Peer Grouping Interventions Implemented and Free or Reduced Lunch N=62

<table>
<thead>
<tr>
<th>Variable</th>
<th>Peer Group Intervention</th>
<th>Free or Reduced Lunch</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Group Intervention</td>
<td>1.000</td>
<td>.340</td>
<td>.007</td>
</tr>
<tr>
<td>Free or Reduced Lunch</td>
<td>.340</td>
<td>1.000</td>
<td>.007</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (2-tailed)
The results of the Pearson Product-Moment correlation displayed in Table 22 provide statistical evidence to fail to reject the null hypothesis. Pearson’s linear correlation of .133, with its associated p-value of 0.303, provides statistical evidence indicating that schools that implemented peer group intervention category were not necessarily related to per-pupil expenditure.

Table 22

*Pearson’s Correlation Between Peer Grouping Interventions Implemented and Per-pupil Expenditure*  
N=62

<table>
<thead>
<tr>
<th>Variable</th>
<th>Peer Group Intervention</th>
<th>Per-pupil Expenditure</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Group Intervention</td>
<td>1.000</td>
<td>.133</td>
<td>.303</td>
</tr>
<tr>
<td>Per-pupil Expenditure</td>
<td>.133</td>
<td>1.000</td>
<td>.303</td>
</tr>
</tbody>
</table>

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

The results of the Pearson Product-Moment correlation displayed in Table 23 provide statistical evidence to fail to reject the null hypothesis. Pearson’s linear correlation of -.204, with its associated p-value of 0.111, provides statistical evidence indicating that schools that implemented school group interventions were unrelated to school ethnicity.
Table 23

Pearson’s Correlation Between School Grouping Interventions Implemented and Ethnicity
N=62

<table>
<thead>
<tr>
<th>Variable</th>
<th>School Group Intervention</th>
<th>Ethnicity</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>1.000</td>
<td>-.204</td>
<td>.111</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-.204</td>
<td>1.000</td>
<td>.111</td>
</tr>
</tbody>
</table>

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

The results of the Pearson Product-Moment correlation displayed in Table 24 provide statistical evidence to fail to reject the null hypothesis. Pearson’s linear correlation of .093, with its associated p-value of 0.471, provides statistical evidence indicating that schools that implemented school group intervention were unrelated to school poverty rates.

Table 24

Pearson’s Correlation Between School Grouping Interventions Implemented and Free or Reduced Lunch N=62

<table>
<thead>
<tr>
<th>Variable</th>
<th>School Group Intervention</th>
<th>Free or Reduced lunch</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>1.000</td>
<td>.093</td>
<td>.471</td>
</tr>
<tr>
<td>Free or Reduced Lunch</td>
<td>.093</td>
<td>1.000</td>
<td>.471</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (2-tailed)
The results of the Pearson Product-Moment correlation displayed in Table 25 provide statistical evidence to fail to reject the null hypothesis. Pearson’s linear correlation of -.063, with its associated p-value of 0.627, provides statistical evidence indicating that schools that implemented school group intervention category were unrelated to per-pupil expenditure.

Table 25

*Pearson’s Correlation Between School Grouping Interventions Implemented and Per-pupil Expenditure N=62*

<table>
<thead>
<tr>
<th>Variable</th>
<th>School Group Intervention</th>
<th>Per-pupil Expenditure</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Group Intervention</td>
<td>1.000</td>
<td>-.063</td>
<td>.627</td>
</tr>
<tr>
<td>Per-pupil Expenditure</td>
<td>-.063</td>
<td>1.000</td>
<td>.627</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (2-tailed)*
Null Hypothesis 5

There will be no statistical relationship between the multiple independent variables (ninth-grade interventions, the year before graduation rate, students with free or reduced lunch, student ethnicity, or per-pupil expenditure) and graduation rates.

A multiple regression analysis was performed to gain a better understanding of the relationship between graduation rates and number of interventions, student ethnicity, students who have free or reduced lunch, and per-pupil expenditure. Additionally, the multiple regression analysis can be used to predict graduation rates, based on the multiple independent variables of the study and to determine if the model was significant.

The results from the multiple regression analysis can be seen in Table 26. A multiple regression analysis was used to develop a model for predicting graduation rates from the year before graduation rates, the total number of interventions, students who have free or reduced lunch, student ethnicity, and per pupil expenditure. The model was able to account for 52% of the variance in graduation rates. Of the five coefficients, the year before graduation rates were significant (p=.001) and the per-pupil expenditure was marginally significant (p=.078).
Table 26

Multiple Regression Analysis for Variables Predicting Graduation Rates

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year Before Graduate Rates</td>
<td>.586</td>
<td>.536</td>
<td>3.485</td>
<td>.001</td>
</tr>
<tr>
<td>Interventions</td>
<td>.133</td>
<td>.044</td>
<td>.334</td>
<td>.740</td>
</tr>
<tr>
<td>Free or Reduced Lunch</td>
<td>-.040</td>
<td>.536</td>
<td>-.096</td>
<td>.602</td>
</tr>
<tr>
<td>Student Ethnicity</td>
<td>-.079</td>
<td>.536</td>
<td>-.799</td>
<td>.430</td>
</tr>
<tr>
<td>Per-pupil Expenditure</td>
<td>.001</td>
<td>.235</td>
<td>1.821</td>
<td>.078</td>
</tr>
</tbody>
</table>

\[ R^2 = .516 \]
Descriptive Data

Data describing the responses from 62 high school principals are found in Figure 4 and Table 27. Included in Figure 4 is a summary of the reported number of each intervention implemented. Included in Table 27 is the intervention, how many schools implement each intervention, percent of the total sample, valid percent, and cumulative percent. Only 14 of the 15 interventions are noted due to zero schools participating in the student-led conference intervention. The freshman orientation intervention was implemented the most at 60 schools, and career academy interventions were implemented the least at four schools.

Figure 4. Summary of the reported number of each intervention from the 62 schools responding to the survey.
Table 27

*Reported Number of Each Intervention*

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Frequency of the responses</th>
<th>Percent of the total sample</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academy</td>
<td>16</td>
<td>25.8</td>
<td>25.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Adult Mentor</td>
<td>26</td>
<td>41.9</td>
<td>41.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Advisory</td>
<td>14</td>
<td>22.6</td>
<td>22.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Career Academy</td>
<td>4</td>
<td>6.5</td>
<td>6.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Counselor</td>
<td>11</td>
<td>17.7</td>
<td>17.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Data Decisions</td>
<td>56</td>
<td>90.3</td>
<td>90.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Flexible Schedule</td>
<td>47</td>
<td>75.8</td>
<td>75.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Looping</td>
<td>14</td>
<td>22.6</td>
<td>22.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Orientation</td>
<td>60</td>
<td>96.8</td>
<td>96.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Peer mentor</td>
<td>33</td>
<td>53.2</td>
<td>53.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Same Peers</td>
<td>10</td>
<td>16.1</td>
<td>16.1</td>
<td>100.0</td>
</tr>
<tr>
<td>SLC</td>
<td>18</td>
<td>29.0</td>
<td>29.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Transition Program</td>
<td>18</td>
<td>29.0</td>
<td>29.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Separate Space</td>
<td>11</td>
<td>17.7</td>
<td>17.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Data describing the total number of interventions are found in Table 28, including the number of interventions implemented by the number of schools, the percent, valid percent, and cumulative percent. The mean number of interventions that schools implement is 5.45. Only one school implemented one intervention, 16 schools implemented five different interventions, and two schools implemented the most, at 10 interventions.

Table 28

*Total Number of Interventions*

<table>
<thead>
<tr>
<th>Number of Interventions</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4.8</td>
<td>4.8</td>
<td>6.5</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>8.1</td>
<td>8.1</td>
<td>14.5</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>19.4</td>
<td>19.4</td>
<td>33.9</td>
</tr>
<tr>
<td>5</td>
<td>16</td>
<td>25.8</td>
<td>25.8</td>
<td>59.7</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>9.7</td>
<td>9.7</td>
<td>69.4</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>12.9</td>
<td>12.9</td>
<td>82.3</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>9.7</td>
<td>9.7</td>
<td>91.9</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>4.8</td>
<td>4.8</td>
<td>96.8</td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td>3.2</td>
<td>3.2</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Tables 29 through 42 are provided in Appendix F to illustrate the data that describe the years each of the interventions were implemented. Included in each table are the years each intervention was implemented, how many schools implemented the specific intervention, the percent of the total sample, the valid percent, and the cumulative percent.

Figure 5 provides a summary of tables 29-42. Out of the 14 interventions the earliest year an intervention was implemented at a school was 1970 (flexible scheduling and freshman orientation). The latest any intervention was implemented was 2008 (freshman academy, adult mentor, advisory, freshman-only counselor, data driven decisions, flexible scheduling, looping, peer mentors, smaller learning communities, a separate space, and staying with peers). The year with the most interventions implemented at various schools was 2006, with 51 interventions implemented.

![Bar graph showing years of implementation](image)

*Figure 5. Summary of reported implementation years of ninth-grade interventions from the 62 schools participating in the survey.*
Data describing the demographic data of schools that implement ninth-grade interventions are found in Table 43. Included in the table are the minimum, maximum, mean, and standard deviation for each variable of the schools responding to the survey. The average number of students who are Black or Latino is 16.93%. The average number of students who receive free or reduced lunch is 24.17%. The average number per-pupil expenditure is $9577.84.

Table 43

*Descriptive Statistics for Demographic Data*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>S D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td>62</td>
<td>2.0</td>
<td>99.1</td>
<td>16.93</td>
<td>1577.620</td>
</tr>
<tr>
<td>Free or reduced lunch</td>
<td>62</td>
<td>2.1</td>
<td>78.8</td>
<td>24.17</td>
<td>17.637</td>
</tr>
<tr>
<td>Per-pupil Expenditure</td>
<td>62</td>
<td>7251</td>
<td>15,087</td>
<td>9577.84</td>
<td>1577.620</td>
</tr>
</tbody>
</table>
Sixty-two schools responded to the survey regarding the use of ninth-grade interventions. Shown in Figures 6, 7, and 8 are the percentages of students with free or reduced lunch, the percentage of students who are Black and Latino, and the per-pupil expenditures from the schools that responded to the survey.

**Figure 6.** Percentage of students with free or reduced lunch at participating schools.
**Figure 7.** Percentage of students that are Black and Latino at participating schools.

**Figure 8.** Per-pupil expenditure of participating schools.

**Summary**
Results of the data analysis were presented in this chapter. The data were analyzed through frequency tables, paired t-tests, repeated measures ANOVA, Pearson Product-Moment correlations, and a multiple regression analysis. Results indicate that participating schools generally implement some ninth-grade interventions. However, implementation does not necessarily result in a positive change in graduation rates. The results indicate a statistically significant relationship between transition program interventions and graduation rates and a marginally significant relationship between the looping intervention and graduation rates. Grouping interventions do not necessarily impact graduation rates. In addition, results indicate that the year before graduation rate is the largest predictor of graduation rates and that per pupil expenditure is a marginally significant predictor of graduation rates.

The schools implemented 14 of the 15 interventions. Not one school implemented the student-led-conferences intervention. Schools have been implementing ninth-grade interventions since 1970 through the present day. There was an increase in the implementation of interventions during 2005, 2006, and 2007, with 2006 being the year when the greatest number of interventions was implemented in the ninth-grade. The average number of interventions at a school is slightly over five per school. Of the schools sampled, the average percentage of students who are Black or Latino is almost 17%, the average number of students who receive free or reduced lunch is 24%, and the average per-pupil expenditure is $9577.84. Last, schools that have more students who receive free or reduced lunch and that have more minority students implement more ninth-grade interventions. Schools that implement the adult and peer grouping interventions tended to have higher populations of minority and poor students.
The summary of the study, the conclusions, the implications for practice, and the recommendations for further research are provided in Chapter V.
CHAPTER V
SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Introduction

Public schools are faced with the challenge of improving student learning so that they can graduate more students who are prepared for the ever-changing, global world (Marx, 2006). Researchers have found that some students do not find success in the traditional organization of a public school and therefore need extra support (Lee & Burkam, 2003). Many schools are responding to this need by providing interventions for the struggling student. A summary of the results of the study performed, the implications of the study, and recommendations for further research are presented in this chapter.

Some area schools are focusing their resources and reform measures on their ninth-grade students (Hertzog et al., 1996) because the success of a ninth-grade class can predict graduation rates for that high school (McIntosh & White, 2006). Unfortunately, only 70% of all ninth-grade students nationally will complete high school on time, and merely 50% of Black and Latino ninth-graders will graduate on time (Jerald, 2006). One reason is that ninth-graders tend to have unique developmental qualities compared to the rest of the high school body (Alspaugh, 1998), which can make high school a challenge for some. For example, many ninth-grade students are cognitively immature (Riera, 2004) and emotionally irresponsible (Scales, 2003) and, in general, they decline academically during their freshman year (Reyers et al., 2000). Researchers have found that personalizing high school for the developmentally distinctive ninth-grade student so that they can become more connected to school and have better relationships with teachers can positively impact their success (Dudley et al., 2002) and then lead to increased graduation rates.
There are several interventions focused on personalization that schools can implement to improve the success of their ninth-grade students. *Breaking Ranks II* (NASSP, 2004) suggested personalizing the school environment by focusing on 15 strategies or specific interventions. Each strategy is supported by further research.

Having advisory classes as an intervention increases the personal connection between high school and the ninth-grader (Darling-Hammond et al., 2002). Assuring parent involvement in a child’s education, such as through the student-led conference, is an important intervention leading to student success (Akos & Galassi, 2004). Interventions such as transition programs into adult life, freshman orientations, and freshman academies are beneficial to students in terms of connecting them to school (Cauley & Jovanovich, 2006). To create personalization during the school day, flexible scheduling and looping are recommended interventions for ninth-grade teachers and students (Cauley & Jovanovich, 2006; Stevenson, 2002). Career academies positively impact student success because they can link ninth-graders to their future (Turner, 2007). Data-based decisions and sharing data with students are helpful interventions for ninth-graders (Gamble-Risley, 2006). Interventions focused on mentoring, both from peers and adults, help to build relationships between students and adults (Lee & Burkam, 2003). Having an active guidance counselor for the ninth-grader has shown to be a successful intervention (Brigman & Campbell, 2003). Interventions focusing on making the school smaller, such as by creating a smaller learning community, students remaining with the same group of peers, or having a separate wing for ninth-graders, all have academic benefits (Lee et al., 2000). Each intervention could help the developmentally delayed ninth-grade student find success in high school and go on to graduate.
Research Questions and Null Hypotheses

The following questions and null hypotheses served to guide this study:

1. Do ninth-grade interventions increase graduation rates?

Null hypothesis: There will be no statistically significant relationship between ninth-grade interventions and graduation rates.

2. Do categories or subgroups of ninth-grade interventions increase graduation rates?

Null hypothesis: There will be no statistical relationship between the categories of ninth-grade interventions (school, peer, adult, structure) and graduation rates.

3. Do school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure) impact the implementation of ninth-grade interventions?

Null hypothesis: There will be no statistical relationship between ninth-grade interventions and school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure).

4. Do school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure) impact the implementation of the categories of interventions (peer, structure, school, adult)?

Null hypothesis: There will be no statistical relationship between the four categories of ninth-grade interventions (peer, structure, school, adult) and school demographics (students with free or reduced lunch, student ethnicity, per-pupil expenditure).

5. Can graduation rates be predicted by ninth-grade interventions, the year before graduation rate, students with free or reduced lunch, student ethnicity, or per-pupil expenditure?
Null hypothesis: There will be no statistical relationship between the multiple independent variables (ninth-grade interventions, the year before graduation rate, students with free or reduced lunch, student ethnicity, or per-pupil expenditure) and graduation rates.

Purpose of Study and Methodology

The purpose of this study was to examine the relationship between specific ninth-grade interventions designed to personalize high school and graduation rates. Although not the primary focus, this study also investigated demographic characteristics of ethnicity of students, poverty rate as measured by the percent of students who have free or reduced lunch, and per-pupil expenditure of the schools surveyed.

In this non-experimental, quantitative study, the researcher collected data through a survey to investigate the relationship between ninth-grade interventions and graduation rates. The researcher examined 99 Michigan schools in Macomb, Oakland, and Wayne Counties, excluding Detroit Public Schools. Of the 99 high schools invited to participate in the study, 62 high school principals responded to the survey regarding whether the school implements the specific ninth-grade interventions related to personalization of the school and the year of the implementation of each intervention. Each school surveyed was a four-year, comprehensive, public high school.

Secondary data were also collected about the schools studied. Data about Michigan high school graduation rates were obtained from the Michigan Department of Education (available online at http://www.michigan.gov/mde). Although the graduation rate data were from the same source, the years vary due to the nature of the study (the interventions could have been implemented during various years at different schools). The additional data collected of students
who receive free or reduced lunch and per-pupil expenditures were also obtained from the
Michigan Department of Education. Data examined were from 2007. The additional data of
student ethnicity were obtained from Standard and Poor’s Annual Report (available online at:
http://ses.standardpoors.com). Data examined were from 2007.

Summary of the Findings

Sixty-two schools in Southeast Michigan responded to a survey regarding ninth-grade
interventions. Of the 62 schools sampled, the average percentage of students who were Black or
Latino was almost 17%, the average number of students who received free or reduced lunch was
24%, and the average per-pupil expenditure was $9577.84.

Fifteen interventions were examined to determine if any of the interventions had an
impact on graduation rates. A 2-tailed paired t-test was generated to determine if the graduation
rate was impacted by a specific intervention.

- There was a significant difference in graduation rates before the transition program
  intervention (M=89.82, SD=9.499) and the graduation rates after the transition program
  intervention was implemented (M=92.28, SD=7.130) conditions: t(9)=2.311, p=.046.
- There was a marginally significant difference in graduation rates before the looping
  intervention (M=98.87, SD=.757) and graduation rates after the looping intervention was
  implemented (M=99.41, SD=5.812) conditions: t(1)=11.000, p=0.058.
- No other intervention (including combining all of the interventions), as measured by
  graduation rates, led to statistically significant results.
When the interventions were placed into four groups, a repeated measures analysis of variance test was run to determine if any of the four categories of interventions impacted graduation rates. None of the four combinations of interventions were significant.

The relationship between the number of interventions and student ethnicity, students with free or reduced lunch, and per-pupil expenditure were examined. Pearson Product-Moment correlations were calculated to determine those relationships.

- Results indicated that schools with a greater number of Black and Latino students ($r=0.427$, $p=0.001$) or poor students ($r=0.416$, $p=0.001$) were more likely to implement ninth-grade interventions.

- Results indicated that schools with a greater number of Black and Latino students ($r=0.247$, $p=0.053$) or poor students ($r=0.340$, $p=0.007$) were more likely to implement the peer grouping interventions.

- Results indicated that schools with a greater number of Black and Latino students ($r=0.258$, $p=0.043$) or poor students ($r=0.315$, $p=0.013$) were more likely to implement the adult grouping interventions.

A multiple regression analysis was used to predict graduation rates from the number of interventions at a school, student ethnicity, students with free or reduced lunch, and per-pupil expenditure.

- The test indicated that the model is significant with 52% of the variance explained.

- The greatest predictor of graduation rates is the year-before graduation rate ($p=0.001$).

- Per-pupil expenditure is a marginally significant predictor of graduation rates ($p=0.078$).

- No other coefficient predicted graduation rates.

A summary of findings can be seen in Figure 9.
| Recommended Interventions | - Implement Transition Program into Adult Life  
|                          | - Implement Looping Teaching Technique  |
| Who Implemented the Interventions | - Schools with more minority or poor students were more likely to implement ninth-grade interventions.  
|                          | - Schools with more minority or poor students were more likely to implement the peer grouping interventions.  
|                          | - Schools with more minority or poor students were more likely to implement the adult grouping interventions.  |
| Graduation Rates | - The model is significant with 52% of the variance explained.  
|                          | - Prior year graduation rate is the greatest predictor of graduation rates.  
|                          | - Per-pupil expenditure is a predictor of graduation rates.  
|                          | - Graduation rates were high overall; about 80% of all students in the sample graduate from high school.  |

*Figure 9. Recommended interventions and outcomes.*
Conclusions

The importance of personalizing high school for students is clear, especially in a time when there is a call to reform public schools so that students learn more and better. In particular, personalizing high school for the developmentally distinct ninth-grade student has shown to positively impact graduation rates. However, it remains unclear as to the best interventions to implement for ninth-grade students. Therefore, school leaders must be shown research on the effects of specific interventions focused on personalization to enable them to be able to make informed decisions about which intervention to implement. While the conclusions from this study are somewhat contradictory due to the complexity of education, the researcher is still able to provide conclusions from the results. The data from this study have provided the basis for the following conclusions:

Conclusions - School Demographics

This study found that schools with a higher number of minority students (as measured by the percentage of Black and Latino students) and poor students (as measured by the percentage of students who receive free or reduced lunch) are more likely to implement ninth-grade interventions. Schools that chose to implement adult grouping interventions and peer grouping interventions tended to have higher populations of minority and poor students. These conclusions are consistent with research findings. Minority students seemed to be at the greatest risk to adjusting to high school and having academic success (Newman et al., 2000) and, therefore, could be in need of ninth-grade interventions. Schools in the three counties studied appeared to be implementing ninth-grade interventions where they are needed the most.
Conclusions - Predicting Graduation Rates

Understanding factors that increase graduation rates and student performance can be complex and multifaceted. Demographics play a role in students graduating from high school or, conversely, students dropping out of school (Balfanz & Legters, 2004). Researchers supported that schools with more poor students, more minority students, and lower per-pupil expenditures graduate a lower percentage of students from high school (Balfanz & Legters, 2004; Leone et al., 2003). This study found that a school’s per-pupil expenditure marginally predicted student graduation rates. In other words, the higher the per-pupil expenditure, the higher percentage of students will graduate from that high school.

This study also found that the biggest predictor of graduation rates is the year-prior graduation rate at the same school, meaning if a school graduates a certain percentage of students one year, the school is likely to graduate the same percentage of students the next year. These conclusions mirror past research that has shown that community demographic characteristics matter in terms of the graduation rates.

Conclusions - Total Number of Interventions

MacIver (1990) held that effective ninth-grade intervention programs should include five or more diversified interventions. Consistent with researchers’ suggestions, schools in the three counties studied have each implemented about five interventions focused on personalizing high school for ninth-grade students. Out of the 15 interventions examined, 14 interventions were used by one or more of the 62 schools that responded to the survey. Not one school implemented the student-led conference intervention. The most frequently implemented intervention, the freshman orientation, was used by 60 schools, and career academy interventions were implemented the least, by only four schools. Two schools implemented 10 interventions, the
highest number; 16 schools implemented five different interventions; and only one school implemented a single intervention.

Conclusions - Years of Implementation

The fifteen interventions examined were implemented over a span of 38 years at the schools studied. Two interventions (flexible scheduling and freshman orientation) were implemented the earliest, in 1970. Several interventions - freshman academy, adult mentor, advisory, freshman only counselor, data driven decisions, flexible scheduling, looping, peer mentor, smaller learning communities, separate space, and staying with peers - were all started at various schools as late as 2008.

Most schools started their freshman interventions during 2005, 2006, and 2007, with the most, 51 interventions, begun in 2006. This clearly indicates a pattern of ninth-grade interventions being implemented at a greater rate in more recent years. This conclusion is reasonable because of the No Child Left Behind law pushing for higher graduation rates and holding schools more accountable than ever before (Lachat, 2001; Marx, 2006). It appears that some schools in Southeast Michigan have responded to the legislation by using ninth-grade interventions to attempt to keep students in school and to help them succeed and graduate from high school. In addition, it appears as though more school leaders have accepted Breaking Ranks II (2004) as a means of school reform.

Conclusions - Transition Program and Looping

There are many reforms that schools may choose to implement to personalize high school for their ninth-graders. This study examined 15 specific interventions and four categories of the interventions based on the recommendations and strategies offered by Breaking Ranks II (NASSP, 2004). Results of this study showed that implementing a program that focuses on the
transition to adult life and having teachers loop with their students provides the greatest gains as measured by graduation rates, and that grouping the interventions does not necessarily impact graduation rates.

A transitional program into adult life is a systematic program designed to help high school students to enter college or a career. Eighteen out of the 62 schools have implemented a transition program into adult life. The schools implemented a transitional program as early as 1995 and as late as 2006. Providing a connection to the real world links students to school, as in a transition program to adult life (Feller, 2003). Additionally, connecting students to their futures by providing a transition program into adult life can increase graduation rates (Fashola & Slavin, 1998). Research supported this conclusion.

Looping is the term for teachers staying with the same group of students two years in a row. Fashola and Slavin (1998) found that providing a bond between student and teacher (as with looping interventions) reduced dropout rates. In addition, teachers looping with their classes help to create a more personalized classroom in which students will have a greater chance to succeed (Clarke et al., 2003). Fourteen of the 62 participant schools have implemented looping interventions. One school implemented looping as early as 1983, and one school implemented looping as late as 2008. Although there is research that supported the idea that all 15 interventions to personalize high school will increase academic performance, this study found that two – transition program into adult life and looping - have the greatest impact on graduation rates.

Conclusions - Graduation Rates

American society is faced with a polarizing phenomenon. More students are attending and completing college than ever before; however, the high school dropout rate is increasing
(Heckman & LaFontaine, 2008). The decline of graduation rates has captured the attention of school reformers, as it has become a national problem. The number of students graduating from American public high schools increased during the 1950s, 60s, and 70s. However, since the 1970s, graduation rates have been on the decline. National graduation rates are around 66-88%, with graduation rates estimated to be as low as 50% for minority students (Heckman & LaFontaine, 2008; Swanson, 2004). The wide range is due to the lack of a national graduation calculation standard, a situation that allows for various graduation calculation methods and definitions of graduation. Despite the 2002 No Child Left Behind Law requiring states to use a graduation calculation method, the method still varies from state to state. Consequently, states continue to report misleading graduation rates that most likely underestimate the number of students who drop out of high school each year (Alliance for Excellent Education, 2008).

In Michigan, a graduation rate calculation has been designed to comply with No Child Left Behind Laws (Michigan Department of Education, 2008). The formula is determined by following first time ninth-graders with an expected four-year completion rate (considered on-time graduates). The formula does take into account students who leave school but return later, students retained in a grade but who stay in school, and students who transferred into and out of the public school system (Michigan Department of Education, 2008). Michigan’s graduation rate is about 69%, with the percentage even lower for poor and non-white students (Education Research Center, 2007).

Schools chosen to participate in this study were from Macomb, Oakland, and Wayne Counties, excluding Detroit Public Schools. While there are high schools in Macomb, Oakland, and Wayne counties that graduate less than 50% of their students, most schools in the three counties graduate more than 70% of their students (Education Research Center, 2007). In fact,
over half of the schools in the three counties graduate more than 80% of their students (Education Research Center, 2007). These numbers for Michigan are impressive when compared to the estimated national graduation rate of 66-88%.

Analysis of the 62 schools in three Michigan counties that responded to the survey regarding the use of the specified ninth-grade interventions revealed that the average graduation rate of the 62 schools is 80%, with all but one school (graduating 48.89%) ranging between 70% and 99%. Disregarding the school with the lowest graduation percentage, all three counties on average graduated 87% of their students. This is about 20% higher than the entire state of Michigan.

Specifically, the schools that responded to the survey in Macomb County averaged graduation of 80% of their students (highest rate at 95.59% and lowest rate at 70.56%). In Oakland County, average graduation rate was 87% (highest rate at 99.04% and lowest rate at 81.60%). The schools that responded to the survey in Wayne County averaged a graduation rate of 75% (highest rate at 97.49% and lowest rate at 48.89%). With the lowest percentage removed among the respondents in Wayne County, an average of 93% of their students were graduated.

The schools that responded to the survey regarding the use of specific ninth-grade interventions designed to personalize high school have relatively high graduation rates compared to the state of Michigan as well as to national estimates. This conclusion is illustrated in Figure 10. Nationally, about 2/3 of high school students graduate (Heckman & LaFontaine, 2008), Michigan graduation rate is higher, about three out of four (Martin, 2008), and, higher still, the three counties surveyed have a combined average graduation rate around 80%.
Implications for Practice

This study investigated high schools of similar size in Southeast Michigan to determine what relationship existed between interventions focused on personalizing high school and graduation rates. The implications of the findings of this study for educational leadership practice, although supported by literature, are somewhat inconclusive. This is because there are many aspects of education to consider when examining student performance other than the factors studied. In addition, there are many aspects of student performance to consider other than graduation rates. Education tends to be multifaceted because all students and school communities differ from one another and could therefore respond differently to various interventions. However, some of the findings of this study could result in more effective schools. Based upon the study results and conclusions, the following are the implications for practice.
Implication for Practice- Transition Programs and Looping

More and more school leaders are recognizing the need to provide extra support for the ninth-grade student (Jerald, 2006). By providing effective interventions for ninth-grade students, researchers suggested that attendance increases, achievement increases, and drop out rates decrease (MacIver, 1990). The primary focus of this study was to determine if there was a relationship between 15 specific ninth-grade interventions focused on personalizing high school and graduation rates. The literature supported that ninth-grade students, due to their unique developmental process, need to feel personally connected to high school to find academic success (Dudley et al., 2002). In addition, research supported that all 15 interventions that were studied were effective tools to personalize high school (NASSP, 2004).

Of the 15 interventions examined, 14 were implemented in one or more of the 62 participating schools. Freshman orientation was implemented the most (in 60 schools), and career academy interventions were implemented the least (in four schools). Many schools indicated that they implemented decisions based on data (56 schools) and flexible scheduling (47 schools). Not one school implemented the student-led conference intervention.

Clearly, schools in Southeast Michigan seem to be implementing ninth-grade interventions focused on personalizing high school. This study suggested, however, that implementing two interventions, transitional programs into adult life and exercising looping as a teaching technique, would bring the greatest gains to high school students. A transitional program into adult life is a systematic program designed to help students attend college or chose a career. Looping is when teachers stay with the same group of students two years in a row. When determining which interventions to implement, school leaders should implement both the
transitional program into adult life interventions and looping interventions for their ninth-grade students.

**Implication for Practice - Groupings**

This study examined four categories of interventions - adult, peer, structure, and system groupings - and their impact on graduation rates. The data gathered indicated that none of the four categories had a significant impact on graduation rates. Researchers suggested that programs for ninth-grade students should offer approximately five interventions (Mclver, 1990), and therefore school districts ought to clarify which combination of interventions works best for their school. School leaders should continue to monitor the level of impact of the interventions and adjust as necessary to determine how to meet the needs of their students because schools and their students differ from each other. While this study did not find statistical evidence that the groupings examined showed an impact on graduation rates, school districts differ from one another and could benefit from their own unique combination of interventions that best fits their school.

**Implication for Practice - The Development Process**

Recognizing that ninth-grade students differ from other high school aged children in terms of their developmental needs is essential when preparing to teach them. Although many ninth-grade students will develop naturally into high school students who can fit the mold of a traditional high school, some will not. The students who struggle with the maturation process could experience failure and eventually drop out of high school because the ninth-grade year is pivotal in terms of schooling.

Ninth-grade students exhibit common characteristics such as weaknesses in cognitive abilities, lack of retention, and poor critical thinking skills – all weaknesses that can make
classroom work difficult for many students to complete (Wood, 2007). Ninth-graders can be in a state of mixed emotions, filled with confusion, self-doubt, and loneliness, which can affect their studies (NASSP, 1985). Also, ninth-graders tend to focus on the social aspect of school and are more likely to be at risk to make poor ethnical decisions that can negatively affect school performance (Kellough & Kellough, 2008). When school leaders are determining which interventions to implement at their school, they must keep in mind the developmental process of students and pay particular attention to the distinctive needs of ninth-grade students.

School leaders ought to remember that each child develops at a different rate and has various strengths and weaknesses (Craig & Baucum, 2002). Although the findings of this study suggested implementing two of the 15 Breaking Ranks II (NASSP, 2004) interventions, research indicated that it is important to implement as many of the 15 interventions as a school can afford because, due to their unique developmental process, each child could respond differently to each intervention. Interventions for ninth-graders should really be comprehensive in the sense that they address all of the potential developmental weaknesses a ninth-grader experiences. Programs should include interventions that help manage cognitive limitations, lack of social skills, the desire to be connected, the emotional needs of students, and so on.

This study, along with others, does identify specific strategies that may be best suited for ninth-graders because, as a group, they have common developmental characteristics. However, it can be difficult to identify specific strategies that will reach all ninth-grade students. Education is complex for the reason that all students are unique in their maturation process as well as in their learning abilities. Thus, schools ought to recognize that ninth-grade students have common developmental characteristics, but schools should offer as many interventions focused on personalizing high school as feasible in order to reach as many students as possible.
Implication for Practice - Teaching Educators

If future studies verify that ninth-grade interventions improve graduation rates, then teaching school administrators and teachers how to effectively implement the interventions should be considered. Undergraduate and graduate schools ought to offer courses on how to successfully implement ninth-grade interventions. Professional development classes about successful ninth-grade intervention programs should be offered to current educators, and central office administrators ought to be taught how to determine which ninth-grade interventions best suit their students.

Implication for Practice - School Reform

Educators are faced with the challenge of improving learning under conditions of complex change (Fullan, 2001). The need for reform is partly due to the increased educational standards mandated by the No Child Left Behind laws (Lachat, 2001; Ryan, 2004) and declining high school graduation rates (Jerald, 2006; Swanson, 2004). Leading educators and researchers suggested a variety of reforms to revolutionize public schools including implementing a smaller learning community (Lee & Smith, 2001), making school more flexible to meet the needs of the students (Sizer, 1984), creating a caring environment (Klem & Connell, 2004), having interdisciplinary units and creative teaching methods (Zemelman et al., 1998), and so on. Many of the suggested reforms can be placed under the umbrella of personalizing high school for each student. Research suggested that personalizing school and the classroom to improve relationships between the student and the teacher are key to student success (Allensworth & Easton, 2007; Darling et al., 2002).

It is true that public schools are in need of comprehensive improvements (Christle et al., 2007); however, actually having a staff design and implement the reforms can be problematic.
Identifying a potentially successful intervention to increase standards in the classroom or to combat low graduation rates is less complicated than when a leader asks for someone to change his or her practice. Often, resistance from staff to broad, extensive change can occur (Fullan, 2001). Additionally, it usually takes years for any implemented reform to be fully successful, and few reforms ever reach the institutional stage where they are routine (Fullan, 2004; Darling-Hammond et al., 2002).

Executing real, sustainable, effective change (such as by implementing interventions focused on personalizing high school) takes a group that is willing to develop, monitor, and update the change process (Marx, 2006). Change takes time. It takes everyone in a school to carry out the reform and to make it effective (Marx, 2006). It takes a knowledge base of the reform (or intervention) so that the staff can carry out the change (Liker & Meier, 2007).

Creating change that produces results takes the dedication of a strong leader (Reeves, 2009), an open school climate (Hoy & Miskel, 2001), and an entire staff commitment (Marx, 2006).

Schools leaders cannot simply place teachers in classrooms and tell them to implement a certain intervention focused on personalization. Instead, leaders who want genuine change must concentrate on altering the entire environment or context to create a new setting focused on the desired interventions (Fullan, 2001). In other words, leaders should not simply expect an intervention to be effectively implemented without changing the entire culture of a school. Therefore, when school reform is implemented, it must be done at the organizational level because that has the greatest chance of enduring change (Fitzpatrick & Yoels, 1992). Ultimately, school leaders must recognize that the organization of a school can affect a student’s decision to drop out or stay in school (Lee & Burkam, 2003).
Several of the interventions designed to personalize high school for ninth-grade students are implemented across the three counties studied; yet they did not have a significant impact on graduation rates. Perhaps these interventions are not implemented fully at the organizational level. Possibly, the entire staff does not understand the interventions completely, there is confusion regarding the interventions, or perhaps the interventions have not been implemented long enough to make an impact.

Educators cannot change some of the factors that may influence graduation rates, such as the developmental process, family make-up, poverty rate, student skill level, and so on. However, reforming the organization of a high school by focusing on interventions that personalize school can be a powerful way to connect all students to school. Providing a supportive and caring environment at school can only assist students in their academic careers. Research stated that school organization can affect student attendance, student behavior, student attitude, and ultimately student performance (Lee et al., 1991; Rutter, 1983). Thus, school leaders, when implementing school reform, should focus on reforming the organization of the school to produce the greatest gains in student achievement. It takes a school staff focused on socially organizing into groups so that many people are responsible for student learning, best practice, and school reform (Fullan, 1994; McLaughlin & Talbert, 2001; Rosenholtz, 1991).

Recommendations for Further Research

From the findings of this study, suggestions are offered for future researchers who may be interested in examining interventions focused on personalizing high school for ninth-grade students. There are many factors that can influence a student’s decision to stay in school, such as their performance level, their connection to the school, their family support, community
demographics, and so on. There are also many factors that influenced the outcomes of this study, such as the number of schools that responded to the survey, the relative newness of the interventions being used are, measures other than graduation rates that indicate student success, and many more. These two points have prompted the following recommendations for further studies:

**Recommendation 1**

Perhaps a more comprehensive study on fewer interventions would be beneficial. If a researcher chose fewer interventions to study, there may be more potential for an in-depth look at the success or failure of specific interventions. If fewer interventions were chosen, students and staff members could be questioned about their perceptions about the interventions. It would be useful to have various perspectives regarding effectiveness of the specific interventions. A longitudinal study could be performed to study changes in graduation rates over time if fewer interventions were the focus of the study.

**Recommendation 2**

This study found that, of the 15 interventions studied, transition programs into adult life and looping interventions have the greatest impact on graduation rates. Perhaps a researcher could examine schools with either (or both) interventions. An in-depth look at what interventions are implemented and how schools are implementing either intervention could be beneficial to high school administrators and therefore, to students. For example, what does a transition program to adult life look like at various schools? Does the program focus on college choice, career choice, or both? Does the transition program occur throughout the freshman year, or is it
continued on throughout the student’s high school career? To what extent do teachers loop with their students? Do teachers follow a class for two or more years? What are the teacher and student perceptions of both of the interventions?

Recommendation 3

Many interventions implemented in the schools studied were instituted during years that have not had graduating classes yet (2005, 2006, 2007). In other words, it was difficult to determine if the ninth-grade interventions impacted the receiving class because the students had not yet graduated from high school. Research suggested that reform can take many years to be successful (Darling-Hammond et al., 2002). In addition, many of the interventions examined were relatively new to implementation. Further research could examine only specific interventions that have been in existence at any one school for more than five years.

Recommendation 4

One issue with this study was that although graduation rates nationally and even statewide are unacceptable or have shown decline, the specific schools examined had extremely high graduation rates. Research suggested that school policy affects graduation rates (Fitzpatrick & Yoels, 1992). However, it was difficult to compare effectiveness of a specific ninth-grade intervention in light of graduation rates in participating schools that were so high before and after the interventions were implemented. A study may be more effective if focused on schools with lower graduation rates or if interventions were assessed using a measure other than graduation rates, such as grade point averages, attendance rates, or discipline referrals, to compare the impact of an intervention.
Recommendation 5

Research has shown that the change process can be a challenge for some and may elicit staff resistance to implementation (Fullan, 2004). Difficulties in the change process could explain why more of the ninth-grade interventions did not show the anticipated impact at the schools studied. It could be that the intervention has been implemented but not effectively by the entire staff. The schools could be implementing the intervention in name but not being committed as an entire organization. A way to improve the study would be to research the extent to which the principal and staff have been prepared to implement an intervention, the extent to which a school has implemented a particular intervention, and the extent to which the staff understands the intervention. In other words, a researcher could determine the level of use of the intervention and the level of commitment of the entire staff.

Recommendation 6

Educators in general struggle with sharing knowledge with one another (Fullan, 2001). Teachers tend to be autonomous in the classroom, and schools tend to avoid sharing successful strategies with other schools. This could be a reason why the various schools studied are implementing a variety of ninth-grade strategies, and potentially why schools could be implementing the same intervention differently. Schools that have found successful, cost-effective interventions designed to personalize school are possibly not sharing their success with other schools and, therefore, many schools report implementing various versions of ninth-grade intervention programs. Further research should examine exactly how the intervention is being implemented through adult and student surveys and interviews.
Summary

Nationally, the increase of high school dropouts and unacceptable graduation rates are, in essence, a telling story of the American public school. Although most of the specific schools studied do not have tremendously low graduation rates, clearly, the public school system is not addressing the needs of all students, as evidenced by the low state and national graduation rates. To increase workforce skills and global competitiveness, and to comply with No Child Left Behind Legislation, American schools must address the decline of high school graduation. One way to do this is by implementing interventions focused on personalizing high school for ninth-grade students, because the success of a ninth-grade class can influence high school graduation rates.

Presented in this chapter were the purpose of the study, summary of the results, conclusions, implications for practice, and recommendations for further research. The results of this study should be used as a basis for additional research in the area of school reform, particularly in the area of increasing ninth-grade student success. Using interventions focused on personalizing high school for ninth-grade students may result in improvements in the achievement of our students.
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Appendix A

Please answer the following 15 questions regarding ninth-grade interventions used at your school by circling yes or no. If your school uses the intervention, please indicate which school year the intervention was implemented (started).

High School: _____________________________________________

1. Do all ninth-graders have an advisory class?
   
   YES  NO  Year Implemented______

   In advisories, teachers may meet with their students to discuss study skills, homework, grades, etc. Advisories may meet several times a year, once a week or more.

2. Do all ninth-graders participate in student led parent-teacher conferences?
   
   YES  NO  Year Implemented______

   Students may facilitate conferences between their teacher and parent(s) to discuss their academic progress.

3. Does your school have a ninth-grade orientation before school begins that includes all ninth-graders?
   
   YES  NO  Year Implemented______

   A ninth-grader orientation is a systematic program that orientates the student to the new school, which may or may not include the following: freshman only first day of school, freshman only registration, etc.

4. Do any of your ninth-grade teachers loop with their students onto the tenth grade?
   
   YES  NO  Year Implemented______

   Looping is when teachers stay with the same group of students two years in a row.
5. Does your school have a ninth-grade academy?

YES NO Year Implemented_____

A ninth-grade academy is a systematic program that offers specific transition programs related to curriculum and social interventions.

---------------------------------------------------------------------------------------------------------------------

6. Does your school offer a career academy to all of the ninth-graders?

YES NO Year Implemented_____

A career academy consists of teaching students skills to obtain and keep a job in their field of choice.

---------------------------------------------------------------------------------------------------------------------

7. Do all of your ninth-graders participate in a transition program to adult life?

YES NO Year Implemented_____

A transition program is a systematic program designed to help students attend college or chose a career.

---------------------------------------------------------------------------------------------------------------------

8. Can any of your ninth-graders experience flexibility within their schedule if they are struggling with a particular subject?

YES NO Year Implemented_____

A flexible schedule may include taking a course twice throughout the day (such as math).

---------------------------------------------------------------------------------------------------------------------

9. Are your ninth-grade teachers and students organized into a smaller learning community or houses?

YES NO Year Implemented_____

Smaller learning communities consist of teachers committed to working with the same group of students where they often meet to discuss curriculum and other school related topics.
10. Is school data used to determine what programs ninth-graders may need?
YES NO Year Implemented______

Data regarding progress, discipline referrals, and attendance are all examples of what may be used to determine programs.

11. Do your ninth-graders have peer mentors?
YES NO Year Implemented______

A peer mentor is someone from high school assigned to a ninth-grade student to assist with school issues. This can include a formal or an informal program.

12. Do your ninth-graders have adult mentors or advisors?
YES NO Year Implemented______

An adult mentor can be any adult systematically assigned to ninth-graders for the purpose of mentorship.

13. Does your school have a counselor only assigned to ninth-graders?
YES NO Year Implemented______

14. Do your ninth-graders remain with the same group of peers during their core classes?
YES NO Year Implemented______

15. Do your ninth-graders have a separate wing, hall or space in the building?
YES NO Year Implemented______
Appendix B

Cover Letter

January 12, 2009

Dear,

I am a doctoral student at Eastern Michigan University and am currently completing my dissertation by conducting a research study to gain a better understanding of the relationship between ninth-grade interventions and graduation rates.

Please consider completing a short 15 item questionnaire about specific ninth-grade interventions you may or may not have in place for freshman students at your high school as well as the year the interventions were implemented.

Your participation will be very helpful. If you agree to participate, please sign the Consent to Participate form, complete the survey and mail both back to me in the self addressed envelope I provided. Your response by February 1st, 2009 would be appreciated.

Thank you very much for your participation!

Sincerely,

Shannon McBrady
Assistant Principal
Center Line High School
Appendix C

Informed Consent Letter

To: High School Principals, Ninth-grade Assistant Principals, or Ninth-grade Counselors

Regarding: Survey Completion

Investigator: Shannon McBrady

Eastern Michigan University Doctoral Candidate

Project Title: Ninth-grade Interventions and the Impact on High School Graduation Rates

I am a doctoral student at Eastern Michigan University and am currently completing my dissertation by conducting a research study to gain a better understanding of the relationship between ninth-grade interventions and graduation rates. The ninth-grade year is often difficult for some students because of the developmental process. Nationally, 30% of all ninth-graders fail one or more classes their freshman year, yet it is a pivotal year for students in determining whether or not they will continue with school. Perhaps more significantly, the freshman year is a predictor of high school graduation rates.

Please consider completing a 15-item questionnaire about specific ninth-grade interventions you may or may not have in place for freshman students at your high school and what year they were implemented. The approximate total time to complete the questionnaire should be about 20 minutes. Once the survey is complete your participation will be concluded.

Only a code number will identify your questionnaire response. At no time will your name be associated with your responses to the questionnaire. All information will be kept in a locked file cabinet of the investigator.

There are no foreseeable risks to you by completing this survey, as all results will be kept completely confidential. The expected benefits to this study will be that the research will provide information regarding which of the 15 ninth-grade interventions selected to be studied has the most impact on high school graduation rates.

Participation in this study is voluntary. Once the completed questionnaire is returned to me in the self addressed stamped envelope, your participation will have been completed. You may choose not to participate. If you do decide to participate, you can change your mind at any time and withdraw from the study without negative consequences.

Results will be presented in aggregate form only. No names or individually identifying information will be revealed. Results may be presented at research meetings and conferences, in scientific publications, and as part of a doctoral thesis being conducted by the principal investigator.

This research protocol and informed consent document has been reviewed and approved by the Eastern Michigan University Human Subjects Review Committee for use from January 1, 2009- April 1, 2009. If you have questions about the approval process, please contact Dr. Deb de Laski-Smith Interim Dean of the Graduate School and Administrative Co-chair of UHSRC, human.subjects@emich.edu.
If you have any questions concerning your participation now or in the future, you can contact the principal investigator, Shannon McBrady at or via email at

Sincerely,

Shannon McBrady
Center Line High School Assistant Principal

Consent to Participate:
I have read or had read to me all of the above information about this research study, including the research procedures, possible risks, side effects, and the likelihood of any benefit to me. The consent and meaning of this information has been explained and I understand. All of my questions, at this time, have been answered. I hereby consent and do voluntarily offer to follow the study requirements and take part in the study.

PRINT NAME:__________________________________________

SIGNATURE:___________________________________________

*Please mail this signed consent and the completed survey in the envelope provided. Thank you for your participation.
December 15, 2008

Shannon McBrady

Dear Shannon McBrady:

The Human Subjects Institutional Review Board (IRB) of Eastern Michigan University has reviewed and approved as exempt research your proposal titled, “Ninth Grade Interventions and the Impact on Graduation Rates.” The IRB determined that the rights and welfare of the individual subjects involved in this research are carefully guarded. Additionally, the methods used to obtain informed consent are appropriate, and the individuals participating in your study are not at risk.

Exempt research does not require reporting of continuation one year after approval if the project continues. However, should the sample or procedures change so as to have an impact on human subjects, then UHSRC should be notified by using the Minor Modification to Research Protocol or the Request for Human Subjects Approval form depending upon the scope of the changes (see the forms online).

On behalf of the Human Subjects Committee, I wish you success in conducting your research.

Sincerely,

Deb de Laski-Smith, Ph.D.
Interim Dean
Graduate School
Administrative Co-Chair
University Human Subjects Review Committee

Reference #: 081201
Appendix E

Intervention Categories

Adult
1. Adult mentors
2. Counselor only for the ninth-grade
3. Looping
4. Advisory class

Peer
1. Peer mentors
2. Smaller learning communities
3. Staying with the same group of peers
4. Separate wing

Structure
1. Freshman academy
2. Transition program
3. Career program
4. Freshman orientation

School
1. Flexible scheduling
2. Making decisions using data

*No school implemented ‘student led conferences’. 
Appendix F

Frequency Tables of Years of Implementation of Specific Interventions

Table 29

*Years for Freshman Academy Intervention*

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<th>Academy Year</th>
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Table 30

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**Years for Data Driven Decisions Intervention**

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**Years for Looping Intervention**

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Table 37

*Years for Freshman Orientation Intervention*

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Table 38

*Years for Peer Mentor Intervention*

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Table 39

*Years for Staying with the Same Peers Intervention*

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### Table 40

*Years for Smaller Learning Communities Intervention*

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<td>20.0</td>
<td>66.7</td>
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<td>86.7</td>
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<td>3.2</td>
<td>13.3</td>
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Table 42
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<th>Wing Year</th>
<th>Frequency of the responses</th>
<th>Percent of the total sample</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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<td>3.2</td>
<td>25.0</td>
<td>62.5</td>
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<tr>
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<td>3</td>
<td>4.8</td>
<td>37.5</td>
<td>100.0</td>
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