

Executive Summary

The focus of this program design evaluation is the impact of trimester scheduling at Spring Lake Public Schools, a K-12 school district in the State of Michigan. Spring Lake Public Schools desired a more efficient way to provide an education to its students so they are better equipped for the competitiveness of the emerging global economy. The District implemented trimester scheduling in 2000, replacing the traditional semester scheduling, as the District believed it would be a method of improving the quality of education at Spring Lake.

This study obtained quantitative data by examining District information from pre-trimester years and post-trimester years in the areas of student achievement, staffing, curriculum, associated costs and school culture at the secondary school. This data was then compared and examined through the use of tables in order to determine trends and what impact the trimester scheduling change had made in the above areas.

Student achievement improved after the implementation of trimester scheduling as determined by student standardized test scores. The data illustrated the trend of raised test scores by an average of 0.46% annually.

With respect to staffing, trimester scheduling did not result in the need for more teachers. More students were able to be educated with the same amount of teachers as employed in the pre-trimester schedule. More planning time was provided to the teachers and their daily work schedule was reduced by one class.

Trimester scheduling allowed Spring Lake Public Schools to offer a wider curriculum than traditional semester scheduling. Required classes could be finished in two-thirds of a year, giving students access to more electives in the remaining one-third of the year. The trimester schedule also allows the District to be responsive and flexible to any new State of Michigan curriculum requirements.

Three factors relating to cost that were reviewed were the teacher cost per class taught, supply costs and operational costs. None of these cost factors rose significantly due to the change to the trimester schedule.

The impact of trimester scheduling was minimal on the school culture beyond the change in how time usage was structured. The District has been able to maintain high graduation rates, low dropout rates and a slight decrease in discipline referrals.

Recommendations for Spring Lake Public Schools as a result of this evaluation focus on the implementation of a year round education calendar and increased professional development opportunities for the staff. A year round calendar would reduce the traditional summer break to smaller breaks spaced throughout the year, thereby increasing student retention and allowing for more new learning by all students when classes resume. This calendar would also allow staff more time throughout the year to participate in workshops, conferences and advanced college courses to better prepare them for educating Spring Lake students.

These recommendations will enable Spring Lake Public Schools to build upon the improvements realized by the implementation of the trimester schedule. The year round educational calendar and increased staff professional development will also allow the District to become even more effective in educating all students.

**A Program Evaluation of the Impact of Trimester Scheduling
In the Secondary Schools of Spring Lake Public Schools**

MSA 685 Project Report

Submitted in Partial Fulfillment of Requirements
for the Degree of
Master of Science in Administration
(Concentration in Human Resource Administration)

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CHAPTER 1

DEFINITION OF THE PROBLEM

Recent studies of education around the world have shown the United States is falling in the global rankings. In a 2003 study conducted by UNICEF, the United States was ranked eighteenth out of twenty-four nations in terms of the relative effectiveness of its educational system (Wu, E., 2005).

Twenty years ago, the United States was first in the world for the percentage of its population holding a high school degree and also first for the percentage of its population holding a college degree. Currently the United States is ninth in the world for high school degree holders and seventh for college degreed citizens (Organization for Cooperation and Development, 2006). Of even greater importance, 15-year-olds in the United States ranked below average on the mathematical and scientific literacy scale used to compare thirty countries in 2003 (Organization For Cooperation And Development, 2005).

The history of education in the United States is filled with examples of fads that come and go quickly, never given a chance to really be evaluated or improved or integrated

into the education landscape. Often, Americans adopt the superficial aspects of some educational idea and miss completely the substance that underlies the idea. Given the impatient political climate, a lack of immediate results may well lead to a change in an educational practice being declared a failure before it is even understood in any deep sense (Fernandez, C. & Yoshida, M., 2004, forward).

Spring Lake Public Schools desired a more efficient way to provide an education to its students so they are better equipped for the competitiveness of the emerging global economy. The District looked to trimester scheduling rather than the traditional semester scheduling as a method of improving the quality of education at Spring Lake.

Purpose of the Study

The purpose of the program examination was to evaluate the impact of trimester scheduling in the secondary schools of Spring Lake Public Schools. Results of the study will be used as a management tool for the District by providing data for managing and maintaining overall progress of educating the students of Spring Lake High School.

Problem Statement

As a result of increasing mandated student academic achievement and decreasing financial resources, Spring Lake Public Schools implemented trimester scheduling in the High School in the school year 2000 - 2001. The Board of Education and top administrators of the District needed to know what impact this change has had on various areas of the school. This data will be utilized for future planning to assist the District in meeting escalating curriculum and student graduation requirements.

Research Objectives

The objective of this research was to answer the following questions in the five major categories of student achievement, staffing, curriculum, cost and the school culture:

1. How does trimester scheduling effect student achievement as measured by standardized test scores, work load and meeting the early intervention needs of students?
2. How is staffing effected by trimester scheduling as measured by the number of staff required,

teacher preparation time allocated and teacher professional development opportunities?

3. How does trimester scheduling effect curriculum as measured by the variety of classes offered and the demand of Michigan requirements for graduation?
4. How cost effective is trimester scheduling in the areas of staffing, supplies and facilities?
5. How does trimester scheduling effect the school culture with a focus on teacher/student connections, discipline referrals and graduation and dropout rates?

The literature review explored the significance of the changes at Spring Lake High School that occurred after the implementation of trimester scheduling in the 2000 - 2001 school year. District data from the pre-trimester period of 1994 - 2000 was compared to data from the post-trimester period of 2001 - 2006 to determine the impact of the scheduling change.

CHAPTER 2

LITERATURE REVIEW

This study examines the impact of trimester scheduling in the secondary schools of Spring Lake Public Schools. With the continued focus on declining secondary student achievement at both the Federal and State level, Spring Lake Public Schools moved to the trimester schedule in the fall of 2000 in an effort to positively impact student learning. After two years of extensive research and discussion, the District abandoned its traditional six-classes per day semester schedule for the trimester schedule, an alternative method of student scheduling of classes that would lead to higher student achievement.

The rationale for using the trimester format was to create a school where teaching and learning is valued with an emphasis on learning outcomes demonstrated in student performance. The manipulation of time was necessary, and a well-designed curriculum and creative instructional practices were the keys to success. In today's high school setting it is critical to deal with all types of student needs and levels of proficiency. This is more than manipulating the time schedule. There are many procedures

and processes that made this a revolutionary change for providing a quality education experience for students.

The trimester plan incorporates both extended class periods and unique timelines into a schedule that is fundamentally different from either the block schedule or the traditional schedule. A trimester schedule provides for the completion of a year long class in two thirds of a school year.

This study of the effectiveness of Spring Lake Public Schools' trimester schedule encompasses an analysis and description of need which looks at the areas of student achievement, staffing, curriculum, cost and school culture. The study also includes the statement of goals and objectives of class scheduling at Spring Lake High School; the identification of program alternatives that Spring Lake Public Schools could use to obtain its goals; the development of an evaluation design to measure the effectiveness of the program alternatives; and, the identification of strategies for program improvement after the program evaluation.

Analysis and Description of Need

This research investigated the effect that trimester scheduling has had on student achievement, curriculum,

staffing, the associated direct costs of providing an education to high school students, and school culture at Spring Lake Public Schools. When Spring Lake Public Schools moved to the trimester schedule, administrators knew that the effects must be studied to determine if this scheduling change was beneficial to the District. District data was acquired to assist in the study of standardized test scores and the number and type of classes taken by students, both pre- and post-trimester implementation. Other areas that were reviewed were the graduation and dropout rates and discipline referrals. Cost was evaluated on a per pupil basis, comparing the data before and after implementation of the trimester schedule, in the areas of salaries and supplies.

The major District goals of trimester scheduling are increased student achievement, better utilization of instructional time, enhancement of teaching skills and methodology, increased student access to more course offerings, and enrichment of the school culture or learning environment, all without an increase in the cost to the District. This research reports the impact trimester scheduling has had in these areas for Spring Lake Public Schools. The following sections provide a more detailed analysis and description of needs and demonstrate the

extent of the impact the current trimester schedule has had at Spring Lake High School.

Student Achievement

Student achievement can be measured in many ways, with the most common being grades and standardized test scores. Grades should be indicators of academic achievement so they can be relied on as evidence of a student's readiness for further study (National Commission on Excellence in Education, 1983). However, historical student grades data was not available in a format that would lead to a meaningful analysis to other districts as there is little commonality in class content and grading scales among Michigan high schools.

The standardized test scores of Spring Lake Public Schools were compared in a pre-trimester and post-trimester format. The most important difference noted was the scheduling of time. Standardized tests of achievement (not to be confused with aptitude tests) should be administered at major transition points from one level of schooling to another and particularly from high school to college or work. The purposes of these tests would be to: certify the students' credentials, identify the need for remedial intervention and identify the opportunity for advanced or

accelerated work. The tests should be administered as part of a nationwide system of state and local standardized tests. This system should include other diagnostic procedures that assist teachers and students to evaluate student progress (National Commission on Excellence in Education, 1983).

In 1983, the National Commission on Excellence in Education issued the report *A Nation At Risk: The Imperative for Educational Reform*. One of the main concerns of this report was how effectively classroom time was being used in United States schools. The Commission recommended that the time for learning be expanded through better classroom management and organization of the school day. It further stated that additional time should be found to meet the special needs of slow learners, the gifted, and others who need more instructional diversity than can be accommodated during a conventional school day or school year (National Commission On Excellence In Education, 1983).

In a "School Administrators" article, a 1995 study by Carl Glickman, a University of Georgia professor, of 820 high schools and 11,000 students reported that schools in which active learning methods were predominant had significantly higher achievement as measured by the

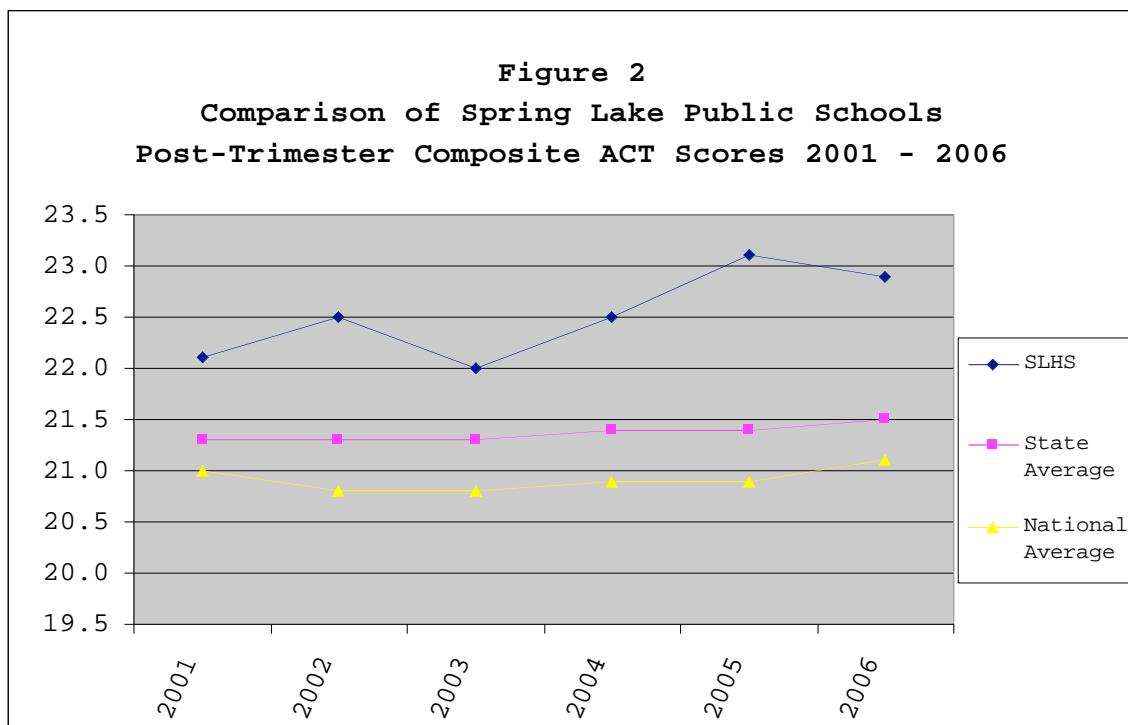
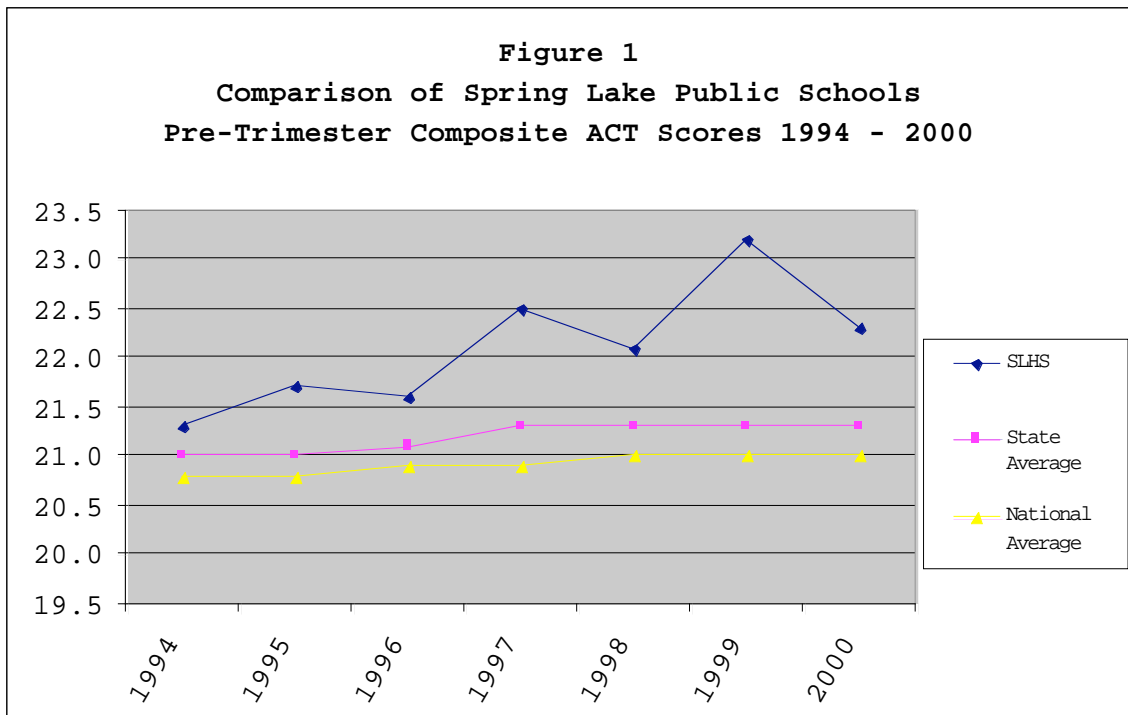
National Assessment of Educational Progress. Teachers at schools with block scheduling may use longer instructional periods to engage students in experiments, writing, and other forms of active learning, as opposed to merely lecturing students (Cromwell, 2005). Because block scheduling, which is the allocation of more time to each class with fewer classes per day, is an inherent part of trimester scheduling, these same results can be expected from implementing a trimester schedule.

Much has been written about the relationship between time and learning and a considerable body of knowledge now exists in this area. Likewise, the past has spawned numerous studies on school reform – what works, what doesn't, and why. And, while many school reform studies have called attention to time as an important factor in school change, few have systematically investigated time as a critical element in school reform. Moreover, from study to study, time is typically talked about as though it were one-dimensional and as if there were actually a shared understanding of *what* time is. Yet, time can take on radically different meanings across contexts and, in fact, there may be very little consensus about the nature of time from one context to the next (Gandara, 2000, p. 2).

To state the obvious, there is a relationship between the amount of time invested in learning and the quantity and quality of learning that occurs for any given group of students. Hence, at this level, the potential importance of time as an element in school reform is transparent – one way to increase student achievement is to manipulate time. It has been demonstrated that the relationship between allotted time and learning outcomes is relatively weak, but the relationship between time on task or academic learning time and learning outcomes is almost certainly much greater (Gandara, 2000, p. 3).

Figure 1 below illustrates composite American College Test (ACT) student scores at Spring Lake High School over a seven year period before the change to trimesters. The Spring Lake High School student scores are compared to the State of Michigan average composite ACT scores and the United States national average composite ACT scores for the same time period.

ACT results of Spring Lake High School students for the post-trimester years 2001 to 2006 are shown below in Figure 2. Also shown are the State of Michigan average composite ACT scores and the United States national average composite ACT scores for the same years.



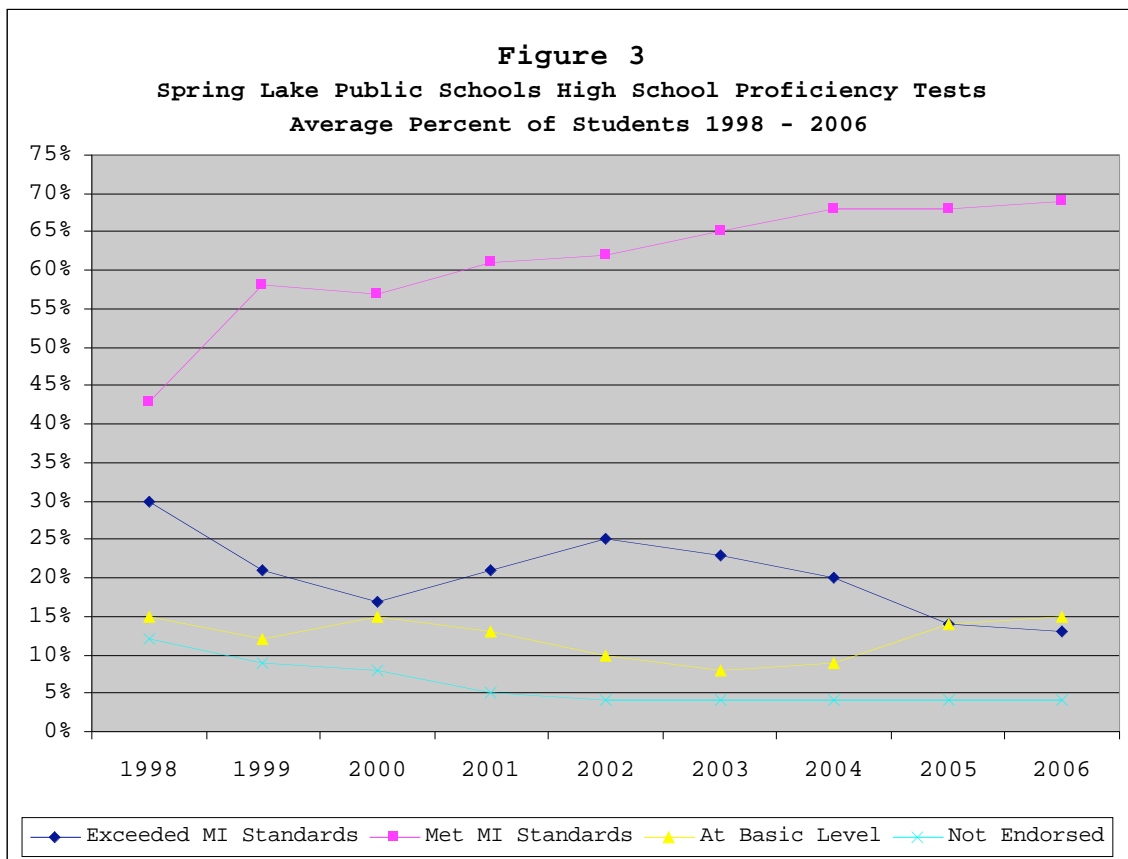
For the seven year period prior to the implementation of the trimester schedule, students at Spring Lake High School had shown a 0.82% increase in their composite ACT scores. After the implementation of trimester scheduling, student ACT scores were increased an additional 0.46%. Trimester scheduling allowed them to maintain and improve upon their test scores, while increasing the percentage of students taking the test from 73% in 1994 to 84% in 2006. Currently, after the implementation of the trimester schedule, more students take the ACT and are more successful than in the pre-trimester years.

State and National average composite scores showed a slight increase over the entire thirteen year period, 0.20% for Michigan and 0.12% for the nation. Spring Lake High School students averaged 4.32% above the State average and 5.67% above the national average from 1994 through 2000. For the years 2001 through 2006, Spring Lake students averaged 5.32% above the State average and 7.65% above the national average. Spring Lake High School students improved their state and national rankings after the high school schedule was changed to the trimester format.

The Michigan High School Proficiency Test, or MEAP, is another method to determine student achievement and was started as a mandatory state assessment in 1998. No student

data is available before that date as the prior method of testing did not produce results that can be easily compared.

Figure 3 denotes average student proficiency at the four endorsement levels of the MEAP. The data used was from the nine year testing period from inception of the current State testing model to the last year of available data.



This chart illustrates that the percentage of students who were not endorsed by the State fell from 12% in 1998 to

4% in 2002, which is the first year that the full impact of trimester scheduling on student achievement was realized. This 4% level has been maintained to the current year. Endorsed students have risen from 88% in 1998 to 96% in 2006. The percentage of students who performed at the basic level has remained fairly constant for the entire time period.

The number of students who met Michigan standards rose significantly after the implementation of trimester scheduling and this upward trend has been maintained to the current year. This is a reliable indicator that a larger percentage of Spring Lake High School students are receiving an education that prepares them well for post-secondary education or participation in the workplace.

The percentage of students who exceeded Michigan standards has fallen, but much of this can be attributed to a change that Michigan implemented which raised the bar to perform at this level. These comparisons of student standardized test scores demonstrate that higher scores were obtained and maintained after the implementation of the trimester schedule.

Before the implementation of the trimester schedule, a major concern of Spring Lake Public Schools administration was how trimester scheduling would affect student

standardized test scores. This concern involved a possible loss of student learning and retention that might occur in the trimester schedule if the students did not take a two-term class in consecutive terms. Popular belief holds that much of what is taught in classrooms is forgotten shortly thereafter. However, there is evidence from numerous studies that long-term retention for knowledge taught in school is substantial. In the article entitled *Knowledge Taught in School: What is Remembered?*, the authors Semb and Ellis (1994, p. 253) concluded that students retain much of the knowledge taught in the classroom, retention decreases over time as a function of the length of the retention interval, increasing the level of original learning differentially affects retention performance and both instructional content and assessment tasks affect learning and retention.

The issue of long-term retention of school learning is complex because it can be influenced by all of the above stated factors. However, Semb and Ellis (1994, p. 273) believe that the most important variable in long-term retention is the degree of original learning. That is, as the degree of original learning increases, the rate of forgetting over the retention interval decreases in the school setting. This pattern of results is not consistent

with laboratory studies of long-term retention. The typical laboratory finding is that the rate of forgetting is constant and is more rapid, even when there are differences in the degree of original learning.

After analyzing the results of over fifty research studies involving retention of school learning, Semb and Ellis (1994, p. 271) determined that the rate of decline for recognition increases sharply from one to five weeks after the learning experience but then levels off until the two year mark where it once again increases sharply. However, the rate of decline for recall is fairly small and constant until after the fourteenth week where it sharply increases. This research helps to validate the claim that students are able to skip a term of 12 weeks between the first and second term of a class and not suffer any more ill consequences than having a two week winter holiday break, which is common among all high school schedules. Analyzing the grades data of Spring Lake High School has shown that students who, for example, take Algebra I "A" in the fall and then Algebra I "B" in the spring do as well, if not better, than students who took Algebra I "B" in the winter immediately following Algebra I "A". This is especially important in math because it is sequential learning that builds on past learning.

Teaching strategies which more actively involve students in the learning process have proven to enable a higher retention level of the students. Active processing experiences, such as a science laboratory or field trip, will aid students in generating meaning for the content being learned. Role playing will enhance understanding of the course concepts beyond memorization. Semb and Ellis (1994, pp. 276-277) equate enhanced understanding with qualitative changes in memory. The trimester schedule allows teachers to incorporate more interactive teaching styles into their daily lesson plans due to more time being allocated to each class period as compared to the traditional schedule.

A major benefit that Spring Lake Public Schools has realized with the trimester schedule is the ability of a student to immediately retake a class in which he/she did poorly or failed. Monitoring of student grades allows the administration to place the at risk student in the same class the next trimester to allow them to receive additional coursework in low achieving subjects.

According to an article in "The School Administrator" journal by Rettig and Canady (2003), students in a trimester schedule who know they are failing do not waste an entire year in a class with no motivation to attend, to

behave and to learn. They can begin again in the same course in the next trimester. Once students know they are failing and may have little chance of graduating with their class, they are more likely to drop out. The trimester schedule offers the possibility of catch-up acceleration and therefore a glimmer of hope for these students.

A traditional high school schedule is a six or seven period day with classes ranging from forty-five to fifty-five minutes. If it is assumed that an average class size is twenty-five students, a teacher might have between one hundred twenty-five and one hundred fifty students per day, an enormous teaching load. The ability of a teacher to individualize instruction for up to one hundred fifty students in fifty minute classes is simply unrealistic. In the book *Transforming Learning With Block Scheduling*, the author Lybbert (1998, p. 4) quotes Osbourne High School Principal Marian B. Stephans, who said, "Studies show that the average forty-five to fifty minute class only provides fifteen to eighteen minutes of education instruction after you factor in taking attendance, passing out information, giving instructions and handing out restroom passes".

From the students' perspective, traditional scheduling may be just as exhausting. They must move from classroom to classroom six or seven times per day. This repetitious

loss of time of time in the class is the time lost to passing periods, which may consume of to ten percent of the school day. Because teachers in shorter classes tend to rely more heavily on the lecture format, a student may find himself/herself a captive audience in a very long day. Students taking AP classes will probably have several daily homework assignments as well as the possibility of studying for several tests simultaneously, which may be an overwhelming pace (Lybbert, 1998, p. 4-5).

In the area of student achievement, there are many influential factors. However, teachers teaching additional sections of a class in the trimester format lead to smaller class sizes, which is very sound educationally. In the book *Let's Put Kids First, Finally: Getting Class Size Right*, Achilles (1999, pp. 37, 46-48) surveys the research on class size to point out the following reasons why smaller works better. Smaller class size results in less crowding. Crowding causes humans to change their behaviors. Why would it be any different in classrooms? Another benefit of smaller class size is a better attitude, because in small classes, teachers often explain that they and their students feel alive, alert, and active all day long. Some of the best learning continues until the final bell. Smaller class sizes allow for deeper content exploration,

because in smaller classes, teachers introduce more topics, cover more content, use more individual teaching strategies. More interpersonal connections are possible because smaller classes result in more parent involvement with the school and more frequent interactions between teachers and children. Students have commented that this allows them to build better relationships with their teachers which lead to greater student success.

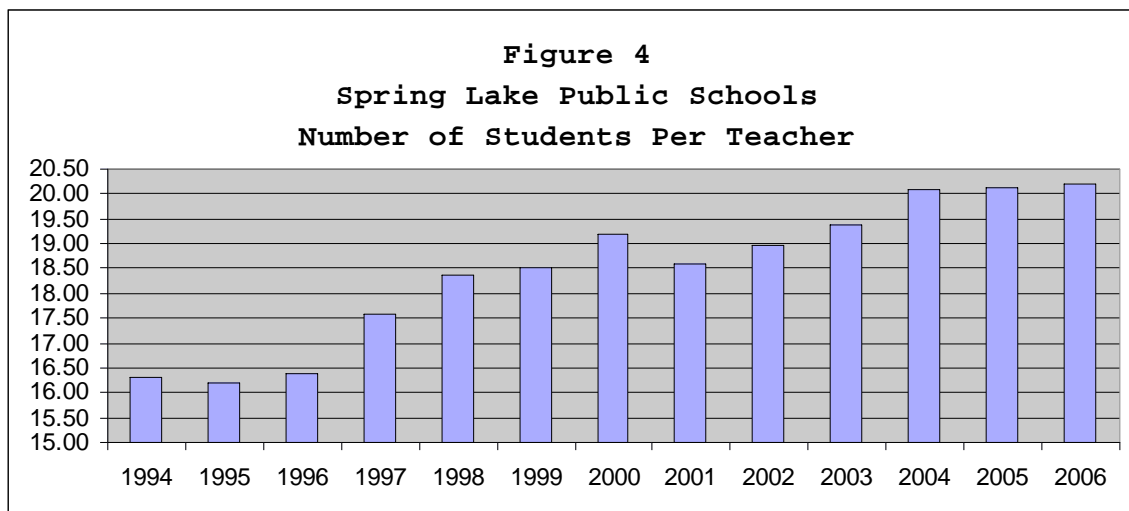
Staffing

One repeated concern regarding the trimester plan is the need to increase staff to teach the higher number of classes offered each year. Mark Keen (1999), a superintendent in Indiana whose district has implemented trimester scheduling, was quoted in the journal "The School Administrator" as saying:

Hiring additional staff puts a serious strain on a growing school corporation. However, with more partial enrollments, trimesters off and early graduations, staffing levels might remain stable. Early indications are that this will, in fact, be true. We are adding one new staff member for every 20 new students. However, in two more years, the projections indicate we will add staff at a ratio of one new staff member

for every 30 new students because the full impact of the schedule will be realized.

Below is a chart that illustrates the student to teacher ratio at Spring Lake High School for the years 1994 through 2006. The number of students per teacher has fluctuated since the implementation of trimester scheduling. In 2000, the last year of the traditional schedule, there were 19.19 students per teacher in the High School. In 2001, the first year of trimesters, it dropped by 3.15% to 18.59 students per teacher. The ensuing years show a slow climb in the student to teacher ratio to 20.21 students per teacher in 2006.



The District made the decision to admit more school of choice students from neighboring districts in the later years of this study which increased the student population

outside of the influence of the scheduling method used. This decision was based on the fact that more students could be educated with the approximately the same number of teachers, resulting in an increase in revenue as student count is how the State of Michigan primarily funds school districts, with little or no increase in expense.

The trimester plans utilized by other school districts helped to develop the ideas behind Spring Lake's trimester system, but the Spring Lake model has many aspects that differ. One such difference is the need to minimize teacher preparations by controlling their teaching assignments, such as having them teach two or three of their daily classes with the same curriculum. Trimester scheduling software does not factor in teacher preparation requirements, often assigning teachers four different classes to teach in one trimester, which makes a teacher less effective as more of their time is spent on class preparation and less on the students. Another difference of the trimester schedule at Spring Lake Public Schools is the scheduling of many elective classes on a bi-annual rotation basis, which also minimizes teacher preparation time.

The trimester schedule for Spring Lake Public Schools has allowed for an increase in teacher preparation time on

a daily basis. While teachers had fifty minutes of daily planning time in the traditional schedule, they now have seventy-two minutes per day to plan. This allows for more opportunities for teacher collaboration on a weekly or monthly basis. In his book *Standards for Success*, O'Shea (2005, p. 68) endorses this time expansion, stating that the scheduling of planning time for teacher collaboration has to overcome the established tradition of teacher isolation. In the United States, the lack of sufficient collaborative planning time has been a major obstacle to structural reform. In contrast, Japanese schools allow teachers time to collaborate in designing lessons and reviewing students' work to a much greater degree with a positive effect on student achievement.

Even if school administrators favor change, real school restructuring cannot take place unless teachers also embrace school change. Teachers need to be willing to take on new responsibilities and give up some of the comfort of old routines, as they struggle to re-conceptualize schooling, restructure their school days, and reinvent themselves as educators. Teachers will need to be supported in their own change processes, with extensive staff development that helps them rethink the goals and

possibilities of education, and develop concrete new approaches to teaching (Sehr, 1997, pp. 178-179).

One point that cannot be restated too forcefully is the professional development needs will be broad and massive. Indispensable to educated students are learned teachers in the classroom. To keep pace with changing content standards, teachers will need ongoing coursework in their disciplines *while they continue to teach their subjects* (National Education Commission on Time and Learning, 1994).

Authors Fernandez and Yoshida (2004, p. 233) feel that teachers in the United States can learn much from certain practices of Japanese teachers who value lesson study for a number of reasons. They state:

First of all, lesson study allows teachers to come together to develop their pedagogical knowledge and skills. Indeed . . . (Japanese) teachers were able to share and evaluate a number of ideas about classroom practice. For example, they spent time discussing the desirable qualities of a manipulative, the types of questions that encourage students to share work with each other, and productive formats for posing word problems. These conversations allowed them to think about principles that could guide their everyday

teaching of mathematics, and which they could then continue to experiment with and refine in their own classrooms. In other words, although these teachers were focusing on a handful of lessons, they used these lessons as a testing ground for their thinking about what constitutes good practice more broadly defined.

When Spring Lake Public Schools teachers taught six fifty-five minute class per day, the lecture format of instruction was most often utilized. This class time and format had been the norm for Spring Lake teachers for many years. The change to longer instruction time per class was daunting to many teachers.

This was a major need that had to be addressed with the implementation of trimester scheduling. It was helping teachers gain the necessary strategies and skills to teach successfully in a large block of time. If teachers do not alter techniques to utilize extended blocks of time effectively and efficiently, the value of trimester scheduling will be drastically diminished and its potential would not be realized. Canady and Rettig (1995, p. 237) believe it may be unreasonable for teachers to react with either enthusiasm or success if for years they have been rewarded for being good teachers simply because they were knowledgeable of their content and dispensed it primarily

in a lecture format during daily fragmented periods of less than an hour. A change to trimester scheduling can become a catalyst for teachers to seek different teaching strategies.

Professional development time should be given to the teaching staff before the scheduling change to allow them the opportunities to receive training from peers who have demonstrated subject area excellence within a larger block of time. Many teachers may benefit from an introduction to the process of implementing cooperative learning in the classroom. Cooperative learning is a successful teaching strategy in which small teams, each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject. They work through the assignment until all group members successfully understand and complete it. Cooperative efforts result in participants striving for mutual benefit so that all group members gain from each other's efforts. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement. Students work through the assignment until all group members successfully understand and complete it. The larger blocks of class time in the trimester schedule allow teachers to utilize

cooperative learning more effectively than in a traditional schedule. Regardless of the topics involved, all professional development should allow teachers to participate in activities with a large degree of engagement (Canady & Rettig, 1995, p. 237).

Curriculum

In 2006, the State of Michigan enacted a rigorous new set of statewide graduation requirements which is believed to prepare all students for future success in college and the workplace. These requirements added additional credits in mathematics, English language arts, science and social studies as well as an online learning experience (Michigan Department of Education, 2006). Many school officials across Michigan are confronted with having to provide more courses to their students within a scheduling framework that is already filled.

The trimester schedule allowed Spring Lake Public Schools to easily incorporate these new State requirements into the high school schedule without any corresponding reduction in elective offerings as students are able to enroll in fifteen classes per year, three more than the traditional twelve classes per year. The majority of these

required credits were already scheduled within Spring Lake High School's existing curriculum.

It is noted by Johnson (2005, p. 101) in the book *Sustaining Change in Schools: How to Overcome Differences and Focus on Quality* that curriculum issues involve alignment of curriculum focus, high school course offerings and graduation requirements. These issues lead to the instructional delivery question of scheduling. With a higher number of mandated courses, scheduling elective courses becomes harder and the amount of time allocated for them in a traditional school schedule becomes less. Course options accomplish very little unless they are accompanied by scheduling flexibility.

Class content and priority to the students' education dictate the time allotted to each class in Spring Lake Public Schools trimester schedule. Many electives and some required classes, such as Government and U.S. History, are completed in one term. The majority of classes require two terms for completion. But some classes, such as the performing arts and Advanced Placement (AP), are best suited to be provided in a three term or year long format.

AP classes, which allow students to earn college credits while still in high school, can present timing problems if they are scheduled in the first and second

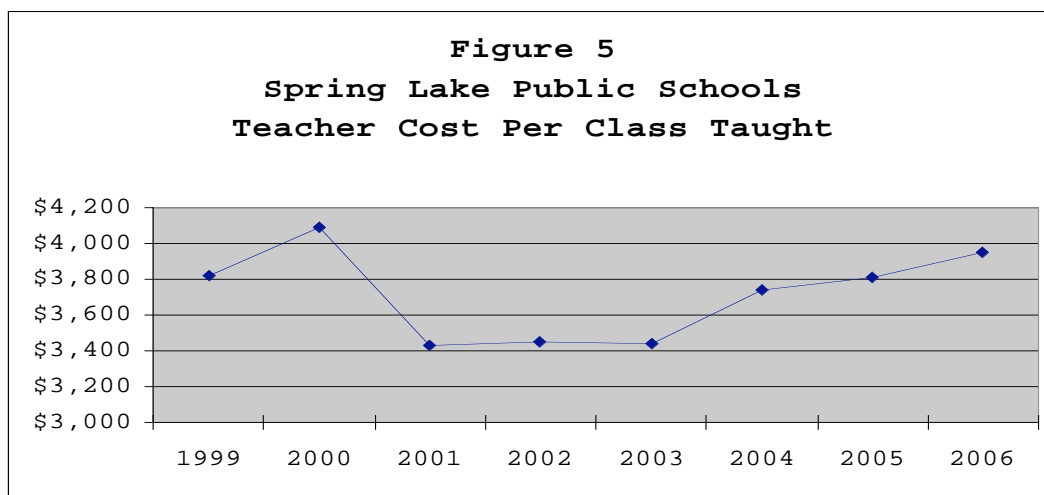
trimester only. Typically, the examination for awarding college credit is given at the end of the school year, which is not optimal for the students who had the class earlier in the year. Spring Lake High School schedules all AP classes in the year long format for this reason. One option that should be explored is making the college credit examinations available at various times of the school year (Queen, 2003, p. 9).

Cost

One of the mandates from Spring Lake Public Schools administration was that any schedule change could not result in increased costs to the district. Most schools in Michigan and the entire country are faced with providing a quality education with more mandates from the state and federal government levels coupled with limited and sometimes shrinking financial resources. As in most educational decisions, the associated cost of a change is a major factor. The trimester schedule has teachers teaching twelve sections of class a year compared to ten sections in a traditional six-period day and has one planning period per day like traditional schedules; therefore, no additional staff is required to teach the expanded number of classes offered in the trimester schedule. Critics of

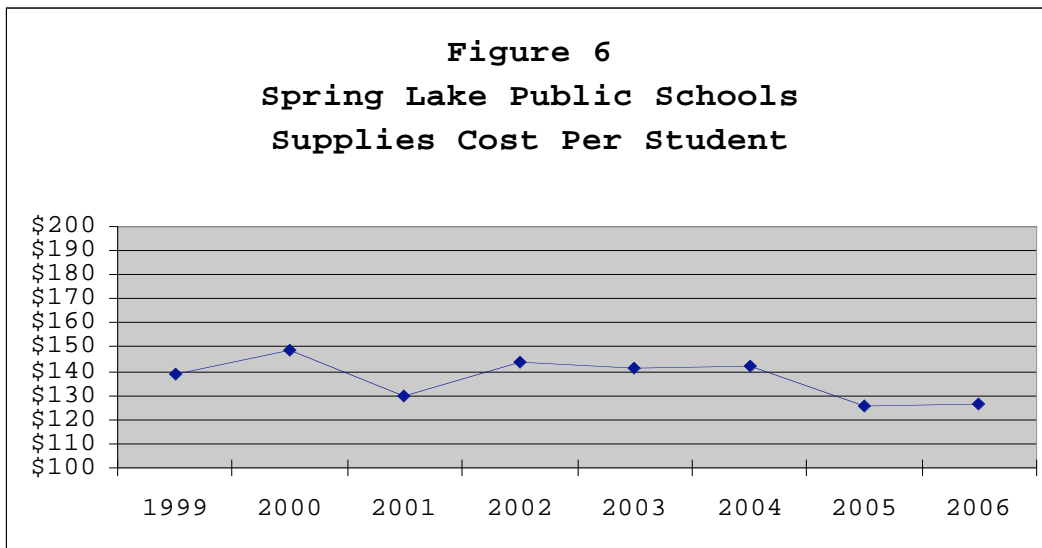
trimester scheduling claim that if more classes are offered during a school year, then more teachers are necessary to provide the instruction. However, an analysis of Spring Lake Public Schools' teacher cost per class taught does not indicate this. If more teachers were necessary to teach more classes, then the cost per class should remain fairly constant, increasing mainly due to an increase in teacher salaries as opposed to the number of teachers required.

Spring Lake Public Schools' data revealed that the cost per class dropped after trimester schedule was implemented, indicating that additional teachers were not required to teach the additional class offerings. Figure 5 below illustrates the teacher cost per class taught for Spring Lake Public Schools over the time period of 1999 to 2006.



The \$4,088 teacher cost per class taught is highest in the year 2000, which was the last year Spring Lake Public Schools operated on a traditional schedule. In 2001, teacher cost per class taught dropped dramatically by 16.12% to \$3,429. The following years show small annual increases, but the 2006 cost of \$3,945 is still below the pre-trimester cost.

Supply budgets at Spring Lake High School have not been affected in either a positive or negative manner due to the increase in class offerings inherent to the trimester schedule. Below, Figure 6 shows the supply cost data on a per student basis both before and after trimester scheduling was implemented.



The cost of supplies has remained fairly constant over the years. The reduction in 2005 and 2006 is a result

of the District's budget cuts necessary due to reduced revenue from the State of Michigan. Supply budgets are not affected negatively because the supplies necessary for the increased class offerings in electives are offset by not having to have books for every section of the required classes as only a portion of these classes are offered in any one term.

The operational costs of the school facilities were not affected by the change to trimester scheduling. No additional classrooms were needed to offer more courses as it was time that was adjusted, not space requirements.

The block scheduling format of trimester scheduling does not automatically mean greater expenditures. In fact, many school systems have built block schedules that have been very efficient financially. The blame for staff and program cuts often are placed unfairly on block scheduling (Hottenstein, 1999).

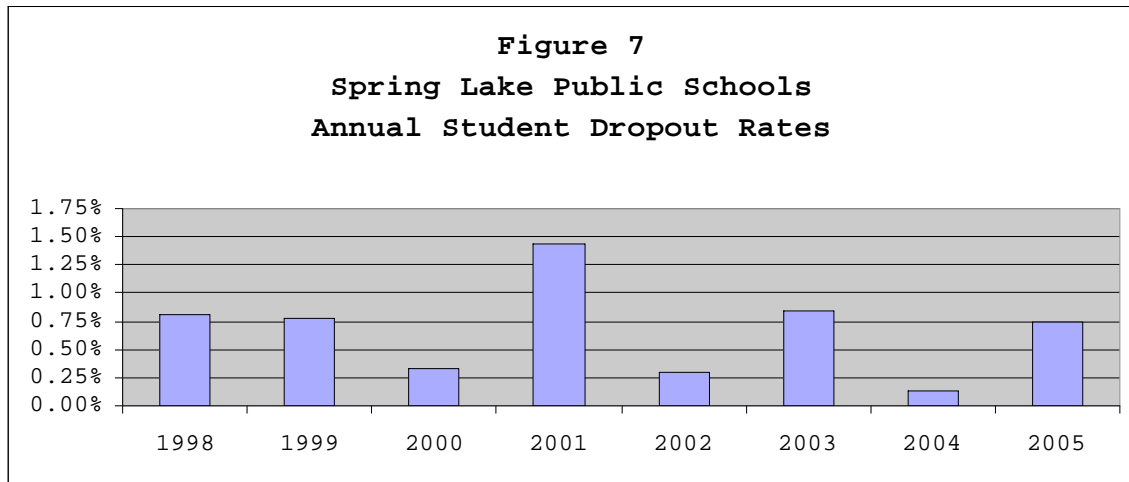
School Culture

The experience of schools that have implemented a block or trimester schedule has been to realize a significant reduction in discipline problems. When the number of passing periods in a day is reduced, the number of opportunities for disruptions in the hall is reduced.

Tardiness is similarly affected as students have fewer chances to be late to class. The real benefit is in terms of school discipline which seems to be related to changing the overall school environment. Both students and teachers report they are happier with a longer class period schedule which leads to less discipline issues. The fact that students do better academically in their classes also affects attendance, failure rates and other factors that are known to be associated with students who are continuously in trouble in school. As students experience more engagement and success at school, their discipline problems will usually decline dramatically. Some schools have seen discipline referrals decline by twenty-five to thirty-five percent (Lybbert, 1998, pp. 14-15).

Spring Lake High School data reveals that discipline referrals averaged 63 per year in 1994 through 1999. In the years 2000 to 2006, discipline referrals averaged 67 per year. When these numbers are computed on a percentage of the student population basis, the percentage of student discipline reports dropped 15.28% from 10.54% pre-trimester to 8.93% post-trimester scheduling. The student population grew at a faster rate than discipline problems did, illustrating that the trimester schedule did help reduce student discipline problems.

One measure of high school performance is the student dropout rate. Spring Lake Public Schools data is illustrated in Figure 7 for the 1998 to 2005 time period.



Historically, Spring Lake Public Schools has had a very low dropout rate of high school students and a very high graduation rate. From the data, it does not appear as if trimester scheduling has had an effect on student dropouts or retention in either a positive or negative manner. The District has been able to maintain its low dropout rates with the schedule change and continues to compare favorably with Michigan and national statistics.

In 1998 the Michigan high school dropout rate was 4.5 percent and in 2004 the Michigan dropout rate was 3.0 percent (State Of Michigan, 2004). The United States national high school dropout rate was 11.0 percent in 1997

and 10.3 percent in 2004 (National Center for Educational Statistics, 2005). Spring Lake Public Schools dropout rate compared favorably at 0.81 percent in 1998 and 0.13 percent in 2004. Spring Lake Public Schools has continued to retain and graduate the vast majority of its students.

No matter what attendance policy a district uses, there will always be the issue of students who do not attend regularly. The key is to put the onus on the student. Students may be encouraged to have a better attendance record using the trimester schedule as they will have fewer classes to attend with less homework.

Of major concern to the school district was the ability of staff members to make the human connection with students while not having them in class all year. This concern was never realized because in the seventy minute period that Spring Lake Public Schools adopted, the teacher has more opportunity to interact with students and make a personal connection.

It has been increasingly important for teachers to build rapport with their students as they are expected to assume more and more responsibility for nurturing individual students and contributing to a positive school learning environment (Lybbert, 1998, p. 17). One of the

benefits of trimester scheduling is that it provides a real opportunity for teachers to get to know their students better in the extended class period. More time can be spent on individual students and assisting their class work and learning. Longer periods also provide the time for more in-depth class projects or labs that, again, allow more one-on-one dialogue between the teacher and student. The stress of trying to know 150 students in small time allotments is diminished by having fewer students per day and having longer periods of time interacting with them.

In the book *Education for Public Democracy*, the author Sehr (1997, p. 178) lists what he believes are basic prerequisites for changing American high schools to provide a better education to young people. One of them was that schools should be built around relationships, between students and teachers, among teachers, and among students. This, in turn, will require that new schools be organized, and existing schools be reorganized, into much smaller functioning units than that of the traditional comprehensive high school. In addition, schools should establish advisory classes, or some other means of ensuring that teachers truly get to know students and vice versa.

In the book *Taking Sides: Clashing Views on Controversial Issues in Secondary Education*, Evans (2002, p. 220) states:

Virtually every high school in this nation can decrease its average class size by 20 percent; increase its course offers or number of sections by 20 percent; reduce the total number of students which whom a teacher works each day by sixty to eighty percent; provide students with regularly scheduled seminars dealing with complex issues; establish a flexible, productive instructional environment that allows effective mastery learning as well as other practices recommended by research; get students to master twenty to thirty percent more information in addition to what they learn in the seminars; and do all of this within approximately present levels of funding. The key to realizing all or most of these claims is abandoning the traditional method of scheduling classes and implementing a schedule where classes are taught in much longer periods with fewer classes per day for only part of the school year.

The analysis and description of needs evaluated the impact of trimester scheduling at Spring Lake Public Schools with relation to the five areas of student

achievement, staffing, curriculum, cost and school culture. The secondary data collection was the needs analysis for this study. It became apparent from the data that the District has realized substantial gains in some of the above areas after implementing the trimester schedule. Specifically, student achievement increased steadily after the implementation of trimester scheduling and the manipulation of time during the school day. Curriculum offerings to the students increased and greater flexibility in the curriculum scheduling allowed the District to respond quickly to State mandated changes and requirements.

At Spring Lake High School, the number of teachers needed to teach in the trimester schedule was no greater than the number required in the prior traditional schedule. Teacher daily planning time was increased and the number of classes taught per day decreased, which allowed the staff more opportunities to gain greater content knowledge.

Trimester scheduling had little impact on the direct costs of educating secondary students at Spring Lake Public Schools. The school culture was affected positively as the longer class periods allowed for more teacher and student interactions and connections. Spring Lake High School was able to maintain its high standards in other aspects of the

school culture, such as the number of discipline referrals, the graduation rate and the student dropout rate. In no instance was it revealed that a negative impact occurred.

Statement of Goals and Objectives

After six years of utilizing the trimester schedule, Spring Lake Public Schools is looking to build on their successes and realize new objectives in the five main areas of student achievement, staffing, curriculum, cost and school culture. The District has identified the following goals:

Goal 1

In the area of student achievement, Spring Lake Public Schools' goal is to remain committed to maintaining and improving the current levels. In keeping with this goal, the District plans to reduce the gap of time between classes, especially ones that utilize sequential learning, such as math. The concern is if a student takes Algebra I in the fall and winter terms and then proceeds on to Algebra II the following fall term, six months has passed between the end of Algebra I and the start of Algebra II. As stated earlier, the rate of decline for recall of learning is fairly small and constant until after the

fourteenth week where it sharply increases (Semb, G. B. & Ellis, J. A., p. 271). It is advantageous for students to have less time between terms to facilitate additional learning rather than relearning material.

Goal 2

Spring Lake Public Schools desires to increase staff development time for both the administrative and academic faculty. Teachers need time for their own learning which should be built into the yearly schedule. This can be in the form of days set aside for teacher collaboration or in outside coursework for new learning. The State of Michigan is constantly redesigning curriculum benchmarks to advance student achievement. These redesigns require that the teaching staff be apprised of the new benchmarks and also be given the tools to achieve them. Professional development days set aside throughout the year would facilitate meeting these needs. The delivery methods that could be utilized are varied. Staff could attend university classes or professional conferences. Online classes, which have more flexible time commitments, could also be a source of new learning for the staff. Webinars, which are conferences attended via a computer in an office

or classroom, do not require travel and result in less time away from the classroom or home.

Goal 3

Currently, the curriculum goal is to maintain the current class offerings to students. The curriculum at Spring Lake Public Schools is in line to meet the new State of Michigan high school graduation requirements. The trimester schedule allows for the additional classes that students need to successfully complete their secondary education in the future. It also allows them to explore their areas of personal interest by offering a wider array of elective classes than a traditional schedule.

Goal 4

Another District goal is that any future changes must be cost neutral. Cost is many times a factor in educational decisions. Any changes that Spring Lake Public Schools makes that involve a cost increase must be balanced by either cost decreases in other areas or attainment of a desired goal which justifies the extra expense. The added value of the change must be weighed against the additional cost to determine if the change is justified.

Goal 5

The District goal is to maintain and improve upon the culture of Spring Lake Public Schools both for students and staff that has improved since the implementation of the trimester schedule. In particular, the District wants to maintain and build upon the growth of interpersonal relationships between faculty and students that resulted from trimester scheduling.

While Spring Lake Public Schools has realized many improvements that increase student learning outcomes after implementing the trimester schedule, the District is also looking at areas where greater successes could be obtained. Specifically, the scheduling of classes within the trimester format to facilitate new student learning and more faculty professional development are two such areas. Any future changes must maintain and build on the current system without being cost prohibitive.

Identification of Program Alternatives

A program alternative that would build on the success of the trimester schedule at Spring Lake Public Schools is the incorporation of trimesters into a year round format of

instruction. Year round education (YRE) is the reorganization of the school calendar from the traditional nine months of instruction and three months of summer break to shorter breaks spaced throughout the entire twelve months. Over 2.1 million students in the United States were enrolled in a YRE program in the 2005 - 2006 school year, a five-fold increase in the last decade. California accounted for over half of these students, followed by Arizona, Hawaii, Nevada and Georgia (National Association for Year Round Education, 2006). Clearly, this is a school scheduling alternative that is gaining momentum.

The school calendars of the past have been based on the principle that schools should meet the needs of the local community. Children who lived in agricultural areas rarely attended school during the summer, or during planting and harvesting, so they could be free to help tend crops or livestock. If children lived in urban areas, it was not unusual for them to attend school for at least two of the three summer months (Borman & Boulay, 2004, p. 4).

As the United States turned from a dominant rural culture to a more urban civilization, educational needs changed. It was no longer necessary to set the school calendar on the basis of the farming seasons.

By the turn of the century, family mobility and the growing integration of rural and urban lifestyles made it important to standardize school curricula and calendars. This need led to the current annual nine month calendar of school for all children in the United States.

The majority of adults in the United States work twelve months of the year. In contrast, the majority of students in grades kindergarten through twelve attend school approximately nine months of the year. This calendar seems unrealistic and unreasonable in today's economic and social environment.

There are many critics of the current pattern of educating the youth of the United States. On May 5, 1994, the National Education Commission on Time and Learning issued the results of its two-year investigation, a report entitled *Prisoners of Time*. "Learning in America is a prisoner of time," said the Commission, arguing that the time available "in a uniform six-hour day and a 180-day year is the unacknowledged design flaw in American education." To fix the design flaw, the Commission proposed buttressing the sweeping reform agenda established by Congress and the Clinton Administration in the Goals 2000: Educate America Act legislation by having schools remain open longer while adjusting time to help individual

students meet high standards (National Education Commission On Time And Learning, 1994).

Decades of school improvement efforts have floundered on a fundamental design flaw, the assumption that learning can be doled out by the clock and defined by the calendar. Research confirms common sense. Some students take three to six times longer than others to learn the same thing. Yet students are caught in a time trap-processed on an assembly line scheduled to the minute. The traditional usage of time virtually assures the failure of many students. Under today's practices, high-ability students are forced to spend more time than they need on a curriculum developed for students of moderate ability. Many become bored, unmotivated, and frustrated. They become prisoners of time (National Education Commission on Time and Learning, 1994).

Struggling students are forced to move with the class and receive less time than they need to master the material. They are penalized with poor grades. They are pushed on to the next task before they are ready. They fall further and further behind and begin living with a powerful dynamic of school failure that is reinforced as long as they remain enrolled or until they drop out. They also become prisoners of time. "Average" students are caught in the time trap as well. Conscientious teachers discover that

the effort to motivate the most capable and help those in difficulty robs them of time for the rest of the class. Typical students are prisoners of time too (National Education Commission on Time and Learning, 1994).

The paradox is that the more the school tries to be fair in allocating time, the more unfair the consequences. Providing equal time for students who need more time guarantees unequal results. "If we genuinely intend to give every student an equal opportunity to reach high academic standards, we must understand that some students will require unequal amounts of time, i.e., they will need additional time" (National Education Commission on Time and Learning, 1994).

The Commission pointed out that the clock and calendar control American education to a surprising degree -- schools typically open and close at the same time each day; class periods average 51 minutes nationally, no matter how complex the subject or how well-prepared the student. Schools devote about 5.6 hours a day for 180 days to instruction of all kinds, and they award high school diplomas on the basis of Carnegie units, or "seat time" (National Education Commission on Time and Learning, 1994).

"The results are predictable," the report said. The school clock governs how families organize their lives, how

administrators oversee their schools ... how teachers work their way through the curriculum ... how material is presented to students and the opportunity they have to comprehend and master it. "Despite the obsession with time, little attention is paid to how it is used," the Commission said. In 42 states, it noted, "only 41 percent of secondary school time must be spent on core academic subjects." According to the report, longer school days and school years overseas, combined with better use of time, mean that "French, German, and Japanese students receive more than twice as much core academic instruction as American students.... American students cannot learn as much as their foreign peers in half the time," the report concluded. Time is "the missing element in the school reform debate," said the Commission, and the overlooked solution to the academic standards problem. "Used wisely and well, time can be the academic equalizer," stated the report (National Education Commission on Time and Learning, 1994).

But if this transformation requires unprecedented national effort, it does not require unprecedented thinking about school operations. Common sense suffices: American students must have more time for learning. The 6-hour, 180-day school year should be relegated to museums, an exhibit

from our education past. Both learners and teachers need more time -- not to do more of the same, but to use all time in new, different, and better ways. The key to liberating learning lies in unlocking time (Goldberg & Cross, 2005, p. 37).

Given the many demands made of schools today, the wonder is not that they do so poorly, but that they accomplish so much. Our society has stuffed additional burdens into the time envelope of 180 six-hour days without regard to the consequences for learning. The National Education Commission agrees with the Maine mathematics teacher who said, "The problem with our schools is not that they are *not* what they used to be, but that they *are* what they used to be." In terms of time, our schools are unchanged despite a transformation in the world around them. Each of the five issues - the design flaw, lack of academic time, out of school influences, time for educators, and new content and achievement standards - revolves around minutes, hours, and days. If the United States is to grasp the larger education ambitions for which it is reaching, we must strike the shackles of time from our schools (National Education Commission on Time and Learning, 1994).

The American people and their educators need to be very clear about the standards movement. It is not time-free. At least three factors demand more time and better use of it. First, subjects traditionally squeezed out of the curriculum now seek their place in the sun. Additional hours and days will be required if new standards in the arts, geography, and foreign languages are to be even *partially attained*. Second, most students will find the traditional core curriculum significantly more demanding. Materials and concepts formerly reserved for the few must now be provided to the many. More student learning time and more flexible schedules for seminars, laboratories, team teaching, team learning, and homework will be essential (National Education Commission on Time and Learning, 1994).

Some research studies have indicated that year long instruction in math and science realize higher student achievement than block or trimester scheduling. In 1986, a large scale study in Canada reported that better student attitudes and achievement from semester scheduling were not supported by the data, and that the performance of high school students in semester classes was significantly lower than those in year-long classes. This disparity was attributed to the large gaps of time between related

courses that can occur in either the block or trimester format (Evans, 2002, pp. 227-229).

One of Sehr's (1997, p. 178) basic prerequisites for changing American high schools is that teaching and learning should be centered on students' work in research or inquiry learning projects and approaches. To facilitate these approaches, high school schedules will have to be redesigned, creating larger blocks of time and eliminating most forty minute periods. In addition, some breadth of curriculum "coverage" will have to be sacrificed so that greater depth of study might be obtained.

An article by Goldberg and Cross (2005, p. 37) in "Edutopia" stated it best:

In our agrarian and industrial past, when most Americans worked on farms or in factories, society could live with the consequences of time-bound education. Able students usually could do well and accomplish a lot. Most others did enough to get by and enjoyed some modest academic success. Dropouts learned little but could still look forward to productive unskilled and even semiskilled work. Society, however, can no longer live with these results. The reality of today's world is that the global economy provides few decent jobs for the poorly educated. Today, a new standard for an

educated citizenry is required, a standard suited to the twenty-first century, not the nineteenth or the twentieth. Americans must be as knowledgeable, competent and inventive as any people in the world. All of our citizens, not just a few, must be able to think for a living. Indeed, our students should do more than meet the standard; they should set it. The stakes are very high. Our people not only have to survive amid today's changes, they have to be able to create tomorrow's.

Many communities and school districts are resistant to changing to YRE because they fear increasing costs. According to a program evaluation of the Orange County Public Schools in Orlando, Florida, operating costs remained constant after a three year period of YRE in the district. Staffing costs increased the first year due to over-staffing which was corrected the second year. This brought staffing costs back to the pre-YRE level (Fardig, 1992, p. 6).

Another finding of this report was that while staff and students adjusted positively to the new calendar, the results did not indicate a trend either positively or negatively in student achievement (Fardig, 1992, p. 8). However, if YRE was coupled with the trimester schedule and

its improved student achievement, the synergist effect might be remarkable.

The District's staff, students and community may well be very resistant to a schedule change of this magnitude. Deutschman (2005) explores ways to counteract this resistance in the article "Change or Die". He states:

Pioneering research in cognitive science and linguistics has pointed to the paramount importance of framing. George Lakoff, a professor of those two disciplines at the University of California at Berkeley, defines frames as the 'mental structures that shape the way we see the world'. The biggest challenge in trying to change how people think is that their minds rely on frames, not facts.

When the stakeholders of the school district are presented with facts that support a change to YRE, they may not accept them. These facts may not make sense to them because they do not fit into the concept their brains have of a school year. A paradigm shift of this magnitude requires a re-framing of the school year for all stakeholders. District administration must employ emotional persuasion that is positive and inspiring. In the paper "Presencing: Learning From the Future As It Emerges", Scharmer states that re-engineering of

organizational structure requires another approach and level of wide-scale change: one that focuses on the mental models and cultural assumptions that guide actions. In these approaches, which are often referred to as organizational learning, the change desired involves the function of a set of underlying context variables referred to as "mental models" or culture. Organizations that use dialogue to focus on shared mental models and cultural assumptions are believed to be more flexible in respect to other key variables like action, structure, and processes. Hence, reframing focuses on changing action, structure, and process by focusing on new mental models and deep taken-for-granted assumptions.

YRE addresses the aforementioned District's goals in a positive manner. Spring Lake Public Schools would be able to reduce gaps in instruction by distributing breaks throughout the school year with no break longer than four weeks. These shorter but more numerous breaks would improve student learning retention and allow for increased learning and less review when classes resume after a break.

YRE allows for more professional development as faculty is free to attend conferences, workshops or college classes during the breaks throughout the year without missing student days. The current curriculum can be maintained and

there are no additional costs associated with YRE. The school culture would change to encompass YRE, but the established benchmarks of attendance, discipline referrals, graduation and dropout rates could easily be maintained. The high level of teacher-student relationships could be enhanced due to the opportunity for interaction during the shorter breaks in the form of remedial assistance or accelerated learning. YRE would enable Spring Lake Public Schools to become even more effective in educating students and preparing them for life after high school.

Developing an Evaluation Design

Evaluation is the process of determining the worth of any given thing. Evaluation of school scheduling is done in order to establish its true value. The method for the activity consists in the gathering and combining of performance data with weighted goals to obtain either comparative or numerical ratings. Evaluation should be a continuous process that provides the information needed to make changes. The resulting information should be shared with all stakeholders so that everyone involved in the scheduling changes can learn from the process (Queen, 2003, pp. 181-182).

A key question to be asked at the beginning of the evaluation process is whether or not the schedule was implemented as planned. Implementation according to the directives of the plan is very critical. Failure to produce desired results may be a direct outcome of failure to implement the change as designed and intended. Implementation should have three phases: the initiation of the new schedule, the continuation of the schedule and the integration of the schedule into the school culture. All stakeholders must fully understand the new schedule and the changes it brings. Regular and immediate monitoring by administrators would control what is being implemented and guarantee that it is what was intended (Queen, 2003, p. 184).

Because change of any kind always generates critics, the evaluation component should be integral to the scheduling change process. Within a year or two of the move to year-round education, critics will be looking for solid data that either confirms or refutes the benefit of the change. Evaluation allows the district to determine what is working and what is not, thereby allowing the opportunity for corrections.

Spring Lake Public Schools should employ the evaluation tools used to research the impact of trimester

scheduling to research the impact of YRE on the District. Student standardized test scores, staffing levels required, curriculum offerings, staff and supply costs and various aspects of the school culture should be reviewed periodically. Baseline data in these areas should be gathered before implementation of YRE. Data review should occur within three months and six months of implementation and annually thereafter. Trends must be noted and determined to be either positive or negative. Negative trends should be addressed immediately with corrective action. To ensure stakeholder buy-in, surveys should be given to staff, students and the community annually to enable the District to be responsive to concerns or potential problems. It is only by measuring the District's progress, either positively or negatively, that Spring Lake Public Schools can once again be successful with this major paradigm shift in the school calendar.

Identifying Strategies for Program Improvement

A common vision, a good plan, and strong support of all stakeholders are most desirable for a successful change in scheduling. It is of paramount importance to have good leaders of the change who have a clear understanding of the problems with the present system and who are determined to

make improvements. A plan of action based on solid research is one major contribution the superintendent and other administrators can provide their staff, students, parents and community before any change is undertaken.

But in order for the change to be successful, attention should also be paid to stakeholders' frames of reference. The frame that dominates their thinking on how the school year should be organized can be extremely hard to break. When addressing this diverse group of stakeholders, the message should be simple, easy to identify with, emotionally resonant and evocative of positive experiences (Deutschman, 2005).

The school board should be kept well informed of the process for implementation and the ramifications of the schedule change. The superintendent's role is crucial in moving all stakeholders to a consensus conclusion. Committee members should be prepared to give persuasive presentations to various groups in the community. Handout materials should be prepared to address issues such as the reasons for change, how the plan actually works, the benefits expected, the experiences of other schools and how block scheduling will affect various sports and activities. Newsletters should be sent out and articles published in local media. Parents and students should be invited to a

series of orientation meetings prior to the beginning of the first year of the new schedule (Lybbert, 1998, p. 57). Parents and students need to be apprised of the new possibilities for increased student achievement and retention.

School administrators and teachers will have to embrace restructuring efforts. Administrators must not only allow, but actively encourage school restructuring, even when it means sacrificing some of their authority and giving greater autonomy to teachers (Sehr, 1997, p. 179).

One strategy that would contribute greatly to the success of YRE is the creation of a common will. A common will is formed and accessed when a group uncovers the layers of their present reality and develops a shared image and sense of future and purpose. The process of uncovering and accessing common will includes more than what is generally known as "visioning." Common will evolves only after the process of uncovering the layers of reality. Typically, the process starts with the surfacing of individual questions, stories and experiences. It continues with tapping into the emerging new environments, for example, by visiting the school districts on the YRE schedule. The next stage is to use the external experiences as a body of resonance for listening to the

source of the inner music: Where does my, or our, commitment come from? Who is my Self? What is my Work? This stage is about connecting the emerging futures with the essence of both the individual and the collective selves. The last step is to turn all of this into tangible action. In practice, the process of accessing common will is a deep transforming journey, the result of which is a transformation of individuals' identity from victims to co-creators through whom new worlds are being brought to the fore (Scharmer, 2000).

Spring Lake Public Schools has shown that it can be innovative and forward thinking by being the first high school in the State of Michigan to implement the trimester schedule. Its success should be instrumental in allowing the stakeholders to embrace the new paradigm of year-round education.

CHAPTER 3
METHODOLOGY

The Board of Education and administration of Spring Lake Public Schools wanted a quantitative analysis of the effect of trimester scheduling on the District. A program design analysis was determined to be the best vehicle from which to understand the impact of trimester scheduling.

This program design analysis required hands-on data analysis by the researcher. The actual standardized test scores needed for comparison to state and national averages were extracted from documents at Spring Lake Public Schools. District documentation also provided data for the annual number of students and teachers at the High School, the cost of various areas of operation, curriculum offerings and other student incidentals. The validity of the numbers is confirmed by audits performed by State of Michigan employees and/or an independent auditing firm.

Specifically, results of the analysis were needed in the areas of student achievement, staffing, curriculum, cost and school culture as illustrated in the following research objectives:

1. How does trimester scheduling effect student achievement as measured by standardized test scores, work load and meeting the early intervention needs of students?
2. How is staffing effected by trimester scheduling as measured by the number of staff required, teacher preparation time allocated and teacher professional development opportunities?
3. How does trimester scheduling effect curriculum as measured by the variety of classes offered and the demand of Michigan requirements for graduation?
4. How cost effective is trimester scheduling in the areas of staffing, supplies and facilities?
5. How does trimester scheduling effect the school culture with a focus on teacher/student connections, discipline referrals and absenteeism?

The sample population used was the students and teaching staff of Spring Lake High School during the years of 1994 through 2006. The student groups were comprised of both males and females ages 13 through 18 in grades 9 through 12. The student population grew from 541 high

school students in 1994 to 840 students in 2006. In 1994, all of the students resided in the Spring Lake District. However, by 2006, 14.6% of the high school students did not live in the District and were enrolled under the school of choice program.

As a result of this student population growth, the teaching staff grew from a full time equivalency of 33.15 teachers in 1994 to 41.57 in 2006. The teacher group ranged in age from 22 years to 60 years and had education levels from Bachelor degrees in education to advanced Master degrees. All of the teachers were certified by the State of Michigan as qualified teachers.

Data was collected from various District sources. The annual number of students was obtained from the audited pupil accounting records from the years 1994 to 2006. Standardized student test scores were found in the annual reports of Spring Lake Public Schools. These annual reports also provided the number of teachers at the high school for the years 1994 through 2006. Payroll records for this time period provided the compensation costs of these teachers.

Curriculum data was obtained from the District's 1994 to 2006 High School master teacher schedules. These master

schedules listed all of the course offerings for each semester or trimester in this time period. The student data system provided the data in the years 2000 through 2006 of student schedules. The student schedules denoted which classes students took and when. Grades from these classes were also available for review.

The audited financial statements and budgets of the District were utilized to retrieve teacher cost per class taught. Supply cost data and operational cost data were also retrieved from these sources.

Student records were used to obtain discipline referral and attendance data for the years 1998 to 2005. The student drop-out rates as reported to the State of Michigan were also utilized for comparison to state and national averages for these years.

The accuracy of the analyses was dependent upon the accuracy of the data obtained from Spring Lake Public Schools. The District administration gave permission to research all the documentation necessary to answer the questions presented in the program design analysis.

This research study presents the results of the impact of trimester scheduling in the secondary schools of Spring Lake Public Schools. Further, it considers as a result

alternatives in redesign to further improve secondary education in Spring Lake Public Schools in Chapter 4.

CHAPTER 4

DATA EXAMINATION FOR REDESIGN

Spring Lake Public Schools has implemented changes in its secondary schools' schedules that have proven to be beneficial to the District and its students in many areas. However, can greater success be achieved with additional changes and, if so, what are they and how best should they be implemented? The following recommendations are a result of the program design evaluation of trimester scheduling and the needs analysis with the attendant review of the District's data presented in Chapter 2.

One paradigm shift that should be considered is a change to year-round education. Year-round education (YRE) means the reorganization of the traditional school calendar into shorter sessions of instruction with intercessions and breaks distributed throughout the entire year. In the school year 2005-2006 there were 243 high schools in the United States operating under a year-round education calendar with a total student population of 237,612 (National Association For Year-Round Education, 2006).

YRE can be configured using the single-track schedule or the multi-track schedule. In the single-track schedule, the entire building has student days and breaks at the same

time. The multi-track schedule rotates groups of students and faculty through the year with only 75% of them attending at any one time, which increases building capacity.

In the upcoming 2007-2008 school year, Spring Lake Public Schools' calendar has three twelve week trimesters each stretching over a thirteen or fourteen week period due to various breaks. Below is this schedule in calendar form as well as its conversion to the YRE format. In the YRE calendar, the twelve week summer break has been evenly split between the trimesters throughout the year. The holiday break in December has been expanded from eight days to three weeks. Spring break is still available in the second trimester as well as the addition of a week long break for the 4th of July holiday in the third trimester. This week in July, along with the four week break in late August through mid-September, allows for family vacations during the summer months.

The four week periods between the trimesters could be used for students who desire acceleration or enrichment programs and for students who need remediation. Teachers should spend less time on re-teaching material in the YRE single track as no break is longer than four weeks. The more frequent breaks may also result in less teacher

"burnout". Figure 8 on the following page contains the current Spring Lake Public Schools 2007 - 2008 calendar with the trimester schedule in the traditional nine month timeframe.

Figure 8

Current 2007-2008 Calendar																														
First Trimester				Second Trimester				Third Trimester																						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S			
September							October							November							December									
						1	1	2	3	4	5	6	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10	9	10	11	12	13	14	15			
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17	16	17	18	19	20	21	22			
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24	23	24	25	26	27	28	29			
23	24	25	26	27	28	29	28	29	30	31	25	26	27	28	29	30	30	31												
30																														
January							February							March							April									
												1	2	2	3	4	5	6	7	8	1	2	3	4	5					
6	7	8	9	10	11	12	3	4	5	6	7	8	9	9	10	11	12	13	14	15	6	7	8	9	10	11	12			
13	14	15	16	17	18	19	10	11	12	13	14	15	16	16	17	18	19	20	21	22	13	14	15	16	17	18	19			
20	21	22	23	24	25	26	17	18	19	20	21	22	23	23	24	25	26	27	28	29	20	21	22	23	24	25	26			
27	28	29	30	31	24	25	26	27	28	29	30	31	27	28	29	30														
May							June							July							August									
4	5	6	7	8	9	10	1	2	3	4	5	6	7	1	2	3	4	5	3	4	5	6	7	8	9					
11	12	13	14	15	16	17	8	9	10	11	12	13	14	6	7	8	9	10	11	12	10	11	12	13	14	15	16			
18	19	20	21	22	23	24	15	16	17	18	19	20	21	13	14	15	16	17	18	19	17	18	19	20	21	22	23			
25	26	27	28	29	30	31	22	23	24	25	26	27	28	20	21	22	23	24	25	26	24	25	26	27	28	29	30			
							29	30	27	28	29	30	31	31																

Figure 9 on the following page contains the proposed 2007 - 2008 YRE single-track calendar utilizing the trimester format at the high school.

Figure 9

Proposed YRE 2007-2008 Calendar Single-Track																																
First Trimester							Second Trimester							Third Trimester																		
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S					
September						1	October						November						December						1							
2	3	4	5	6	7	8	1	2	3	4	5	6	1	2	3	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
9	10	11	12	13	14	15	7	8	9	10	11	12	13	4	5	6	7	8	9	10	9	10	11	12	13	14	15					
16	17	18	19	20	21	22	14	15	16	17	18	19	20	11	12	13	14	15	16	17	16	17	18	19	20	21	22					
23	24	25	26	27	28	29	21	22	23	24	25	26	27	18	19	20	21	22	23	24	23	24	25	26	27	28	29					
30	28	29	30	31	25	26	27	28	29	30	30	31	30	31																		
January						1	2	3	4	5	February						March						April						1			
6	7	8	9	10	11	12	3	4	5	6	7	8	9	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	10	11	12	13	14	15	16	9	10	11	12	13	14	15	13	14	15	16	17	18	19					
20	21	22	23	24	25	26	17	18	19	20	21	22	23	16	17	18	19	20	21	22	20	21	22	23	24	25	26					
27	28	29	30	31	24	25	26	27	28	29	23	24	25	26	27	28	29	27	28	29	30											
May						1	2	3	June						July						August						1	2				
4	5	6	7	8	9	10	1	2	3	4	5	6	7	1	2	3	4	5	3	4	5	6	7	8	9							
11	12	13	14	15	16	17	8	9	10	11	12	13	14	6	7	8	9	10	11	12	10	11	12	13	14	15	16					
18	19	20	21	22	23	24	15	16	17	18	19	20	21	13	14	15	16	17	18	19	17	18	19	20	21	22	23					
25	26	27	28	29	30	31	22	23	24	25	26	27	28	20	21	22	23	24	25	26	24	25	26	27	28	29	30					
	29	30	27	28	29	30	31	31																								

Another calendar alternative is a multi-track YRE arrangement, which is shown in Figure 10 below. This schedule increases the physical capacity of the school because one-quarter of the student and staff population are on vacation at any given time. This allows the building to accommodate twenty-five percent more students than the one-track calendar. This schedule would work well in elementary classrooms where the students stay with one teacher all day, but could be problematic for secondary

schools where students change classrooms for each subject. It may require more staff in buildings with less than 1,200 students which would lead to higher costs.

Figure 10

Track A	B				B				B			
Track B		B				B				B		
Track C			B				B				B	
Track B				B				B				B
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
B=Break												

Because Spring Lake Public Schools has limited facilities at the elementary level and desires smaller class sizes, the multi-track YRE format would allow the District to educate these students with the current number of classrooms. Another positive aspect of the multi-track YRE format is it is not expected to require additional teacher costs when implemented.

Once the new design has been determined and before the implementation, the evaluation process must be developed which will be utilized to determine the effectiveness of YRE and to ensure its success. The evaluation tools used in the analysis of the effects of trimester scheduling should be again employed in the analysis of year-round education. Data should be gathered before implementation

to establish the base line levels of student achievement, staffing, curriculum, cost and aspects of the school culture. These areas should all be examined again within six months of implementation of YRE and then annually after that time.

In the area of student achievement, test results from the ACT and the Michigan High School Proficiency Test should be compared to pre-YRE data to determine if YRE has any affect on student learning. Post-YRE data should be compiled over several years to determine any trending. Teachers should track the amount of time spent at the beginning of the fall trimesters on relearning material, which should decrease due to a shorter summer break.

In the area of staffing, professional development should be analyzed as to any increase or decrease in amount of time available and how many teachers took advantage of increased opportunities. The number of students to teacher ratios should be analyzed annually to determine what, if any, affect YRE has on them.

Curriculum offerings will probably not change much initially after implementation of YRE, however, the ability of the District to respond to State required changes should be monitored. Student demand for elective classes should be evaluated each trimester to ensure that the District is

providing classes of interest and relevance to the students.

Cost is one area which must be closely scrutinized. Teacher cost per class taught data should be gathered at the beginning of the implementation and then bi-annually to determine any trends. It would be expected to rise slightly each year due to salary and benefit cost increases that the District pays. Any substantial increase should be investigated immediately to determine the cause.

The cost of supplies should be determined on a per student basis annually. No increase is expected that is attributable to YRE, however, a slight increase is realistic due to the rising prices of supplies.

If a multi-track YRE is implemented, the cost of administrative and support services may rise by a substantial amount due to having 75% of the student population in attendance at any one time. These increases should be offset by the ability to educate more students in the same amount of space, thereby increasing revenues. The cost of teacher salaries, supplies, support services, and other operational costs should be reported on a per student basis for easier comparison and to avoid influences from fluctuating student numbers.

School culture will be dramatically changed in many ways. Surveys should be given to students, staff and families to determine how well they are adjusting to the YRE schedule. Administrators should be willing to "tweak" the schedule if it would make it more acceptable to the stakeholders. Absenteeism and discipline referrals should continue to be tracked to determine how YRE affects the student behavior.

In summary, the researcher proposes that Spring Lake Public Schools implement the YRE model for the District. Specifically, a single-track YRE should be utilized in the secondary schools and the multi-track YRE should be implemented in the elementary schools. District administration should facilitate stakeholder acceptance by providing information in a positive and inspiring manner. This will lead to stakeholders' re-framing of the school year and a change of their mental models of how to schedule instructional time.

Continual evaluation of the new schedule is imperative to its success. The administration must determine if the implementation of the schedule change is consistent with its design and then measure the impact of the change in the five key areas of student achievement, staffing, curriculum, cost and school culture. Allowances must be

made for re-design in areas that are not satisfactory and allow for input from stakeholders. YRE will allow Spring Lake Public Schools to build upon its successful past while responding to the future of education.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Spring Lake Public Schools aspired to a more effective way of providing a quality education to its students so they were better equipped for the competitiveness of the emerging global economy. The District implemented trimester scheduling at its secondary schools in 2000 to improve student learning and preparedness for the future.

Chapter 1 defined the problem as a program design evaluation that examined the impact trimester scheduled had in the secondary schools of Spring Lake Public Schools. Research objectives were defined for student achievement, staffing, curriculum, cost and school culture.

Chapter 2 focused on how trimester scheduling affected the areas of student achievement, staffing, curriculum, cost and school culture. District goals were identified in each of these areas. Program alternatives were developed to allow District attainment of these goals. An evaluation design was provided to assist in examining the success of the alternative programs implementation and also of the

District's goals. Strategies were identified to assist with the success of the new programs.

Chapter 3 detailed the methodology employed in the evaluation of the impact of trimester scheduling at Spring Lake Public Schools. District data was utilized from the years 1994 to 2006. Reviewed data included student standardized test scores, the annual number of students and staff, curriculum offerings, the direct cost of trimester scheduling in terms of staff and supplies. Also reviewed were various aspects of the school culture, such as the interaction time of teachers and students, discipline referrals and the graduation and dropout rates.

Chapter 4 examined the program redesign of year round education (YRE). As a result of the data collection of the needs analysis in Chapter 2, the researcher proposed a move to single-track YRE for the secondary schools and multi-track YRE for the elementary schools at Spring Lake Public Schools. An evaluation design incorporated the evaluation tools used in the evaluation of the impact of trimester scheduling. Continual evaluation was deemed necessary to ensure the success of the YRE calendar design.

Conclusions

This program evaluation of the impact of trimester scheduling in the secondary schools of Spring Lake Public Schools answered the research objectives of the evaluation as follows:

1. How does trimester scheduling effect student achievement as measured by standardized test scores, work load and meeting the early intervention needs of students?

Comparisons of student standardized test scores demonstrate that higher scores were obtained and maintained after the implementation of the trimester schedule. Student work load decreased as they had one less class per day that required homework and/or studying for a test.

A major benefit that Spring Lake Public Schools has realized with the trimester schedule is the ability of a student to immediately retake a class in which he/she did poorly or failed. This early intervention is instrumental in helping at-risk students succeed.

2. How is staffing effected by trimester scheduling as measured by the number of staff required,

teacher preparation time allocated and teacher professional development opportunities?

No more staff was required to teach in the trimester schedule and daily teacher preparation time was increased. The amount of preparation needed was decreased as teachers teach four daily classes in the trimester schedule, one less than in the traditional six-period day. Also, Spring Lake Public Schools purposefully has teachers teach more than one period of a subject per day, thereby reducing the need to prepare for many different subjects. Faculty professional development was not significantly increased or decreased by the trimester schedule.

3. How does trimester scheduling effect curriculum as measured by the variety of classes offered and the demand of Michigan requirements for graduation?

The trimester schedule allows students to enroll in fifteen different classes per year which enables them to easily meet the State of Michigan graduation requirements. Students are also able to experience more elective classes in the trimester schedule than the traditional semester schedule allows.

4. How cost effective is trimester scheduling in the areas of staffing, supplies and facilities?

Teacher instructional time increased from ten classes per year in the traditional semester schedule to twelve classes per year in the trimester schedule. Teacher cost per class taught dropped dramatically after trimester scheduling was implemented which clearly demonstrated that the same number of teachers utilized in the semester schedule could teach the additional classes offered in the trimester schedule. Neither supply costs nor facility operational costs were impacted by the implementation of the trimester schedule.

5. How does trimester scheduling effect the school culture with a focus on teacher/student connections, discipline referrals and graduation and dropout rates?

The expanded class time of seventy-two minutes greatly increased the opportunities to improve teacher/student relationships as more class time could be spent on achieving a one-on-one personal connection. These connections advanced the teachers' effectiveness and student learning.

Student disciplinary referrals decreased after trimester implementation. This was partially due to students becoming more successful academically as the trimester schedule allows for earlier interventions for at-risk students. Also, student hall time and the attendant opportunity for altercations were reduced as students changed classrooms one less time per day than in semester scheduling.

Spring Lake Public Schools has historically had very high graduation rates and very low dropout rates. Trimester scheduling did not adversely impact these areas and allowed the District to maintain its success.

Recommendations

This researcher recommends that Spring Lake Public Schools continue the trimester schedule in its secondary schools. It is also recommended that a YRE calendar be implemented to build on the trimester success. The secondary schools would benefit from a single-track YRE format. The implementation of the multi-track YRE program would ease the overcrowded conditions in the elementary schools and allow better facility usage without the cost of building expansion. Additional research must be done to

evaluate YRE after implementation to determine its value to Spring Lake Public Schools and to identify areas that need correcting.

More opportunities for administrator and teacher professional development should be built into the breaks throughout the YRE calendar. Continuous learning by staff will better prepare them to assist students to become successful at Spring Lake Public Schools and beyond.

Spring Lake Public Schools enjoys a sterling reputation statewide as an innovative and successful public school district. Trimester scheduling has played a large part in developing this reputation. The year round education calendar and additional staff professional development will enable Spring Lake Public Schools to continue setting the standard to which other school districts aspire.

REFERENCES

- Achilles, C. M. (1999). *Let's Put Kids First, Finally: Getting Class Size Right*. Thousand Oaks, CA: Corwin Press, Inc.
- Borman, G. D. & Boulay, M. (2004). *Summer Learning: Research, Policies and Programs*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Canady, R. L., & Rettig, M. D. (1995). *Block Scheduling: A Catalyst for Change in High Schools*. Princeton, NJ: Eye on Education, Inc.
- Cromwell, S. (2005). *Block Scheduling: A Solution or a Problem?* Retrieved January 21, 2007, from http://www.educationworld.com/a_admin/admin/admin029.shtml
- Deutschman, A. (2005). Change or Die. *Fast Company Magazine*, Gruner + Jahr USA Publishing.
- Education World. (2005). *Block Scheduling: A Solution or a Problem?* Retrieved January 21, 2007, from http://www.educationworld.com/a_admin/admin/admin0229.shtml
- Evans, D. L. (2002). *Taking Sides: Clashing Views on Controversial Issues in Secondary Education*. Guilford, CT: McGraw-Hill/Dushkin.

- Fardig, D. (1992). *Year-Round Education Program Evaluation Report*. Unpublished doctoral dissertation.
- Fernandez, C. & Yoshida, M. (2004). *Lesson Study: A Japanese Approach to Improving Mathematics Teaching and Learning*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Gandara, P. C. (2000). *The Dimensions of Time and the Challenge of School Reform*. Albany, NY: Albany State University of New York Press.
- Goldberg, M., & Cross, C. T. (2005, September). In *Time Out*. Retrieved February 25, 2007, from Edutopia Web Site: http://www.edutopia.org/magazine/edlarticle.php?id=Art_1333&issue=sep_05
- Hottenstein, D. S. (1999). Block Scheduling's Success Formula. *The School Administrator, March*. Retrieved February 9, 2007, from American Association of School Administrators Web Site: <http://www.aasa.org/publications/saarticledetail.cfm?ItemNumber=3380>
- Johnson, D. P. (2005). *Sustaining Change in Schools: How to Overcome Differences and Focus on Quality*. Alexandria, VA: Association for Supervision and Curriculum Development.

- Keen, M. F. (1999). Three Semesters for Learning. *The School Administrator*, 56, 27-29.
- Lybbert, B. (1998). *Transforming Learning with Block Scheduling*. Thousand Oaks, CA: Corwin Press, Inc.
- Michigan Department of Education. (2006, November). *Michigan Merit Curriculum High School Graduation Requirements*. Retrieved January 21, 2007, from <http://michigan.gov/mde/0,1607,7-140-38924--,00.html>
- National Association For Year-Round Education. (2006). Retrieved February 2, 2007, from <http://nayre.org>
- National Center for Educational Statistics (2005). Retrieved April 3, 2007, from <http://nces.ed.gov/programs/digest/d05/lt2.asp#11>
- National Commission on Excellence in Education. (1983, April). *A Nation at Risk: the Imperative for Educational Reform*. Retrieved January 28, 2007, from <http://www.ed.gov/pubs/NatAtRisk/index.html>
- National Education Commission on Time and Learning. (1994, April). *Prisoners of Time*. Retrieved February 3, 2007, from <http://www.ed.gov/pubs/PrisonersOfTime/index.html>

- Organization for Cooperation and Development. (2005).
Retrieved February 18, 2007, from
[http://ocde.p4,siteinternet.com/publications/doifiles/
012005061T032.xls](http://ocde.p4.siteinternet.com/publications/doifiles/012005061T032.xls)
- Organization For Cooperation And Development. (2006).
Education at a Glance. Retrieved February 18, 2007,
from <http://www.oecd.org/dataoecd/47/51/37363421.xls>
- O'Shea, M. (2005). *From Standards to Success*. Alexandria,
VA: Association for Supervision and Curriculum
Development.
- Queen, J. A. (2003). *The Block Scheduling Handbook*.
Thousand Oaks, CA: Corwin Press, Inc.
- Rettig, M. D., & Canady, R. L. (2003, October). *Block
Scheduling's Missteps, Successes and Variables*.
Retrieved February 9, 2007, from
[http://www.aasa.org/publicastions/saarticledetail.cfm?
ItemNumber=1584](http://www.aasa.org/publicastions/saarticledetail.cfm?ItemNumber=1584)
- Schmarmer, C. O. (2000, May). *Presencing: Learning From the
Future As it Emerges*. : MIT Sloan School of
Management.
- Sehr, D. (1997). *Education for Public Democracy*. Albany,
NY: Albany State University of New York Press.

Semb, G. B., & Ellis, J. A. (1994). Knowledge Taught in School: What Is Remembered? *Review of Educational Research*, 64(2), 253-286.

State Of Michigan (2004). Retrieved April 3, 2007, from Center for Educational Performance and Information Web Site:

http://www.michigan.gov/documents/DROP_80618_7.pdf

Walker, K. (). *Research Brief: Trimester Schedule*.

Retrieved February 2, 2007, from

<http://www.principalspartnership.com/trimester.pdf>

Wu, E. (2005, October 4). *U.S. Falls in Education Rank Compared to Other Countries*. Retrieved January 28, 2007, from

<http://kapi.kcc.hawaii.edu/upload/fullnews.php?id=52>