A study of alternative education seat time waiver students in Michigan

Linden A. Moore

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A Study of Alternative Education Seat Time Waiver Students in Michigan

by

Linden A. Moore

Dissertation

Submitted to the Department of Leadership and Counseling

Eastern Michigan University

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Educational Leadership

Concentration in Educational Studies

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Ypsilanti, Michigan
Dedication

This work is dedicated to a number of people. Especially to my incredible wife, Janel, whose support, patience and encouragement makes me a better man every day. To my children, Eli and Alex, for giving me all the patience and understanding a four and seven year old can drum up. In return, I offer my nights and weekends henceforth.

I dedicate this work also to my parents, Rin and Sabrina Moore, who taught me to be relentless and never give up!

Finally, I dedicate this work to Edward S. Graham, Ph.D. who kept me focused on the prize, offered words of encouragement and advice, and has continually set the example of what a professional is.
Abstract

In September of 2007, the Michigan Department of Education introduced a program referred to as seat time waivers to a few school districts in Michigan to pilot. During the 2009-2010 school year, 999 students were on seat time waivers with a total of 5070 classes taken by these students. While the number of online learners continues to grow exponentially, the levels of success are questionable.

This study investigates the reason why some students placed on seat time waivers find academic success while others do not. It compares the different academic characteristics the students self-report and identifies which of these had the greatest impact on academic success. By identifying these characteristics, students, parents, and school administration can make more informed decisions when deciding who is a candidate for a seat time waiver.

A modified version of the Education Success Prediction Instrument (ESPRI) was completed by 205 alternative education students in Grades 9-12 on seat time waivers in Michigan. The students self-reported on their perceived level of self-regulation, self-management, external support, socioeconomic status, internal and external locus of control, and technology aptitude. Exploratory factor analysis, confirmatory factor analysis, and structural equation modeling were used to identify the characteristics that had the greatest impact on total courses completed and the pace the courses were completed.

Major findings include (a) working at school impacts both outcomes, (b) different factors impact each outcome, (c) students showed a deficit perspective through internal locus of control, (d) female course completion increased with increased face-to-face meetings with their mentors, (e) self-management did not impact either outcome, (f) student self-regulation was key to increase total course completion and pace.
The results provide insight for school districts and families looking to put a student on a seat time waiver. This information can help school districts and families avoid costly mistakes for a district and setbacks for students who do not pass online courses.
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Chapter 1: Introduction

The school setting many teachers and administrators knew 10 and 15 years ago is no longer the setting of today (Yi, 2013). Many characteristics of schools have changed including the students. Schools can no longer try to push students out the door after educating them for 13 years like a cog on an assembly line; they now must meet the needs of individual students and give them every opportunity to be successful based on their individual needs and interests. Students are no longer formed into the cookie cutter shape that is most convenient for the school; they are instead encouraged to be their own person and take advantage of their education as an opportunity to enhance themselves as individuals. Recent additions to the Michigan School Code Act 451 of 1976 now require schools to create personal curricula for students to aid in the achievement of their goals during and after high school (Legislative Council, State of Michigan, 2011).

To meet this need, schools have had to find creative ways to broaden their course offerings. Schools have the option to hire teachers to instruct fewer common course requests like Latin, digital arts & photography, macroeconomics, etc.; however, there may be few students enrolled in these courses, depending on the total number of students enrolled in the school. A school will have difficulty sustaining a budget with such a large resource tied to so few students. A much more cost-effective approach is to enroll those students in an online course. Nationally the number of students taking online courses has topped 1 million, and this number seems to be growing (Dillon & Tucker 2011). Allen and Seaman have defined four different kinds of courses in reference to how much of the course is delivered online. A class with 0% online is considered a traditional class. One that has 1% to 29% of the instruction facilitated online would be referred to as web-facilitated. Classes that have 30% to 79% of its curriculum
delivered online is a blended or hybrid course. Only classes that have more than 80% of its course content and instruction online would be considered an online class (Allen & Seaman, 2007).

At its inception, online schooling was used as a supplement to classes or a way for students to earn necessary credits through credit recovery. Over the past ten years, increasing numbers of students have moved to full-time online learning. According to the Sloan Consortium, an estimated 1.03 million students were taking online classes in the United States in the 2001-2008 school year. That was up 47% from two years prior, and the number of students continues to climb (Arora, 2009). In 2013, the International Association for K-12 Online Learning produced a publication that claimed K-12 online learning estimated to be a $300 million market, which is growing at a projected annual pace of 30% (INACOL, 2013).

Statement of the Problem

In September of 2007, the Michigan Department of Education introduced a program referred to as seat time waivers to a few school districts in Michigan to pilot. (Van Beek, 2011). In the next school year, the Genesee Intermediate School District (GISD) applied for a seat time waiver that encompassed every high school in the county (Svitkovich, Knox-Pipes, Hagel, & Schantz, 2010). To utilize the seat time waiver, students were required to enroll in the GISD’s GenNET program. For the 2009 – 2010 school year, the GenNET program was opened to all schools in the state of Michigan.

During the 2009 – 2010 school year, 999 students were on seat time waivers with a total of 5070 classes taken by these students. Due to the success of the 2009-2010 school year, a school district may file for seat time waivers provided the school follows a specific set of rules to account for students’ participation in their education. According to these rules, students on the
seat waiver may take a virtual learning course, or an online class, without the in school seat time requirement. An online class, as defined by the State of Michigan, is

A course of study that is capable of generating a credit or a grade, that is provided in an interactive internet-connected learning environment, in which pupils are separated from their teachers by time or location, or both, and in which a teacher who holds a valid Michigan teaching certificate is responsible for determining appropriate instructional methods for each pupil, diagnosing learning needs, assessing pupil learning, prescribing intervention strategies, reporting outcomes, and evaluating the effects of instruction and support strategies. (Legislative Council, State of Michigan, 2014)

Without a seat time waiver, a student is limited to two online classes per semester, but with a seat time waiver, a student may enroll in unlimited courses. Furthermore, the student does not need to be present on count day but must be assigned a mentor teacher to assist and monitor progress (Michigan Department of Education, 2013).

In the current climate of educational funding in Michigan, students equal money. The more students a district has, the more money it gets (Legislative Council, State of Michigan, 1994). Additionally, parents now have options when it comes to where their child is educated. The school in the community in which the student resided was the only option for students prior to “school of choice.” Now students can pack up their book bags and go to another school without packing up their homes (Legislative Council, State of Michigan, 2008). Schools are now in a situation where they must treat students and parents as costumers and do what they can to keep them happy, satisfied and returning to the school. The days of telling students, “We can’t meet your needs,” are drawing to a close. Schools must now find ways to meet the needs of their clientele or students will leave the district and go to another and with that goes our funding.
Schools are also held responsible for their students graduating no matter what they do. If a student is kicked out of school for drug possession and never graduates, that is considered the school’s “drop out” whether they come back to school or not. No matter what happens in a student’s personal life, the State of Michigan holds firm that it is the school’s responsibility to get the student graduated. To this end, schools are caught in a difficult situation. By holding firm on its rules and expelling a student, the school runs the risk of having the credit of a drop out (Center for Educational Performance and Information). Additionally, according to the *MDE Pupil Accounting Manual*, if a student is expelled or suspended and only receives two non-consecutive hours per week of individualized instruction, they become a pro-rated full-time equivalent student (FTE) (Michigan Department of Education, 2010). This makes the decision to hold firm on the values of a school’s policy, even when the decision is potentially costly. With the help of a seat time waiver, not only does the student stay on track to graduate, but the school also receives the funding to educate him or her.

While the State of Michigan has been willing to waive the amount of time a student must be in school by allowing students to earn their education online, it has not been clear as to who should be given this opportunity (Michigan Department of Education, 2013). The process and information that needs to be provided for a school district to receive funding for each pupil on a seat time waiver is very clearly provided within the pupil accounting manual provided by the Michigan Department of Education, but recommendations for who should be a candidate is lacking (Michigan Department of Education, 2013). Intermediate school districts like the one in Genesee County have recommended a variety of students based on their personal situations instead of basing the decision on their skill sets and personal habits. They and other school districts have utilized the seat time waiver program as an opportunity to provide online classes to
students who are suspended/expelled, teen parents, traveling, or students who are homebound due to medical issues (Svitkovich et al., 2010).

The seat time waiver program has the potential to take on many more students in future school years. The problem is, while the number of online learners continues to grow exponentially, the levels of success are questionable. Schools must have better identification processes and better knowledge about the factors that lead to success. This study will help principals and counselors at schools determine if the students they have are good candidates for seat time waivers and online learning. There are many studies that show a student’s grade point average (GPA) is a great predictor for of how a student will perform in an online class, showing that past performance is an indication of future results (Cheung & Kan, 2002; Willging & Johnson, 2009). Many students in need of a seat time waiver do not carry a GPA that would indicate future success, so other characteristics need to be examined. By studying the characteristics of the students who are successful in online learning schools will be able to determine the students who will be successful in those classes. This will save the schools money on wasted courses that students failed, and it will save the students from wasting time in classes they fail therefore putting them further behind for graduation.

Purpose and Rationale of the Study

The purpose of the study is to identify the characteristics advantageous for an alternative education student to be successful in a seat time waiver. Additionally, the study measured the impact these characteristics have on how many classes a student was able to complete. Students on a seat time waiver have the option to work on a class at the pace with which they are most comfortable. Students who are credit deficient or interested in early graduation have the option to work at an accelerated pace to complete courses more quickly.
Conceptual Framework

The goal of a seat time waiver is to give a student the opportunity to pass classes, graduate within four years and find post-graduation success. While students on seat time waivers may forgo opportunities and experiences they had in a traditional school such as participating on athletic teams, prom, and homecoming, they gain freedoms and other opportunities by being on a seat time waiver such as flexible schedules and a greater range of courses to take. All of these changes represent just some of the challenges that come with making the decision to move from traditional learning. Specific student characteristics impact the level of success a student has in an online learning environment as diagramed in Figure 1. Lacking these characteristics may be compounded if the student is from an at-risk or low socioeconomic status family. Moreover, the student’s characteristics may have a greater impact than the reason why the student is on a seat time waiver in the first place.

Researchers are divided when it comes to the way that self-regulation is defined. Self-regulated learners are cognizant of their academic strengths and weaknesses, and they have a repertoire of strategies they appropriately apply to tackle the day-to-day challenges of academic tasks. These learners hold incremental beliefs about intelligence (as opposed to entity, or fixed views of intelligence) and attribute their successes or failures to factors (e.g., effort expended on a task, effective use of strategies) within their control (Dweck & Leggett, 1988). Dweck and Bandura refer to such sub-concepts as learning goal orientation versus mastery goal orientation, helplessness and overall response to setbacks.

Mastery goal orientation is the predisposition of people seeking out new and challenging learning tasks because they are intrinsically motivated to do so (Gottfried, Fleming, & Gottfried, 1994). Intrinsic motivation is characterized by one doing an activity for the pure joy of doing it.
Ryan and Deci describe intrinsic motivation as the “natural inclination towards assimilation, mastery and spontaneous interest” in an activity or task (p. 71). On the other hand, when students have a performance approach orientation, they are more interested in proving their self-worth to society or loved ones (Wolters, 2004). For a student to find value in the activity a performance goal structure must be put in place, so extrinsically motivated students can receive something they value (Midgley et al., 1998).
Students who receive seat time waivers:

- Alternative Education
- Dropouts
- Pregnant/parenting teens
- Attendance issues
- Expelled/suspended
- Transient students
- Credit recovery
- Accelerated learning
- Working students

Figure 1. Conceptual framework.
On the other hand, Zimmerman, Kitsantas, and Dabbaugh refer to self-regulation as a process of regulating actions through planning, setting personal goals, self-monitoring, and self-evaluating. Both of these processes are discussed and utilized within this study because each has value in the process of a student being successful in a seat time waiver setting. For the sake of clarity and to reduce confusion within this study, this type of self-regulation is referred to as “self-management.”

Self-management refers to actions that are planned and cyclically adapted to the attainment of personal goals (Zimmerman, 2000). Self-management has specific processes that affect student achievement which include goal setting and planning, self-monitoring, self-evaluating, environmental structuring, time planning and management, and help seeking (Zimmerman, 2002; Kitsantas, 2002). Given the lack of direct supervision to regulate student behavior, characteristics like self-management through strong time management, goal setting and planning and self-monitoring are essential to be successful in an online learning environment (Michinov, Brunot, Bohec, Juhel, & Delaval, 2011).

Self-management is not enough for students to be successful in an online learning course they need confidence in their aptitude. This confidence will help propel them in a positive direction. “Self-efficacy refers to beliefs about one’s capabilities to organize and implement actions necessary to attain designated performance of skill for specific tasks” (Zimmerman, 2000). In addition to the idea of a person’s belief in his or her ability to successfully execute a plan of action, Albert Bandura posited self-efficacy also influences one’s effort and perseverance when faced with adversity or possible failure.

The characteristics for why a student on a seat time waiver and the characteristics of students who experience success are not the same and do not relate to one another. This study
investigates the reason why some students placed on seat time waivers find academic success while others do not. It compares the different academic characteristics the students self-report and identifies which of these had the greatest impact on academic success.

**Research Questions**

The following research questions, along with the conceptual framework, provide the basic outline for exploring the concepts of student success while participating in a seat time waiver:

1. What background characteristics impact the pace and total number of courses completed by a student on a seat time waiver?

2. What skills and online experience impact the pace and total number of courses completed by a student on a seat time waiver?

3. Do particular student characteristics have greater impact than others on the pace and total number of courses completed by a student on a seat time waiver?

The researcher entered this study with the following hypothesis:

1. A student’s level of self-regulation, self-management, locus of control, self-efficacy, external support, technology aptitude, and socioeconomic status as defined in the literature review will have an impact on his/her pace and ability to earn credits while enrolled on a seat time waiver.

2. Students with higher levels of self-regulation, high self-management skills, higher internal locus of control, high self-efficacy, more external support, and higher technology aptitude as defined in the literature review will have an impact on his/her pace and ability to complete courses than the students who do not possess these traits regardless of socioeconomic status.
3. The higher the levels of self-regulation, self-management, internal locus of control, technology aptitude, external support, and self-efficacy a student has, the more classes he/she will complete.

**Term Definitions**

The research questions will be addressed within the conceptual framework illustrated in Figure 1. The framework starts by identifying the students receiving seat time waivers. The boxes located on the right and left are the two different outcomes expected from a seat time waiver. The boxes in the middle are the characteristics the students have that will impact a student’s level of success in either outcome. The higher levels of each characteristic the student has, the greater impact it will have in an online learning setting. There are also arrows in the middle that show the impact that each characteristic may have on one another.

**Accelerated learning** takes what is taught in a traditional semester and allows students to earn credits in a shorter period of time, thus allowing the student to graduate at a quicker pace than in a traditional setting (Boyd, 2004).

**Alternative education** is a separate, non-traditional program within a K-12 public school district or a public school academy established to provide personalized educational services for students who are at risk of not graduating with their class and/or have individual needs not being met in a traditional setting (Michigan Department of Education).

**Attendance issues** refer to any struggles students may have with attending classes due to pregnancy or teen parenthood, or other obligations that conflict with school.

**Credit recovery** refers to a student that is deficient in credits needed to graduate with his/her cohort by taking the equivalent of a full load of courses. A student in a credit recovery
situation will take additional courses outside of the school day to earn credits at an accelerated pace.

**Dropout** is a term the U.S. Department of Education refers to as a student who does not graduate within four years of entering ninth grade (Stetser & Stillwell, 2014). In the State of Michigan however, graduation rates are calculated for four, five and six year students (CEPI), n.d.). This gives the students two years after their cohort has graduated to be considered a part of the graduation rate.

**Expel or suspend** refers to a board of education right to remove a student from school for committing or being an accomplice in a “gross misdemeanor” or “persistent disobedience.” The student could be expelled or suspended for up to 180 days. The student must be given due process and the person hearing the case must be impartial (Michigan Department of Education, 2010).

**External support systems** for students can include but are not limited to parents/guardians, a mentor/coach, or other people willing to provide guidance and support to a student throughout their education. An online mentor is a certified teacher assigned to a seat time waiver student by the school district in which the student is enrolled and is considered the official teacher on record. The mentor is required to communicate with the student about coursework on a weekly basis, assist the student when necessary, monitor progress and keep an online activity report that includes when the student was logged in, coursework completions and any other learning activities (Michigan Department of Education, 2013).

**Internal locus of control** refers to an individual’s belief regarding the events that take place within his/her life are a result of their own actions and under their own control (Lefcourt, 1966). People with high levels of internal locus of control believe their grades in school are a
result of their hard work. They also believe when they have failures in life, it is a result of something they did or did not do.

**External locus of control** refers to an individual’s belief regarding the events that take place within his/her life are unrelated to their own behaviors. Furthermore, they believe that certain situations are beyond their personal control (Lefcourt, 1966). People with high levels of external locus of control believe that positive or negative things that happen in life can be attributed to good or bad luck. They believe that success in school has to do with the what the teachers did or did not do to make them successful.

**Passing classes** refers to the practice of awarding credit to a student that has earned a 60% or “D-“, which falls within an “A” through “E” system that was developed by Mount Holyoke College in 1897. Their system was adapted from Harvard’s system, which classified students into six different divisions (Marzano, 2000).

**Seat time waiver** students may continue to pursue a high school diploma or grade progression utilizing online learning content without physically attending classes held in a school building (Michigan Department of Education, 2013).

**Self-efficacy** refers to beliefs about one’s capabilities to organize and implement actions necessary to attain the designated performance level of skill for specific tasks (Zimmerman, 2000).

**Self-management** has specific processes that affect student achievement which include goal setting and planning, self-monitoring, self-evaluating, environmental structuring, time planning and management, and help seeking (Zimmerman, 2002; Kitsantas, 2002).
**Self-regulation** refers to the student’s goal orientation (performance/mastery), response to failure or setbacks, and their causal agent in behavior outcome sequences (Dweck & Reppucci, 1973; Molden & Dweck, 2006).

**Socioeconomic status (SES)** combines education, income, and occupation to describe one’s social standing or class. Socioeconomic status can impact access to and distribution of resources; “SES is relevant to all realms of behavioral and social science, including research, practice, education and advocacy” (American Psychological Association, n.d.).

**Technology aptitude** refers to one’s ability to search for information on the internet, operate systems, manage files, and use Internet applications all of which are important indicators of completion in online courses (Dupin-Bryant, 2004).

**Transient students** are students who change schools, either once or on repeated occasions, outside of the “normal time” students would change schools (Strand & Demie, 2006). A normal time for changing schools is considered to be when a student matriculates from an elementary school to a junior high.
Chapter 2: Literature Review

This literature review justifies the structure of the concept map as captured in Figure 1. It outlines the two expected outcomes of the seat time waiver. Next, the review identifies the characteristics that impact student success. Finally, there is a brief description of who the students are that get seat time waivers.

Outcomes That Come from a Seat Time Waiver

There are two main outcomes that schools and student are looking for from a seat time waiver. A student will pass classes and earn credits at the same or faster pace than a student in a traditional classroom. These two outcomes are addressed in this research where if a student passes classes at a pace equal to or faster than students enrolled in a traditional building, this will lead to a student graduating in four years or less. The following discusses both of those expected outcomes.

Total classes completed. The first outcome that comes from students on a seat time waiver is successful completion of classes. The State of Michigan requires the school to be evaluated based on “program effectiveness.” In addition to students participating in grade appropriate state assessments, the school district is required to determine the academic progress of each student regularly and must use the results from the determination to develop an education plan that leads to a high school diploma (Michigan Department Of Education, 2013). While there is plenty of debate on what “passing a class” should mean, most schools utilize an “A” through “E” scale originally developed by Mount Holyoke College in 1897. Their system was adapted from Harvard’s, which classified students into six different divisions (Marzano, 2000). Most high schools in the United States have adopted that system to establish the minimum grade for passing a course as 60% or “D-.”
Pace: Accelerated learning (average days to complete a class). The second outcome of a seat time waiver is that students earn credits at the same pace or faster than students in a traditional school setting. While on a seat time waiver, a student is not restricted to the hours that the school is open and the times the teacher is available which afford students the advantage of moving at his/her own pace. Students may move as quickly as they want through the subject matter, and when they complete the requirements for the course that could mean that they are done, or it could mean they may move on to another course as desired. This allows students get as many credits as they can handle and allow them to graduate on time (Dessoff, 2009).

Ultimately students are expected to complete the courses required for graduation set forth by the State of Michigan and the local board of education; therefore the State of Michigan calculates graduation based on four-year cohorts. For a student to be considered an “on-time” graduate, he/she must complete the requirements within four years (Stetser & Stillwell, 2014). Students are expected to graduate in four years; otherwise they are considered dropouts until they complete their graduation requirements (Center for Educational Performance and Information).

**Student Characteristics That Impact Online Success**

While many characteristics exist that impact a student’s online success, the literature points out nine student characteristics that are particularly important and can impact the success a student will have while enrolled in a seat time waiver. They are the student’s ability to self-manage, the student’s ability to self-regulate, locus of control, self-efficacy, technology aptitude, socioeconomic status, and an external support system.

**Student self-management.** In addition to self-regulation, Roblyer’s ESPRI identifies self-management (organization strategies) as one of the four most important characteristics to online success (Roblyer & Marshall, 2003). One of the biggest draws to online classes is the idea
that there is not a set time for “attending class.” A student has the option to work on the class whenever it is convenient for him/her. This could be any time from first thing in the morning to late at night. Companies that offer online classes use terms like “24-hour all access” and “anytime, anywhere” to sell their products to students. Traditional public schools have been working hard to be creative by coming up with different ways to offer education to students, but there are just some things a traditional school cannot accommodate that online schools can.

Students taking online classes can take advantage of time flexibility, freedom to work from almost anywhere, and variety of classes.

One quality necessary for students to be successful in school is that he/she must have a certain level of self-discipline or self-management. Due to the increased independence of online learning, the importance of that characteristic increases greatly. “Academic leaders cite the need for more discipline on the part of online students as the most critical barrier” (Allen & Seaman).

A study done by the American Psychological Society found

Highly self-disciplined adolescents outperformed their more impulsive peers on every academic-performed variable, including report-card grades, standardized achievement-tests scores, admission to a competitive high school, and attendance. Self-discipline measured in the fall, predicted more variance in each of these outcomes than did IQ, and unlike, IQ, self-discipline predicted gains in academic performance over the school year (Duckworth 2005).

A study involving 167 students preparing to take an online course found that self-direction and initiative of the student successfully predicts student achievement in online courses (Bernard, Brauer, Abrami, & Surkes, 2004).
To that point, Stephanie Waschull conducted a study of 57 students in an online psychology course to see if there was a correlation between six behavior characteristics (self-discipline/motivation, technology expertise, access to technology, preference for text based learning, study skills, and adequate time commitment) and course performance as measured by test averages, assignment averages, final exam and cumulative final grades. She found self-discipline/motivation to be the factor most significantly correlated with a student’s performance in the course (Waschull, 2005).

If a student lacks self-motivation in traditional schooling, online classes may be his/her worst option. As stated earlier, in most online classes the student has the option to work on course material at his/her leisure. The key to this is to ensure that the student spends adequate time working and not too much time on leisure. In a study of online learners in 2011 showed that students who did not self-manage and tended to procrastinate longer than their classmates were less successful. This was partially due to a lesser amount of participation (and later entries) in discussion forums throughout the course (Michinov et al., 2011). To that point, students who lack the ability to self-regulate are disadvantaged in a setting where students have the freedom to work at their own discretion (Tuckman, 2007). Most online learning companies have logins for both parents and students to allow the parents to keep track of students’ progress.

Dabbagh and Kitsantas cite goal setting, self-monitoring, self-evaluation, help seeking, and time planning and management as key self-regulatory processes that impact student achievement in online learning. Each one of the practices plays a key role in the success of a student due to the lack of an instructor in the room working with him/her. When each one of these is broken down, how they can have such a significant impact on student success becomes apparent. Counselors and administrators need to be cognizant of a student’s ability to employ
each one of these skills they are far too often overlooked as key components to success. This will lead to a student to struggle to achieve in the academic arena (Zohar, 1999).

For a student to be successful in an online learning setting, he/she must have the ability to work alone. “For some students and teachers, the absence of personal contact blocks some dimensions of learning that are important to any educational experience” (Donlevy, 2003). Many have argued that learning does not take place through simply hearing a message and processing, but instead experiencing the information, conversation, applying what is learned through real-world activity, talking through misconceptions and collaborating with others (Knowles, 1973; Brown, 1990). Online learning provides an environment for all of these activities, but it happens in a much different setting by threaded discussions, email, and video conferencing. Online learners must be able to work through the lesson with very little, if any, face-to-face contact. This does not mean the student is left completely to his or her own devices. The State of Michigan requires a certified teacher to mentor the student (Center for Educational Performance and Information (CEPI), n.d.).

A student should feel as if there is a connection to the school system and that the school should make an attempt to involve the student in district affairs. A study of 179 students enrolled in an online business course found that students who participated in a class orientation session were more likely to be successful in an online class than those that did not (Wojciechowski & Palmer, 2005). The orientation session consisted of a one-hour session that covered information on assignments utilizing the course platform and provided an opportunity to develop a sense of community within the course.

**Student self-regulation.** Roblyer’s ESPRI identifies this trait as one of the four most important characteristics for online success (Roblyer & Marshall, 2003). Given the fact that
online classes come with a lot of freedom, self-regulation and academic motivation must be key factors when making the decision to go online. Some have argued self-regulation is far more important in an online learning setting that in a traditional classroom (Bol & Garner, 2011). Academic motivation is defined by the “students’ movement toward and engagement in learning activities” (Artino Jr. & Stephens, 2009). One of the biggest drawbacks to online classes, though, is that there may not be anyone holding the student accountable for getting course work done. In an article titled “Accessible Online Learning,” Case and Davidson are quoted as saying, “online courses are best for students who are strong self-learners. Students who prefer to have information explained to them or who benefit from lively class discussions will probably not thrive in online courses” (p. 51). Anthony Artino, Jr., and Jason Stephens describe motivated learners as students who can persevere through difficult tasks and seize the chances to learn with some level of tenacity. They go on to say that these types of learners are enthusiastic contributors to their own education and are highly engaged in the learning activities placed in front of them.

A common part of the human experience particularly in school is dealing with failure, setbacks and occasional disappointment. Some students have far more experiences than others. Dweck and Molden point out that those people that are self-regulators will respond to failures and setbacks by continuing to chase their goals. Self-regulating students will have to decide when they fail, whether or not they have been undermined and weakened or challenged and energized with the opportunity to prove they can succeed (Molden & Dweck, 2006).

When choosing the classes that students will take it is important that principals and counselors understand what the students’ goals are and how their needs can be met. They should determine if the student is a performance goal-orientated student or mastery-orientated student. Having this information will be critical in predicting how the student will react to challenging
tasks, difficulties and even failure (Elliott & Dweck, 1988). Each student will approach their tasks differently from the questions they ask, the information they seek, and the way they will utilize that information (Dweck & Leggett, 1988). The performance goal-orientated student will only care about achieving the grade he/she needs which will serve as a referendum of his/her ability while the mastery-orientated student will be more concerned about learning new skills, and the experience will provide information on how to improve those skills (Elliott & Dweck, 1988; Svinicki, 2005). This will come from understanding each individual student’s needs and what direction they want to take their education.

In a study of 64 students enrolled in an introduction to gerontology course delivered in an online format via Blackboard, Cho and Shen found that the students who were intrinsically motivated, or mastery goal orientated, and had academic self-efficacy were positively associated with achievement in the course. The same association could not have been made with students who were extrinsically, or performance goal orientated (Cho & Shen, 2013). These conclusions can be tied to previous research by Diener and Dweck who found two different reactions to failure. Students with the mastery-oriented response did not focus on reasons for the failure but instead found ways to coach themselves to find the strategies that would improve the performance. On the other hand, students who were identified with characteristics of “helplessness” identified reasons for their failures as lack of ability, and performance would decline even though all of the students had success on the task previously (Diener & Dweck, 1978, 1980).

Both student and mentor must know the goal prior to getting into the online class arena. Students cannot attempt online learning with a “ready, fire, aim” approach. “Setting goals, monitoring progress towards these goals, and reflecting on outcomes are hallmarks of effective
self-regulation” (Bol & Garner, 2011). Skills like these are linked to student achievement (Boekaerts, Pintrich, & Zeider, 2000). Research shows for students to have success, they must have goals that are specific, measurable, attainable, realistic and timely (SMART goals). Students with SMART goals are more successful than those without. Many of the online platforms help with goal setting by requiring the provider to enter the date the student should be finished with the class. The online course provider can show the student how much he/she has done, but also how much they need to complete to finish the course on time.

To ensure the student is able to achieve the smart goals the student must self-monitor on a regular basis. This is defined as “one’s deliberate attention to an aspect of behavior that directs the learner’s attention to the task and assists them in evaluating the outcomes of their efforts” (Dabbagh & Kitsantas, 2004). Many online providers can offer reports of student login times and, in some cases, even attempt to calculate idle time versus active time. Students and parents can access this and self-monitor the pace at which they are working. If necessary, the students can make adjustments to ensure the attainment of the SMART goal they have set for themselves.

Locus of control. Roblyer’s ESPRI identifies locus of control as one of the four most important characteristics to student online success (Roblyer & Marshall, 2003). Self-efficacy and locus of control both refer to how one will approach a task and react to events in life (Artino Jr. & Stephens, 2009). While the two have differing definitions, Judge, Erez, Bono, and Thoresen, conduct four studies that show the characteristics have very little variance between one another. They argue that the two are so closely related that they are a measure of the same concept.

One’s internal locus of control refers to an individual’s belief that the events that take place within his/her life come from his/her own actions and not the actions of others (Lefcourt, 1966). While a student can be highly self-regulated because of the ability to schedule his/her own
time and be efficient while working alone, he/she could have a low internal locus of control due to the belief as to why he/she is successful or not. In effect, a student with a low internal locus of control believes life is happening to them and that they are not in control of outcomes. Dweck and Reppucci discuss a similar tendency where students credit the results of their actions to themselves as “internal reinforcement responsibility.” In contrast if the student credits the results to outside factors this is considered “external reinforcement responsibility” (1973). Their study found that students who believe their successes and failures are due to outside factors find them “helpless”; therefore they are convinced the outcome will remain the same regardless of their effort (Dweck & Reppucci, 1973).

In a later study of a group of children, reinforcement responsibility profiles showed that the children most likely to quit when challenged took less responsibility for successes or failures. Furthermore, in the event they did take the responsibility, they credited the outcome to their ability rather than effort. Because these students attributed their failure to their abilities, they were less likely to increase their effort and make another attempt at the task (Dweck, 1975). Many online providers require students to earn a specific percentage on a quiz before they are allowed to continue to the next lesson. For this reason, students must have the resilience to retake tests and quizzes if they do not meet the minimal threshold without giving up at the first sight of a challenge or setback.

In a study by Wang and Newlin, students who were successful in cyber classes had a higher internal locus of control than students who were enrolled in conventional classes. Angie Parker furthers this by conducting a study on college students that shows a correlation between students with an internal locus of control and their success in online classes. Furthermore, her
study shows that “students who are moderately internal tend to become more self-directed in web-based courses” (2003).

**Self-efficacy.** In a study done on 122 college students, a correlation was found between self-efficacy regarding course content and technology skills and the scores on the cumulative final exam. While, the study did not find the same correlation with the total points scored in, there was a correlation between higher levels of self-efficacy and online activity in the class (Wang & Newlin, 2002). Additionally, a survey of 897 online university students revealed self-efficacy could be used as a predictor for student achievement (Joo, Lim, & Kim, 2013). Efficacy expectations are presumed to impact performance in tasks due to increased persistence and higher intensity of effort (Bandura, 1977). A study of over 150 distance education students confirmed that one of the biggest keys to a student completing the course hinged on the confidence the student had in studying from a distance (Gibson & Graff, 1992). A more recent study done in 2007 of 424 students enrolled in an e-learning Blackboard course showed self-efficacy is an important characteristic that will influence learner participation in an online program. Additionally, the study also showed perceived self-efficacy was the most reliable indicator for learner satisfaction followed by the e-learning system and quality multimedia instruction (Liaw, 2008). What this study does not address is the impact of instructional methods or design of the course on student success in an online environment. While both of these variables are instrumental in online education, each of these has been addressed by previous studies (Cheung & Kan, 2002; Willging & Johnson, 2009; Dillon & Tucker 2011).

Self-efficacy, when it comes to online technology, is not always an indicator of success in online classes. Online Technologies Self-Efficacy Scale (OTSES), developed by Miltiadou and Yu, determines entry-level confidence with necessary computer skills for online learning. The
OTSES instrument was used to measure the level of self-efficacy in online technologies of 73 junior college students enrolled in one of six online courses. It was concluded that online technology self-efficacy was a poor predictor of online success (Deture, 2004).

**Technology aptitude.** Roblyer’s ESPRI identifies technology aptitude/self-efficacy as the most important characteristic for student online success (Roblyer & Marshall, 2003). When students take online courses, they must have the ability to use and communicate through multiple forms of technology. In a traditional setting, students will communicate with their teachers on a face-to-face level, occasionally sending an email. While taking an online class, the likelihood of ever meeting the teacher is slim, so having the ability to communicate through email, instant messenger, Skype and over the telephone is key. There are also online courses that involve web-based conferencing and virtual meeting rooms in which students will use different icons, like different facial expressions, to show their understanding of the content (smiles = fine, perplexed face = confusion) and a hand that the students can click to show they have a question. Students in the class can be broken into groups so when their microphones are active they can only hear the people in their groups. These types of classes require the ability to use microphones, web cams and possibly scanners for students to share their work. “A lack of technology skills also can be very frustrating to a student who is asked to submit an assignment online but who doesn't know the basics of word-processing, presentation, or other software” (Rao, Eady, & Edelen-Smith, 2011).

Maki and Maki conducted a study of 189 students enrolled in a psychology course that was offered in web-based format and traditional lecture. The technology skills of the students were measured using Gernsbacher and Varner’s Multi-Media Comprehension Battery (MMCB). They found that students who scored relatively high on the MMCB also had the most benefit
from the web-based course. Conversely, students who scored low on the MMCB benefited the least from the web-based course (Maki & Maki, 2002). Dupin-Bryant took this one step further when she found that students who had higher skill levels and training with technology, specifically in the area of searching for information on the Web, operating systems and file management, and Internet applications were more likely to complete online courses. An important point to consider is that years of experience with technology was not as decisive as the type of experience (Dupin-Bryant, 2004).

The design of an online course can be critical to the success and satisfaction of the student enrolled. Studies have shown that student satisfaction in an online course is impacted by its design. While gaining access to computers and the internet is the minimum, Case and Davidson point out that the real goal in online learning is usability of the course and its platform (2011). To further that point, in a study of 76 students at a higher education institution, 83% of the students identified that the most important factor when considering satisfaction was the design of the course. More students found the design of the course to be a greater impact on their satisfaction with the course than their comfort with technology (Cho & Shen, 2013).

The design of a course is not limited to the set up and looks of the course. A variety of factors go into the design like use of multimedia, access to content, and what programs are used to support the content. A qualitative study of graduate students showed they found more satisfaction in courses that were interactive and utilized multimedia than those in which content was text-based, interaction with others was limited, and most of the learning was individualized (Boling, Hough, Krinsky, Saleem, & Stevens, 2012). The main complaint among students who did not care for the text-based, individualized instruction was they felt most of the assignments were reading and writing and did not challenge their higher order cognitive skills, nor did it push
their creativity. Conversely, when students felt like they were a part of a community of learners who were working together online, they described this as “a powerful motivator and mechanism for online learning.” (Boling, Hough, Krinsky, Saleem, & Stevens, 2012). Much of the credit for students’ feeling of community came from a program called Wimba which is a live online classroom that supports multi-way audio, video, application sharing, polling and content display. Both students and instructors explain that the program helped engage students, allowed instructors to scaffold learning, and promoted group conversations and presentations allowed students and instructors to interact in a more personal way (Boling, Hough, Krinsky, Saleem, & Stevens, 2012).

Ng and Nichols have shown instructional methods to have an impact on high ability students. In this study, 14-year-old students worked on their online course work by utilizing Moodle, an online management system. The students had an opportunity to utilize discussion forums, chat rooms and private communication. Additionally, there was an area for resources where the readings and other coursework were provided (Ng & Nicholas, 2010). At the beginning of the course all of the lessons were very structured and planned with specific tasks that the students had to complete. As the course progressed, students were given more freedom and were expected to create their own product on the topic utilizing their own choice of media (PowerPoint, web-designer, etc.). At the conclusion of the study, 70% of the students persevered through the course and completed all of the tasks required (Ng & Nicholas, 2010).

**Socioeconomic status.** Access to online learning can be limited for students who live in homes that do not have a computer or Internet. While going to the library may be a reasonable alternative, this may defeat the purpose as to why the student is on a seat time waiver. Going to the library for access to the Internet would be trading one building for another with the additional
inconvenience of finding one’s own transportation. The Michigan Department of Education has considered students who come from low socioeconomic situations. They have said the school must provide the student with a computer and Internet access to any student on a seat time waiver and receives free or reduced lunch. With that said, computer and Internet access is not always a predictor of success in online settings. In a study of 150 students enrolled in an online physics course, Internet access at home was not a significant predictor of success for the 55 students who did not come onsite (Slykhuis & Park, 2006).

Seat time waivers can actually give access to students who otherwise may not have access to education. In 2004, South Korea began utilizing online learning to reach underprivileged students in impoverished areas. This started as a movement in three regions of the country, but by 2005 the educational platform had moved throughout the entire country (KERIS, 2008). The policy was based on the United States’ policy “No Child Left Behind” of 2001. South Korea was attempting to decrease the educational gap between underprivileged students and the rest of the country while offering differentiated instruction to the students (KERIS, 2008).

**External support.** As students go through school they must have support from home. “When parents are engaged as a resource for academic activities at home, the bridge between the school and home environments becomes more apparent” (Gonzalez-Dehass 2005). This becomes even more important when the majority of the learning that takes place for the student is at home. “When students view parents as models and trusted partners in learning, it helps them assess their own capabilities and performance” (Gonzalez-Dehass 2005).

Parents are not the only system of support a student on a seat time waiver receives. The State of Michigan requires seat time waiver students to be assigned mentors who must
communicate with them on a weekly basis regarding course work (Michigan Department of Education, 2013). School districts must report the communications to the State during annual attendance audits. The online mentor must be a certified teacher and is considered the teacher of record. The teacher is required to be available to the student for assistance. Additionally, the mentor must monitor the student’s progress and keep an online activity report that includes when the student was logged in, coursework completions and any other learning activities (Michigan Department of Education, 2013).

External support also comes from the online teacher. Studies have shown in higher education that dropout rates in online courses far exceed that of traditional face-to-face instruction by 10 to 20% in some cases (Carr, 2000; Diaz, 2002). This is why Lykourentzou makes the argument that it is vital for the online teacher must be made aware promptly if a student is at risk so he or she can make the proper adjustments to the course and increase that student’s likelihood for success (Lykourentzou et al., 2009).

**Students Who Get Seat Time Waiver**

There are many reasons why students end up on seat time waivers. These reasons include, but are not limited, expelled/suspended students, students with attendance issues, students interested in accelerated learning for early graduation or credit recovery, pregnant/parenting teens, transient students, and working students (Svitkovich et al., 2010).

There is no doubt students with different circumstances like suspensions/expulsions, teen pregnancy and medical issues need educational opportunities if they are going to graduate within four years, particularly when these circumstances keep them from attending school for semesters at a time. Each semester a student misses without being afforded a homebound teacher or allowed to turn in missing work is another semester they fall behind, which forces him/her into a
credit recovery situation. Studies have shown that suspension and expulsion leads to student loss of credit, continued disciplinary problems, and ultimately may cause a student to drop out (Nichols & Steffy, 1999). A teen mother’s situation is not any better. Wanda Pillow asserts that as many as half of teen mothers will not finish high school.

For whatever the reason the student gets put on a seat time waiver, it is important that they pass the required classes and move closer to graduation. With the goal of graduation in mind, it is very important that the student not be in a situation in which he/she is set up to fail. Students need to be put in a situation where they will be successful or it will be a waste of time for everyone involved. This is why it’s imperative counselors and principals understand what it takes to succeed as a seat time waiver student and be able to recognize if students have the characteristics necessary to be successful.
Chapter 3: Research Methods

Research Tradition and Rationale for Appropriateness

This is a quantitative causal/comparative study. This method was chosen because the study shows how student characteristics impact outcomes in an online setting. Many studies have been conducted about students and the feelings they have toward the experience that comes with online learning (Liaw, 2008; Ke & Kwak, 2013). A lot of the focus has been on the students and their experience as customers. These studies question how they feel the instructor has met their needs, if they have had a positive experience, and why are they are on the seat time waiver. This study builds on those studies by taking characteristics of the students and sees how they impact their success in an online environment. This study looks at students enrolled in alternative education high schools. It compares student characteristics and measure the impact of these characteristics on student success in school based on the rate the student is passing classes and the total number of classes the student has completed.

Sampling

The data was collected from students in Montrose Community Schools, Clio Community Schools, and the Birch Run Area Schools by utilizing the lead administrator for each building as a contact. All three of these school districts have significant populations of online students who are on seat time waivers. The sample consists of male and female students in grades 9 – 12.

Online Learning Platform

All of the students enrolled in the seat-time waivers in this study were using the same online company, Edgenuity. Classes are broken in to several units. Students watch video lectures accompanied by power point projects that they must click on to move the videos forward. There are formative assessments throughout each lesson. At the end of the lesson, they take multiple-
choice quizzes, and after correctly answering seven of 10 multiple-choice questions that prove mastery, move on to watch more video lectures. In some cases, units have essays or research projects the students must complete and upload to the website. A highly qualified teacher that works at the school grades assignments and leaves feedback for the students. At the end of each unit there is a review followed by a unit test. The course culminates with a final exam review and a final exam where the student must score a 70% or better to pass.

Data Collection and Instrumentation

The survey used was a modified version of The Education Success Prediction Instrument (ESPRI; see Appendix A) developed in 2002 to help predict the success of students in virtual high schools (Marshal & Roblyer, 2002). The ESPRI was originally administered to 135 students in 13 different schools around the country to find out if a prediction can be made concerning whether or not a student will be successful in online learning. The ESPRI was then administered again to students in 2006 with 2,162 students participating in the survey (Roblyer & Davis, 2008). The ESPRI has students rate their level of locus of control, internal versus external motivation, self-confidence/self-esteem, responsibility, degree of experimentation (risk taking) time management, ability to set goals, achievement motivation, self-reported computer/technology skills, and content area background. This instrument was able to predict with 100% confidence the students who would succeed and with 95% confidence the students who would fail (Roblyer & Marshall, 2003). Since creating the ESPRI, Roblyer has gone on to create Online Learning Readiness Survey (OLRS; Roblyer, 2007). Many modified versions of this survey can be found on multiple online school websites to help students gauge if they are potential candidates for online learning.
For the purposes of this study the ESPRI was modified to have the students rate their level of self-regulation, self-management, and identify their socioeconomic status by reporting whether they receive free or reduced lunch. Content area background was removed along with self-reported GPA due to the group of students being surveyed and the reason they are enrolled in the alternative education program is, by in large, for credit recovery purposes.

The survey was administered through Survey Monkey, and students were able to access it via email or by going to the website directly through their online provider’s platform. The survey had students answer demographic questions that include the name of their mentor, age, gender, grade level, participation in clubs and organizations, employment, other commitments, online learning experience, free and reduced lunch status, and why they are participating in a seat time waiver.

The student’s name is attached to their student ID number. The school provided the total number of credits earned during 2015 – 2016 as of May 25, 2016. The pace of credit completion was calculated by total number of days from the first day of school (September 8, 2015) until May 25, 2016 divided by total credits earned. Total number of days includes holidays and weekends due to the 24/7 access provided by online learning. Students who have earned 6 credits will have a pace of one class completed every 39.8 days (239/6).

The next portions of the instrument are 45 statements in which the students self-report on a Likert scale. Each statement falls under the categories that can be found in Figure 1. The statements divided into categories can be found in Appendix B.

**Data Collection**

The data were collected from students in Montrose Community Schools, Clio Community Schools, and the Birch Run Area Schools. All three of these school districts have
significant populations of online students who are on seat time waivers. The sample consists of male and female students in Grades 9-12. The superintendent was first called for each school district to discuss the study and why their particular school was chosen to participate. Each superintendent had a lead administrator that they designated as a contact person for the study. Upon contacting each administrator, a release form was sent to gain informed consent that his or her schools were willing to participate in the study. While two of the schools had a quick turn around in returning the informed consent, one of the districts needed a follow up phone call from another superintendent to get the paperwork of his desk.

Once consent was gained from all of the school districts, parental passive consent forms were sent home with all students enrolled in the alternative education buildings. Students and parents were given information on the study and multiple avenues to contact the researcher or the researcher’s adviser. They had one week to return the passive consent form indicating they were not interested in participating in the study.

After giving a week for students to return the passive consent forms, a link was sent to each lead administrator to make available to the students to complete the survey. The link was posted on the student’s announcement page of their online provider’s dashboard. Students had the option to complete the survey at their convenience. Many of the students completed the survey right away while others took a little longer. One of the challenges that came from sampling this population was connecting with the students. Due to the nature of the programs, not all of the students are on site, which means email and messaging through the online platform was the main form of communication. After a week, all three lead administrators to see how the survey collections were going and if there was any further assistance that was needed to help
collect more surveys. Shortly after that visit, there were enough surveys collected to meet the criteria necessary to examine the data.

The final step in collecting the data was contacting the lead administrator from each building to collect the date the student enrolled, the date they dropped and the number of courses they completed in that time. A majority of the students were enrolled as of the first day of school, so the enrollment date was fairly consistent. Furthermore, a majority of the students in the study stayed enrolled the entire year so the cutoff date for them was the date the information was requested.

**Data Analysis**

Once the surveys were collected, the data had to be prepared for factor analysis. Which lead to dummy coding of some of the variables, which can be seen in Table 1. Dummy coding is a key portion of path analysis and regression. Dummy coding assigns the numbers 0 and 1 to indicate membership in any mutually exclusive and exhaustive category. The number of dummy codes necessary to represent a single attribute variable is equal to the number of levels (categories) in that variable minus one. For a given attribute variable, none of the dummy variables constructed can be redundant. That is, one dummy variable cannot be a constant multiple or a simple linear relation of another. The interaction of two attribute variables (e.g. gender and marital status) is represented by a third dummy variable that is simply the product of the two individual dummy variables (Skrivanek, 2009). All of the answers provided on the survey were given numerical values. Every item was turned into a “yes or no” question. For example, when students were asked to choose their gender, they had the option to select male or female. When this was coded, it was separated into two columns. One column indicated if the participant was male and the other indicated if the respondent was female.
Table 1

*Dummy Coding for Demographic Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>=0</th>
<th>=1</th>
<th>Factored Variable Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>No</td>
<td>Yes</td>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
<td>No</td>
<td>Yes</td>
<td>Female</td>
</tr>
<tr>
<td>Free or Reduced Lunch</td>
<td>No</td>
<td>Yes</td>
<td>Low SES</td>
</tr>
<tr>
<td>Email account</td>
<td>No</td>
<td>Yes</td>
<td>Email</td>
</tr>
<tr>
<td>Commitments outside of school</td>
<td>No</td>
<td>Yes</td>
<td>Commitments</td>
</tr>
<tr>
<td>Do you have someone that tracks your progress?</td>
<td>No</td>
<td>Yes</td>
<td>Mentor</td>
</tr>
<tr>
<td>Do you use text messaging to communicate with your mentor?</td>
<td>No</td>
<td>Yes</td>
<td>Text</td>
</tr>
<tr>
<td>Do you use instant messenger to communicate with your mentor?</td>
<td>No</td>
<td>Yes</td>
<td>Instant Messenger</td>
</tr>
<tr>
<td>Do you use email to communicate with your mentor?</td>
<td>No</td>
<td>Yes</td>
<td>Email</td>
</tr>
<tr>
<td>Do you use phone conversations to communicate with your mentor?</td>
<td>No</td>
<td>Yes</td>
<td>Phone</td>
</tr>
<tr>
<td>Do you communicate face-to-face with your mentor?</td>
<td>No</td>
<td>Yes</td>
<td>Face-to-Face</td>
</tr>
<tr>
<td>Do you use Facetime/Skype to communicate with your mentor?</td>
<td>No</td>
<td>Yes</td>
<td>Facetime/Skype</td>
</tr>
<tr>
<td>Do you use YikYak to communicate with your mentor?</td>
<td>No</td>
<td>Yes</td>
<td>YikYak</td>
</tr>
</tbody>
</table>

In addition to dummy coding variables that were reduced to yes or no responses, some of the survey items needed to be coded based on frequency. Table 2 shows the dummy coding for these types of variables. For example, students were asked how often they come to school to work on online courses. Each response was given a value. Participants that selected “almost never” were given a “0,” “monthly” were given a “1,” “weekly” were given a “2,” and participants that selected “daily” which meant they were there three to four times per week were
given a “3.” In the event a variable did not have four categories, like the time that was spent with the mentor, each response was only assigned “0” through “2.”

Table 2

Dummy Coding for Frequency Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>=0</th>
<th>=1</th>
<th>=2</th>
<th>=3</th>
<th>Factored Variable Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>I come to school to work on my online courses.</td>
<td>Almost Never</td>
<td>Monthly</td>
<td>Weekly</td>
<td>Daily</td>
<td>Work At School</td>
</tr>
<tr>
<td>How often do you communicate with your mentor teacher?</td>
<td>Almost Never</td>
<td>Monthly</td>
<td>Weekly</td>
<td>Daily</td>
<td>Communication Frequency</td>
</tr>
<tr>
<td>Face-to-face interaction with mentor</td>
<td>Almost Never</td>
<td>Monthly</td>
<td>Weekly</td>
<td>Daily</td>
<td>Face-to-Face</td>
</tr>
<tr>
<td>How much experience do you have working on online courses?</td>
<td>Never full time</td>
<td>1st year</td>
<td>2nd year</td>
<td>3rd or more</td>
<td>Online Experience</td>
</tr>
<tr>
<td>Length of visit with mentor</td>
<td>Less than 30 mins</td>
<td>30-60 mins</td>
<td>More than 60 mins</td>
<td>n/a</td>
<td>Mentor Time</td>
</tr>
<tr>
<td>I have children of my own</td>
<td>No</td>
<td>1 child</td>
<td>2 children</td>
<td>3 children</td>
<td>Child</td>
</tr>
<tr>
<td>I have a job</td>
<td>No</td>
<td>&gt;10 hrs/wk</td>
<td>10-19 hrs/wk</td>
<td>20+ hrs/wk</td>
<td>Job</td>
</tr>
<tr>
<td>I am on an athletic team</td>
<td>No</td>
<td>1 team</td>
<td>2 teams</td>
<td>3 teams</td>
<td>Athletics</td>
</tr>
<tr>
<td>I am in a club or organization</td>
<td>No</td>
<td>1 club</td>
<td>2 clubs</td>
<td>3 clubs</td>
<td>Clubs</td>
</tr>
</tbody>
</table>

The variables regarding the participants having children, jobs, and involvement in athletics or clubs and organizations were broken down further to separate each group and study them individually. An example is when the participant selected how many children they had. The survey item had four different options, “No,” one child, two children, or three children. These
were turned into four separate columns. One column indicating who has children and another three columns indicating how many children the participant had. Table 3 shows how they were separated and named.

Table 3

*Dummy Coding for Specific Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>=0</th>
<th>=1</th>
<th>Factored Variable Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>I care for family member</td>
<td>No</td>
<td>Yes</td>
<td>Care for Family</td>
</tr>
<tr>
<td>Do you have children</td>
<td>No</td>
<td>Yes</td>
<td>Child</td>
</tr>
<tr>
<td>I have one (1) child</td>
<td>No</td>
<td>Yes</td>
<td>Child1</td>
</tr>
<tr>
<td>I have two (2) children</td>
<td>No</td>
<td>Yes</td>
<td>Child2</td>
</tr>
<tr>
<td>I have three (3) children</td>
<td>No</td>
<td>Yes</td>
<td>Child3</td>
</tr>
<tr>
<td>I have a job</td>
<td>No</td>
<td>Yes</td>
<td>Job</td>
</tr>
<tr>
<td>I work less than 10 hours per week</td>
<td>No</td>
<td>Yes</td>
<td>Job10</td>
</tr>
<tr>
<td>I work 10-19 hours per week</td>
<td>No</td>
<td>Yes</td>
<td>Job19</td>
</tr>
<tr>
<td>I work 20+ hours per week</td>
<td>No</td>
<td>Yes</td>
<td>Job20</td>
</tr>
<tr>
<td>I am on an athletic team</td>
<td>No</td>
<td>Yes</td>
<td>Team1</td>
</tr>
<tr>
<td>I am on three (2) athletic teams</td>
<td>No</td>
<td>Yes</td>
<td>Team2</td>
</tr>
<tr>
<td>I am on three (3) athletic teams</td>
<td>No</td>
<td>Yes</td>
<td>Team3</td>
</tr>
<tr>
<td>I am in a club or organization</td>
<td>No</td>
<td>Yes</td>
<td>Team1</td>
</tr>
<tr>
<td>I am in two (2) clubs or organizations</td>
<td>No</td>
<td>Yes</td>
<td>Team2</td>
</tr>
<tr>
<td>I am in three (3) clubs or organizations</td>
<td>No</td>
<td>Yes</td>
<td>Team3</td>
</tr>
</tbody>
</table>

The researcher analyzed the data and looked for correlations between the students identified characteristics for success and their success in their course work. The Statistical Package for the Social Sciences (SPSS) computer software application was used to analyze the data. A descriptive statistical method, including frequency distribution was used to analyze the responses. The researcher developed frequency tables for each question posed to participants in the survey. All responses are shown in percentages.
The add-on module for SPSS, AMOS (Analysis of Moment Structures) was also used for data analysis. Although structural equation modeling, path analysis and covariance structure modeling is what it is primarily used for, it may also be used to perform linear regression analysis and ANOVA and ANCOVA. A plug in called “Pattern Matrix Model Builder” was added to the AMOS software to help create the confirmatory factor analysis. After the confirmatory analysis was done, AMOS was also used to manipulate and create the structural equation model.

Inferential statistical methods, including independent samples, *t*-tests, ANOVA, and chi-square were used to compare various groups of students according to their characteristics that impact online success. Direct, indirect and total effects were determined through multiple regression analysis, path analysis and structural equation modeling (SEM). The structural equation modeling was be used to explain a series of characteristics and show how each impacted an outcome (Reisinger & Turner, 1999) through a path analytic model. In this case the structural equation model shows the relationship between student characteristics and the outcomes in their online classes. Even though structural modeling cannot guarantee causal conditions have been met, statisticians have maintained structured equation modeling offers tentative causal inferences to be determined when used with carefully specified and controlled designs (Bullock, Harlow, & Mulaik, 1994).

Multiple regression analysis is a multivariate analysis used to find the relationship between numerous independent variables, or predictors, and a dependent variable. This type of statistical analysis is used to determine the extent to which the independent variable impacts the dependent variable (Kirch, 2008).
For the data from this method to be trustworthy, the following underlying assumptions must be met:

- There must be an absence of multicollinearity in that the independent variables are not related to themselves.
- Variables must be normally distributed. If they are not, the relationships and the significance can be distorted.
- There is an assumption of a linear relationship between the independent and dependent variables. If the relationships between the variables are considered nonlinear, the regression analyses will underestimate the true relationship of the independent variable to the dependent variable.
- Variables are measured without error. Only relevant variables should be included in the model. It is assumed that scores on the predictors are reliable.
- Homoscedasticity is another underlying assumption in multiple regression analysis. This means that the variance of errors is the same across all levels of the independent variable. Heteroscedasticity can distort findings (Osborn & Waters, 2002).

Path analysis is a technique that allows researchers to test theoretical propositions about cause and effect without manipulating variables. This can be done with models in the form of multiple regression analysis, factor analysis, along with more general families of models in the multivariate analysis of variance and covariance analyses (MANOVA, ANOVA, ANCOVA).

Path analysis is closely related to multiple regression analysis and can be viewed as a special case of structural equation modeling (SEM) focusing on causality. In this case only single indicators are employed for each variable in a causal model and allows for the testing of a model and both direct and indirect effects on some outcomes.
Path analysis has underlying assumptions just like multiple regression and some are similar as follows (Ender, 1998):

- Relations among models are linear, additive, and causal. Curvilinear, multiplicative, or interaction relations are excluded.
- Residuals are uncorrelated with all other variables and residuals in the model.
- There is one-way causal flow (recursive models only).
- The variables are measured on an interval scale.
- The variables used as predictors are measured without error.

Mediating effects identify how or why the observed relationship between an independent variable and a dependent variable operates. There are three different types of effects within mediating effects and are as follows:

- Direct effects refer to the relationships between the measured and latent variables. The sensitivity of the dependent variable to changes in the independent variable while all other factors stay the same are referred to as the direct effects. An example of this would be a student’s ability in a subject impacting their grade in a course.
- Indirect effects refer to two variables that are related to one another only through the influence of one or more additional variables. An example of this would be people with more years of schooling (a difference in education) tending to earn more money (a difference in income).
- The third type of mediating effects is total effect. This is the sum of both direct and indirect effects.
Within the framework of seat time waivers, statistical mediation identifies the underlying relationship between an independent variable (i.e. self-regulation or technology aptitude) and a dependent variable (passing classes).

Moderating effects occur when the relationship of two variables rely on a third. Interaction is when the moderating variable’s strength is quantified. Moderating effects can increase or decrease the strength of a relationship. Additionally, moderating effects can change the direction of the relationship entirely.

Exploratory factor analysis (EFA) is done to determine constructs for regression analysis by factoring the variables of the survey. The factor analysis uses a principal component analysis with a correlation matrix, based on an Eigenvalue greater than one, and a Promax with Kaiser-Meyer-Olkin Measure of Sampling Adequacy method and Bartlett’s test of sphericity displayed in a rotated solution, excluding missing cases pairwise. The data was sorted by size and coefficients less than .45 are suppressed. The theoretical conceptual framework generates conceptual factors for the regression analysis. Regression analysis uses these saved final factors. This results in excluding some of the original questions of the survey.

Structural equation modeling (SEM) is used to present the results in a graphical representation of the relationship between all of the different factors under consideration. A SEM analysis suggests causal effects from the nature of relationships obtained (which variable affects others) that test a theoretical model (McMillan & Schumacher, 2006). The difference between this technique and others is SEM is used to confirm whether a certain model works (Salkind, 2008).

One of the advantages of using SEM is it is based on more flexible assumptions (particularly allowing interpretation in the face of multicollinearity). SEM also uses confirmatory
factor analysis (CFA) to reduce measurement error by having multiple indicators per latent variable. SEM allows the researcher to test entire models, versus focusing on individual coefficients in addition to test coefficients across multiple subject groups (Sudano & Perzynski, February 22, 2013).

Just like with multivariate and path analysis there are core assumptions that must be met for structural equation modeling to be appropriate. They are as follows:

- The relationship between the coefficients and the error term must be linear
- The residuals must have a mean of zero, be independent, be normally distributed and have variances that are uniform across the variable
- Variables in SEM should be continuous, interval level data.
- No specification error, which means there is a need for correct model specification. If necessary variables are omitted or unnecessary variables are included in the model, there will be measurement error.
- Variables included in the model must have acceptable levels of kurtosis.
- A sufficiently large sample size based on the number of variables is necessary to obtain quality results from the data collected.

There are distinct terms used when discussing variables of SEM. Instead of using independent and dependent, the following terms are used:

Exogenous variables refer to a variable that is not dependent or predictive of other independent variables. Exogenous variables cause other variables within the model (Weston, 2006). On the other hand, other latent variables or indicators predict endogenous variables. Endogenous variables can be both independent and dependent variables within the model (Weston & Gore, 2006).
Measured variables are those that are observed and in which the attribute or level of the entity is measured and can assume an infinite number of values within a range (McMillan & Schumacher, 2006). The measurement model of SEM lets the researcher evaluate how well the observed measured variables combine to identify underlying hypothesized ideas. Conversely, a latent variable is an unobserved hypothetical variable that cannot be recorded or declared (Weston & Gore, 2006).

When identifying a best fitting model, “goodness of fit” asks the question of how well a set of data “fits” an existing set. If there is a “goodness of fit,” the observed data will match up to another data set. In the case where a model does not show a good fit based on goodness-of-fit index data or other fit indices, like Bentler’s Comparative Fit Index (CFI), changes and updates must be made to the model (Bentler, 1990). By doing this, the researcher is trying to find a better fitting model by freeing (estimating) or setting (not estimating) parameters to propose an alternative model that is a better fit. Utilizing search strategies or specification searches that determine which adjustment might provide a better fitting model, the researcher prioritizes the modifications that were made.

Tests can be done to identify which of the parameters the researcher assumed to be zero are significantly different from zero and should be estimated by using the Lagrange multiplier test. Weston and Gore recommend using the Wald test to identify which of the estimated parameters that were assumed to be different from zero are not and should be removed from the model. The decision should be made with the assistance of modification indices and expected parameter change statistics because modification index estimates the amount of decrease in model chi-square, and the expected parameters change approximates the expected size of change in the parameter estimate when a certain fixed parameter is freely estimated (Lei & Wu, 2007).
Prioritizing based on theories and research is essential as the analysis is completed. The chances of making a Type I error significantly increase after the initial testing when there is adjusting to the model. The SEM/Path Analysis model in Figure 2 outlines an initial specification model of the seat time waiver success constructs, including both measured and latent variables.
Figure 2. Specification model with variables.
Delimitations

This study was given to the students enrolled in the Montrose Alternative Education Center located in Montrose, MI. All Montrose Alternative Education Center students are on seat time waivers. Unlike traditional seat time waivers, Montrose students are required to be onsite 5 hours per week if they are not making a minimum progress of 35% in a single class per week. Some students choose to come on site more than that, which may help them to be more successful than others because they have access to four certified teachers upon request. Not all seat time waivers across the State of Michigan work like this.

This study was completely voluntary and participants could have chosen to end their involvement in the study at any time without consequence or ramifications. An informed consent form completed by the participants was designed to bring this to their attention (Glesne & Peshkin, 1992). This issue was critical for the student participants due to the potential perception of a power differential between me and them, as I was viewed as not only a researcher but as their principal in the case of the students attending Montrose Alternative Education Center. For this group in particular, it needed to be clear to them that their decisions to volunteer or abstain from the study had no bearing on their outcomes in the classroom in which they are being observed. While the use of informed consent normally best applies to what is known prior to the conduct of research, using caution and care in dealing with all participants assisted in their protection should any unanticipated circumstances arise (Eisner, 1991). Furthermore, given that the majority of the participants in the study are minors, protecting the privacy of all participants was a top priority. Identifying information was altered, including specific names, class information, and any personal information that is conveyed during data reporting.
Biases

This study conducted in three different alternative education buildings, and I am the principal of one of the buildings. I have personal relationships with many of the students and work with them to overcome many obstacles to help them complete coursework. There is no arguing that I am searching for the best education option for these students.
Chapter 4: Results

Presentation and Analysis of Data

The purpose of the study is to identify the characteristics advantageous for an alternative education student to be successful in a seat time waiver program. Additionally, the study measures the impact these characteristics have on how many classes a student is able to complete and the pace in which they are done. Students on a seat time waiver have the option to work on a class at the pace with which they are most comfortable. Students who are credit deficient or interested in early graduation have the option to work at an accelerated pace to complete courses more quickly.

The study includes responses from 205 students enrolled in three alternative education buildings located in the northern Genesee County area equaling 39% of the total possible population of alternative education students enrolled in the three buildings. The surveys were completed through Survey Monkey during the spring of 2016.

Demographic Characteristics

Figure 3 illustrates the key demographic characteristics of the survey respondents when compared to the populations of the state, district, and individual schools. While most of the demographic areas reported by the survey participants coincide with state, district and school numbers, twelfth grade students participated at a lower rate than other grades. Conversely, tenth grade students participated at a much higher rate than the other grades.

Two demographics that call for explanation are the numbers of ninth grade students (2%) and twelfth grade students (58%) enrolled in the schools. While state enrollment numbers suggest each grade is closely divided into quarters, the alternative education schools have a fraction of ninth grade students enrolled when compared to the state. On the other hand, twelfth
grade enrollment in alternative education represents more than double the state average. This discrepancy is attributed to students typically enrolling in an alternative education building after attending a traditional high school, but not experiencing success.

Gender data shows that the population males (53%) that participated in the survey is greater that the number of females (47%). This is consistent with district and state data, especially in alternative education, where males make up the majority of the population. With that said, females participated in the survey at a higher rate than males, which was expected.

**Figure 3.** Demographics.

**Latent Variable Descriptive Statistics**

Respondents were given a survey in which they were asked to assess the level of agreement between a set of statements against their academic characteristics. A 6-point Likert scale was used to collect the responses for latent variable characteristics. The statements were
broken into five different categories that consisted of student self-management, student self-regulation, locus of control, self-efficacy, and technology aptitude. The respondents rated their agreement with the statements as 1: strongly disagree, 2: disagree, 3: somewhat disagree, 4: somewhat agree, 5: agree, and 6: strongly agree. The mean scale ratings for the 36 questions ranged from a high of 5.36 to a low of 2.95. The grand mean is 4.49, with an overall standard deviation of 1.33.

As predicted, students reported high levels of technology aptitude. As a group they consistently reported high levels of aptitude in using browsers to locate Internet sites and communicate electronically with others.

The level of self-efficacy reported by this population was not expected given the lack of academic success this population of students has had in previous years. Students felt most confident in their ability to learn new tasks and their ability to achieve in all courses.

The mean data seemed to be somewhat contradictory in the category of locus of control. Respondents strongly agreed with statements like “When I perform well on tasks, it is usually due to my own efforts” and “I take responsibility for my actions most of the time,” but when asked if it is the teacher’s fault when they perform poorly on a test, the mean answer was “agree.” This is discussed in Chapter 5.

**Exploratory Factor Analysis for Confirmatory Factor Analysis**

Exploratory factor analysis (EFA) is done to determine constructs for regression analysis by factoring the variables of the survey. The factor analysis uses a principal component analysis with a correlation matrix, based on an Eigenvalue greater than one, and a Promax with Kaiser-Meyer-Olkin Measure of Sampling Adequacy method (KMO) and Bartlett’s test of sphericity displayed in a rotated solution, excluding missing cases pairwise. The data is sorted by size, and
coefficients less than .45 are suppressed. The theoretical conceptual framework generated conceptual factors for the regression analysis. Regression analysis uses these saved final factors. This results in excluding some of the original questions of the survey.

Table 4 shows the KMO and Barlett’s Test from the factor analysis. The KMO should be above .700 and anything above .800 is good. Table 4 shows that the KMO is .868, which is good. The Bartlett’s test of Sphericity significance was .000, which is important. In the event the Bartlett’s Test of Sphericity determines it is not significant, this is considered a “red flag,” and there is a problem with the analysis.

Table 4

<table>
<thead>
<tr>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</th>
<th>.868</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td></td>
</tr>
<tr>
<td>Approx. Chi-Square</td>
<td>1568.012</td>
</tr>
<tr>
<td>df</td>
<td>231</td>
</tr>
<tr>
<td>Sig.</td>
<td>.000</td>
</tr>
</tbody>
</table>

The pattern matrix in Table 5 shows the six factors that loaded together with the correlating survey items. All of the loadings must be above .300, and in this case the lowest one is under Self-Regulation (SelfReg), which had the greatest number of items, load in one factor. As the matrix is analyzed, it is key to ensure that items only load in one column and there are no cross loadings. In similar fashion, a factor correlation matrix shows the level of correlation between each factor. Table 6 shows the factor correlation matrix where no correlation between the factors should be greater than .700, which provides discriminant validity.
### Table 5

*Pattern Matrix*\(^a\)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Factor</th>
<th>SelfReg</th>
<th>ExtSup</th>
<th>SelfMan</th>
<th>SelfEff</th>
<th>ExtLOC</th>
<th>IntLOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control of Pace</td>
<td>.740</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Take Responsibility</td>
<td>.722</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform from My Effort</td>
<td>.662</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Try in All Classes</td>
<td>.586</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Works When I Plan</td>
<td>.577</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to Achieve</td>
<td>.494</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Important Tasks First</td>
<td>.473</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Directed</td>
<td>.451</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learn New Tasks</td>
<td>.388</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set Goals with Mentor</td>
<td>.900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentor Availability</td>
<td>.603</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentor Helps Success</td>
<td>.532</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schedule Time Daily</td>
<td>.773</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short to Long Goals</td>
<td>.614</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feedback on Goals</td>
<td>.562</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overcome Difficulties</td>
<td>.924</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I Take Chances</td>
<td>.558</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material Rewards</td>
<td>.556</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Luck in Success</td>
<td>.538</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work for Rewards</td>
<td>.511</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stressed Last Minute</td>
<td>.601</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goes Wrong My Fault</td>
<td>.546</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Maximum Likelihood.  
Rotation Method: Promax with Kaiser Normalization.  

\(^a\) Rotation converged in 8 iterations.
Table 6

*Factor Correlation Matrix*

<table>
<thead>
<tr>
<th>Factor</th>
<th>SelfReg</th>
<th>ExtSup</th>
<th>SelfMan</th>
<th>SelfEff</th>
<th>ExtLOC</th>
<th>IntLOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SelfReg</td>
<td>1.000</td>
<td>.519</td>
<td>.667</td>
<td>.523</td>
<td>.096</td>
<td>.508</td>
</tr>
<tr>
<td>ExtSup</td>
<td>.519</td>
<td>1.000</td>
<td>.532</td>
<td>.451</td>
<td>.122</td>
<td>.310</td>
</tr>
<tr>
<td>SelfMan</td>
<td>.667</td>
<td>.532</td>
<td>1.000</td>
<td>.517</td>
<td>.238</td>
<td>.413</td>
</tr>
<tr>
<td>SelfEff</td>
<td>.523</td>
<td>.451</td>
<td>.517</td>
<td>1.000</td>
<td>-.117</td>
<td>.281</td>
</tr>
<tr>
<td>ExtLOC</td>
<td>.096</td>
<td>.122</td>
<td>.238</td>
<td>-.117</td>
<td>1.000</td>
<td>.020</td>
</tr>
<tr>
<td>IntLOC</td>
<td>.508</td>
<td>.310</td>
<td>.413</td>
<td>.281</td>
<td>.020</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Extraction Method: Maximum Likelihood.
Rotation Method: Promax with Kaiser Normalization.

**Confirmatory Factor Analysis for Structural Equation Modeling**

Confirmatory factor analysis for the structural equation modeling validates the loadings of the measurement variables onto the latent variables of the study. Figure 4 is the confirmatory factor analysis model for the study. The loadings were confirmed and found to be statistically significant as expected.
Figure 4. Confirmatory factor analysis model.
This study focuses on four main indicators of fit that are included in the Amos™ output that give the best results (Byrne, 2001). The indicators of fit that will be used throughout the remainder of this study are the absolute fit indices using the CMIN/DF; the RMSEA models, the relative fit indices using the CFI model; the information theory indices using the AIC, BCC, ECVI, and MECVI models; and the Hoelter Index test.

The CMIN/DF is simply the $\chi^2$ divided by the degrees of freedom. Byrne (2001) explains the CMIN/DF as follows:

The null hypothesis…postulates that the specification of the factor loadings, factor variance/covariance, and error variances for the model under study are valid; the (CMIN/DF) … simultaneously tests the extent to which this specification is true. The probability value associated with $\chi^2$ represents the likelihood of obtaining a $\chi^2$ value that exceeds the $\chi^2$ value when H0 is true. (p. 79)

The CMIN/DF score should be below 3.0 to meet the criteria according to Byrne (2001). The study’s CMIN/DF is 1.837, within the range to demonstrate the specified model fit.

The second model of absolute fit indicator is the RMSEA. This “has been recognized as one of the most informative criteria in covariance structure modeling” (Byrne, 2001, p. 84). The RMSEA considers the error of estimate in the study population covariance matrix if such a matrix were available when measuring for goodness-of-fit in the specified model. That is to say, RMSEA compares the hypothetical population matrix from the data to the speculated matrix of the proposed model. A range of RMSEA that is less 0.01 is considered excellent, a score that is less than 0.05 is good, a score that is less than 0.08 is adequate, a score that is less 0.1 is mediocre, and any score greater than 0.1 is poor. The RMSEA for this study is .064, which is an adequate fit.
The relative fit indicator is the CFI. When dealing with a study with a small sample size, CFI is an especially important measure of fit (Byrne, 2001, p. 83). The CFI measures the hypothesized model of the specification and the ideal model created by the data. A value will range between 0 and 1 and any value less than .95 is considered acceptable to indicate a good fit (Byrne, 2001, p. 83). The CFI for this model is .886. Therefore, the model is accepted as a good fit.

Table 7

*Absolute Fit and Relative Fit Indices*

<table>
<thead>
<tr>
<th>Model</th>
<th>CMIN/DF</th>
<th>RMSEA</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>1.837</td>
<td>.064</td>
<td>.886</td>
</tr>
</tbody>
</table>

Information theory indices require a comparison between this study, the “default” model, the “saturation” model (where all the variance is explained), and the null or independence model (where there are no latent variables and no correlation between variables). These include AIC, BCC, ECVI, and MECVI. For these indices, the absolute values are meaningless, and all three values must be compared to each other. For a good fit model, the “default” model value is less than the saturation and independence models. This study is considered a good fit based on all four models.

Table 8

*Information Theory Indices*

<table>
<thead>
<tr>
<th>Model</th>
<th>AIC</th>
<th>BCC</th>
<th>ECVI</th>
<th>MECVI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>518.308</td>
<td>538.893</td>
<td>2.541</td>
<td>2.642</td>
</tr>
<tr>
<td>Saturated model</td>
<td>550.000</td>
<td>619.890</td>
<td>2.696</td>
<td>3.039</td>
</tr>
<tr>
<td>Independence model</td>
<td>1721.572</td>
<td>1727.163</td>
<td>8.439</td>
<td>8.466</td>
</tr>
</tbody>
</table>

The Hoelter index is the final measurement. This statistic measures the adequacy of sample size instead of the model fit as the previous tests do. “Specifically, its purpose is to
estimate a sample size that would be sufficient to yield an adequate model fit for a $\chi^2$ test” (Byrne, 2001, p. 87). Hoelter is reported at two significance levels, .05 and .01. The values for both levels should be above 200 to indicate a good fit model. Hoelter recommends values of at least 200. Values less than 75 indicate a very poor fit. If the value is between 75 and 200, the study is considered acceptable. This study’s Hoelter values at significance level of .05 and .01 were 131 and 139 respectively.

The strength of the study is increased due to the fact it is a good fit in absolute fit indices, relative fit indices, information theory indices, and the Hoelter index. The confirmatory factor analysis helped in identifying six subgroups that had survey items that coincided with one another. Those subgroups were the six characteristics identified in the literature review that impacted the total number of courses completed by a student and the pace in which the student completed the courses.

Table 9 shows the survey items that load on the self-regulation portion of the model. This characteristic has the largest number of items in the model. These items focus on the self-regulation of the student as a mindset in regard to goal orientation. They drill into the attitude of the participant when approaching the plan rather than how often planning takes place or whether or not the plan is carried out. In the Likert scale used, where 3.5 is generally positive, participants in the survey have confidence in their abilities to learn and achieve regardless of the difficulty of the task or how new it is to them. In contrast, they lack in confidence as a self-starter.
Table 9

Survey Items That Make Up Self-regulation

<table>
<thead>
<tr>
<th></th>
<th>Loadings</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having control over the pace of learning an activity is important to me (i.e., the</td>
<td>.772</td>
<td>4.91</td>
</tr>
<tr>
<td>time I take to complete an activity).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I take responsibility for my actions most of the time.</td>
<td>.608</td>
<td>5.09</td>
</tr>
<tr>
<td>When I perform well on tasks, it is usually due to my own efforts.</td>
<td>.557</td>
<td>4.96</td>
</tr>
<tr>
<td>I try to achieve in all my classes, regardless of their level of difficulty.</td>
<td>.659</td>
<td>4.92</td>
</tr>
<tr>
<td>When I plan activities, I can almost always make them work.</td>
<td>.567</td>
<td>4.70</td>
</tr>
<tr>
<td>I have the ability to achieve in all of my courses.</td>
<td>.749</td>
<td>4.80</td>
</tr>
<tr>
<td>When several demands are placed upon me, I will determine which tasks are most</td>
<td>.736</td>
<td>4.73</td>
</tr>
<tr>
<td>important and complete those first.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel that I am a very self-directed individual (a self-starter).</td>
<td>.518</td>
<td>4.56</td>
</tr>
<tr>
<td>I have the ability to learn new tasks.</td>
<td>.409</td>
<td>5.14</td>
</tr>
<tr>
<td><strong>Total Average</strong></td>
<td><strong>4.87</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 10 focuses on the external support system of the participant. The items in this portion are specific to the teacher or mentor of the student enrolled in the seat time waiver program. Given that one of the requirements of a seat time waiver program is that all students must have a mentor, all of the participants had a mentor on which to comment. The participants agreed that the goals they set with their teachers or mentors were realistic. They felt most confident that their teachers or mentors helped them achieve success in the seat time waiver program.
Table 10

*Survey Items That Make Up External Support System*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Loadings</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>My mentor/teacher helps me set realistic long-term and short-term goals for me to accomplish.</td>
<td>.891</td>
<td>4.36</td>
</tr>
<tr>
<td>My mentor/teacher is available when I need them after school hours.</td>
<td>.609</td>
<td>4.37</td>
</tr>
<tr>
<td>My mentor/teacher helps me to be successful in this program.</td>
<td>.657</td>
<td>4.77</td>
</tr>
<tr>
<td><strong>Total Average</strong></td>
<td></td>
<td><strong>4.50</strong></td>
</tr>
</tbody>
</table>

Table 11 focuses on the self-efficacy of the students. These items revolve around overcoming obstacles and the students’ willingness to have dogged perseverance and tenacity when attempting to achieve their goals. Self-efficacy is about risk-taking and the possibility of failure. The students felt confident about taking chances even if they knew little about what they were doing. The item identifying their ability to overcome many of the obstacles was the highest in the model.

Table 11

*Survey Items That Make Up Self-Efficacy*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Loadings</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>As classes become harder, I feel that I have the ability to overcome many of the difficult obstacles that may present themselves.</td>
<td>.991</td>
<td>4.40</td>
</tr>
<tr>
<td>If I am given a task to perform that I know little about, I don’t mind taking a chance.</td>
<td>.499</td>
<td>4.63</td>
</tr>
<tr>
<td><strong>Total Average</strong></td>
<td></td>
<td><strong>4.51</strong></td>
</tr>
</tbody>
</table>

Table 12 has items that measure the students’ self-management characteristics. While self-regulation is a mindset, self-management is more about the technical side of accomplishing goals and completing tasks. Self-management focuses on schedules that are task-oriented like
following a cookbook. The averages for these items are not as high in this area as they are in self-regulation but still were over the 3.5 mark of overall agreement.

Table 12

*Survey Items That Make Up Self-Management*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Loadings</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>I tend to schedule my daily activities to allow enough time to accomplish them.</td>
<td>.891</td>
<td>4.47</td>
</tr>
<tr>
<td>I will often set short-term goals to help me reach a longer-term goal.</td>
<td>.609</td>
<td>4.48</td>
</tr>
<tr>
<td>Feedback is very important in helping me to attain my goals.</td>
<td>.657</td>
<td>4.59</td>
</tr>
<tr>
<td><strong>Total Average</strong></td>
<td></td>
<td><strong>4.51</strong></td>
</tr>
</tbody>
</table>

Table 13 examines the students’ external locus of control. This is the area the students rated the lowest. The students’ overall average is over 3.5, indicating a positive reaction, but two out of three of the items fall under that number. While they said that they would work harder if they had a material reward at stake, this is not something that exists in their lives because no one in their family is offering these rewards. Overall, the group was split on whether or not luck plays a large roll in anyone’s success.

Table 13

*Survey Items That Make Up External Locus of Control*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Loadings</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>I receive material rewards from my family if I attain high grades (i.e. money).</td>
<td>.614</td>
<td>2.95</td>
</tr>
<tr>
<td>I believe that luck plays a large role in anyone’s success.</td>
<td>.799</td>
<td>3.46</td>
</tr>
<tr>
<td>I tend to work harder and accomplish more if I know there is a material reward at stake (e.g. money, breaks, pizza parties, gas card)</td>
<td>.688</td>
<td>4.53</td>
</tr>
<tr>
<td><strong>Total Average</strong></td>
<td></td>
<td><strong>3.65</strong></td>
</tr>
</tbody>
</table>
Table 14 examines the students’ internal locus of control. The average of these items turn out to be higher than the students’ external locus of control. They find themselves stressed because they cram things to the last possible moment, and they feel like when things go wrong, it is because of their actions.

Table 14

**Survey Items That Make Up Internal Locus of Control**

<table>
<thead>
<tr>
<th></th>
<th>Loadings</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>I frequently find myself to be very stressed, as I tend to cram too many things together at the last possible moment.</td>
<td>.567</td>
<td>4.36</td>
</tr>
<tr>
<td>When something goes wrong, I usually feel that it is my own fault.</td>
<td>.512</td>
<td>4.26</td>
</tr>
<tr>
<td><strong>Total Average</strong></td>
<td></td>
<td><strong>4.31</strong></td>
</tr>
</tbody>
</table>

**Structural Equation Modeling**

Following the confirmatory factor analysis, structural equation modeling was done to see the impact of the characteristics in question on the total courses completed by the student and the pace in which the courses were completed. The original hypothesized model was tested using the SPSS Amos 23.0.0. It is not surprising that the final model, shown in Figure 5, has fewer measurement and latent variables than the originally hypothesized model. These were removed through a process of elimination where the lowest loading variables are removed one by one to obtain the best model fit. Latent variables such as self-management, self-regulation, internal locus of control, external locus of control, and self-efficacy remained in the model. Technology aptitude, socioeconomic status, and external support system remained in the model through manifest variables or interaction effects variables.
Figure 5. Structural equation model.

The structural equation model retains all the variables found to be related in the confirmatory factor analysis except for External Support (ExtSup). Table 15 shows the maximum likelihood estimates for the model. The measurement variable for Self-Regulation on courses completed is strong, positive, and carry statistical significance of at least \( p \leq .05 \). Additional variables that had strong, positive statistical significance of at least \( p \leq .05 \) for courses completed are students who work at school (WorkatSchool), twelfth grade students who communicate more frequently with their mentors (Grade12_x_CommFreq), and students who
feel comfortable using internet browsers (Tech_1). Two variables impacting courses completed have loadings that are strong, negative, and carry statistical significance of at least $p \leq .05$. These are ninth grade students (Grade9), and students with two children (Child2).

Table 15

*Maximum Likelihood Estimates for Structural Equation Model*

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>CourseCompleted &lt;-- WorkatSchool</td>
<td>1.864</td>
<td>.394</td>
<td>4.733</td>
<td>***</td>
</tr>
<tr>
<td>CourseCompleted &lt;-- Grade9</td>
<td>-5.259</td>
<td>2.321</td>
<td>-2.266</td>
<td>.023</td>
</tr>
<tr>
<td>CourseCompleted &lt;-- Grade12_x_CommFreq</td>
<td>.695</td>
<td>.330</td>
<td>2.104</td>
<td>.035</td>
</tr>
<tr>
<td>CourseCompleted &lt;-- Internal_LOC</td>
<td>-1.298</td>
<td>.644</td>
<td>-2.016</td>
<td>.044</td>
</tr>
<tr>
<td>CourseCompleted &lt;-- Tech_1</td>
<td>.870</td>
<td>.410</td>
<td>2.125</td>
<td>.034</td>
</tr>
<tr>
<td>CourseCompleted &lt;-- Child2</td>
<td>-6.372</td>
<td>2.732</td>
<td>-2.332</td>
<td>.020</td>
</tr>
<tr>
<td>Pace &lt;-- SelfReg</td>
<td>.010</td>
<td>.004</td>
<td>2.745</td>
<td>.006</td>
</tr>
<tr>
<td>Pace &lt;-- SES_workSchool</td>
<td>-.006</td>
<td>.002</td>
<td>-2.823</td>
<td>.005</td>
</tr>
<tr>
<td>Pace &lt;-- WorkatSchool</td>
<td>.008</td>
<td>.003</td>
<td>3.039</td>
<td>.002</td>
</tr>
<tr>
<td>Pace &lt;-- Female_x_Face2Face</td>
<td>.010</td>
<td>.002</td>
<td>4.770</td>
<td>***</td>
</tr>
<tr>
<td>Self_Manage &lt;-- SelfReg</td>
<td>.734</td>
<td>.098</td>
<td>7.481</td>
<td>***</td>
</tr>
</tbody>
</table>

The measurement variable for Internal Locus of Control on pace is strong, negative and has a statistical significance of at least $p \leq .05$. Additionally, students of low socioeconomic status that work at school had strong, negative, and statistical of significance at least $p \leq .05$. On the other hand, variables that has strong, positive, statistical significance of at least $p \leq .05$ for pace are Self-Regulation (SelfReg), students who work at school (WorkatSchool), and females that have face-to-face meetings with their mentors (Female_x_Face2Face).

While Table 15 shows the impact Self-Regulation has on Self-Management in a positive manner that is statistically significant, Table 16 shows the covariances of the Internal Locus of Control (Internal LOC), External Locus of Control (External LOC), Self-Efficacy (SelfEff), and Self-Regulation (SelfReg). All of these covariances are strong, positive, and have statistical significance of at least $p \leq .05$ except for the Internal Locus of Control and Self-Efficacy. The loadings for these variables are negative.
Table 16

*Covariances of Latent Variables for Structural Equation Model*

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal LOC &lt;---&gt; SelfEff</td>
<td>-.269</td>
<td>.101</td>
<td>-2.667</td>
<td>.008</td>
</tr>
<tr>
<td>Internal LOC &lt;---&gt; SelfReg</td>
<td>.395</td>
<td>.088</td>
<td>4.482</td>
<td>***</td>
</tr>
<tr>
<td>External LOC &lt;---&gt; Internal LOC</td>
<td>.274</td>
<td>.107</td>
<td>2.554</td>
<td>.011</td>
</tr>
<tr>
<td>External LOC &lt;---&gt; SelfRg</td>
<td>.231</td>
<td>.077</td>
<td>2.997</td>
<td>.003</td>
</tr>
</tbody>
</table>

The absolute fit and relative fit indices for the structural equation model are shown in Table 17. The CMIN/DF score should be below 3.0 to meet the criteria according to Byrne (2001). The structural equation model’s CMIN/DF is 2.616, within the range to demonstrate the specified model fit.

The second model of absolute fit indicator is the RMSEA. A range of RMSEA that is less than 0.01 is considered excellent, a score that is less than 0.05 is good, a score that is less than 0.08 is adequate, a score that is less than 0.1 is mediocre, and any score greater than 0.1 is poor. The RMSEA for this study is .089, which is an adequate fit that is close to mediocre.

The relative fit indicator is the CFI. A value will range between 0 and 1, and any value less than .95 is considered acceptable to indicate a good fit (Byrne, 2001, p.83). The CFI for this model is .642. Therefore, the model is accepted as a good fit.

Table 17

*Absolute Fit and Relative Fit Indices*

<table>
<thead>
<tr>
<th>Model</th>
<th>CMIN/DF</th>
<th>RMSEA</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>2.616</td>
<td>.089</td>
<td>.642</td>
</tr>
</tbody>
</table>

As stated earlier, information theory indices require a comparison between this study, the “default” model, the “saturation” model (where all the variance is explained), and the null or independence model (where there are no latent variables and no correlation between variables).
These include AIC, BCC, ECVI, and MECVI. For these indices, the absolute values are meaningless, and all three values must be compared to each other. For a good fit model, the “default” model value is less than the saturation and independence models. Unlike the information collected during the confirmatory factor analysis, Table 18 shows that the structural equation model does not have a good fit based on the information theory indices.

Table 18

**Information Theory Indices**

<table>
<thead>
<tr>
<th>Model</th>
<th>AIC</th>
<th>BCC</th>
<th>ECVI</th>
<th>MECVI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>1079.913</td>
<td>1109.742</td>
<td>5.294</td>
<td>5.440</td>
</tr>
<tr>
<td>Saturated model</td>
<td>868.000</td>
<td>1011.840</td>
<td>4.255</td>
<td>4.960</td>
</tr>
</tbody>
</table>

Finally, the Hoelter index measures the adequacy of sample size instead of the model fit, as the previous tests do. As is the case in the confirmatory factor analysis, Hoelter is reported at two significance levels, .05 and .01. The values for both levels should be above 200 to indicate a good fit model. Hoelter recommends values of at least 200. Values less than 75 indicate a very poor fit. If the value is between 75 and 200, the study is considered acceptable. The structural equation model’s Hoelter values at significance level of .05 and .01 are 89 and 93 respectively.

Although this study did not achieve good fit in the information theory indices, the strength of the study is increased due to the fact it is a good fit in absolute fit indices, relative fit indices, and the Hoelter index. The confirmatory factor analysis helped in identifying six subgroups that had coinciding survey items. Structural equation modeling helped to identify which specific characteristics impacted total courses completed and the pace in which the courses were completed. Furthermore, the process helped identify additional variables that impacted both outcomes in both positive and negative ways.
Chapter 5: Conclusion

Conclusions

This study examines the characteristics advantageous for alternative education students to be successful in a seat time waiver program. Additionally, the study measures the impact these characteristics have on how many classes students will be able to complete. Students on a seat time waiver have the option to work on classes at the pace with which they are most comfortable, and this study measures which characteristics will impact that pace. Students who are credit deficient or interested in early graduation have the option to work at an accelerated pace to complete courses more quickly than students in a traditional setting. The findings of the study came through structural equation modeling analysis. The characteristics originally predicted to impact course completion and pace were different than expected. The following are the conclusions that came from the study.

**Conclusion #1: Working at school impacts both outcomes.** Students enrolled in a seat time waiver have the option to work in any environment they choose. Each of the schools involved in this study offer students a place on campus to work on classes with a mentor teacher on site to provide assistance when needed. The survey asked the students how often they work at school. Students had the option to answer “Almost Never”, “Monthly”, “Weekly”, or “Daily” (3 to 4 times per week). Table 19 shows how these students perform in regard to pace and courses completed.

Table 19

*Students Who Work at School Outcomes*

<table>
<thead>
<tr>
<th></th>
<th>Almost Never</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Count</strong></td>
<td>13</td>
<td>71</td>
<td>8</td>
<td>113</td>
</tr>
<tr>
<td><strong>Mean Courses Completed</strong></td>
<td>6.38</td>
<td>5.98</td>
<td>9.50</td>
<td>10.79</td>
</tr>
<tr>
<td><strong>Pace</strong></td>
<td>2.47%</td>
<td>3.35%</td>
<td>4.64%</td>
<td>5.16%</td>
</tr>
</tbody>
</table>
Working at school is the only variable that directly impacts both outcomes. Students who work at school complete more classes than their counterparts and complete them at a faster pace. While mentor interaction time, communication frequency with mentors, face-to-face communications with mentors, and time spent at school are all measured; working at school is the only variable that combines all of them. Working at school has an impact on course completion and pace because it offers the opportunity for the students to utilize a mentor when they need one, but they still have the freedom that comes with online learning by working on the coursework of their choice. Furthermore, the social act of learning with students is not measured but could play a part in the success of the students who are working at school. “For some students and teachers, the absence of personal contact blocks some dimensions of learning that are important to any educational experience” (Donlevy, 2003). The sense of community may be a key component to working at school because students working at the same time will encourage and congratulate one another when completing courses. In a paper presented at the Mid-South Instructional Technology Conference Middle Tennessee State University, Prestera and Moller (2001) stated the importance of student interaction to student learning.

Access to a mentor for academic questions is not the only benefit to working at school. “Academic leaders cite the need for more discipline on the part of online students as the most critical barrier” (Allen & Seaman). Students who work at school can utilize the onsite mentor teachers to assist them in staying on task. In other studies, students who participated in a class orientation session were more likely to be successful in an online class than those that did not (Wojciechowski & Palmer, 2005). The orientation session consisted of a one-hour session that covered information on assignments utilizing the course platform and provided an opportunity to develop a sense of community within the course.
Conclusion #2: Different factors impact each outcome. The original hypothesis where both courses completed and pace would have self-management, self-regulation, internal locus of control, self-efficacy, technology aptitude, socioeconomic status, and external support system impacting them turned out to be wrong. This hypothesis was based on studies where students were enrolled in online courses, but not more than one at a time. This may be where the breakdown took place. Self-efficacy can be a predictor of achievement in the class, but that does not mean there is a correlation between whether or not the course is completed or the pace in which it is done (Wang & Newlin, 2002).

Self-efficacy and locus of control both refer to how one will approach a task and react to events in life (Artino Jr. & Stephens, 2009). This could explain why internal locus of control had a significant impact on total courses completed rather than pace. A student may be able to complete a single class, or even a few classes, quickly over a month’s time, but the characteristics that it takes to have sustained commitment to complete 10 to 15 classes are different.

The external support system of the student also did not show to have an impact on his or her pace or total courses completed. With that said, mentor communication frequency with twelfth grade students did have an impact on courses completed, which could point toward some of the ideas found in expectancy theory of motivation, where the amount of effort that a person puts into the achievement of a performance goal is dependent on two necessary conditions—that the goal is attractive and that the person believes that it can be achieved through effort (Vroom, 2013). The concept of graduation may not seem realistic or attainable to underclassmen. As twelfth grade students they, however, may finally see the value of the goal and also believe that it is attainable.
Whether or not students work at school was the only variable that impacted both pace and courses completed. This may be why the argument is made that the online teacher must be made aware promptly if a student is at risk so he or she can make the proper adjustments to the course and increase that student’s likelihood for success (Lykourentzou et al., 2009).

**Conclusion #3: Internal locus of control’s deficit perspective.** Internal locus of control had a negative impact on the total number of courses completed. When looking at the items surveyed in this area, they represent negative feelings connected to completing tasks. Respondents strongly agreed with statements like “When I perform well on tasks, it is usually due to my own efforts,” and “I take responsibility for my actions most of the time,” but when asked if it is the teacher’s fault when they perform poorly on a test, the mean answer was “agree.” One item addressed is being very stressed because students tend to cram too many things together at the last possible moment, while the other refers to students taking blame when something goes wrong. Students who rate themselves higher in the area of internal locus of control probably have a deficit perspective. Thus, this is really a measure of “deficit perspective,” and it is not surprising that higher levels of deficit perspectives would be negatively related to course completion. Many of the students have been told by school officials, parents, and others that the reason why they are where they are in life is due to the decisions they have made in the past. Internal locus of control refers to an individual’s belief that the events that take place within his/her life come from their own actions and not the actions of others (Lefcourt, 1966). However, if this internal locus of control translates to stronger internal “blame,” it becomes a barrier to successful completion of courses.

**Conclusion #4: Females and face-to-face meetings.** Another conclusion drawn from this study is the impact of face-to-face meetings with the mentor and female students on the pace
of courses completed. Studies have shown in higher education that dropout rates in online
courses far exceed that of traditional face-to-face instruction by 10% to 20% in some cases (Carr,
2000; Diaz, 2002). This variable has the greatest impact on pace over any other variable or
interacting affect. This highlights the importance of females coming to the school to meet with
their mentors for face-to-face conversations. Additionally, this builds on the theories of Carol
Gilligan who claims boys are “self-defined through separation” while girls are “self-delineated
through connection” (Gilligan, 1993).

**Conclusion #5: Self-management’s ineffective impact.** One of the biggest surprises
that came from this study was that, while self-regulation significantly impacted self-
management, self-management did not impact pace or courses completed. The characteristics of
self-management like the act of goal setting, self-monitoring, time planning, and creating a
checklist of tasks completed not having an impact on pace or total courses completed was
unexpected (Dabbagh & Kitsantas, 2004). Each one of the practices plays a key role in the
success of a student due to the lack of an instructor in the room working with him/her. The
number of students who worked at the school may have overshadowed the characteristics of self-
management.

**Conclusion #6: Self-regulation’s impact on the model.** Self-regulation impacted pace
directly and impacted courses completed through internal locus of control. It is no surprise that
self-regulation would significantly impact pace, given the characteristics of this variable.
Students with strong self-regulation have a positive attitude toward the process of goal setting
and believe that they can learn new tasks regardless of the level of difficulty. They have a growth
mindset and academic motivation, which helps drive them to complete courses faster that
students lacking these characteristics. (Elliott & Dweck, 1988; Svinicki, 2005).
One of the seemingly contradictory results from the analysis is the negative impact that self-regulation had on total courses completed, but at the same time, its positive impact on pace. These results are, in fact, not contradictory. To understand this, we need to focus on the meaning of “internal locus of control”. Internal locus of control in this study is a surrogate measure for “deficit thinking”. The internal locus of control variable indicates that these students accept the blame and responsibility for problems in their lives (a dimension of internal locus of control), but this measure is more directly related to deficit thinking and is related to low self-efficacy (which explains the negative relationship between the latter two variables).

This deficit perspective is relatively stable and ingrained (Oakes, 2005), whereas self-regulation tends to be more malleable. So, the negative relationship between internal locus of control and self-regulation indicates that students are compensating for their deficit perspectives by raising their self-regulation behaviors, and this in turn positively increases their pace of course completion. However, this does not work over the long term. The results indicate that self-regulation does not mediate deficit perspectives for total course completions.

Clearly, these deficit perspectives indicate that "attitudes" are critical for educational success. Many of the students enrolled in the alternative education programs have mental blocks from having been told in one way or another that they are not as good or as smart as their peers because of the programs they have been enrolled in as youngsters, like Head Start, Title I pullout programs, or the current alternative education programs they are in. Jeannie Oakes provides evidence indicating that students who are grouped in lower-achieving tracks do not learn better and develop a much more negative self-image that initially expected.

The fact that these students are able to use the self-regulation skills to work at a faster pace shows that they have the skills to complete the courses quickly but not over a long period of
time. This is a short-term strategy that compensates for this deficit thinking but does not change the underlying self-image and thus fades over time. This sprinter’s mentality allows the student to complete a significant amount of coursework, which can remove the stresses that come from external forces like mentors, parents, and administrators that are expecting high productivity. As those people fade off because they are satisfied with current productivity, the student’s pace also slows.

Implications for Theory

Past research has not attempted to study alternative education students enrolled in full-time online learning. The concentration of this research focused on the characteristics that helped increase these students’ success in completing a number of classes and increasing the pace in which they are done. Theories on self-regulation, self-management, self-efficacy, locus of control and external support were the basis in attempting to understand the characteristics that would help students be successful in an online environment.

Self-management’s lack of impact on outcome. Self-management skills like goal setting, self-monitoring, self-evaluation, help seeking, and time planning and management are key self-regulatory processes that impact student achievement in online learning (Dabbagh & Kitsantas, 2004). This was not the case for the students participating in this study. The data showed self-regulation impacted self-management, but there was not an impact on pace or total courses completed from self-management, which increases the importance of self-regulation. As mentioned earlier, self-regulation refers to the student’s goal orientation (performance/mastery), response to failure or setbacks, and their causal agent in behavior outcome sequences (Dweck & Reppucci, 1973; Molden & Dweck, 2006). The goals, self-monitoring, self-evaluation, and time planning must be that of the student instead of the mentor. As much as the mentor may prepare
materials and offer encouragement, the student’s skills and attitude are still the most important factors for success.

Waschull studied six behavior characteristics (self-discipline/motivation, technology expertise, access to technology, preference for text-based learning, study skills, and adequate time commitment) and course performance, measured by test averages, assignment averages, final exam and cumulative final grades. She found self-discipline to be the factor most significantly correlated with a student’s performance in the course (Waschull, 2005). While performance in the course may be impacted, this did not increase the pace or number of courses completed.

**Internal locus of control’s deficit perspective.** While deficit thinking did impact the total number of courses a student completed, there was not an impact on pace. The research says that students with higher levels of deficit thinking and lower levels of self-efficacy tend to respond and react to setbacks because these students attribute their success to their abilities, they are more likely to increase their effort and make another attempt at the task (Dweck, 1975). When examining the items in the survey, the two pieces that stick out are where fault is directed when something goes wrong and stress at the last moment. It is clear that the negative things happening in these students’ lives are partly a result of the low levels of internal locus of control because they believe events that take place within their lives come from their own actions and not the actions of others (Lefcourt, 1966).

**Female face-to-face interactions impact on pace.** Female pace increases with face-to-face interactions with mentors. “For some students and teachers, the absence of personal contact blocks some dimensions of learning that are important to any educational experience” (Donlevy, 2003). This study adds to the research on field dependence-field independence learning styles.
Furthermore, this research adds to the work of Deborah Tannen, linguistics professor at Georgetown University who studies gender interpersonal communication. Tannen believes that women and men have different speech styles, and she defines them for us as “rapport-talk” and “report-talk,” respectively (Tannen, 1990).

**Implications on Practice**

There are three main implications from this study that can be used in practice. These practices can have immediate impact on both the pace at which the student will complete the class and the total number of courses the student will complete. The main challenges are identifying students with high levels of self-regulation, ensuring female students have ample opportunity for face-to-face interactions, and finding ways to make sure students have the opportunity to work at the school.

**Self-regulation skills for seat time waiver students.** Seat time waiver students must be carefully selected based on self-regulation skills. Students lacking in these skills must carefully consider if they are a “good” fit for the program. Schools considering candidates for seat time waivers should determine if the student is a performance goal-orientated student or mastery-orientated student. Having this information is critical in predicting how the student will react to challenging tasks, difficulties, and even failure (Elliott & Dweck, 1988). It may not be necessary for students to take a 45 question survey to find out how they will do, but an open and honest conversation regarding each student’s commitment to education and whether or not he/she has the drive to persevere through difficult tasks even after setbacks may cause students to redo areas he/she performed poorly in previously. “Online courses are best for students who are strong self-learners. Students who prefer to have information explained to them or who benefit from lively class discussions will probably not thrive in online courses” (Case & Davidson, 2011). Having a
student, who tends to flourish in an environment where the learning is a social interaction, in a seat time waiver program, left to his/her own accord, may be fruitless for the student and in turn, a failure for the school.

In the event a student is accepted with poor self-regulation skills, the mentor must focus on improving the student’s self-regulation skills to increase pace. Mentors must work with these learners to create enthusiasm for their own education and find ways to get them highly engaged in the learning activities placed in front of them (Artino Jr. & Stephens, 2009). To improve these low self-regulating students, the mentor will have to be there when the students fail to teach them they have not been undermined and weakened but instead, challenged and energized with the opportunity to prove they can succeed to overcome this obstacle (Molden & Dweck, 2006).

**Female students and face-to-face interactions.** Given that face-to-face interactions between female student and mentor increase the pace in which a student completes courses, it is very important that a mentor takes time to schedule meetings with female students. Creating a rapport with the female students will prove to help mentors make connections and establish intimacy and community. Conversation is going to be more cooperative and productive, which will ultimately lead to increased pace in the female students.

Follow-through on these meetings will be vital in the female students completing courses at a faster pace. This may mean ensuring each mentor has enough office hours scheduled for all students. It may also be necessary for the school to evenly divide the students based on gender to give each mentor the opportunity to create space for meeting times with all students, particularly the female students. While in the meetings it may be important to establish a professional level of intimacy as well as show concern and empathy. More will be gained with female students if the mentor fosters cooperation rather than competition (Tannen, 1990).
**Students need to work at school.** Students working at school have a greater number of total courses completed and increase in pace as compared to their counterparts. While online learning has been sold to consumers as the option to allow students to work from home, or anywhere in the world for that matter, the reality is that students benefit far more from working in school with a mentor nearby to provide guidance, structure, and support. Online learning works well for students who have the self-regulation skills important to be successful, but that is not the case for all students. This was the one variable that increased performance in both pace and total courses completed.

As students and school officials consider whether or not seat time waivers are the answer for their students, the option to work at school must be explored to offer the best possible outcome for the student. Studies have shown that students who do not self-manage and tend to procrastinate longer than their classmates are less successful. This is partially due to a lesser amount of participation (and later entries) in discussion forums throughout the course (Michinov et al., 2011). Some of these pitfalls can be avoided with a mentor nearby to help redirect the students when they are not able to stay on task.

**Suggestions for improved online instruction.** Based on the findings, the students who participated in this study performed at a faster pace and completed more courses when communicating with a mentor. The current online learning platform consists of a “canned curriculum” where students work through the content without communicating with the instructor of the course. There is convincing evidence that suggests if students are responding well to communication with a mentor, interaction with the instructor of the online course would be helpful too. Districts should find an online provider that has instructors who interact with the students, which will lead to an increased level of engagement in the course.
Limitations

Low number of respondents. After sending the survey to three different school districts requesting their students to participate in the study, there were only 205 students that chose to participate. A higher number of responses would have given the SEM analysis program more information to work with and stronger data. This also may have helped keep some of the variables that were lost from the original hypothesis and the final SEM.

The study could have increased the number of respondents by including more school districts instead of the three districts in the same geographical area. There is at least one more school in the county that operates completely on seat time waivers and another that is in the southern portion of the state. While the other districts do not use the same online class provider, this study is not based on a single provider and only discusses online courses in general.

Similarity of characteristics. The characteristics that were studied and measured can be explained in different ways but have many similarities. Self-regulation and self-management are two characteristics that sound very similar and can be described quite similarly, but regulation is about a mindset and management is about being task-oriented. This can confuse and complicate things when discussing their impact on student achievement. Furthermore, self-efficacy and locus of control both refer to how one will approach a task and react to events in life (Artino Jr. & Stephens, 2009). Both of these correlated with one another but were measured in different ways in the study.

Survey flaws. While this survey was based off the ESPRI, developed by M.D. Roblyer, it still contains flaws that would not be worked out until it has been tested in multiple trials. A pilot study was conducted, but the low number of participants in the study may have jeopardized the
reliability of the items. This survey should be tested further and edited to help cultivate better questions that get to the true meaning of the survey items.

Additionally, supervision of the students while taking the survey may be helpful to ensure the responses are genuine and well thought out. There is a fear that many of the students who participated in the survey did not put forth a full effort in taking the survey and simply did it because classmates were doing it. Many of the items in the survey ask the student to take an honest look at themselves and the type of students and people they are. If the students are not willing to give genuine answers to these questions, the validity of their answers are compromised.

Implication on Future Research

This research provided a lot of answers and guidance for future practice, but I felt myself wanting to know more about this subject and the students participating in the study. When considering future research on this topic there were some additional questions that I had that may inspire future dissertations. These are only a few of the questions I was led to when I completed this study.

All of the students involved in this study were using the same online platform, so is there a different result when using a different vendor? There are many different online platforms that schools use. Each provider has pros and cons that allow the student and mentor to work together in different ways, including parent communication portals and emails. All of the schools in this study used Edgenuity as their online course provider. There is another alternative education school that uses multiple providers depending on the subject matter. How successful is a student that is using multiple online providers? Furthermore, given the transient nature of the alternative education students, circumstances may change that prevent them from continuing to work on
their courses with their current schools. How do these characteristics impact students that change schools?

How does the age of a student impact the pace of course completion as they get closer to 20 years old, which ages out of public school? While this study asked the student for their age, very few students were 18 years old or above. At age 19 or 20 they face the decision of dropping out of school, paying for adult school, or enrolling in a GED program.

What characteristics of a mentor impact student success online? While working with many different mentors throughout this process, it is clear they all have different techniques and personality traits that help them connect with students. Are characteristics like self-regulation, self-management, self-efficacy, technology aptitude, and locus of control factors in course completion or pace? Also, how are these factors different than those in a traditional direct-instruction school?

What is the implication when it comes to different content areas? This study only focused on the student completing the class. There were no questions regarding different subject areas like math, science, English, or social studies versus elective course work. Furthermore, it is no secret that students have “favorite” subjects and areas of study in which they are most interested. There is reason to believe that students enrolled in subject areas they have more interest in are more likely to complete these courses at a faster pace than courses in which they have little to no interest.

How to increase male pace and total courses completed is another question that arose. This study found one characteristic that seemed to stick out for female students and their success, but the same was not true for males. Given that males are the largest population of students in alternative education buildings, it is important to see what will help in their success. As
discussed earlier, Tannen refers to the importance of rapport talk with females. Conversely, she says that rapport talk is the cornerstone for male communication (Tannen, 1990).
References


APPENDICES
Appendix A: Educational Success Prediction Instrument


This survey is designed for high school students who are interested in Internet-based distance education. Please answer the following questions as accurately as you can.

DIRECTIONS: Circle the number to indicate how much you agree or disagree with each statement below. Strongly Agree is a “1” and Strongly Disagree is a “7.”

Name of School: ________________________________

Name of Mentor: ________________________________

Student ID Number: ________________________________

1. I am a competent person in my schoolwork.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

2. I believe that I am a valuable person.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

3. I try to achieve in all my classes, regardless of their level of difficulty.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

4. I am well prepared for my schoolwork and believe that unfair tests rarely happen.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

5. I have the ability to learn new tasks.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

6. I really enjoy going to school because I like to learn.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

7. It is important that my teachers give me knowledge of results or feedback that I can use to further enhance my performance.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

8. I have a need to achieve and feel competent.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

9. Feedback is very important in helping me to attain my goals.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree
10. Having control over my learning environment is important to me (i.e., choosing when to perform an activity).

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

11. I like to take risks if they are reasonable.

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

12. I feel that I am a worthy individual.

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

13. If I do not perform well on a test, it is probably because I did not have enough time.

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

14. I enjoy going to school and learning about new ideas.

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

15. I receive material rewards from my family if I attain high grades (for example, money).

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

16. I believe myself to be a very organized individual.

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

17. I believe myself to be a high achiever.

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

18. I frequently find myself to be very stressed, as I tend to cram too many things together at the last possible moment.

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

19. I believe that luck plays a large role in anyone’s success.

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

20. I do not care what other people think of me if I make mistakes.

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

21. I have younger brothers and sisters at home that are frequently under my care.

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

22. The goals I set are often too easy.

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**

23. I find it easier to study for my exams at the last possible moment.

**Strongly Agree** 1 2 3 4 5 6 7 **Strongly Disagree**
24. As classes become harder, I feel that I have the ability to overcome many of the difficult obstacles that may present themselves.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

25. I use e-mail at least once a week.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

26. Studying for tests is often a waste of time because test questions may not be related to course work.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

27. The only reason I study hard in school is to achieve high grades.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

28. I find that I try harder if I set high goals for myself.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

29. I feel good about myself.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

30. I tend to schedule my daily activities to allow enough time to accomplish them.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

31. When something goes wrong, I usually feel that it is my own fault.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

32. I have my own e-mail account.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

33. When several demands are placed upon me, I will determine which tasks are most important and complete those first.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

34. I rarely set goals for myself.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

35. I tend to persist at tasks until they are accomplished.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

36. I have good word processing skills.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

37. When I have a difficult exam coming up, I tend to start studying a week or two ahead of time.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree
38. If I am unsure what to do in a situation, I will frequently wait for someone to give me advice.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

39. I know how to use a browser to locate Internet sites.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

40. I have the ability to achieve in all of my courses.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

41. If I am unsure of what to do in a situation, I tend to wait for instructions rather than go ahead.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

42. Planning too far ahead is not smart because many things are a matter of timing or luck.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

43. When I plan activities, I can almost always make them work.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

44. If I make a mistake, I will often blame others.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

45. If I miss questions on a test, it is usually the teacher’s fault.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

46. I have a computer in my home.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

47. I study hard for all of my classes because I enjoy acquiring new knowledge.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

48. Personal contact with my classmates is important to me.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

49. I am afraid of failure.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

50. Face-to-face interaction with my teachers is important to me.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

51. I believe myself to be a task-oriented person.

   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree
52. I am more comfortable working on class projects in small groups than I am alone.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

53. I like taking chances and performing risky tasks.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

54. When working with others on projects, I frequently find myself doing everything to ensure it is done properly.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

55. It is difficult to say “no” to the requests of other persons.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

56. I take responsibility for my actions most of the time.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

57. If I am given a task to perform that I know little about, I don’t mind taking a chance.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

58. If I do not perform well on a test, it is probably because I did not get good instruction from the teacher.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

59. I find it easier to study for an important test by breaking it into sub-parts rather than studying the whole subject matter at one time.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

60. If I do not perform a task well, it is probably because it is too difficult.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

61. I will often set short-term goals to help me reach a long-term goal.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

62. Many times, the goals I set are too difficult to reach.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

63. I strive to achieve higher grades only for recognition (e.g., to be in National Honor Society).
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

64. Many times, I lose interest in attaining the goals I set.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree
65. I feel motivated to perform well in my classes because of the approval I receive from other individuals.

   **Strongly Agree** 1  2  3  4  5  6  7 **Strongly Disagree**

66. I feel comfortable using a computer.

   **Strongly Agree** 1  2  3  4  5  6  7 **Strongly Disagree**

67. I have easy access to a computer with Internet capability.

   **Strongly Agree** 1  2  3  4  5  6  7 **Strongly Disagree**

68. I feel that I am a very self-directed individual (a self-starter).

   **Strongly Agree** 1  2  3  4  5  6  7 **Strongly Disagree**

69. Having control over the pace of learning an activity is important to me (i.e., the time I take to complete an activity).

   **Strongly Agree** 1  2  3  4  5  6  7 **Strongly Disagree**

70. When I perform well on tasks, it is usually due to my own efforts.

   **Strongly Agree** 1  2  3  4  5  6  7 **Strongly Disagree**

Information About You — Please circle the appropriate answer for each of the following and fill in information, where necessary:

1. What is your age?
   a. 13     b. 14     c. 15     d. 16
   e. 17     f. 18     g. 19     h. Other: ________

2. What is your race?
   d. Hispanic     e. Asian               f. Other: ______________________

3. What is your gender?
   a. Male       b. Female

4. What is your favorite topic in school?
   a. Art         b. Computer science     c. English/language arts
   d. Foreign language  e. Humanities    f. Mathematics
   g. Music       h. Physical education  i. Science
   j. Social studies  k. Technology education  l. Other: ___________

5. What is your grade level?
   a. 9th     b. 10th     c. 11th     d. 12th
6. Circle the number of clubs and organizations in which are a member or officer. (If none, leave blank.)
   a. 1  b. 2  c. 3  d. 4  e. 5  f. More than 5

7. Do you have a part-time job? (If none, leave blank.)
   a. No  b. Yes: How many hours a week do you work? ________

8. How many hours a week do you spend in activities other than a job outside school? (If none, leave blank.)
   a. 1-5  b. 6-10  c. 11-15  d. 16-20  e. More than 20

9. Do you have commitments (e.g., family) outside of school, work, and clubs/organizations?
   a. No  b. Yes. Explain ________________________________

10. Is the course you are about to take (or are taking now) your FIRST Internet course?
    a. No  b. Yes

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Appendix B: ESPRI Questions Divided by Characteristics

Self-Regulation (Dweck & Reppucci, 1973; Dweck, 1975; Elliott & Dweck, 1988; Svinicki, 2005)

1. I try to achieve in all my classes, regardless of their level of difficulty.
2. I tend to persist at tasks until they are accomplished.
3. I enjoy going to school and learning about new ideas.
4. I feel motivated to perform well in my classes because of the approval I receive from other individuals.
5. As classes become harder, I feel that I have the ability to overcome many of the difficult obstacles that may present themselves.

Self-Management (Knowles, 1973; Brown, 1990; Bernard, Brauer, Abrami, & Surkes, 2004; Waschull, 2005)

1. I frequently find myself to be very stressed, as I tend to cram too many things together at the last possible moment.
2. I find it easier to study for my exams at the last possible moment.
3. I tend to schedule my daily activities to allow enough time to accomplish them.
4. When several demands are placed upon me, I will determine which tasks are most important and complete those first.
5. When I plan activities, I can almost always make them work.
6. It is difficult to say “no” to the requests of other persons.
7. I will often set short-term goals to help me reach a long-term goal.
8. Having control over the pace of learning an activity is important to me (i.e., the time I take to complete an activity).
9. I find that I try harder if I set high goals for myself.
10. I feel that I am a very self-directed individual (a self-starter).

1. When I perform well on tasks, it is usually due to my own efforts.

2. I believe that luck plays a large role in anyone’s success.

3. When something goes wrong, I usually feel that it is my own fault.

4. I take responsibility for my actions most of the time.

5. If I do not perform well on a test, it is probably because I did not get good instruction from the teacher.

External Support System (Lykourentzou, Giannoukos, Nikolopoulos, Mpardis, & Loumos, 2009).

1. Feedback is very important in helping me to attain my goals.

2. I receive material rewards from my family if I attain high grades (for example, money).

3. I tend to work harder and accomplish more if I know there is a material reward at stake (for example money, longer breaks, pizza parties, gas cards)

4. My mentor/teacher helps me set realistic long term and short term goals for me to accomplish.

5. I communicate with my mentor/teacher
   a. Daily
   b. Weekly
   c. Monthly
   d. Almost Never

6. The form of communication I most often use with my mentor/teacher is (check all that apply)
   a. Text Messaging
   b. Instant Messenger (Facebook/Twitter)
   c. Email
   d. Phone
   e. Face-to-face

7. I come to school to work on my online courses
   a. Daily (3-4 times per week)
   b. Weekly
   c. Monthly
   d. Almost Never

8. I have a face-to-face interaction with my mentor/teacher
   a. Daily (3-4 times per week)
   b. Weekly
c. Monthly
d. Almost Never

9. Visits with my mentor last
   a. Less than 30 minutes
   b. 30-60 minutes
   c. More than 60 minutes

10. The communication I have with my mentor is based on (Check all that apply)
    a. Educational
    b. Social
    c. Care and Concern
    d. Health and Wellness
    e. Conflict Management

11. I have someone at home that monitors my progress
    a. Daily
    b. Weekly
    c. Monthly
    d. At Semesters
    e. Almost Never

12. My mentor/teacher is available when I need them during school hours.

13. My mentor/teacher is available when I need them after school hours.

14. My mentor/teacher helps me to be successful in this program.

15. I have other people in my life that are under my care (children, siblings, parents, grandparents, extended family).

Self-Efficacy (Wang & Newlin, 2000, 2002; Joo, Lim, & Kim, 2013)

1. I have the ability to learn new tasks.

2. I am a competent person in my schoolwork.

3. I have the ability to achieve in all of my courses.

4. If I am given a task to perform that I know little about, I don’t mind taking a chance.

5. I believe myself to be a high achiever.
Technology Aptitude (Maki & Maki, 2002; Dupin-Bryant, 2004; Waschull, 2005; Rao, Eady, & Edelen-Smith, 2011)

1. I communicate electronically (Ex. e-mail, text, Twitter, Facebook, instant messenger, etc.) at least once a week.

2. I have my own e-mail account.

3. I have good word processing skills.

4. I know how to use a browser to locate Internet sites.

5. I have easy access to a computer with Internet capability.
Appendix C: Predicted Impact for Each Characteristic

Self-Management Outcomes

H1: The student’s ability to work alone will positively impact the pace at which he or she will be able to earn credits (Zimmerman, 2002; Kitsantas, 2002; Dabbagh & Kitsantas, 2004).

Self-Regulation Processes Outcomes

H1: The student’s self-regulation process will positively impact the pace his/her will be able to earn credits (Artino Jr. & Stephens, 2009).

Self-Efficacy Outcomes

H1: The student’s self-efficacy will positively impact the pace at which he/she will be able to earn credits (Joo, Lim, & Kim, 2013).
H3: The student’s self-efficacy will positively impact his/her locus of control (Judge, Erez, Bono, & Thoresen, 2002).

Locus of Control Outcomes

H1: The student’s locus of control will positively impact the pace at which he/she will be able to earn credits (Wang & Newlin, 2002; Joo, Lim, & Kim, 2013).
H3: The student’s locus of control will positively impact his/her self-efficacy (Judge, Erez, Bono, & Thoresen, 2002).

Technology Aptitude Outcomes

H1: The student’s technology aptitude will positively impact the pace at which he/she will be able to earn credits (Maki & Maki, 2002).

Socioeconomic Status Outcomes

H1: The student’s socioeconomic status will positively impact the pace at which he/she will be able to earn credits (Kim & Lee, 2011).
H2: The student’s socioeconomic status will positively impact his/her technology aptitude (Kim & Lee, 2011).
H3: The student’s socioeconomic status will positively impact his/her external support (Kim & Lee, 2011).

Student’s External Support Outcomes

H1: The student’s external support system will positively impact the pace at which he/she will be able to earn credits (Boekaerts, Pintrich, & Zeider, 2000).
Appendix D: IRB Approval Letter

**RESEARCH @ EMU**

**UHSRC Determination:** EXPEDITED INITIAL APPROVAL

**DATE:** March 11, 2016

**TO:** Linden Moore
Eastern Michigan University

**Re:** UHSRC: # 819035-1
Category: Expedited category 7
Approval Date: March 11, 2016
Expiration Date: March 10, 2017

**Title:** A Study of Alternative Education Seat Time Waiver Students in Michigan

Your research project, entitled A Study of Alternative Education Seat Time Waiver Students in Michigan, has been approved in accordance with all applicable federal regulations.

This approval included the following:

1. Enrollment of 200 subjects to participate in the approved protocol.
2. Use of the following study measures: Student Survey
3. Use of the following stamped recruitment materials: Guidelines for discussing study
4. Use of the stamped: Child Assent form, Passive Parental Consent form

**Renewals:** This approval is valid for one year and expires on March 10, 2017. If you plan to continue your study beyond March 10, 2017, you must submit a Continuing Review Form by February 8, 2017 to ensure the approval does not lapse.

**Modifications:** All changes must be approved prior to implementation. If you plan to make any minor changes, you must submit a Minor Modification Form. For any changes that alter study design or any study instruments, you must submit a Human Subjects Approval Request Form. These forms are available through IRBNet on the UHSRC website.

**Problems:** All major deviations from the reviewed protocol, unanticipated problems, adverse events, subject complaints, or other problems that may increase the risk to human subjects or change the category of review must be reported to the UHSRC via an Event Report form, available through IRBNet on the UHSRC website.

**Follow-up:** If your Expedited research project is not completed and closed after three years, the UHSRC office requires a new Human Subjects Approval Request Form prior to approving a continuation beyond three years.

Please use the UHSRC number listed above on any forms submitted that relate to this project, or on any correspondence with the UHSRC office.

Good luck in your research. If we can be of further assistance, please contact us at 734-487-3090 or via e-mail at human.subjects@emich.edu. Thank you for your cooperation.

Sincerely,
Joan Cowdery, PhD
Vice Chair
University Human Subjects Review Committee