

THE MICHIGAN SEAT TIME WAIVER:
ITS IMPACT ON STUDENTS, AT RISK AND NON AT RISK,
AND THE PROBABILITY OF GRADUATION

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“The problems that exist in the world today
cannot be solved by the level of thinking that created them.”

Albert Einstein

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This dissertation is dedicated to my family.
Thank you for your love and support.
It is a gift to be a part of something so special where
loyalty, respect, high expectations, and unconditional love
shape lives for generations.

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ABSTRACT

THE MICHIGAN SEAT TIME WAIVER: IT'S IMPACT ON STUDENTS, AT RISK AND NON AT RISK, AND THE PROBABILITY OF GRADUATION

by Keely P. Mounger

Michigan schools are faced with many challenges. Low graduation rates and a critically high number of annual high school dropouts plague the state. Federal mandates require increased standards for all students to achieve academic proficiency and to close the gap for minority and otherwise at risk students. Educators continue to seek and implement strategies to keep students in school. Additionally, there is a need to facilitate models of instruction which engage today's technologically sophisticated learners. In response to these issues the Michigan Department of Education endorsed changes to the pupil accounting rules to waive seat time requirements for students. The seat time waiver allows schools to create flexible online options for students outside the boundaries of brick and mortar schools.

The purpose of this study was to determine if participation in the seat time waiver impacts the probability of a student graduating from high school and if participation in the seat time waiver impacts the probability of an at risk student graduating from high school. The categorical dependent variable was graduation and the categorical independent variables were at risk status and participation in the seat time waiver.

This study is quantitative, non experimental research. The study involved a population size of 1037, 2009/2010 fourth and fifth year seniors from five high schools around the state of Michigan. Purposive sampling was used to select high schools that had seniors on the seat time waiver in the 2009/2010 school year. Permission was

obtained from the four district superintendents to review student graduation data, at risk status and seat time waiver participation for seniors from the 2009/2010 school year. Confidentiality was a priority. Data was collected and entered into SPSS. Descriptive analysis was used to provide information in bar graph form. Binary logistic regression was conducted to determine the impact of the independent variables of at risk status and seat time waiver participation on the dependent variable of graduation. Additionally, gender was reviewed as a third independent variable.

Results indicated that utilizing a seat time waiver impacted the probability of graduation for both at risk and non at risk students. Specifically, the probability of graduation for non at risk students was positively impacted. The probability of graduation for at risk males was also positively impacted. The probability of graduation for at risk females was negatively impacted

The concept of the seat time waiver, allowing students to learn any place, any time, any pace, using teacher led online courses, is one model that takes into consideration the characteristics of today's learner and the skills necessary for success in the 21st century. This research project on the use of a seat time waiver to create flexible online opportunities for public school students showed results similar to other recent studies. It adds to the conversation of online learning as an effective instructional model for many students.

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CHAPTER I

INTRODUCTION

Michigan schools are faced with many challenges. Low graduation rates and a critically high number of annual high school dropouts plague the state. Federal mandates require increased standards for all students to achieve academic proficiency and to close the achievement gap for at risk students. Educators continue to seek and implement strategies to keep students in school. Additionally, there is a need to facilitate models of instruction which engage today's technologically sophisticated learners. In response to these issues, the Michigan Department of Education endorsed changes to the pupil accounting rules to waive seat time requirements for students. Previously, pupil accounting regulations stipulated students be in a school setting with required daily attendance and virtual courses be restricted to two per semester. The seat time waiver allows schools to create flexible online options outside the boundaries of brick and mortar schools (Michigan Department of Education, Pupil Accounting Manual, 5-O-B Seat Time Waiver, 2010).

This study will serve as beginning research on the impact the seat time waiver has on probability for graduation for Michigan students and for Michigan at risk students. The seat time waiver is in its infancy stage as a way for students to acquire credits toward graduation. The following discusses the background, purpose and significance of the study. This chapter details the research questions and null hypotheses being investigated. Chapter one defines the pertinent terms related to the topic and the project and outlines the assumptions, delimitations, and limitations of the project. The chapter ends with a brief overview of the literature review, timeline and methodology for the study.

Background

The State of Michigan has substantially changed the requirements for high school graduation. Far greater emphasis is placed on rigor, achievement and proficiency. On April 20, 2006 Governor Jennifer Granholm “signed into law one of the most comprehensive sets of high school graduation requirements in the nation called the Michigan Merit Curriculum” (Michigan Department of Education High School Graduation Requirements, 2006). The law is applicable to all students beginning with those entering the eighth grade 2006. The changes are a result of federal legislation, the No Child Left Behind Act (NCLB), implemented in 2002. NCLB is a federal program providing substantial funding to states that agree to follow certain guidelines related to public education. NCLB calls participating public schools to higher standards - requiring accountability for all students in obtaining academic proficiency and a commitment to close the achievement gap that exists for disadvantaged and minority students (No Child Left Behind, 2002). At no time in the history of public education, prior to NCLB, were public schools expected to educate **all** students to proficiency.

In 2007, Michigan State Superintendent Michael Flanagan extended an invitation to all interested Michigan public schools to “expand opportunities for high school students by seeking waivers from the administrative rules and pupil accounting rules that cause[d] barriers to innovation and student academic success” (Michigan Department of Education, Seat Time Waiver Request Letter, 2007). The Michigan Department of Education provided clarification of the seat time waiver to school districts via the Pupil Accounting Manual. “An intermediate school district, a local school district, or a public school academy seeking to offer pupils access to online learning options and seeking to

offer the opportunity to continue working on a high school diploma or grade progression without actually attending at the school facility may choose to do so under a seat time waiver. The seat time waiver is a Department approved alternative education program or another innovative program which allows a district to provide a number of courses to pupils through virtual learning that exceeds the maximum number allowed under Administrative Rule 340.11. Section 101(9), of the State School Aid Act (MCL 388.1701(9)), permits the Superintendent of Public Instruction to waive the required days and required hours of pupil instruction for alternative education programs or another innovative program approved by the Department, including a four (4) day school week. Section 380.1281 of the Revised School Code allows the Superintendent of Public Instruction the right to waive for a limited time administrative rules if the district can demonstrate that the district can address the intent of the Rule in a more effective, efficient, and economical manner or that the waiver is necessary to stimulate improved pupil performance. Administrative Rule 340.18 grants the Superintendent of Public Instruction the authority to waive for a limited time Pupil Accounting Rules. It is under these provisions that the seat time waivers are granted” (Michigan Department of Education, Pupil Accounting Manual, 2010).

The Genesee County Intermediate School District (GISD) was among the first few Michigan districts to receive the waiver (Svitkovich & Knox-Pipes, 2009). Dr. Tom Svitkovich, GISD Superintendent, responded to Dr. Flanagan’s invitation by seeking a waiver to the following instructional seat time requirements:

- **Expelled or Suspended due to disciplinary action / local district policy**

- Section 5N-5 of the MDE Pupil Accounting Manual
 - “A pupil provided a minimum of two nonconsecutive hours per week of individualized instruction, who was suspended or expelled under local school board policy, is a pro-rated FTE with the pro-ration based on the number of hours of instruction...”

A waiver of this rule will allow this population access to self-paced on-line classes. Four on-line classes will be considered full time. Weekly visits by a mentor teacher will provide assistance and monitor progress.

- **Virtual Learning at a pupil’s self scheduled time/no regular attendance**

- Section R340.11 – Pending Administrative Rules
- Section 5O-2(3) of the MDE Pupil Accounting Manual
 - “The pupil must be concurrently enrolled and attending at least one course offered by the district in which credit is earned and regular daily attendance is required.”
 - “The pupil must be in attendance on the count day or during the 10/30 day rule period during the class time designed for the course on the pupil’s class schedule.”
 - “This type of virtual learning course is limited to two per semester per pupil.”

A waiver of these rules will allow selected pupils to access self-paced on-line classes without the in-school seat time requirement. Weekly visits by a mentor teacher will provide assistance and monitor progress.

- **Post Secondary Option**

- School Aid Act – Section R340.17 – Pending Administrative Rules
- Section 5G-3(1) of the MDE Pupil Accounting Manual
 - “The pupil is enrolled and attending at least one high school course.”

A waiver of this rule will allow a more flexible scheduling of selected pupils to enroll exclusively in post-secondary classes, or combine with virtual or work-based experiences.

- **Work-Based Learning Experience**

- Section R340.15 – Pending Administrative Rules
- Section 5P-7(1) of the MDE Pupil Accounting Manual
 - “The work-based learning experience shall not generate more than one-half of the pupil’s FTE, not to exceed.5.”

A waiver of this rule will allow a more flexible scheduling of selected pupils to enroll in individualized work-based learning experiences or a combination of work-based learning, post-secondary classes, and virtual learning experiences.

Approval to waive the above instructional requirements creates significant any time, any place, and any pace opportunities for students to earn high school credits toward graduation. Such flexibility will likely decrease dropout rates and increase student achievement. It will also provide greater individualized instruction and more access to early post secondary experiences and early work force opportunities. The seat time waiver has the potential to substantially impact how and where learning takes place for Michigan youth. Ultimately, the goal is to ensure that all Michigan students acquire the skills and knowledge necessary for high school graduation so they are college and career ready.

The Genesee Intermediate School District received the seat time waiver opportunity due to successful distance and on-line learning programs already in place. The Genesee Network for Education Telecommunications (GenNET) was well developed at the GISD and offered over 600 courses using vendors from around the country. The courses ranged from remedial to advanced placement level options and included a host of content and subject options. GenNET technology included voice, video and a data system that connected 205 school buildings throughout Genesee County. GenNET also had existing partnerships with regional educational media centers across the state providing distance learning and online opportunities throughout Michigan at a reasonable cost (Genesee Intermediate School District, 2008).

Numerous districts applied for the original seat time waiver but due to a lack of resources the Michigan Department of Education was unable to adequately process the

applications. In response to this problem, Dr. Svitkovich proposed an expansion of the GISD seat time waiver model to include all Michigan public school districts. In July of 2009, Superintendent Flanagan approved the opportunity for districts to access the seat time waiver by entering into partnership with the GISD (Sviktovich, Knox-Pipes, Hagel, & Schantz, 2010).

Fifty five of fifty seven Intermediate School Districts entered into partnership with the GISD allowing nearly every local district in Michigan access to the seat time waiver. Over 400 local districts entered such agreements in August, 2009. There are clear provisions for use of the waiver. Specifically, “the district is required to pay any associated tuition charges or fees for the seat time waiver course(s) and other online activities on behalf of the eligible pupil. These costs include:

- a. Student Computer – The district must offer to provide a computer for each pupil enrolled under an approved seat time waiver (*Bond v. Ann Arbor School District*, 178 N.W.2d 484 (Mich. 1970); Michigan Department of Education Pupil Accounting Manual January 2011 5-O-B 3*District, 383 Mich 693, 1970*). The computer must include internet capacity and appropriate software configuration for use by the pupil in the home for the length of time that the pupil is enrolled in the seat time waiver program.
- b. Broadband Connectivity – The district must offer to provide broadband internet for a pupil enrolled in the program (*Bond v. Ann Arbor School District*, 178 N.W.2d 484 (Mich. 1970)). The broadband internet capacity shall be a minimum of 1Mbps up/ 3 Mbps down for use in the home for the length of time that the pupil is enrolled in the seat time waiver

program. For districts with an approved seat time waiver located where broadband access is severely limited to the online learning, the Department of Education must give written approval for “offline” computer based delivery of instruction and an alternative means of providing teacher-pupil interaction shall be required and shall be documented. (Michigan Department of Education, Pupil Accounting Manual, 5-O-B, Seat Time Waiver, 2010)

Districts signed agreements requiring strict accounting of students and the availability of a mentor teacher to provide weekly contact with each student waiving seat time. Boards of Education were required to pass resolutions endorsing the GenNET courses as acceptable course credits for that specific district (Svitkovich et al., 2010).

The concept of the seat time waiver appeals to various student populations. All students are eligible to access the seat time waiver option. Seat time waiver candidates may include homebound or home-school students; suspended and expelled students; those who may have otherwise gone into an alternative setting; pregnant students who prefer not to be in school; students wishing to accelerate their high school program for early graduation; or any student who simply may not fit into a traditional high school setting. Students enrolling in the seat time waiver option need to be strong independent learners. Student success will depend on the student’s ability to learn outside the bounds of the traditional classroom (Svitkovich, 2008). The law requires that every student be assigned a mentor from the school to ensure that support is available and that student success is monitored.

Problem Statement

Dropping out of school presents tremendous challenges for individuals and society. The economic consequences for families and communities are profound. The life path for dropouts is far more likely to include lack of employment, less earnings, public assistance, and prison (Cristle, Jolivette, & Nelson, 2000). The Center of Labor Market studies estimates that adults with high school diplomas “contribute major fiscal benefits to the country over their working lifetime” (Center for Labor Market Studies, 2009, p. 12). Specifically, the fiscal benefit of a working high school graduate paying taxes versus a non-working high school dropout receiving public assistance or entering the legal system is more than \$250,000 per youth over a lifetime (Center for Labor Market Studies, 2009).

At risk youth are particularly vulnerable for dropping out of high school. Section 31a of the State School Aid Act defines at risk as a student meeting one of a number of criteria specified in the legislation. These criteria include: is a victim of child abuse or neglect; is below grade level in English language and communication skills or mathematics; is a pregnant teenager or teenage parent; is eligible for a federal free or reduced-price lunch subsidy; has atypical behavior or attendance patterns; or has a family history of school failure, incarceration, or substance abuse.

For pupils for whom the results of at least the applicable Michigan education assessment program (MEAP) test have been received, at-risk pupil also includes a pupil who does not meet the other criteria under this subsection but who did not achieve at least a score of level two on the most recent MEAP English language arts, mathematics or science test for which results for the pupil have been received. For pupils for whom the

results of the Michigan merit examination have been received, at risk pupil also includes a pupil who does not meet the other criteria under this subsection but who did not achieve proficiency on the reading component of the most recent Michigan merit examination for which results for the pupil have been received, did not achieve proficiency on the mathematics component of the most recent Michigan merit examination for which results for the pupil have been received, or did not achieve basic competency on the science component of the most recent Michigan merit examination for which results for the pupil have been received. For pupils in grades K-3, at-risk pupil also includes a pupil who is at risk of not meeting the district's core academic curricular objectives in English language arts or mathematics. Section 31a of the State School Aid Act provides funding to eligible districts for supplementary instructional and pupil support services for pupils who meet the at-risk criteria. The amount of the additional allowance shall be based on the number of actual pupils in membership in the district or public school academy who met the income eligibility criteria for free breakfast, lunch, or milk in the immediately preceding state fiscal year (Michigan Department of Education, Section 31a, 2010). For the purpose of determining at risk status in this study, free and reduced lunch status is used as the criteria in accordance with section 31a.

Students dropout of school for four major reasons: “academic failure, disinterest in school, problematic behavior, and life events” (Princotta & Reyna, 2009, p. 12). Schools must develop strategies to lower dropout rates. States are encouraged to develop “rigorous, relevant options for earning a high school diploma” and to focus on awarding credit for performance not seat time (Princiotta & Reyna, 2009, p. 5). The Michigan seat time waiver creates opportunities to address the major reasons for dropping out of school.

Students experiencing academic failure are often behind due to absenteeism and tardiness. These problems do not exist in an any time, any pace, any place model. Lack of interest is eliminated when students have more input into course and project selection. Problematic behavior is generally associated with negative interactions with peers. Students accessing courses online and outside the walls of traditional schools do not have behavioral issues related to school. Students who experience life events such as pregnancy, the loss of a parent, health problems, or homelessness can continue their educational process while attempting to deal with such personal issues. These are compelling reasons to study the seat time waiver and its impact on student graduation.

Initiatives to provide students with alternative paths to high school graduation may serve to increase individual success and to improve society as a whole. Seat time waivers offer students flexibility and a creative alternative to traditional high schools. Research on the waiver's impact on students, economically at risk students in particular, and credit acquisition toward graduation does not exist. The Michigan Department of Education is beginning to gather credit acquisition and graduation data related to the seat time waiver. No specific research exists assessing the academic success of students attempting to acquire credits and graduate using the seat time waiver model.

Waiving the pupil accounting rules to allow students an opportunity to acquire high school credits outside the walls of traditional schools is a new and innovative concept for Michigan. Research must be conducted to determine if the model is effective in terms of student achievement and high school graduation rates. The lack of such research is a significant issue. This project will serve as beginning research in determining the impact of the model.

Conceptual Framework

The study was conducted using two ethical frameworks – the ethic of profession and the ethic of critique (Shapiro & Gross, 2008). The ethic of the profession in education asks educators to “consider the best interests of the students, who may be diverse in their composition and their needs (Shapiro & Gross, 2008, p. 35).” The seat time waiver is an initiative which provides educators with flexible options for assisting students with diverse needs in acquiring credits toward graduation. The ethic of critique is “aimed at awakening all of us to inequities in society and, in particular, to injustices within education at all levels” (Shapiro & Gross, 2008, p. 25). This research specifically examined the results of at risk students using the seat time waiver. For the purposes of this study, at risk students will be identified based on their school free and reduced breakfast and lunch status. This is the method of identification utilized by the State of Michigan when allocating funding for at risk students based on section 31a of the State School Aid Act (Michigan Department of Education, Section 31a, 2010). The initiative may present new possibilities for credit acquisition and graduation for those who have been ignored, oppressed or in some way under served. This research project examined the graduation data of students enrolled in the seat time waiver option from these ethical frameworks as a way of adding to the conversation of how students from varying circumstances may be impacted by flexibility in credit acquisition toward graduation.

Purpose

The purpose of this study was to determine if participation in the seat time waiver impacts the probability of a non at risk student graduating from high school.

Additionally, the study's purpose was to determine if participation in the seat time waiver impacts the probability of an at risk student graduating from high school. The categorical dependent variable was graduation and the categorical independent variables were at risk status and participation in the seat time waiver.

Research Questions and Hypotheses

The research questions for the study are:

1. Does utilizing a seat time waiver impact the probability of high school seniors graduating?
2. Does utilizing a seat time waiver impact the probability of at risk high school seniors graduating?

The null hypotheses for the study are:

1. Utilizing a seat time waiver does not impact the probability of high school seniors graduating.
2. Utilizing a seat time waiver does not impact the probability of at risk high school seniors graduating.

Significance of the Study

Waiving the pupil accounting rules to allow students an opportunity to acquire high school credits outside the walls of traditional schools was a new and innovative concept for Michigan. Research must be conducted to determine if the model is effective

in terms of student achievement and high school graduation rates. Low graduation rates in Michigan are a significant issue. There is no research on the impact of the seat time waiver on graduation rates. The study will be significant to Michigan educators including teachers, counselors and administrators. It will provide educators with useful data in determining appropriate options for students. The study will be valuable to the Michigan Department of Education as they assess the impact of the seat time waiver on Michigan students. Additionally, the study will be important in adding to the conversation related to the characteristics and factors which likely impact graduation rates.

Definition of Terms

1. Alternative Education - A separate program within a K-12 public school district or charter school established to serve and provide youth a choice or option whose needs are not being met in the traditional school setting. There are three indispensable goals for alternative schools:
 - a. That students attend by choice.
 - b. That the school or program be responsive to unmet local needs.
 - c. That the student body reflects the racial and socio-economic mix of the community (Michigan Department of Education, Alternative Education, 2010).
2. At risk - Section 31a of the State School Aid Act provides funding to eligible districts for supplementary instructional and pupil support services for pupils who meet the at-risk criteria specified in the legislation. Section 31a funds are

limited to direct services to pupils and may not be used for administrative or other related costs. The amount of the additional allowance shall be based on the number of actual pupils in membership in the district or public school academy who met the income eligibility criteria for free breakfast, lunch, or milk in the immediately preceding state fiscal year. (Michigan Department of Education, Section 31a, 2010).

3. Cohort (2010) - The group of students who enrolled in ninth grade in the 2006-2007 school year are assigned to the 2010 cohort (CEPI, Understanding Michigan's Cohort Graduation and Dropout Rates, 2009).
4. Cyber school - a school in which most or all of a student's instruction occurs through online learning. Online learning is defined in Michigan pupil accounting rules as "a nontraditional method of receiving pupil instruction for courses that are taken through online learning or otherwise on a computer or other technology" (Michigan Department of Education, Section 31a, 2010).
5. Dropout - students who leave school (typically high school) before earning or receiving a diploma or who dropout to get a General Equivalency Development Certificate (Michigan Department of Education Universal Ed Brochure, 2006).
6. Fifth Year Student - Students who were categorized as "off-track" at the end of their fourth year and continued in a high school program working toward graduation in the fifth year (CEPI, Understanding Michigan's Cohort Graduation and Dropout Rates, 2009).
7. Fourth Year Student – An "on-track" member of his/her cohort (CEPI, Understanding Michigan's Cohort Graduation and Dropout Rates, 2009).

8. 2010 Graduation rate - The percentage, calculated as On-Track Graduated + Off-Track Graduated divided by the 2010 Cohort, of the total number of students in the 2010 cohort who completed high school with a regular diploma in five years or less (CEPI, Michigan Graduation and Dropout Rate Report, 2009).
9. NCLB - The *No Child Left Behind Act of 2001* – An Act to close the achievement gap with accountability, flexibility, and choice so that no child is left behind (No Child Left Behind Act of 2001, 20 U.S.C. § 6301 et seq. 12). NCLB reauthorized the Elementary and Secondary Education Act (ESEA) - the main federal law affecting education from kindergarten through high school. Proposed by President Bush shortly after his inauguration, NCLB was signed into law on January 8th, 2002. NCLB is built on four principles: accountability for results, more choices for parents, greater local control and flexibility, and an emphasis on doing what works based on scientific research (Center for Educational Performance, 2010).
10. Off-track (graduated & continuing) - completed high school with a regular diploma in more than four years, or did not complete high school in four years and are still continuing in school (CEPI, Michigan Graduation and Dropout Rate Report, 2009).
11. Online learning - the act or experience of one that learns while connected to, served by, or available through a system and especially a computer or telecommunications system (as the Internet) (Merriam Webster, 2011).

12. On-track graduated - completed high school with a regular diploma in four years or less (CEPI, Michigan Graduation and Dropout Rate Report, 2009).
13. Seat time waiver - An intermediate school district, a local school district, or a public school academy seeking to offer pupils access to online learning options and seeking to offer the opportunity to continue working on a high school diploma or grade progression without actually attending at the school facility may choose to do so under a seat time waiver (Michigan Department of Education, Pupil Accounting Manual, 2010).

Assumptions

The research study was based on some important assumptions. The researcher assumed that student demographic and graduation data submitted by districts to the Michigan Education Information System (MEIS) was accurate. Further, the researcher assumed that the Center for Educational Performance and Information (CEPI) combined, stored and reliably reported district data. Finally, the researcher assumed that data reported from the participating high schools regarding seat time waiver students was accurate.

Delimitations

Delimitations for the study included the selected sample and the time frame. The researcher chose to study the graduation, at risk status and seat time waiver participation of high school seniors from five high schools in Michigan creating a sample size of 1037 students. The study only analyzed data related to the 2009/2010 school year. These choices were made in an effort to facilitate immediate feedback on the topic and to

provide initial data adding to the conversation on the effectiveness of the seat time waiver.

Limitations

Limitations of this study included the number of students in the greater sample who participated in the seat time waiver and the socio-economic status of students included in the study. Seat time waiver participation was 3.4% of the sample which is a low number. This limitation is a result of the nature and newness of the seat time waiver program. Using purposive sampling, Districts with varying socioeconomic demographics were selected through the use of purposive sampling; however, knowledge of specifics related to the at risk status of students could not be obtained until the data were collected. These factors could not be controlled by the researcher.

Overview of Literature Review

The seat time waiver is in the infancy stage in Michigan. Data collection and analysis are just beginning. The review of the literature supported the significant need for this research. A review of various literature topics leading to the development of the Michigan seat time waiver was necessary. Themes addressed in the study are high school dropout rates and at risk students, alternative education, technology and on line learning, cyber schooling, and today's learner and 21st century skills. In order to assess the impact of the seat time waiver it was essential to understand the research that exists related to educational issues and models leading to the implementation of the seat time waiver in Michigan.

Overview of Methodology

This study is quantitative, non experimental research. Specifically, the study is causal comparative research. This type of research is also referred to as ex post facto referring to the Latin “after the fact”. The research was designed to investigate the impact the seat time waiver had on graduation rates for at risk and non at risk students. The study involved a population size of 1037, 2009/2010 fourth and fifth year seniors from five high schools around the state of Michigan. Purposive sampling was used to select high schools that had seniors on the seat time waiver in the 2009/2010 school year. Permission was obtained from the four district superintendents to review student graduation data, at risk status and seat time waiver participation for seniors from the 2009/2010 school year. Data was collected, entered into SPSS, analyzed using logistic regression and then reported in this final dissertation.

Overview of Document

The dissertation includes the five chapters required for the dissertation. Chapter I introduces the study and explains the background, purpose and significance of the work. Chapter II provides a review of relevant literature related to the themes leading to the seat time waiver. The themes reflect information related to educational issues and models contributing to the development of the seat time waiver. Chapter III explains the methodology of the study. This includes the research design, population and sample, instrumentation, data collection and data analysis. Chapter IV presents the research findings and discusses the results. Chapter V summarizes the findings, discusses the implications for various stakeholders, and reports suggestions for future research.

CHAPTER II

LITERATURE REVIEW

Seat time waivers are new to Michigan. Research on their impact on students and graduation does not exist. A quantitative study of students involved in the Michigan seat time waiver program serves as beginning research on the impact of the seat time waiver on the probability of graduation for both at risk and non at risk students.

In order to better understand the topic of seat time waivers, at risk students, and the probability of graduation, literature related to the following themes was reviewed:

1. High School Dropout Rates and At Risk Students
2. Alternative Education
3. Technology and Online learning
4. Cyber Schools
5. Today's Learner and 21st Century Skills

Such review provided perspective on learning opportunities created through technology, the overwhelming educational gap existing for at risk students, and the importance of innovative educational reform. Research on students participating in the Michigan seat time waiver program adds to the conversation of innovation, technology and credit acquisition toward graduation for all students.

High School Dropout Rates

There is a direct correlation between high school dropouts and at risk students in poverty. In a 2006 report compiled by the National Center for Education Statistics for the United States Department of Education statistics showed there were 4.5 times as many high school dropouts from low income families as from high income families and 2.5

times as many high school dropouts from low income families as from middle income families. This disparity is true for data collected from 1972-2006. Low income for this report was defined as the bottom 20 percent of all family incomes for each year (Laird, Cataldi, KewalRamani, & Chapman, 2008).

Dropping out of school presents tremendous challenges for individuals and society. The economic consequences for families and communities are profound. The life path for dropouts is far more likely to include lack of employment, less earnings, public assistance, and prison (Cristle, Jolivette, & Nelson, 2000). In 2000, 56 percent of dropouts were unemployed compared to only 16 percent of high school graduates (Stanard, 2003). The average income of a dropout in 2000 was 40 percent less than a high school graduate (Campbell, 2003). Additionally, 52 percent of welfare recipients are dropouts, 82 percent of the prison populations are dropouts and 85 percent of juvenile justice cases are high school dropouts (Standard, 2003). In 2010 it was reported that an average of 7200 students will dropout of school everyday (Foundation for Excellence, 2010).

School non-attendance also shows a strong relationship to dropping out of high school (Cristle et al., 2007). This link between high school absenteeism and dropping out has been well-documented (Ekstrom, Goertz, Pollack, & Rock, 1986; Gleason and Dynarski, 2002; Mensch & Kandel, 1988). Clearly, students in poverty are substantially more at risk for dropping out and dropping out leads to more poverty. Additionally, the link between non-attendance and dropout rates is cause for further exploration of innovative solutions. Seat time waivers for at risk students, especially those from economically challenged families and those who struggle with attendance may provide an

opportunity for more high school age students to work toward credit acquisition and graduation.

Alternative Education

The United States Department of Education defines an alternative education school as “a public elementary/secondary school that addresses needs of students that typically cannot be met in a regular school, provides non-traditional education, serves as an adjunct to a regular school, or falls outside the categories of regular, special education or vocational education” (U.S. Department of Education, Public Alternative Schools and Programs for Students At Risk of Education Failure, 2002, p. 55). Most often the term alternative education is used to describe programs serving vulnerable youth, historically unsuccessful and no longer in traditional schools (Aron, 2006). In 2002, there were over 20,000 alternative programs in operation and primarily serving an at-risk population (Lange & Sletten, 2002).

Students referred to public alternative education programs are at risk of failing in regular educational settings. Indicators are poor grades, truancy, disruptive behavior, suspension and pregnancy (U.S. Department of Education, National Center for Education Statistics, 2002, p. 55). Historically, alternative education programs were not held to the same academic standards as traditional programs. No Child Left Behind and the nationwide focus on standards and assessment is impacting alternative education. “The dilemma for policy makers is how to introduce high academic standards in alternative education systems without sacrificing the elements that make alternative programs successful and without compromising the integrity of the high standards” (NGA Center for Best Practices, 2001, p. 3).

Students are entering alternative education programs at record rates. From 1991 to 2001 the rate of students obtaining alternative academic credentials doubled (NGA Center for Best Practices, 2001). In 2000, a statewide study in Michigan indicated that five percent of all high school students were enrolled in the states' 360 alternative education programs, most of which serve at-risk students (Michigan Alternative Education Study Project, 2000).

As indicated, there is extensive research on the growth of alternative education programs, the types of students enrolling in alternative education programs, and changes in accountability. There is little research on the effectiveness of alternative education programs. Advocates have reported the successes of these programs for at-risk youth but “there is still very little consistent wide-ranging evidence of their effectiveness or even an understanding of their characteristics” (Lange & Sletten, 2002, p. 2). Further, according to Lange and Sletten there is very little rigorous evaluation research on the links between characteristics and outcomes.

It is important to review the alternative education statistics and literature for three reasons. First, the Michigan seat time waiver is granted to alternative education programs meeting certain criteria using on-line learning opportunities (Michigan Pupil Accounting Manual, 2007). Second, alternative education programs serve primarily at-risk students which is significant to this seat time waiver study. Finally, 83 percent of alternative education programs provide opportunities for self paced instruction using technology (United States Department of Education, National Center for Education Statistics, 2002). This serves as a direct correlation to how students will receive instruction while in the seat time waiver program.

Technology and Online Learning

“We are in the early stages of a learning revolution” (Voorhees, 2001, p. 5).

Technology is at the forefront of renovating education. Educating America in the 21st century will require expanding innovative educational opportunities and a commitment to achievement for all students. Online education programs are significantly impacting public education (Watson, 2005).

Online learning has rapidly increased since the 1990s. “Online learning – for students and for teachers – is one of the fastest growing trends in educational uses of technology” (U.S. Department of Education, 2010, p. xi.). In 2003 nearly 50,000 K-12 students were enrolled in online courses (Golden, Wicks & Williams, 2004). The primary target populations for online learning or virtual schools include gifted students, students seeking credit recovery, at-risk students and dropouts. Online learning has emerged as a supplement or replacement for face to face classroom instruction for students failing in traditional secondary programs (Chen & Hirumi, 2005). It is estimated that more than one million K-12 students took online courses in the 2007-2008 school year (Picciano & Seaman, 2009). Technology and K-12 enrollment in online courses has out paced all other educational formats in recent years (Setzer & Lewis, 2005).

In the 1990s the U.S. Department of Education funded Project ESTRELLA (Encourage Students through Technology to Reach High Expectations in Learning, Lifeskills and Achievement), a migrant education technology project. Migrant students from Texas working in Montana, New York and Illinois were given laptops and access to the NovaNET computerized, self paced instructional systems. NovaNET at that time housed over 10,000 lessons for students (United States Department of Education, 1998).

Internet access and online mentors were provided to students. These migrant students were particularly at-risk both financially and for dropping out of high school. The ESTRELLA project is recognized as an early example of how technology successfully impacted the marginalized in terms of credit acquisition toward high school graduation. “This project has a clear goal – to enlist technology, families, educators and the migrant community to increase the high school graduation rate and change life choices for migrant students. This project offers perhaps the closest vision of what the 21st century virtual high school or school without walls may look like” (U.S. Department of Education Archived Information, 2005).

By 2000 NovaNET was being used in many high schools for self paced, computerized instruction. A study was conducted in North Carolina high schools comparing outcomes of NovaNET participants with outcomes of a group of students who did not participate in NovaNET courses. The comparison group students were similar to the participants but not an exact match. The study took place over the 2000-2001 school year. Results indicated that the number of failing grades for the NovaNET students decreased significantly from their past performance and their grade point averages increased significantly due to the use of computerized instruction. The comparison group comprised of traditional, non NovaNet students, showed a slight increase in failing grades but a significant increase in grade point averages. Overall, NovaNET helped at risk students pass classes (Harlow & Baenen, 2002).

A 2008-2009 review of the NovaNet instructional program used in North Carolina schools for at risk students and credit acquisition showed a high completion and pass rate for students. Pass rates ranged from 83% to 100% depending on the course taken. Over

time the program increased the rate of success and course completion for students (Bulgakov-Cooke, 2010).

By 2002 online learning options had expanded and close to 50,000 students were enrolled in virtual schools also known as cyber schools with the number growing rapidly (Hadderman, 2002). According to a survey by WestEd's Distance Learning Resource Network, the cyber schools movement is seen as the "next wave" in technology based K-12 education (Clark, 2001).

The educational movement to embrace technology and online learning is strong. "The internet is bringing us closer than we ever thought possible to making learning of all kinds –at all levels, any time, any place, any pace – a practical reality for every man, woman, and child" (Web Based Education Commission, 2000, p.1). "The time is ripe for state boards of education and other state education leaders to think through the various policy questions, consider the implications and adopt policies that will drive technology in directions that effectively maximize student achievement – for *all* students" (National Association of State Boards of Education, 2001, p. 4).

Cyber Schools

Cyber schools, through the charter school movement, are gaining momentum and challenging the traditional public school model of instructional delivery. Classrooms within "brick and mortar" school houses are being replaced by online learning systems termed as nonclassroom based charters (Huerta, Gonzalez, & d'Entremont, 2006). Though cyber schools originally appealed primarily to the home school population this is changing rapidly. It is important to review the research as it relates to student outcomes

and cyber schools. This may provide some insight for seat time waiver programs providing computer based instruction.

As accountability for public schools has increased, cyber schools are also being pressured to report academic data. Achievement data from California revealed that non-classroom based charters have “much lower adjusted test scores than either other charter schools or conventional public schools” (Zimmer, Buddin, Chau, Gill, & Guarino, 2003, p. 49). Zimmer noted that, interestingly, non-classroom based students come from a higher socioeconomic status and considerably lower rates of free and reduced lunch populations. Another study done in California analyzed achievement growth targets set by the California Academic Performance Index. Again, non-classroom based charters were outperformed by classroom based charters and traditional schools (Edwards & Perry, 2005). This information emphasizes the need for further exploration of achievement outcomes for all socioeconomic groups using computer based instruction.

In January of 2008 the Department of Technology and Data Coordination at the Michigan Department of Education prepared a report for the Michigan Senate and Michigan House of Representatives Appropriations Subcommittees on Education and K-12 School Aid. The purpose of the report was to outline the feasibility of “removing barriers to the operation of cyber schools that focus on special student populations such as dropouts or expelled students” (Michigan Department of Education, 2009). The report outlined several cyber schools operating throughout the nation and around the globe including the following:

Connections Academy

- 14 schools in 12 states, mostly charter schools
- Offer 375 courses, a complete high school curriculum including honors courses and foreign language
- Provide skilled tutors and learning coaches
- Strong emphasis in achievement and participation
- Program supplements local school district efforts
- www.connectionsacademy.com/

Insight Schools

- 6,400 students nationwide, 40 percent “previously un-enrolled”
- Incoming student GPA is 1.8
- Operates in 10 states
- Each full time teacher has 150 students
- Offers 120 courses
- Aligns instruction to state standards where applicable
- Full time students receive pre-loaded computer and internet connection
- www.insightschools.net/

Florida Virtual School

- Largest virtual school operating in 32 states and 13 countries
- Instructors are all certified teachers but are not required to live in Florida
- 97% retention rate for teachers
- Florida Virtual has a full time curriculum department
- Homework help lines are available for students
- 12 class enrollments equal one FTE
- Only successful students receive funding
- Local school districts award diplomas
- Students must secure their own computer and internet access
- www.flvs.net/

Indiana University High School

- Has students in all 50 states
- 1,700 students enrolled in high school diploma programs
- Teachers have 20 to 40 students per course
- North Central and NCS accreditation
- Tuition and fees are paid by the student
- No support from the state of Indiana
- Program delivery mirrors a traditional correspondence course concept
- iuhighschool.iu.edu

Michigan Virtual School (Michigan Virtual University)

- 2nd rank virtual school in the country; 2nd longest in operation
- Instructors are all Michigan certified teachers and highly qualified in the subjects that they teach
- More than 11,000 course registrations in 2007-2008; 90 percent completion rate
- Serving more than 800 schools in Michigan
- Provides training to school-based mentors
- Partner in several of Michigan's seat time waiver pilots as education service provider
- www.mivu.org

Not School (based in the UK)

- Current partner with Westwood Community School's "Cyber School" program (seat time waiver)
- Research based, constructivist, project based learning model, targeting drop-outs
- 8 years of operations with 3,500 students completing the re-engagement program
- 93 percent graduate success rate (61% are going to college; 18% obtain employment; 14% are seeking employment)
- www.notschool.net

Ohio Virtual Academy

- 7,000 students in Ohio, many high need students
 - 1,500 former "brick & mortar" teachers
 - Set curriculum delivered by teachers that does not allow the student to progress unless mastery is demonstrated
 - Parent participation is required
 - Mentors are available to assist students
 - Computer and internet connection provided by the academy
- www.k12.com/ohva/

These cyber schools are examples of a movement that is changing instructional delivery around the world. It opens endless opportunities and possibilities for today's learners. There is evidence that increased student achievement and fiscal responsibility will result with the increase in cyber schools and online learning opportunities (Foundation for Excellence in Education, 2010; Wise, 2010). "Digital learning can transform education. Technology has the power and scalability to customize education

so each and every student learns in his or her own style , at his or her own pace, which maximizes the chance for success in school” (Foundation for Excellence in Education, 2010, p. 4). “For states and school districts striving to raise student outcomes without additional dollars, there is steadily growing evidence of the cost-effectiveness of online learning whether used in a virtual school or in a classroom” (Wise, 2010, p.7)

Harvard Business Professor and researcher Clayton Christensen believes that we are in a “disruptive transition from teacher- delivered to software-delivered instruction” (Christensen, 2008, p. 91). Data support the notion that by 2019, 50% of high school courses will be delivered on line (Christensen, 2008). Christensen outlines four factors that will accelerate this transition:

- Computer based learning will continue to improve.
- Learning pathways for various types of learners will emerge –computer based instruction will become “student-centric technology”.
- The looming teacher shortage.
- The costs associated with computer based instruction will drop significantly.

Researcher Brady reports that Christensen’s prediction of fifty percent of all high school courses being taught online by 2019 is a “sharp contrast” to the current estimate of approximately two percent but “elevates the debate on the promises and drawbacks of online learning” (Brady, Umpstead, & Eckes, 2010, p. 2).

Research studies prior to 2005 indicate that overall, there were no statistically significant differences in online instruction and face to face instruction (Bernard, et al. 2004; Cavanaugh, 2001; Machtmes & Asher, 2000; Zhao, 2005). Bernard (2004),

Cavanaugh (2001), and Machtmes (2000) conducted meta analyses of available research analyzing student achievement using interactive distance education or online learning with student achievement using face to face instruction. Both Bernard and Cavanaugh caution readers that the available amount of quality research for K-12 distance education is very limited. “On a cautionary note, distance education for K-12 is much newer and less proven than traditional instruction. The fact that only 19 studies were found to be suitable for this analysis is a testimony to that fact. Therefore, students and teachers have fewer quality materials and less experience on which to draw when using distance education. It can be argued that as the use of interactive distance education grows and expertise develops, academic gains can be expected to increase” (Cavanaugh, 2001, p. 85).

Research after 2005 presents a more positive trend in terms of student outcomes (Sitzmann, Kraiger, Stewart, & Wisher, 2006; US Department of Education, 2010). Sitzmann’s research examined the effectiveness of web based instruction versus classroom instruction primarily in industry, government, and higher education. Though not specific to K-12 education the study presents strong evidence that web based instruction is becoming increasingly more effective for learners.

The US Department of Education 2010 Review of Online Learning Studies reports that “students in online conditions performed modestly better, on average than those learning the same material through traditional face to face instruction” (p. xiv). This information is drawn from various studies – most of which were not K-12 specific. “Few rigorous research studies of the effectiveness of online learning for K-12 students have been published” (US Department of Education, 2010, p. xiv). There is a

tremendous need for further study specifically related to K-12 student achievement. Despite the gaps, available research is beginning to show a positive trend in achievement favorable to the use of online learning opportunities for K-12 students. “The preliminary research shows promise for online learning as an effective alternative for improving student performance across diverse groups of students” (Patrick & Powell, 2009, p. 10).

Today’s Learner and 21st Century Skills

Educators are faced with a new reality – “today’s students are no longer the people our educational system was designed to teach” (Prenksy, 2001, p. 1). These learners have grown up with computers, cell phones, video games, instant messaging, digital music players and social networking. They are immersed in technology. This generation, born after 1980, is referred to as the “Net-Generation” (Hendricks, 2004) or as “digital natives” (Prensky, 2001). Digital natives are “native speakers” in the world of technology while previous generations can only be considered “digital immigrants”. Digital immigrants are in the process of learning the new language of technology. It will always be a second language which is far different than today’s “native speakers” in the digital world (Prensky, 2001).

The net generation acquires and processes information differently than previous generations. Previous generations were heavily influenced by radio and television while the net generation has grown and developed in a “digital universe with the internet at forefront” (Feiertag & Berge, 2008, p. 458). Net generation students “are characterized as Multitaskers who favor graphics over text, who communicate with equal ease in person and online who expect instantaneous responses, and who prefer Google to the library” (Oblinger & Hawkins, 2005, p.12). Today’s learners are virtual learners. They

are “accustomed to seeking and building knowledge in a technology enhanced environment” (Mabrito & Medley, 2008). Their learning style is hands-on. The focus is on doing not knowing (Oblinger & Hawkins, 2005). They interact with information and engage in collaborative knowledge building. They use social networks, blogs and YouTube to create and publish. Their world integrates words, graphics, sound and video (Mabrito & Medley, 2008, p. 1).

Most educators face the challenge of learning and embracing technology as a Digital Immigrant and engaging learners who are native in this digital world (Prensky, 2001). “Unfortunately for our Digital Immigrant teachers, the people sitting in their classes grew up on the twitch speed of video games and MTV. They are used to the instantaneity of hypertext, download music, phones in their pockets, a library on their laptops, beamed messages and instant messaging. They’ve been networked most or all of their lives. They have little, patience for lectures, step by step logic and tell-test instruction” (Prensky, 2001, p. 3). Today’s learners require that a paradigm shift take place in yesterday’s teachers if we are to effectively facilitate the learning of tomorrow’s leaders.

There is a small body of research that calls into question some of the commonly accepted generalizations about students from this new era. Jones and Healing (2010) suggest that there has been “little exploration of the arguments that could account for the dramatic change associated with an entire generation of young people.” Several authors including Prensky, Tapscott, Oblinger, Palfrey, and Gasser have written literature in support of the “strong determinist argument that the existence of an environment infused with digital and networked technologies leads to a generational step change among your

people” (Jones & Healing, 2010, p. 354). Further, these authors make the assumption that the Net Generation is a homogenous group with vast experience in technology and strong technological skills. Conversely, some recent studies indicate that there is a “diverse range of technology skills and preferences” (Kennedy, Judd, Dalgarnot & Waycott, 2010, p. 332). The recent studies in opposition to popular generalizations of the Net Generation, question the necessity for large scale changes in instructional models and curriculum. The fact still remains that today’s learners are growing up in a vastly different technological environment than previous generations and our educational system must address these complexities.

With this explosion of technology and exposure comes the reality that additional skills are necessary to be successful in the 21st century. “People in the 21st century live in a technology and media-suffused environment, marked by various characteristics, including: 1) access to an abundance of information, 2) rapid changes in technology tools, and 3) the ability to collaborate and make individual contributions on an unprecedented scale. To be effective in the 21st century, citizens and workers must be able to exhibit a range of functional and critical thinking skills related to information, media and technology” (Partnerships for 21st Century Skills, 2010, p. 5). Educational leaders must address the need to capitalize on technological advancements while enhancing the skill sets of the thinkers and leaders of tomorrow. “Technology changes the way the world works. As technology evolves so must the skill sets of those who use it. In order to remain competitive tomorrow, today’s students need to develop techniques that readily adapt to changes as they occur” (North Central Regional Educational Laboratory, 2003, p. 1).

“In this new century, information and knowledge matter more than ever, and the ability to use them effectively rests on a set of abilities that extend beyond the traditional base of reading, writing, math and science. Teachers, students, and employees –all of us - must now incorporate the following components to enhance our knowledge and critical thinking skills:

- Technology Literacy: The ability to use new media such as the Internet to effectively access and communicate information.
- Information Literacy: The ability to gather, organize, filter and evaluate information, and to form valid opinions based on the results.
- Media Creativity: The growing capacity of individuals everywhere to produce and distribute content to audiences of all sizes.
- Social Competence and Responsibility: The competence to consider the social consequences of an online publication and the responsibility vis-à-vis children” (21st Century Literacy Summit, 2002, p. 4).

The emerging characteristics of the Net Generation coupled with the complexities of the global economy emphasize the need for educators to ensure that students are versed in the necessary skills for success in this century. “In an increasingly competitive global economy, it is not enough for students to acquire subject-level mastery alone. Skills like creativity, problem-solving, communication and analytical thinking are necessary for all levels of success” (North American Council for Online Learning, 2006, p. 2).

Though education in the United States has long clung to its old industrial model, changes are taking place. Technological advancements and opportunities are beginning to be considered in learning environments for students. The concept of the seat time

waiver, allowing students to learn any place, any time, any pace, using teacher led online courses, is one model that takes into consideration the characteristics of today's learner and the skills necessary for success in the 21st century.

Conclusion

The Michigan Department of Education is just beginning to collect accurate data on the seat time waiver. Research does not exist on the impact it is having on the probability of graduation. Many legislative, technological, and instructional changes have occurred over the past decades leading to the seat time waiver as an option for credit acquisition toward high school graduation. In order to understand these changes it was necessary to review the literature related to the following themes:

1. High School Dropout Rates and At Risk Students
2. Alternative Education
3. Technology and Online learning
4. Cyber Schools
5. Today's Learner and 21st Century Skills

The literature presents a clear picture of the impact of technology on K-12 education in recent decades. Today's learners are exposed to a markedly different world than previous generations. These learners require different skills to be successful in the technologically sophisticated 21st century. Further, there is growing evidence that online instruction is as effective or more effective in terms of student achievement for at risk and non at risk students than face to face instruction. The information and background presented in this review of the literature provided perspective on how and why the seat time waiver emerged and why researching its impact is valuable.

Conceptual Model Summary

The conceptual model (Appendix A) is a pictorial representation of the legislative factors, changing instructional models, continued concern for the success of marginalized students, the technology explosion, the development of today's technologically exposed learners, and how these led to Michigan's decision to waive pupil accounting . The conceptual model depicts the seat time waiver as an instructional delivery model option resulting from these developments. Ultimately, the conceptual model symbolizes the impact the independent variables of at risk status and seat time waiver participation may have on the probability of graduation.

The study was conducted based on two frameworks - the ethic of profession and the ethic of critique. The frameworks call educators to consider the best interest of all students with particular attention to those who may be under served educationally due to existing inequities and injustices. These concepts frame the entire project and are represented as such in the conceptual model.

The federal No Child Left Behind legislation led to a stronger focus on achievement, proficiency and rigor for all schools. In April of 2006 Michigan Governor Jennifer Granholm signed into law one of the most comprehensive sets of high school graduation requirements in the nation called the Michigan Merit Curriculum (Michigan Department of Education, Michigan Merit Curriculum, 2010). With these new requirements and growth and access in technology the Michigan Department of Education was open to removing barriers to innovation and academic success. The seat time waiver was developed based on this concept of removing existing barriers due to pupil accounting. There are various instructional models and changes in technology that

led to the possibility of students being supported by schools but not having to be bound by the rules of daily attendance inside traditional school buildings.

Michigan, like many other states, faces problems with high school dropout rates. At risk students are far more likely to dropout of high school than non at risk students. For individuals, this leads to poverty, unemployment and increased potential for imprisonment. As a society, high dropout rates create financial burdens and quality of community concerns. One response to the dropout crisis over past decades has been alternative education. This offers at risk students an alternate setting which can better serve the needs of at risk youth.

The tremendous technological advancements and substantial increase in student access to technology in recent years has led to instructional models centered on virtual learning. Alternative programs offer in school, online courses for credit acquisition. More recently, cyber schools were launched offering student access to full time virtual learning. Today's sophisticated, technologically exposed learners can be better served with creative instructional options which incorporate and expand their digital skills sets and enhance the development of skills necessary for success in the 21st century. The seat time waiver is a flexible, online option which allows students the freedom of any time, any place, any pace learning with the support of an educator from the traditional high school. In particular, the seat time waiver may prove to be an added credit acquisition and graduation opportunity for students at risk for dropping out of high school.

CHAPTER III

METHODOLOGY

Purpose

The purpose of this study was to determine if participation in the seat time waiver impacts the probability of a student graduating from high school. Additionally, the study's purpose was to determine if participation in the seat time waiver impacts the probability of an at risk student graduating from high school. The categorical dependent variable was graduation and the categorical independent variables were at risk status and participation in the seat time waiver.

Chapter three states the research questions and null hypotheses, details the research design and discusses the population and sample. Data collection and data analysis, and the timeline for the project are also detailed.

Research Questions and Hypotheses

The research questions for the study are:

1. Does utilizing a seat time waiver impact the probability of high school seniors graduating?
2. Does utilizing a seat time waiver impact the probability of at risk high school seniors graduating?

The null hypotheses for the study are:

1. Utilizing a seat time waiver does not impact the probability of high school seniors graduating.
2. Utilizing a seat time waiver does not impact the probability of at risk high school seniors graduating.

Research Design

Quantitative research is “a means for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures” (Creswell, 2009, p. 4). Specifically, this research study is causal-comparative. Using “causal-comparative research, investigators attempt to determine the cause or consequences of differences that already exist between or among groups of individuals” (Fraenkel & Wallen, 2006, p. 370). This type of research is also referred to as *ex post facto* referring to the Latin “after the fact. The purpose of *ex post facto* research is to investigate whether one or more pre-existing conditions have possibly caused subsequent differences in the groups of subjects. The investigator attempts to determine whether differences between groups (the independent variable) have resulted in an observed difference on the dependent variable” (McMillan & Schumacher, 2006, p. 241). In this study, the investigator will attempt to determine if the independent variables of at risk status and participation in the seat time waiver impact the dependent variable of student graduation.

Specifically, the study explores the seat time waivers impact on the probability of at risk and non at risk students graduating. The study provides insight on the predictability of a student graduating based on the independent factors of at risk and seat time waiver status. For the purposes of this study, at risk students were identified based on their school free and reduced breakfast and lunch status. This is the method of identification utilized by the State of Michigan when allocating funding for at risk students based on section 31a of the State School Aid Act. Particular emphasis was

placed on the impact of the seat time waiver. Logistic regression was used to analyze the data in this quantitative study. This is the appropriate method when both the outcome variable and the predictor variables are categorical. A quantitative, ex post facto, research design using logistic regression analysis was the best design to answer the questions presented in this project.

Population and Sample

The sample was comprised of 1037 fourth and fifth year Michigan high school students. The vast majority of students entered ninth grade in the fall of 2006 and were part of the cohort eligible to graduate in 2010. These are fourth year, on track seniors. Some students entered ninth grade in the fall of 2005, failed to graduate with their cohort in 2009, and continued as fifth year seniors in their high school setting with the possibility of graduating in 2010. Both groups were included in the sample. Student data from five high schools in four Michigan districts was utilized. One district had both a traditional high school and an alternative high school with students on the seat time waiver. Data from both high schools in that particular district was used.

The five high schools are representative of rural, inner city and suburban areas in an effort to obtain more generalizable information. High schools of varying size were selected as another way to generalize information. District A represents a large, suburban high school with over 450 students in the sample. District B represents a mid size, rural high school with fewer than 200 students in the sample population. District C represents a small, inner city high school with fewer than 100 students. District D represents two high schools in the sample. The traditional school from District D is midsize,

representing fewer than 200 students from the population sample. The alternative high school from District D is very small, representing fewer than 50 students in the sample.

In July of 2009, Superintendent Flanagan approved the opportunity for districts to access the seat time waiver by entering into partnership with the Genesee Intermediate School District (Sviktkovich, Knox-Pipes, Hagel, & Schantz, 2010). All five of the high schools in the sample had students participating in a seat time waiver obtained from the GISD. Each of the four districts signed agreements with the GISD to utilize approved online courses and to provide mentors, computers and internet access for students on the seat time waiver.

Purposive sampling was used to select the participating high schools. Purposive sampling is when “based on previous knowledge of a population and the specific purpose of the research investigators use personal judgment to select a sample. Researchers assume they can use their knowledge of the population to judge whether or not a particular sample will be representative” (Frankel & Wallen, 2006, p. 100). In this case, the researcher obtained information on the number of seat time waiver participants various districts had in the 2009-2010 school year. Individual students met the criteria as a member of the 2010 cohort or as a continuing student from the previous cohort. Additionally, the researcher identified high schools with varying demographics. Schools from rural, intercity, and suburban areas are represented in the sample.

The large sample size was selected to ensure that a sufficient number of seat time waiver participants existed. The seat time waiver is such a new concept that very few students in the state participated in the waiver program. It was necessary to gather data for the 1037 students to obtain a sample of 35 seat time waiver participants.

Instrumentation

“The whole process of preparing to collect data is called instrumentation” (Fraenkel & Wallen, 2006, p.113). For this study, it was not necessary to develop particular instruments to collect data. Secondary data sets were used. The data already exists in a reliable format in the Center for Educational Performance and Information (CEPI) data warehousing system. All Michigan school districts are required to report student information on at risk status, cohort status and graduation through the Michigan Education Information System (MEIS). CEPI combines, stores, and reports that data. This raw data contains student identifiers. It is only accessible to specific personnel in each district and therefore requires the permission of the Superintendent to gain access.

Seat time waiver student data exists at the district level. The information was not reported to CEPI for the 2009/2010 school year. It was obtained directly from the participating high schools. The seat-time waiver participation information will be part of the mandatory data reported through CEPI for the 2010/2011 school year making future data easier to obtain.

Data Collection

Written permission was obtained from the four participating district superintendents to access student data via the Center for Educational Performance and Information (CEPI) and from district principals or counselors. Superintendents of high schools participating in the research project provided signed agreements granting permission to access and utilize student data related to graduation, at risk status, and seat time waiver participation for the 2009/2010 school year. See Appendix B. District

superintendents received a letter detailing the collection process via CEPI and through contact with high school principals and counselors. See Appendix C.

Approval from the Central Michigan University Internal Review Board (IRB) was obtained after the proposal was accepted by the dissertation committee. Following IRB approval, high school principals and counselors were contacted to obtain the Universal Identification Codes (UIC) and or names for senior, seat time waiver participants for the 2009/2010 school year. Participating district data for graduation and at risk status was gathered and put into an excel spreadsheet format. The UIC's and names of seat time waiver participants was cross checked with CEPI data to establish graduation and at risk status for these students. Student's names and UIC's for all students was replaced with arbitrary numbers ensuring confidentiality.

Access to CEPI data specific to student information is limited to certain school district personnel. Generally, superintendents and business officials have permission to review this data. Permission from participating superintendents was critical for this project.

All data were stored in a secure place. Specifically, hard copies of information were stored in a locked file cabinet in the researcher's home. Spreadsheets and SPSS data were stored on flash drives belonging to the researcher. The flash drives were stored in locked cabinets. The researcher is the only person with access to the locked cabinets. Upon completion and final approval of the dissertation, all data was destroyed. Hard copies were shredded and information on flash drives was deleted. Confidentiality was a priority. All student identifiers including names and unique identification codes (UIC's) were removed. Additionally, the high schools and districts were identified in the study.

Data Analysis

After the data sets for at risk status, seat time waiver participation, and graduation were combined into an excel spread sheet with all identifiers removed, the data was uploaded into SPSS. The data was examined in two ways: descriptively and using logistical regression. The initial examination of the data involved the creation of a graphic portrayal of the data using descriptive statistics. “When data are collected, the observations must be organized so that the researcher can easily and correctly interpret the results” (McMillan & Schumacher, 2006, p153). “Categorical data simply indicate the total number of objects, individuals, or events a researcher finds in a particular category” (Fraenkel & Wallen, 2006, p. 190). Bar graphs were created to summarize the population sample in terms of at risk status, seat time waiver participation and graduation status. Additionally, bar graphs showing the sample by gender were also created as a point of discussion and interest. The purpose of the graphs was to provide a pictorial summary of the descriptive data.

Graduation, at risk status, and seat time waiver status data was analyzed using logistic regression. Logistic regression “allows us to predict categorical outcomes based on predictor variables” (Field, 2009, p. 265). Using logistic regression “makes it possible to predict which of two categories a person is likely to belong to given certain other information” (Field, 2009, p. 265). In this case logistic regression was used to determine if a student is more or less likely to graduate based on the predictor variables of at risk status and seat time waiver participation.

The independent or predictor variables in the study were at risk status and seat time waiver participation. The dependent or outcome variable was graduation. It is

important to note that all three variables were categorical. “A variable used to separate subjects or entities into two or more attributes is a categorical variable” (McMillan & Schumacher, 2006, p. 54). Specifically, all three categorical variables in this study have only two attributes – yes or no. Data was entered identifying each member of the population as yes or no in at risk status, seat time waiver participation and graduation. Logistic regression had to be used because the variables are categorical. More specifically, this data analysis was binary logistic regression because the researcher will be able to predict “membership of two categorical outcomes” (Field, 2009, p. 265) – graduation, yes or no.

The SPSS output provided insight into assessing the fit of the model for the data as well as an odds ratio. The odds ratio indicated whether the predictor variables increase or decrease the likelihood of graduation. Additionally, the individual contributions of the predictors – at risk status and seat time waiver participation – were determined. Finally, an interaction was included to determine the combined effect of at risk status and participation in the seat time waiver on graduation. The level of significance for the analysis was set at the critical value of .05.

Summary

The research study was designed to address whether or not the seat time waiver impacted the probability of graduation for at risk and non at risk students in the 2009-2010 school year. A population sample of 1037 high school seniors from five high schools in four Michigan districts was utilized. Of the 1037 in the sample population, 35 used a seat time waiver during the 2009-2010 school year. Binary logistic regression was conducted to determine the impact of the independent variables of at risk status and seat

time waiver participation on the dependent variable of graduation. Necessary permissions were obtained to gather data for appropriate use in this study and all aspects of ensuring the confidentiality of participants was considered.

CHAPTER IV

RESULTS

Purpose Statement

The purpose of this study was to determine if participation in the seat time waiver (STW) impacts the probability of a non at risk student graduating from high school and if participation in the seat time waiver impacts the probability of an at risk student graduating from high school. The categorical dependent variable was graduation and the categorical independent variables were at risk status and participation in the seat time waiver. This chapter summarizes the data collection process. Additionally, the two research questions are addressed based on quantitative data analysis and the results are reported.

Data Collection

In November of 2010 information on districts with seat time waiver students was gathered. Districts were selected for review for this project based on higher numbers of seat time waiver participants. Additionally, districts were selected to reflect urban, suburban, and rural demographics. Superintendents in four districts representing five high schools were contacted for permission to access student data via the Center for Educational Performance and Information (CEPI). The four superintendents provided written permission to access the necessary data.

Student information on graduation status, seat time waiver participation status, at risk status (based on supplemental nutrition eligibility as defined by participation in the free or reduced school lunch program), and gender were compiled from the five participating high schools. There were a total of 1037, fourth and fifth year seniors from

the 2009/2010 school year in the sample. All data were entered into an excel spreadsheet and then exported into the Statistical Package for the Social Sciences (SPSS) 17.0.

Student and district identifiers were removed from the sample.

Demographic Information

The total sample population for the project was 1037 fourth and fifth year seniors (N=1037). The vast majority of students entered ninth grade in the fall of 2006 and were part of the cohort eligible to graduate in 2010. These were fourth year, on track seniors. Some students entered ninth grade in the fall of 2005, failed to graduate with their cohort in 2009, and continued as fifth year seniors in their high school setting with the possibility of graduating in 2010. Both groups were included in the sample. Student data from five high schools in four Michigan districts was utilized. One district had both a traditional high school and an alternative high school with students on the seat time waiver. Data from both high schools in that particular district was used.

As indicated in Table 1, the five high schools were representative of rural, inner city and suburban areas. High schools of varying size were selected. District A represents a large, suburban high school with over 450 students in the sample. District B represents a mid size, rural high school with fewer than 200 students in the sample population. District C represents a small, inner city high school with fewer than 100 students. District D represents two high schools in the sample. The traditional school from District D is midsize, representing fewer than 200 students from the population sample. The alternative high school from District D is very small, representing fewer than 50 students in the sample. The exact number of students in each participating high school is not reported in this study in order to protect the identity of the districts.

Table 1. Fourth and Fifth Year Seniors (N=1037)

	Suburban	Rural	Inner City
District A	450+		
District B		200-	
District C			100-
District D HS #1		200-	
District D HS #2		50-	

Descriptive data for the project variables of graduation (Table 2), seat time waiver participation (Table 3), at risk status (Table 4), and gender (Table 5) are summarized below. Each table is followed by a bar graph providing a pictorial representation of the data.

As indicated in Table 2 and illustrated in Figure 1, 902 (87%) of the 1037 students graduated. This rate of graduation (87%) was higher than the 2009/2010 graduation rate for the state of Michigan (75.95%) (CEPI, State of Michigan 2010 Cohort Graduation and Dropout rate Report). The four traditional high schools in the study had graduation rates ranging from 78% to 90% with the alternative high school graduation rate at less than 40% (CEPI, State of Michigan 2010 Cohort Graduation and Dropout rate Report).

Table 2. Graduation

	Frequency	Percent
Valid Did not Graduate	135	13.0
Graduated	902	87.0
Total	1037	100.0

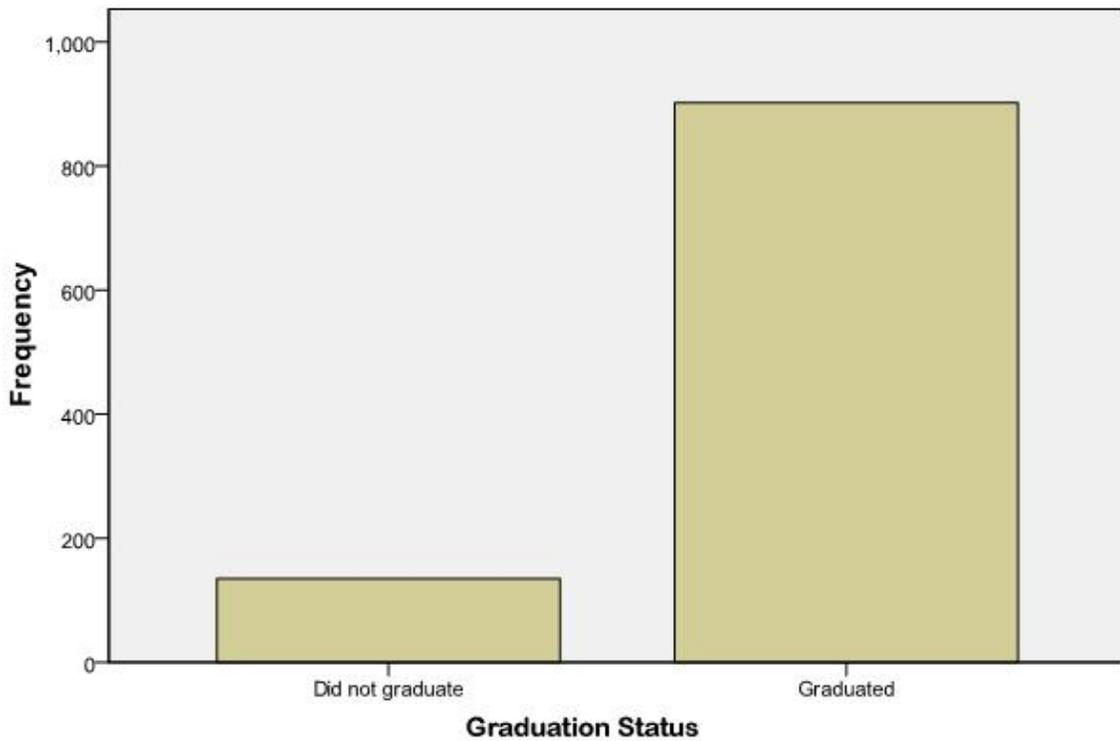


Figure 1. Graduation Status

Summarized in Table 3 and illustrated in Figure 2 are the frequencies for seat time waiver participants. Of the 1037 students, 35 (3.4%) students utilized a seat time waiver and 1002 students were in classroom settings.

Table 3. Seat Time Waiver participants

	Frequency	Percent
Valid No STW	1002	96.6
STW	35	3.4
Total	1037	100.0

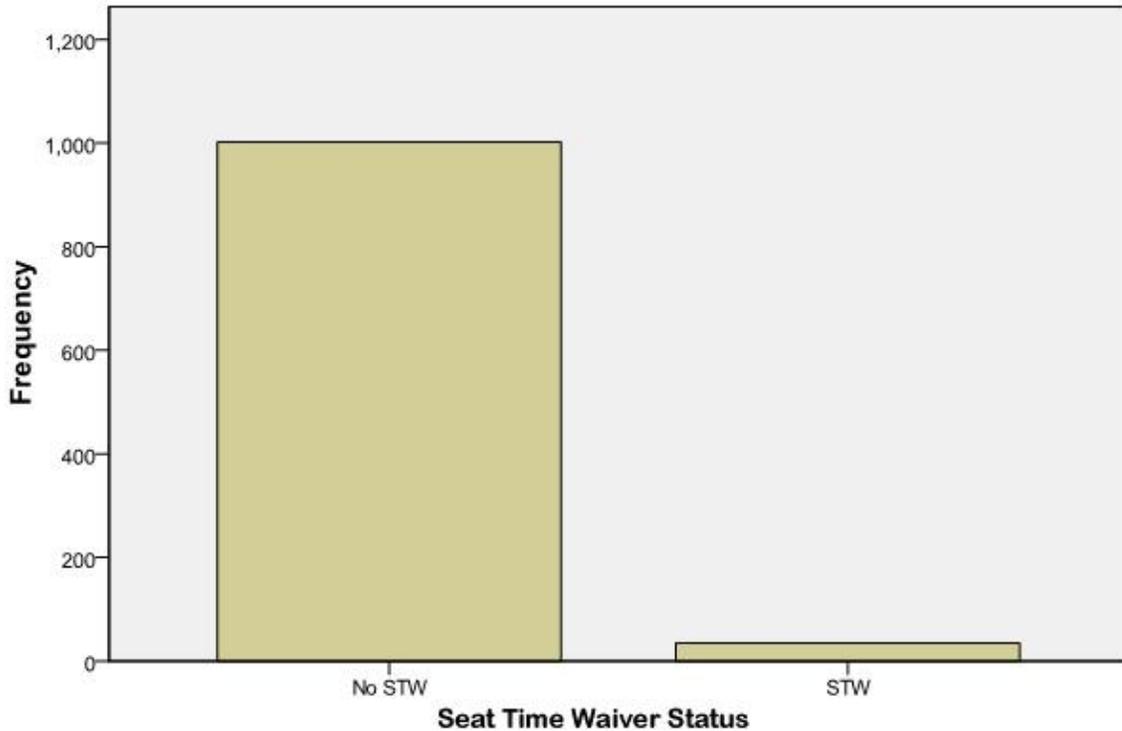


Figure 2. Seat Time Waiver Status

Summarized in Table 4 and illustrated in Figure 3 are the frequencies for the at risk status of the population sample as determined by supplemental nutrition eligibility. Students qualifying for free or reduced lunch are considered at risk by state standards. The sample of 1037 students included 251 (24%) students who were at risk and 786 (75.8%) not at risk. In comparison, the 2009/2010 total at risk population for the state of Michigan was 29% with 66.59% graduating (CEPI, State of Michigan 2010 Cohort Graduation and Dropout rate Report).

Table 4. Supplemental Nutrition Eligibility

	Frequency	Percent
Valid Not At Risk	786	75.8
At Risk	251	24.2
Total	1037	100.0

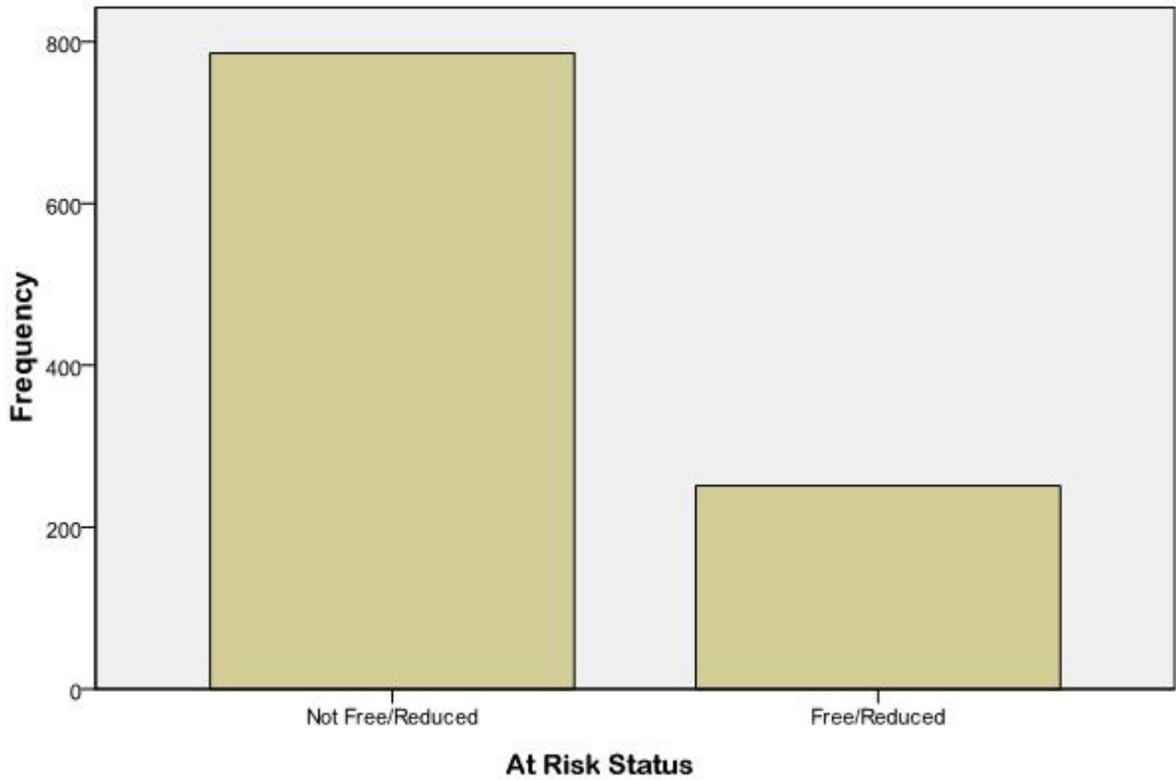


Figure 3. At Risk Status

Summarized in Table 5 and illustrated in Figure 4 are the gender frequencies of the population. The sample 1037 students included 554 (53.4%) females and 483 (46.6%) males. In comparison, the 2009/2010 Michigan graduation cohort was comprised of 48.6% females and 51.4% males with 80.44% of females graduating and 71.1% of males graduating (CEPI, State of Michigan 2010 Cohort Graduation and Dropout rate Report).

Table 5. Gender

	Frequency	Percent
Valid Female	554	53.4
Male	483	46.6
Total	1037	100.0

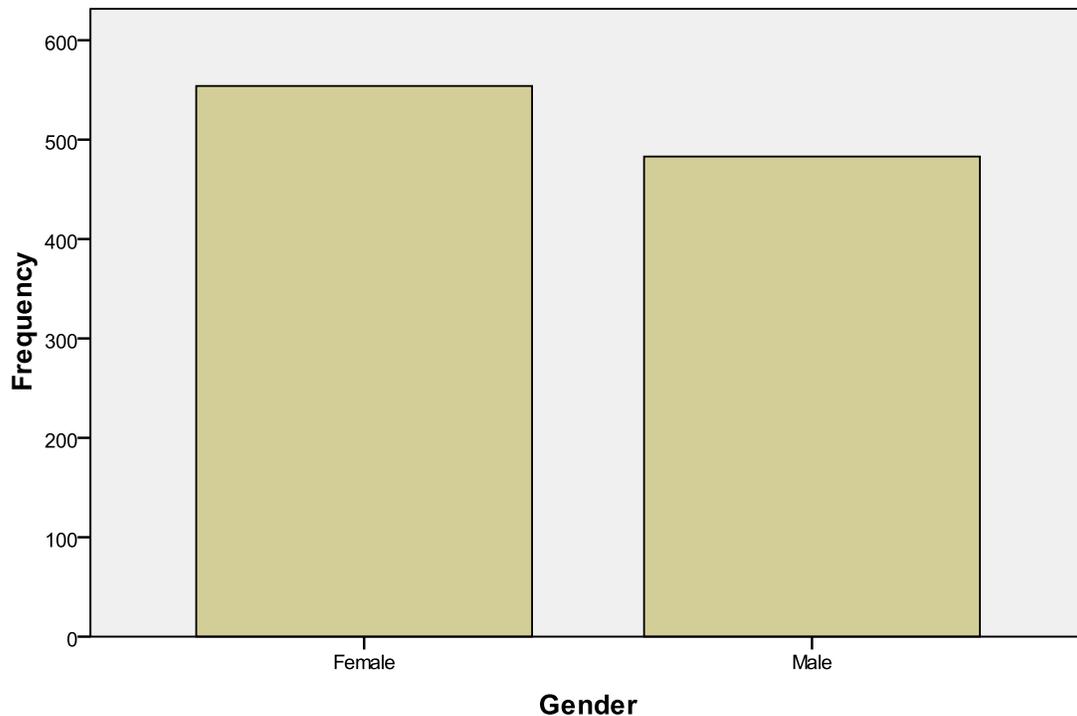


Figure 4. Gender

Analysis of Data

The student data sets for graduation, seat time waiver participation and at risk status were combined into an excel spreadsheet and uploaded into SPSS. Gender was also included. Descriptive statistics were created for an initial examination of the quantitative data. The descriptive statistics provided important information about each of the variables in the study. In order to provide specific data describing the relationship of the independent variables (seat time waiver, at risk status and gender) on the dependent variable (graduation) crosstabulations were run. “A crosstabulation table is a combination of two (or more) frequency tables arranged such that each cell in the resulting table represents a unique combination of specific values of crosstabulated variables. Thus, crosstabulation allows us to examine frequencies of observations that belong to specific combinations of categories on more than one variable” (StatSoft

Electronic Statistics Textbook).

Illustrated in Table 6 is a crosstabulation of graduation, the seat time waiver and at risk status. Of the 786 non at risk students in the sample, 112 did not graduate. Of those 112, seven were on a seat time waiver. The remaining 674 non at risk students did graduate. Of those 674, 17 were on a seat time waiver.

The number of at risk students who did not graduate was 23. Of the 23, eight were on a seat time waiver. The remaining 228 at risk students graduated. Of the 228, three were on a seat time waiver.

Table 6. Graduation * STW * At Risk Crosstabulation

Count		STW		
		No STW	STW	Total
Not At Risk	Graduation Did not graduate	105	7	112
	Graduated	657	17	674
	Total	762	24	786
At Risk	Graduation Did not graduate	15	8	23
	Graduated	225	3	228
	Total	240	11	251

Summarized in Table 7 is a crosstabulation of data for graduation, seat time waiver participation, and gender. Of the 554 females in the sample population, 54 did not graduate. Of those 54, eight students on a seat time waiver. The remaining 500 females graduated. Of the 500 graduating females, nine were on a seat time waiver. Of the 483 males in the sample population, 81 did not graduate. Of those, seven were on a seat time

waiver. The remaining 402 males in the sample population did graduate. Of those, 11 were on a seat time waiver.

Table 7. Graduation * STW * Gender Crosstabulation

Count		STW		
		No STW	STW	Total
Female	Graduation Did not graduate	46	8	54
	Graduated	491	9	500
	Total	537	17	554
Male	Graduation Did not graduate	74	7	81
	Graduated	391	11	402
	Total	465	18	483

Summarized in Table 8 is the crosstabulation data for graduation, at risk status and gender. Of the 554 females in the sample population, 54 did not graduate. Of those 54, seven students were at risk. The remaining 500 females graduated. Of the 500 graduating females, 120 were at risk. Of the 483 males in the sample population, 81 did not graduate. Of those, 16 were at risk. The remaining 402 males in the sample population did graduate. Of those, 108 were at risk.

Table 8. Graduation * At Risk * Gender Crosstabulation

Count					
			At Risk Status		
Gender			Not At Risk	At Risk	Total
Female	Graduation	Did not graduate	47	7	54
		Graduated	380	120	500
	Total		427	127	554
Male	Graduation	Did not graduate	65	16	81
		Graduated	294	108	402
	Total		359	124	483

The independent, or predictor variables, in the study were at risk status and seat time waiver participation. The dependent, or outcome, variable was graduation. It is important to note that all three variables were categorical. According to McMillan and Schumacher (2006) a variable used to separate subjects or entities into two or more attributes is a categorical variable. Specifically, all three categorical variables in this study have only two attributes – yes or no. Data was entered identifying each member of the population as yes or no in at risk status, seat time waiver participation and graduation.

In order to gain insight about the potential impact of the seat time waiver on the probability of graduation, logistic regression was run. According to Field (2009) logistic regression makes it possible to predict categorical outcomes based on predictor variables. Further, binary logistic regression makes it possible to predict which of two categories a person is likely to belong to given certain other information. This data analysis used binary logistic regression due to the ability to predict membership of two categorical outcomes – graduation, yes or no. In this case logistic regression will determine if a

student is more or less likely to graduate based on the predictor variables of at risk status and seat time waiver participation.

Binary logistic regression provided the necessary output data to address the research questions in this project. The process included reviewing the main effect of a predictor variable which describes the effect of the predictor variable on the outcome variable (Field, 2009). In this case, testing for the effect seat time waiver participation had on graduation and the effect that at risk status had on graduation. Additionally, an interaction effect was specified. This described the effect of two or more variables in combination on the outcome variable (Field, 2009).

Specifically, the analysis of binary regression output data required reviewing the chi square statistic and its level of significance, the -2 log likelihood value and the corresponding Nagelkerke R Square value, and the Wald statistic and its significance level. Finally, the odds ratio or $\text{Exp}(B)$ was critical to analyzing the data.

The chi square statistic measured the difference between the model including a predictor variable or variables and the model when only a constant was included (Field, 2009). The resulting significance level indicated the significance of impact of the predictor variable.

The overall fit of the model was assessed using the log-likelihood statistic. It was an indicator of how much unexplained information existed after fitting the model. The larger the log-likelihood value, the more unexplained observations there were (Field, 2009). SPSS reports this as the -2 log-likelihood or -2LL. This multiplication makes it possible to compare values against numbers obtained by chance alone (Field, 2009). From the -2LL the R square statistic was calculated. This represented “a partial

correlation between the outcome variable and each of the predictable variables and it can vary between -1 and 1. A positive value indicates that as the predictor variable increases so does the likelihood of the event occurring. A negative value implies that as the predictor variable increases the likelihood of the outcome occurring decreases” (Field, 2009, p. 268). In this project, the Nagelkerke R square value was reported.

The Wald statistic assessed the contribution of the predictor variables on the outcome variable. If the Wald statistic is significantly different from zero it can be assumed that the predictor variable or interaction of variables made a significant contribution to the outcome. The significance level was set at $p \leq 0.05$. The Wald is also used to create the chi square distribution value.

According to Field (2009), the value of the odds ratio is crucial to the interpretation of logistic regression. This indicated the change in odds of an event occurring resulting from a change in the predictor. This was reported in the SPSS output data as Exp(B). If the value of Exp(B) is greater than one it can be assumed that as the predictor variable increases the odds of the outcome occurring increase. If the value is less than one the odds of the outcome decrease as the predictor increases (Field, 2009).

Research Question Number One

Research Question #1: Does utilizing a seat time waiver impact the probability of high school seniors graduating?

The null hypothesis for this question was:

H₀: Utilizing a seat time waiver does not impact the probability of high school seniors graduating.

In order to reject the null hypothesis, binary regression was run. Variables were coded as 0 or 1 in the data set. Illustrated in Tables 9 and 10 are the coding values of each variable analyzed for question number one (graduated, on a seat time waiver, and not at risk). In each case, information obtained from the regression relates to the variable coded as “1”. The significance level was set at $p \leq 0.05$

Table 9. Dependent Variable Coding

Original Value	Internal Value	Frequency
Did not graduate	0	135
Graduated	1	902

Table 10. Categorical Variables Codings

		Frequency
STW	0 No	1002
	1 Yes	35
At Risk	0 Yes	251
	1 No	786

Summarized in Table 11 are the chi square statistics for seat time waiver participation and non at risk status. The chi square significance level of .000 indicates statistical significance for the seat time waiver as a contributing factor to the outcome variable of graduation ($p \leq 0.05$). Table 10 also indicates that the predictor variable of not at risk as also makes a contribution to the outcome variable of graduation. Additionally, the significance level of .031 indicates statistical significance for non at risk status as a contributing factor to the outcome variable of graduation.

Table 11. Tests of Model

	Chi-square	Sig.
STW	19.924	.000
Not At Risk	19.924	.031

Illustrated in Table 12 are the -2 log-likelihood and Nagelkerke R square value for the predictor variable. The -2 log-likelihood for the seat time waiver variable was 782.164 with an R square value of .035. The -2 log-likelihood value is high indicating that the model fit is not particularly good and that other variables could also contribute significantly to the outcome variable. This is likely due to the very small sample size of 35 seat time waiver participants of the total sample of 1037 students. The -2 log-likelihood for the non at risk predictor was 797.441 with an R square value of .008. This also indicates that the model fit is marginal. Additionally, the low R square value for the non at risk variable indicates it has less impact on probability than the seat time waiver variable.

Table 12. Model Summary

	-2 Log likelihood	Nagelkerke R Square
STW	782.164	.035
Not At Risk	797.441	.008

Summarized in Table 13 are the Wald statistic, its significance level, and the odds ratio value for the predictor variable. The Wald value for the seat time waiver predictor variable is 23.102 with a significance level of .000 ($p \leq 0.05$). These numbers indicate that the seat time waiver made a statistically significant contribution to predicting

graduation. The odds ratio noted as Exp(B) at 5.512 indicates that as the seat time waiver variable increases the outcome variable of graduation increases. The Wald value for the non at risk predictor variable is 4.275 with a statistically significant level of .039 indicating that the non at risk variable also makes a significant contribution to predicting the outcome variable of graduation. The odds ratio of 1.647 indicates that as the predictor variable of not at risk increases the outcome variable of graduation increases. This is well supported in literature.

Table 13. Variables in the equation

	Wald	Sig	Exp(B)
STW	23.102	.000	5.512
Not At Risk	4.275	.039	1.647

An interaction was run to obtain the combined effect of the predictor variables (seat time waiver participation and non at risk status) on the outcome variable (graduation). Shown in Table 14 is the chi square value of 14.708 which was statistically significant at .000 ($p \leq 0.05$).

Table 14. Test of Model (Interaction)

	Chi-square	Sig.
STW*Not At Risk	14.708	.000

Illustrated in Table 15 are the -2 log-likelihood and Nagelkerke R square value for the interaction of variables. The -2 log-likelihood for the seat time waiver variable was 787.380 with an R square value of .026. These results indicate the combined effect of

the variables has a greater impact on the probability of graduation than the not at risk variable tested independently.

Table 15. Model Summary (Interaction)

	-2 Log likelihood	Nagelkerke R Square
STW*Not At Risk	787.380	.026

Illustrated in Table 16 are further results of the interaction. The Wald is 11.963 with a significance value of .001 indicating the combined interaction of these variables makes a statistically significant contribution to graduation ($p \leq 0.05$). The odds ratio of 2.675 indicates that as these variables increase in combination, the probability of graduation will also increase.

Table 16. Variables in the equation (Interaction)

	Wald	Sig	Exp(B)
STW*Not At Risk	11.963	.001	2.675

In summary, the binary logistical regression output using a data set coded for graduation, seat time waiver and non at risk status provided evidence that with increased participation in the seat time waiver the probability of graduation will increase for non at risk students ($p \leq 0.05$). This proves that utilizing a seat time waiver does impact the probability of high school seniors graduating. Therefore, the null hypothesis for question number one is rejected.

Research Question Number Two

Research Question #2: Does utilizing a seat time waiver impact the probability of at risk high school seniors graduating?

The null hypothesis for this question was:

H₀: Utilizing a seat time waiver does not impact the probability of at risk high school seniors graduating.

Illustrated in Table 17 are the necessary changes in predictor variable codings to address research question two. In this case, the focus was at risk students, making it necessary to code at risk students as “1” and non at risk students as “0”. All other codings remained the same. Binary regression was run with the new variable codings.

Table 17. Categorical Variables Codings

		Frequency
STW	0 No	1002
	1 Yes	35
At Risk	0 No	786
	1 Yes	251

Summarized in Table 18 are the chi square statistics for seat time waiver participation and at risk status. The chi square significance level of .000 indicates statistical significance for the seat time waiver as a contributing factor to the outcome variable of graduation ($p \leq 0.05$). Table 17 also indicates that the predictor variable of at risk status also makes a contribution to the outcome variable of graduation. Additionally, the significance level of .031 indicates statistical significance for at risk status as a contributing factor to the outcome variable of graduation.

Table 18. Tests of Model

	Chi-square	Sig.
STW	19.924	.000
At Risk	4.647	.031

Summarized in Table 19 are the -2 log-likelihood and Nagelkerke R square value for the predictor variables. The -2 log-likelihood for the seat time waiver variable was 782.164 with an R square value of .035. The -2 log-likelihood value is high indicating that the model fit is not particularly good and that other variables could also contribute significantly to the outcome variable. This is likely due to the very small sample size of 35 seat time waiver participants in the full sample. The -2 log-likelihood for the at risk predictor was 797.441 with an R square value of .008. This also indicates that the model fit is marginal. Additionally, the low R square value for the at risk variable indicates this has less impact on probability than the seat time waiver variable.

Table 19. Model Summary

	-2 Log likelihood	Nagelkerke R Square
STW	782.164	.035
At Risk	797.441	.008

Summarized in Table 20 are the Wald statistic, its significance level and the odds ratio value for the each of the predictor variables taken independently. The Wald value for the seat time waiver predictor variable is 23.102 with a significance level of .000. These numbers indicate that the seat time waiver made a statistically significant contribution to predicting graduation. The odds ratio noted as Exp(B) at 5.512 indicates

that as the seat time waiver variable increases the outcome variable of graduation increases. The Wald value for the at risk predictor variable is 4.275 with a significance level of .039 indicating that the at risk variable also makes a statistically significant contribution to predicting the outcome variable of graduation ($p \leq 0.05$). The odds ratio of .607 indicates that as the predictor variable of at risk increases the outcome variable of graduation decreases.

Table 20. Variables in the equation

	Wald	Sig	Exp(B)
STW	23.102	.000	5.512
At Risk	4.275	.039	.607

It was determined that, independently, the predictor variables had statistically significant impact on the probability of graduation. An interaction was run in to obtain the combined effect of the predictor variables (seat time waiver participation and at risk status) on the outcome variable (graduation). Shown in Table 21 is the chi square value of 1.518 with a significance level .218. This is not statistically significant ($p \leq 0.05$).

Table 21. Test of Model (Interaction)

	Chi-square	Sig.
STW*At Risk	1.518	.218

Illustrated in Table 22 is the -2 log-likelihood value at 800.570 and the R square number at .003. These results indicate the combined effect of the variables had less impact on the probability of graduation than the variables tested independently.

Table 22. Model Summary (Interaction)

	-2 Log likelihood	Nagelkerke R Square
STW*At Risk	800.570	.003

Summarized in Table 23 are the Wald statistic, its significance level and the odds ratio value for the predictor variables in combination. The Wald is 1.464 with a significance value of .226. These results indicate that the combined interaction of the predictor variables does not make a statistically significant impact on graduation. The odds ratio is .766, however, without a statistically significant Wald it does not indicate that the interaction of the predictor variables of seat time waiver and at risk status impact the probability of graduation.

Table 23. Variables in the equation (Interaction)

	Wald	Sig	Exp(B)
STW*At Risk	1.464	.226	.766

In order to further address research question two, gender was added as a third predictor variable. Shown in Table 24 are the necessary codings for including gender with a focus on males.

Table 24. Categorical Variables Codings

		Frequency
STW	0 No	1002
	1 Yes	35
At Risk	0 No	786
	1 Yes	251
Gender	0 Female	554
	1 Male	483

An interaction was run to obtain the combined effect of the predictor variables, (seat time waiver participation, at risk status, and male) on the outcome variable (graduation). Shown in Table 25 is the chi square result which was statistically significant at .036 ($p \leq 0.05$).

Table 25. Test of Model (Interaction)

	Chi-square	Sig.
STW*At Risk*Male	4.418	.036

Illustrated in Table 26 are the -2 log-likelihood and Nagelkerke R square value for the interaction of variables. The -2 log-likelihood was 797.670 with an R square value of .008. These results indicate the combined effect of the variables has a greater impact on the probability of graduation than the combined effect of the variables without including gender.

Table 26. Model Summary (Interaction)

	-2 Log likelihood	Nagelkerke R Square
STW*At Risk*Male	797.670	.008

Summarized in Table 27 are the Wald statistic, its significance level and the odds ratio value for the predictor variables in combination. The Wald is 4.272 with a significance value of .039 indicating the combined interaction of these variables has a statistically significant impact on graduation. The odds ratio of 1.502 indicates that as these variables increase in combination the probability of graduation for males will also increase.

Table 27. Variables in the equation (Interaction)

	Wald	Sig	Exp(B)
STW*At Risk*Male	4.272	.039	1.502

To thoroughly explore the addition of gender as a predictor variable in combination with at risk status and seat time waiver participation an additional binary regression was run providing results for the interaction of the variables coding for females in the sample. Summarized in Table 28 are the necessary coding changes.

Table 28. Categorical Variables Codings

		Frequency
STW	0 No	1002
	1 Yes	35
At Risk	0 No	786
	1 Yes	251
Gender	0 Male	554
	1 Female	483

Shown in Table 29 is the chi square result which was statistically significant at .001 ($p \leq 0.05$).

Table 29. Test of Model (Interaction)

	Chi-square	Sig.
STW*At Risk*Female	10.401	.001

Illustrated in Table 30 are the -2 log-likelihood and Nagelkerke R square value for the interaction of variables. The -2 log-likelihood value was 791.687 and the R square number was .019. These results indicate that the combined effect of the variables had a

greater impact on the probability of graduation than the combined effect of the variables without including gender.

Table 30. Model Summary (Interaction)

	-2 Log likelihood	Nagelkerke R Square
STW*At Risk*Female	791.687	.019

Summarized in Table 31 are the Wald statistic, its significance level and the odds ratio value for the predictor variables in combination. The Wald is 10.661 with a significance value of .001 indicating the combined interaction of these variables has a statistically significant contribution to the probability of graduation. The odds ratio of .554 indicates that as these variables increase the probability of graduation will decrease for females.

Table 31. Variables in the equation (Interaction)

	Wald	Sig	Exp(B)
STW*At Risk*Female	10.611	.001	.544

In summary, the binary logistical regression output using data sets coded for graduation, seat time waiver, at risk status, and gender provided evidence that participation in the seat time waiver impacts the probability of graduation. Specifically, the probability of graduation increased for at risk, male students on a seat time waiver and decreased for at risk females on a seat time waiver. ($p \leq 0.05$). This proves that utilizing a seat time waiver does impact the probability of high school seniors graduating. Therefore, the null hypothesis for question number two is rejected.

CHAPTER V

SUMMARY AND DISCUSSION

The purpose of this study was to determine if participation in the seat time waiver impacted the probability of a student graduating from high school. Additionally, the study's purpose was to determine if participation in the seat time waiver impacted the probability of an at risk student graduating from high school. The categorical dependent variable was graduation and the categorical independent variables were at risk status and participation in the seat time waiver. This chapter discusses connections of the project to other research, reports implications of the study, provides a critique of the study and makes recommendations for future research.

For the purpose of determining at risk status in this study, free and reduced lunch status is used as the criteria in accordance with section 31a. Section 31a of the State School Aid Act provides funding to eligible districts for supplementary instructional and pupil support services for pupils who meet the at-risk criteria. The amount of the additional allowance shall be based on the number of actual pupils in membership in the district or public school academy who met the income eligibility criteria for free breakfast, lunch, or milk in the immediately preceding state fiscal year. (Michigan Department of Education, Section 31a, 2010).

Dropping out of school presents tremendous challenges for individuals and society. At risk youth are particularly vulnerable for dropping out of high school. Students dropout of school for four major reasons: “academic failure, disinterest in school, problematic behavior, and life events” (Princotta & Reyna, 2009, p. 12). Schools must develop strategies to lower dropout rates. States are encouraged to develop

“rigorous, relevant options for earning a high school diploma” and to focus on awarding credit for performance not seat time (Princiotta & Reyna, 2009, p. 5). The Michigan seat time waiver created opportunities to address the major reasons for dropping out of school.

The population sample was comprised of 1037 fourth and fifth year Michigan high school students. The vast majority of students entered ninth grade in the fall of 2006 and were part of the cohort eligible to graduate in 2010. These were fourth year, on track seniors. Some students entered ninth grade in the fall of 2005, failed to graduate with their cohort in 2009, and continued as fifth year seniors in their high school setting with the possibility of graduating in 2010. Both groups were included in the sample. Student data from five high schools in four Michigan districts was utilized. One district had both a traditional high school and an alternative high school with students on the seat time waiver. Data from both high schools in that particular district were used.

Methodology Summary

Written permission was obtained from the four participating district superintendents to access student data via the Center for Educational Performance and Information (CEPI) and from district principals or counselors. In the fall of 2010, superintendents of high schools participating in the research project provided signed agreements granting permission to access and utilize student data related to graduation, at risk status, and seat time waiver participation for the 2009/2010 school year. District superintendents received a letter detailing the collection process via CEPI and through contact with their high school principals and counselors. High school principals and counselors were contacted to obtain the Universal Identification Codes (UIC) and or names for senior, seat time waiver participants for the 2009/2010 school year. In April of

2011, data for graduation, at risk status and gender were accessed and put into an excel spreadsheet format. Student's names and Universal Identification Codes for all students were replaced with arbitrary numbers ensuring confidentiality.

Information was uploaded into the Statistical Package for the Social Sciences (SPSS) 17.0 for analysis. The data was examined in two ways: descriptively and using logistical regression. Bar graphs were created to provide a pictorial summary of the descriptive data. Logistic regression was utilized to determine if a student was more or less likely to graduate based on the predictor variables of at risk status and seat time waiver participation.

Summary of Findings

Quantitative analysis techniques were utilized to investigate the project research questions. Table 31 summarizes the key findings of the study.

Table 32. Key Findings of Research Study

Key Findings

1. Utilizing a seat time waiver positively impacts the probability of high school seniors graduating.
 2. Utilizing a seat time waiver impacts the probability of at risk, high school seniors graduating.
 3. Utilizing a seat time waiver positively impacts the probability of at risk, male, high school seniors graduating.
 4. Utilizing a seat time waiver negatively impacts the probability of at risk, female, high school seniors graduating.
-

Research Question #1: Does utilizing a seat time waiver impact the probability of non at risk high school seniors graduating?

The null hypothesis for this question was:

H₀: Utilizing a seat time waiver does not impact the probability of non at risk high school seniors graduating.

The first research question examined whether the seat time waiver impacted the probability of non at risk seniors graduating. The initial binary regression indicated that with an increase in use of the seat time waiver, the probability of graduation will increase. The results of the study indicated that the interactive effects of the seat time waiver and non at risk students showed positive impact on the likelihood of graduation. The null hypothesis was rejected based on the results of the statistical analysis.

The findings further substantiate information documented in The United States Department of Education 2010 Review of Online Learning Studies reporting that “students in online conditions performed modestly better, on average than those learning the same material through traditional face to face instruction” (p. xiv). The research study findings concur with recent research indicating that programs offering students online opportunities for learning and credit acquisition are becoming more successful over time as evidenced by documented student achievement and are proving to be viable options in education.

Research Question #2: Does utilizing a seat time waiver impact the probability of at risk high school seniors graduating?

The null hypothesis for this question was:

H₀: Utilizing a seat time waiver does not impact the probability of at risk high school seniors graduating.

The second research question examined whether the seat time waiver impacted the probability of at risk seniors graduating. The initial binary regression indicated that with an increase in use of the seat time waiver, the probability of graduation for all students will increase. The sample population consisted of 251 at risk students for a total of 24.2% of the sample. Using binary regression analysis and an interaction between the predictor variables of the seat time waiver and at risk status the results did not show statistical significance to indicate that at risk students on a seat time waiver would be more likely to graduate.

To further investigate the impact of the seat time waiver on the at risk population, the predictor variable of gender was added. This produced interesting and important results. Binary regression indicated statistical significance for at risk, male, seat time waiver participants and the probability of graduating. In Michigan, the 2010 graduation rate for males was 71.1% and for females was 80.44%. The graduation rate for at risk students was 66.59%. The data obtained in this research project show promise for at risk young men and the probability of graduating. The results for at risk females were statistically unfavorable in this study. Statistically significant results indicated that the probability of at risk females graduating when utilizing a seat time waiver decreases. The null hypothesis was rejected based on the results of the statistical analysis.

Connections to Previous Research

This study confirmed the work of many researchers reporting on the importance and impact of technology on education for all students. Additionally, the study makes

important connections to research related to at risk students and high dropout rates. Educational trends show dramatic differences in instructional delivery for future students. This may prove to be particularly important in reaching at risk students who may have otherwise become dropouts. Public education is experiencing a revolution based on the evolution of technology and the fact that students are immersed in fast paced technology from the moment they are born. Students have different needs and a one size fits all instructional approach is no longer relevant. Current research shows great promise for student success in online learning environments.

There is a direct correlation between high school dropouts and at risk students in poverty. In a 2006 report compiled by the National Center for Education Statistics for the United States Department of Education statistics showed there were 4.5 times as many high school dropouts from low income families as from high income families and 2.5 times as many high school dropouts from low income families as from middle income families. This disparity is true for data collected from 1972-2006 (Laird, Cataldi, KewalRamani, & Chapman, 2008).

Dropping out of school presents tremendous challenges for individuals and society. The life path for dropouts is far more likely to include lack of employment, less earnings, public assistance, and prison (Cristle, Jolivette, & Nelson, 2000). In 2000, 56 percent of dropouts were unemployed compared to only 16 percent of high school graduates (Stanard, 2003). In 2010 it was reported that an average of 7200 students will dropout of school everyday (Foundation for Excellence, 2010).

This seat time waiver research project shows that there is promise for at risk males utilizing a seat time waiver and success in acquiring credits toward graduation.

Though this research did not show favorable results for at risk females and graduation, males are significantly more at risk for dropping out of high school than females.

Early research related to gender and technology reported that boys had greater computer experience, both in home use and school use, than girls (Sanders, 2005). Further, there was a significant amount of research on the “male dominated culture of computing. Thoughtful analysis of the hallmarks of male computing culture – invisibility, exclusion, condescension, hostility, an emphasis on speed and competitiveness, and other dynamics – have been published every decade since the 80’s” (Sanders, 2005, p. 6). Recent research indicates that internet use among females is now higher than males (Yukselturk & Bulut, 2009). This shows that the gender gap in exposure may have closed but does not speak to why and how the internet is used differently by males and females.

A recent study specific to junior high students and online exploration and online communication reported interesting results. Boys were more exploration-oriented internet users and girls were more communication-oriented users, pointing out that gender plays a significant role in student views on the purpose of internet use (Tsai & Tsai, 2010). This study, along with other previous studies, substantiates the reality that females and males learn and respond differently in online environments. The research does not speak to student outcomes in terms of achievement or credit acquisition as it relates to gender and online environments. There is a notable lack of research on this topic.

This research project on the seat time waiver and the probability of student graduation did not investigate which courses seat time waiver students participated in or

the instructional delivery of the online courses. The delivery, communication methods, and expectations for the courses may have contributed to the lack of success for at risk females in this study. Likewise, these same factors may have been more conducive to the learning styles and strengths of the at risk males in the study. Further research should be done to address these variances. Research on K-12 students and online learning is extremely limited. There is a need for specific research on gender, at risk status and online learning in order to adequately assess the success of online learning models including the seat time waiver and ultimately, to create the possibility of success for all students.

Online learning has rapidly increased since the 1990s. “Online learning – for students and for teachers – is one of the fastest growing trends in educational uses of technology” (U.S. Department of Education, 2010, p. xi). In 2003 nearly 50,000 K-12 students were enrolled in online courses (Golden, Wicks & Williams, 2004). The primary target populations for online learning or virtual schools include gifted students, students seeking credit recovery, at-risk students and dropouts. Online learning has emerged as a supplement or replacement for face to face classroom instruction for students failing in traditional secondary programs (Chen & Hirumi, 2005). It is estimated that more than one million K-12 students took online courses in the 2007-2008 school year (Picciano & Seaman, 2009). Technology and K-12 enrollment in online courses has out paced all other educational formats in recent years (Setzer & Lewis, 2005).

“Digital learning can transform education. Technology has the power and scalability to customize education so each and every student learns in his or her own style , at his or

her own pace, which maximizes the chance for success in school” (Foundation for Excellence in Education, 2010, P. 4).

Harvard Business Professor and researcher Clayton Christensen believes that we are in a “disruptive transition from teacher- delivered to software-delivered instruction” (Christensen, 2008, p. 91). Data support the notion that by 2019, 50% of high school courses will be delivered on line (Christensen, 2008). Researcher Brady reports that Christensen’s prediction of fifty percent of all high school courses being taught online by 2019 is a “sharp contrast” to the current estimate of approximately two percent but “elevates the debate on the promises and drawbacks of online learning” (Brady, Umpstead, Eckes, 2010, p. 2)

Research studies prior to 2005 indicate that overall, there were no statistically significant differences in online instruction and face to face instruction (Bernard et al.,2004; Cavanaugh, 2001; Machtmes & Asher, 2000; Zhao, 2005). Bernard (2004), Cavanaugh (2001), and Machtmes (2000) conducted meta analyses of available research analyzing student achievement using interactive distance education or online learning with student achievement using face to face instruction. Though K-12 research is limited, “it can be argued that as the use of interactive distance education grows and expertise develops, academic gains can be expected to increase” (Cavanaugh, 2001 p. 85).

Research after 2005 presents a more positive trend in terms of student outcomes (Sitzmann, Kraiger, Stewart, & Wisner 2006; US Department of Education, 2010). Sitzmann’s research examined the effectiveness of web based instruction versus classroom instruction primarily in industry, government, and higher education. Though

not specific to K-12 education the study presents strong evidence that web based instruction is becoming increasingly more effective for learners.

The US Department of Education 2010 Review of Online Learning Studies reports that “students in online conditions performed modestly better, on average than those learning the same material through traditional face to face instruction” (p. xiv). This information is drawn from various studies – most of which were not K-12 specific. “Few rigorous research studies of the effectiveness of online learning for K-12 students have been published” (US Department of Education, 2010, p. xiv). There is a tremendous need for further study specifically related to K-12 student achievement. Despite the gaps, available research is beginning to show a positive trend in achievement favorable to the use of online learning opportunities for K-12 students. “The preliminary research shows promise for online learning as an effective alternative for improving student performance across diverse groups of students” (Patrick & Powell, 2009, p. 10).

The concept of the seat time waiver, allowing students to learn any place, any time, any pace, using teacher led online courses, is one model that takes into consideration the characteristics of today’s learner and the skills necessary for success in the 21st century. This research project on the use of a seat time waiver to create flexible online opportunities for public school students showed results similar to other recent studies. The project adds to the conversation of online learning as an effective instructional model for many students.

Conceptual Model Summary

The conceptual model (Appendix A) is a pictorial representation of the legislative factors, changing instructional models, continued concern for the success of marginalized

students, the technology explosion, the development of today's technologically exposed learners, and how these led to Michigan's decision to waive pupil accounting regulations. The conceptual model depicts the seat time waiver as an instructional delivery model option resulting from these developments. Ultimately, the conceptual model symbolizes the impact the independent variables of at risk status and seat time waiver participation may have on the probability of graduation.

The study was conducted based on two frameworks - the ethic of profession and the ethic of critique. The frameworks call educators to consider the best interest of all students with particular attention to those who may be under served educationally due to existing inequities and injustices. These concepts frame the entire project and are represented as such in the conceptual model.

The federal No Child Left Behind legislation led to a stronger focus on achievement, proficiency and rigor for all schools. In April of 2006 Michigan Governor Jennifer Granholm signed into law one of the most comprehensive sets of high school graduation requirements in the nation called the Michigan Merit Curriculum (Michigan Department of Education, Michigan Merit Curriculum, 2010). With these new requirements and growth and access in technology the Michigan Department of Education was open to removing barriers to innovation and academic success. The seat time waiver was developed based on this concept of removing existing barriers due to pupil accounting. There are various instructional models and changes in technology that led to the possibility of students being supported by schools but not having to be bound by the rules of daily attendance inside traditional school buildings.

Michigan, like many other states, faces problems with high school dropout rates. At risk students are far more likely to dropout of high school than non at risk students. For individuals, this leads to poverty, unemployment and increased potential for imprisonment. As a society, high dropout rates create financial burdens and quality of community concerns. One response to the dropout crisis over past decades has been alternative education. This offers at risk students an alternate setting which can better serve the needs of at risk youth.

The tremendous technological advancements and substantial increase in student access to technology in recent years has led to instructional models centered on virtual learning. Alternative programs offer in school, online courses for credit acquisition. More recently, cyber schools were launched offering student access to full time virtual learning. Today's sophisticated, technologically exposed learners can be better served with creative instructional options which incorporate and expand their digital skills sets and enhance the development of skills necessary for success in the 21st century. The seat time waiver is a flexible, online option which allows students the freedom of any time, any place, any pace learning with the support of an educator from the traditional high school. In particular, the seat time waiver may prove to be an added credit acquisition and graduation opportunity for students at risk for dropping out of high school.

Implications of the Study

This research study has implications for district administrators, educators, the Michigan Department of Education, students, and parents or other primary care givers. It serves as initial data on the impact that seat time waiver participation may have on the probability of graduation.

Implications for District Administrators

Schools are faced with the challenge of high dropout rates, decreased funding, and an outcry from the public and government officials to implement initiatives which will result in greater student success, increased academic rigor, and ultimately, substantially higher numbers of high school graduates. The seat time waiver initiative is one option that meets the needs of a variety of students, maintains funding for the student in the public school district and is proving to be successful for students. Of particular importance is the statistical evidence in this research indicating that there is increased probability of at risk males graduating while participating in a seat time waiver. Males are substantially more at risk for not graduating in Michigan than females. This research suggests that the seat time waiver may be especially useful in districts helping young males find success. It is important to note that this was not the case for at risk females in the study. In fact, the study indicated that females utilizing a seat time waiver were less likely to graduate.

District leaders should allocate resources to the successful identification and mentoring of students who may be well served using the seat time waiver model. Additionally, district administration should be diligent in documenting the experience of students participating in this learning model, paying particular attention to gender. Superintendents need to advocate for legislation to create dollars for online learning opportunities in public schools including the seat time waiver model.

Additionally, school districts should implement stakeholder committees to explore online learning opportunities for students. The committees should include parents, teachers, students, board members, community members, business leaders and

the local political representatives. This model would serve as a way to create initiatives and policy specific to each district.

On a broader scope, county-wide or state-wide advocacy groups, including intermediate school district representation, should be formed to explore possibilities and work toward policy changes at state and federal levels. Current levels of funding and contractual obligations to face to face instructional practices are barriers to the success of online learning initiatives and blended model programming.

Implications for Educators

Educators are in a transitional time in our history. Technology is used in numerous capacities in education. Online and blended models of teaching and learning are increasing at incredible rates. Educators are responsible for identifying how each student will learn and be successful and whether they fit into a traditional classroom setting or may benefit from an online alternative. This research study suggests that the seat time waiver should be accessed for a variety of students as a viable option for acquiring credits toward graduation. Educators must take responsibility for the identifying, mentoring, and monitoring of seat time waiver participants in order for students to find success.

Local districts must adequately train counselors to help students access online courses and to mentor them through the seat time waiver process. Counselors should be afforded an appropriate amount of time to dedicate to students on seat time waivers. Districts should implement accountability procedures to ensure that counselors are meeting the needs of seat time waiver participants. Additionally, there is a need to

allocate local resources to the collection and assessment of data related to seat time waiver students' success in credit acquisition and achievement.

Implications for Students and Parents or other Primary Care Givers

The seat time waiver is an opportunity for any student to participate in the public educational process while engaged in a completely online experience. Parents and other primary care givers may find that for any number of reasons a traditional educational experience inside brick and mortar school is not the best fit for their child. The state of Michigan envisioned that students or parents may choose the seat time waiver option for suspended or expelled students, students with attendance issues, students with social or emotional issues, students interested in accelerated learning students with medical situations, pregnant or parenting teens, students on the move, working students or home school students.

This study provides information for parents and students that the seat time waiver is a viable option for credit acquisition toward graduation. Though it is only one small study, this coupled with recent research indicating that students engaged in online instruction are performing modestly better than students receiving face to face instruction, testing for the same material, is powerful evidence that the needs of students can be met using a non traditional model.

Implications for the Michigan Department of Education

In 2007, Michigan Superintendent, Dr. Michael Flanagan, introduced the seat time waiver as a possibility for Michigan school district to offer full online programs to public school students. The initiative was accessible state wide by the 2009/2010 school

year. The pupil accounting rules only allowed students to participate in two online courses without a waiver. The initiative was a way to allow for any time, any place, any pace learning while maintaining full student funding within districts.

This study provides some evidence to the Michigan Department of Education (MDE) that school districts offering the seat time waiver are creating opportunities for success for students. The findings indicate that the probability of graduation is likely to increase as use of the waiver model increases. Certainly, the goal of the Michigan Department of Education and all Michigan school districts is to increase graduation rates. Significantly more research needs to be done to monitor the success of the seat time waiver.

On April 25, 2011, Dr. Flanagan spoke at the Governors Summit in Lansing, Michigan. He expressed his desire to make further changes regarding public schools ability to offer online programs to students. He now feels strongly that at some point in the future schools should have the flexibility to provide online opportunities to students without having to seek a seat time waiver. Such a change would indicate the state's commitment to public schools taking full advantage of technological possibilities and addressing the needs of all learners and their success.

The support of the Governor and a move toward creating further flexible options for online learning opportunities in public schools is positive and appropriate. Unfortunately, the state is not providing sufficient funding to adequately investigate and implement technologically driven programs. Though the state sees the advantages to such programs, legislators continue to reduce funding for schools. The Michigan

Department of Education, boards of education, superintendents, educators, parents and all community members must insist that the issue of adequate school funding be addressed.

State and federal grant opportunities should be developed to create technological capacity for local districts. There are various grants available for initiatives to serve at risk students; however, the funding is inadequate to meet the needs of all districts. Further, grant funding should be allocated for programs specific to credit recovery utilizing technology. State and federal legislators continue to express great concern for at risk students and high drop out rates with little to no action toward solutions. The creation of unfunded mandates for school districts continues yet no financial or legislative support materializes.

The Future of Seat Time Waivers

In July of 2011, the Michigan Department of Education announced expansion of the seat time waiver program for the 2011-2012 school year. All existing waivers are still applicable and the Genesee Intermediate School District waiver program is still in effect. The expanded program allows districts to run their own seat time waiver programs utilizing a streamline and simplified application process. Additionally, the expanded program creates a blended learning option. Districts approved for this option can create flexible learning opportunities combining face to face instruction with online learning. 100% of grades 6-12 students in a district may participate in the blended learning option with the stipulation that no more than 50% of the pupil's instructional time be online (Michigan Department of Education, Streamlined Process for Approving Seat Time Waivers, 2011). The expanded seat time program is further evidence of the Michigan

Department of Education's commitment to flexible, innovative models of instruction leading to the successful graduation of career and college ready students.

Support from the Michigan Department of Education and legislators to provide flexibility for schools in creating individualized models of instruction for students is a tremendous shift. The opportunity to utilize a combination of face to face and online instruction is powerful. It has the potential to meet the needs of all students. Though verbal support and a change to the pupil accounting regulations are a good starting point, legislation must be passed allowing districts to manage outdated contractual obligations to face to face, teacher led instruction. We are at a critical point in public education – one which requires innovative thinking, strong leadership, a commitment to the success of all students, and a willingness to embrace change with technology serving as a major driver in decision making.

Seat time waivers will likely be unnecessary in the near future. The concept of public school students learning outside of brick and mortar school buildings is here to stay. Dr. Flanagan's commitment to allowing schools the possibility of waiving pupil accounting regulations as a way to remove barriers for student success was the first step in a process for schools to create any time, any place, any pace, individualized learning opportunities. Governor Snyder's favorable position on granting public schools flexibility to initiate various teaching and learning models without a formal waiver process is further movement in a positive direction. Though the waiver process as of 2011 is streamlined for easier access, the ultimate goal should be permanent changes to pupil accounting regulations allowing maximum flexibility.

The investment in total online and blended models of instruction is essential. A commitment to utilizing technology to its fullest capacity and abandoning our relentless commitment to an outdated instructional model in public education is the path to fulfilling the possibility of success for all students.

Critique of the Study

Limitations existed for the study due to factors related to the sample. The seat time waiver was available to a select few districts beginning in the 2008-2009 school year. It became available statewide in the 2009/2010 school year. Utilization of the waiver was minimal in the 2009/2010 school year. Purposive sampling was used to identify high schools with documented use of the waiver. There were 35 seat time waiver students in the total sample population of 1037 or 3.1%. This small number of seat time waiver participants was an anticipated limitation of the study.

The small number of seat time waiver students likely compromised the model fit reported in the binary regression statistics. This suggests that though the results indicated the seat time waiver did impact the probability of graduation at a statistically significant level there are other outside factors that may substantially contribute to the result.

The study was also limited by the time frame and the number of schools included in the sample. Data are only reflective of the 2009/2010 school year. Additionally, only five high schools in four Michigan school districts were included. Though the sample included rural, suburban and inner city students from traditional high schools and one alternative high school it is very small in comparison to the entire state population of high school seniors in 2009/2010.

Uncontrollable factors also created limitations for the study. It was impossible to know the percentage of at risk students in the population until the study was in progress. Access to the at risk data was only available upon approval of the project from the Central Michigan University Internal Review Board. The sample proved to have a total of 24.2% of at risk students in comparison to 29% of at risk students state-wide. Though not essential, a higher number of at risk students more closely matching the state population would have been ideal. Additionally, the graduation rate for the population was not accessible until after project approval. The 2009/2010 Michigan graduation rate was 75.95% while the population sample graduation rate was substantially higher at 87%.

Recommendations for Future Research

Research on the impact of online learning in K-12 public education is very limited. Some recent research indicates that online learning is at least as effective as face to face instruction. The seat time waiver in Michigan allows public schools to provide full online experiences for students as an option for meeting the criteria for high school graduation. Research on the impact of the seat time waiver is just beginning. This study analyzes the impact of the seat time waiver on the probability of high school seniors and graduation. The study addressed both non at risk and at risk students.

There are numerous studies that could add to the conversation of the impact of the seat time waiver. This study only examined gender as it impacted at risk students. Further research should be done with gender, on at risk students and the seat time waiver. Additionally, race and ethnicity should be added as predictor variables in order to assess their interactive impact with seat time waiver participation and the probability of graduation.

This study indicated positive impact on graduation for at risk, males on the seat time waiver. This is a critical finding in light of the lower graduation rate for males versus females and in particular for those at risk. Further research must be done to determine if minority males, in particular, would benefit from the seat time waiver or other online initiatives. Dropout rates for minority males, specifically Hispanic and African Americans, are high across the United States.

Beginning with the 2010-2011 school year, the state of Michigan is requiring that seat time waiver information be included in data reported by all districts to the Center for Educational Performance and Information (CEPI). This makes student data on the seat time waiver easily accessible with permission. This change in reporting makes it possible to do a state wide study on the probability of graduation for students on a seat time waiver. This state wide research should be done incorporating the other predictor variables discussed previously including gender, race and ethnicity and at risk status. Future research should include a comprehensive, longitudinal study as more data is available over time.

This study focused on high school seniors and the probability of graduating while participating in a seat time waiver. Further research should assess the impact on graduation for those students who begin utilizing a seat time waiver earlier in their school careers. As online learning continues to increase in popularity as a viable option students and parents will access the seat time waiver earlier.

There are numerous factors that contribute to the success or failure of students. Further research should include qualitative studies examining why students or parents

choose the seat time waiver and what factors contribute to success or failure using this learning model.

Finally, further research could be conducted on seat time waiver high school graduates and their college experience. Research to examine the preparedness of seat time waiver students in comparison to traditional high school graduates would add to the conversation of the effectiveness of the seat time waiver. Research could also be done to determine if seat time waiver high school graduates are more likely to choose on line college experiences as opposed to the face to face instructional models.

The research on the seat time waiver in Michigan is just beginning. There are many possibilities for further studies to provide insight specifically on the impact of the seat time waiver, and more generally to the conversation of the impact of online instruction on education.

Conclusion

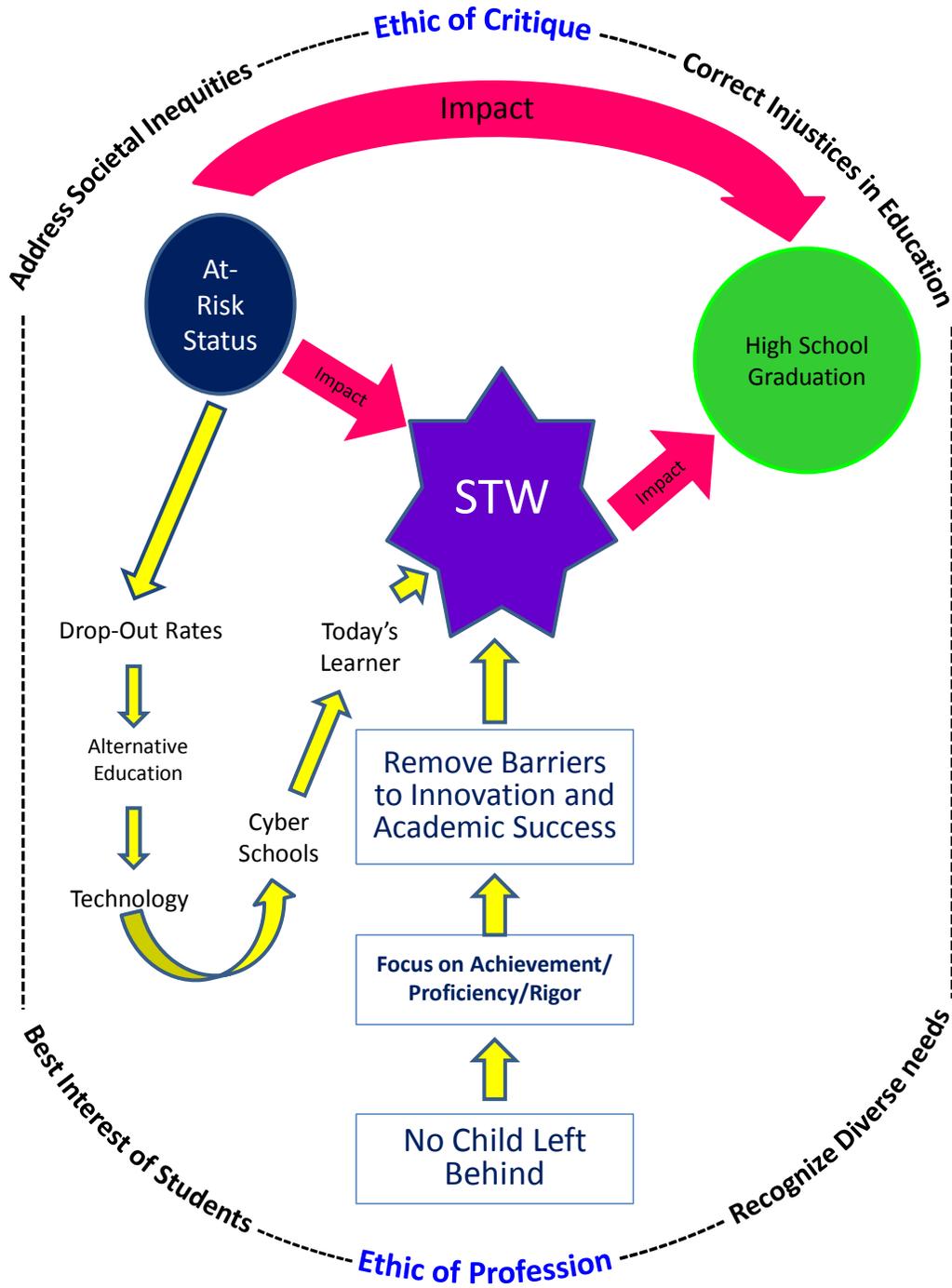
This research study found that the Michigan seat time waiver impacted the probability of graduation for at risk and non at risk high school seniors. Specifically, results indicated that with increased use of the seat time waiver the probability of graduation increased for all non at risk students and for male, at risk students. Results also indicated that the probability of female, at risk students graduating decreased with increased use of the seat time waiver.

The key findings related to non at risk, seat time waiver participants and male, at risk seat time waiver participants further substantiated other recent research. The negative impact of the seat time waiver experience for females is contrary to recent research regarding student success and online learning. Far more research with state

wide data over time should be done to make more generalizable conclusions regarding the success and impact of the seat time waiver and credit acquisition toward graduation.

APPENDICES

APPENDIX A
THE CONCEPTUAL MODEL



APPENDIX B

LETTER TO SUPERINTENDENTS



November 23, 2010

Dear _____,

Thank you for your consideration to participate in my doctoral research project. I am a doctoral student at Central Michigan University and the Superintendent of Coleman Community Schools. My research involves examining the impact of the seat time waiver on student graduation and requires access to specific data which is housed in the Center for Educational Performance and Information (CEPI). I am requesting your permission to access _____ High School student data for all 2009/2010 fourth/fifth year seniors via CEPI. I will be utilizing information on graduation status and at-risk status for each student. Data will be reviewed from various districts in the state of Michigan.

Additionally, I am requesting permission to contact your high school Principal/Counselor to obtain the Unique Identification Codes for all 2009/2010 seniors using a seat time waiver. Graduation and at-risk data will be reviewed for these students as well.

Per our discussion, all identifiers for the students will be removed and a pseudonym will be used for your high school. All identifying data will be kept in a secure location and destroyed upon completion of the dissertation.

Thank you for your cooperation in this matter. Please review the attached document. Respectfully, I am requesting that you sign the permission document and place it on your district letterhead. You may return it to me via email or fax. The document will be provided to the internal review board at Central Michigan University as part of a process to ensure the protection of all subjects in the research project.

Sincerely,

Keely P. Mounger
Cell: (810)223-4416
Office: (989)465-6060
Fax: (989)465-9853
E mail: kmounger@colemanschools.net

APPENDIX C

WRITTEN PERMISSION FROM SUPERINTENDENTS

(District Letterhead)

Dear Ms. Mounger,

This document serves as notification of permission to include _____ High School student data as part of a study on the seat time waiver, at risk students and graduation.

Specifically, you are granted permission to do the following:

1. Access at risk status and graduation data for all fourth/fifth year _____ High School Seniors for the 2009/2010 school year via the Center for Educational Performance and Information (CEPI).
2. Obtain the Unique Identification Codes (UICs) for all fourth/fifth year _____ High School Seniors on a seat time waiver in the 2009/2010 school year.

I understand that all student identifiers will be removed and a pseudonym will be used for _____ High School. Additionally, all identifying data will be kept in a secure location and destroyed upon completion of your dissertation.

X _____
Name
Superintendent
(School District)

Date _____

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