

Understanding the Role and Applicability of K-12 Online Learning to Support Student Dropout Recovery Efforts

Richard E. Ferdig, Ph.D.



Preface



The Michigan Virtual University® (MVU®) has been working collaboratively with schools and education leaders in Michigan to address the persistent problem of students dropping out of school. Online learning has created new opportunities to reach students who are not challenged or engaged by the traditional educational model. MVU is pleased to collaborate with Dr. Richard Ferdig on the development of this paper that succinctly defines the dropout problem, provides an extensive review of the research that has been conducted in this area of study, explores the potential impact of virtual schools as an alternative strategy, and concludes with a comprehensive set of recommendations and resources for K-12 educators.

MVU has also proposed creating a statewide dropout recovery program with online diagnostics, highly qualified Michigan-certified online instructors, online intervention counselors, prescriptive learning modules, self-paced tutorials and practice tests that could help thousands of young adults who have dropped out of school, earn a diploma or prepare for the General Educational Development (GED) exam. This innovative program could help fill a void created by the elimination of programs that previously served this population and could be expanded to include customized online support services for students that are learning English as a second language. In support of this effort, MVU has met with the Michigan Association of Community and Adult Education and other organizations to explore online learning opportunities, blended instruction strategies, identify resources for students and adult education professionals and potential sources of funding.



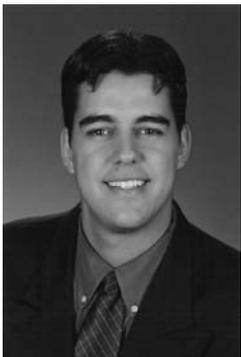
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Michigan Virtual University
October 2010

About MVU

The Michigan Virtual School® (MVS®) and Michigan LearnPort® are the core divisions of Michigan Virtual University, a private nonprofit 501(c)(3) organization that works in partnership with K-12 schools to supplement and expand online learning opportunities. The MVS was created by Public Act 230 of 2000 to serve both traditional and nontraditional students, and since its inception has served over 80,000 course enrollments. The MVS offers a broad range of core academic courses aligned with state standards, college level equivalent courses, remedial, enrichment and world language courses, and innovative online experiences. In 2005, the MVS was awarded accreditation by the North Central Association Commission on Accreditation and School Improvement (NCA CASI) and the Commission on International and Trans-Regional Accreditation (CITA). An independent board of directors representing business, education leaders and state government governs MVU.

Abstract

Recent, daunting reports suggest that the true high school graduation rate is substantially lower than the official rate, and that it has been declining for the last 40 years. These findings suggest that one-third of all public high school students and nearly one-half of minority students fail to complete their high school experience. K-12 online learning, a method of delivering teaching and learning through electronic means, has been touted as a potential solution for reaching students who might be considered lost to the traditional education system. This report describes what we currently know about high school dropout and retention, what solutions have been proposed, and how online learning might impact the retention rate. Drawing on existing work from Michigan Virtual School, data are provided to discuss performance of credit recovery students and conditions under which such students succeed and struggle in online learning environments. Results suggest that online learning can impact retention and dropout recovery; however, simply replicating existing face-to-face environments often replicates the negative behavioral, affective, and cognitive outcomes of at-risk students.



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1. The Dropout Crisis

1.1 Defining the problem

Each year in America, thousands of students drop out of high school. Some return through alternative education programs or complete their GED (General Education Development) certificate; however, many leave high school and never return. The problem is so prevalent it has been called an epidemic, a crisis, and a tragic cycle with severe consequences.¹

Frequently cited reports suggest that the graduation rate is somewhere between 70-75%; the idea is that somewhere around 1 in 4 students fail to graduate from high school.² Graduation rates for minority students are quoted as being even lower. As if these numbers were not tragic enough, “the new school of thought is that the true graduation rate is substantially lower than the rate that had been reported for years by the NCES and other governmental agencies.”³

Using multiple data collection sources and innovative methodologies for data analyses, researchers now argue that the overall graduation rate has fallen in the past 45 years; children born in the late 1940s graduate at a higher rate than today’s children. And, minority graduation rates have had little to no improvement since the 1950 birth cohorts.⁴ Each year, almost 1 in 3 students fail to graduate from public high schools; nearly 1 in 2 blacks, Hispanics, and Native Americans fail to graduate. Many of these students leave with less than two years remaining in their educational experience.⁵

The difference in graduation rates point to the difficulty in both defining dropout and in collecting data on dropouts.⁶ Regardless of finding a definitive graduation rate, even conservative numbers demonstrates a problem with student dropout. This is a problem that, if anything, has gotten worse over the last 50 years, even in the face of educational reform at the forefront of the public agenda.⁷

1.2 Why dropping out has been labeled a crisis

Dropping out prior to high school graduation is a documented problem, but it has also been labeled a crisis on both an individual and a societal level. From an individual perspective, there are serious economic and personal consequences to leaving.⁸ Many dropouts are not employed, a problem that will continue to worsen as federal and state unemployment numbers increase.⁹ Students who drop out are also more than eight times as likely to be in jail or prison.¹⁰ Multiple studies have also concluded that truancy was related to criminality, violence, job and marital problems.^{11 12} In sum, dropouts are less likely to vote, less likely to be engaged in civic activities, earn less, are more likely to be living in poverty, are more likely to be divorced or be a single parent (with children who also are likely to drop out), have higher health costs and have lower life expectancies.^{13 14}

The problems associated with dropouts also impact society. Forty percent of high school dropouts receive some sort of government assistance such as welfare, food stamps, and housing assistance.^{15 16} They have higher demand for social services, and they increase criminal justice costs due to their higher crime rate, and because they earn less they contribute less to the tax base and thus the economy writ large.¹⁷ According to one report, students dropping out in one year alone will cost more than \$325 billion in wages, taxes, and productivity over the lifetime of the students.¹⁸ In sum, dropouts not only hurt themselves, but also the greater society.¹⁹

1.3 Understanding why students drop out

Reasons for dropping out of school generally fall into one of two categories: a) individual; or b) institutional.²⁰ Individual factors are things about

the student or the student's life that impact their decision or their ability to stay in school. Institutional factors are things about their family, school, or communities that directly influence their chances of dropping out. Other researchers call this the "push" and "pull" effect; the individual factors pull the students out of school and the institutional factors push them out.²¹

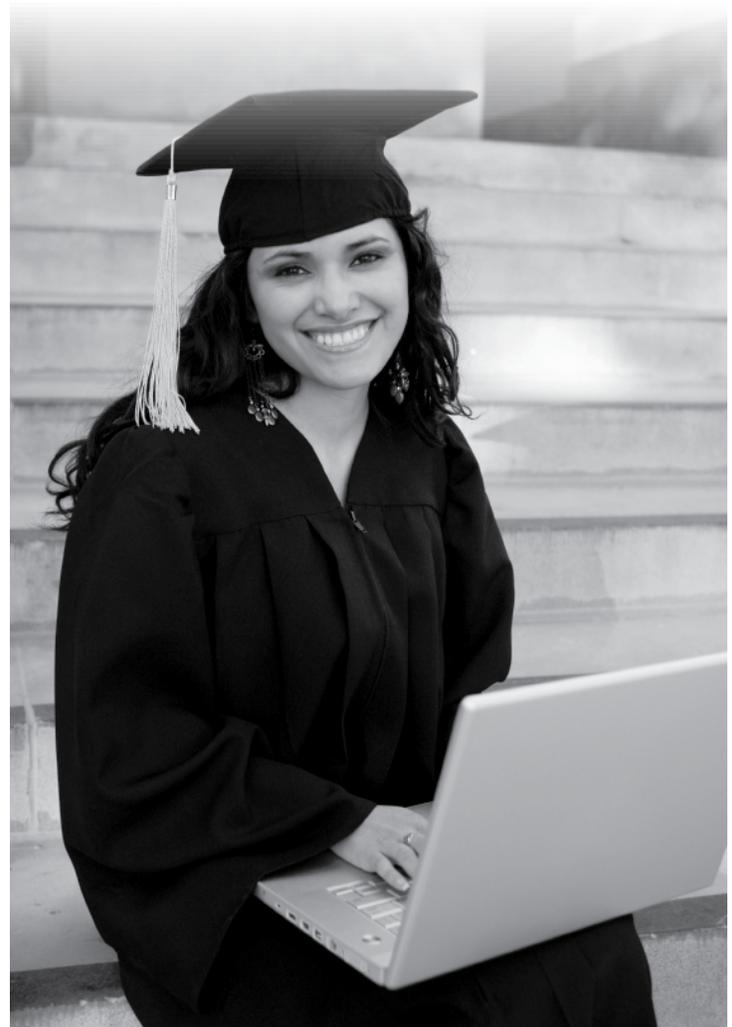
In 2008, Rumberger & Lim reviewed 25 years of research on dropouts. Using 203 published studies, they attempted to identify significant predictors of dropout and/or graduation. In doing so, they were able to more clearly define individual factors (performance, behavior, attitudes, and background) and institutional factors (family/community and school).²² Bridgeland and his colleagues completed a survey of students and found almost the exact results, triangulating research and practice.²³ Table 1 summarizes the factors, the examples, and the student survey results from both sets of studies.

Most recent research studies have confirmed these findings.²⁴ However, there are three other recent, important findings about why students drop-out. First, there has been an increased recognition of the importance of key transition points.²⁵ "Standardized test scores and ninth-grade dropout rates have suggested, and researchers have confirmed that the middle to high school transition is a key point in the academic, social, and emotional trajectory of students across the country."²⁶ The idea is that these students lose footing early in the process (during their first year of high school) and are unable to recover. In the end, "ninth-grade students exhibit higher rates of failure in courses, decline in test scores, and behavioral problems than students in all other grade levels do."²⁷

A second key area of recent interest is an exploration of the perspective of the student. Such work has provided evidence that one of the important reasons that students drop out is because they are myopic; in other words, they fail to see the end goal of their work.²⁸ This could be related, in part, to recent neurological and psychological research that suggests adolescents lack abstract reasoning skills and are predisposed to risk behavior.²⁹ This does not negate the importance of the push or pull factors; rather, it suggests that the push and/or pull factors become the trees which prevent students from seeing the

proverbial larger forest. There does not seem to be enough immediate evidence for some students to recognize the importance of additional schooling.

A third recent key issue relates to the disconnectedness between the participants in the crisis. In 2006, a seminal report was published called the "Silent Epidemic."³⁰ In that report and in subsequent research, the authors interviewed students, parents, and teachers about the dropout crisis.³¹ The good news is that each group shared an understanding of the key factors (e.g., push and pull factors) that lead students to drop out of school. The bad news is that each of the three groups would often disagree about the importance and timeliness of each of the individual factors. This can lead to a disconnect about the root causes and the solutions to those issues. "These disconnects are not peripheral, but central to the dropout debate."³²



	Factor	Examples	Student Survey Results
Individual Factors	Educational Performance	Test scores and grades, early academic achievement (e.g. elementary and middle school) and grade retention	35% of students said they dropped out because they were failing, 45% said they started unprepared and could not make up ground because of their elementary and middle school experiences, and 32% were required to repeat a grade before dropping out.
	Behavior	Absenteeism, drug use, teenage pregnancy, criminal behavior, and work (in and out school).	32% said they left because they had a job and needed to make money, 26% left when they became a parent, and 22% left to care for a family member.
	Attitudes	Opinions about school, expectations about the usefulness of attending school, and expectations of themselves.	69% of students said they left because they were not motivated, 70% were confident they could have graduated if they tried, and 29% expressed doubt they could have met the requirements even if they had put forth effort.
	Background	Many demographic items about the student—things they could not control. For instance, dropout rates were shown to be higher for males and higher for Blacks, Hispanics and Native Americans than they were for Asians or whites. Students with a higher English proficiency or those from second generation immigrant parents were significantly less likely to drop out (compared to first and third generation). And, students who attended preschool were also less likely to drop out.	
Institutional Factors	Family	Structure of the family (single vs. dual parented families), family resources, and family practices. Much of the research within this area focused on parental involvement in schooling and expectations they had for their students.	80% of students surveyed did one hour or less of homework and 66% said they would have worked harder if that would have been demanded of them.
	School	Demographic factors about the student body, resources available to the school, and the school’s structure and policies.	47% of students said they dropped out because classes were not interesting, 43% said they had missed too much school and the structure prevented them from catching up, and many students reported that the school did not have support structures in place to help them (e.g. tutors or after school help).

Table 1. Summary of factors relating to students dropping out of school.^{33 34}

2. Retention Solutions

Many of the published reports documenting the dropout crisis have provided case studies or brief descriptions of retention and dropout programs (e.g., the National Education Association Advocacy Guide³⁵ or the National Dropout Prevention Center/Network's Exemplary Programs Report³⁶). The United States Department of Education Institute of Education Sciences also maintains the *What Works Clearinghouse*, documenting research-based programs and identifying their level of support for their claims.³⁷ Some of the programs have seen success; others have struggled to receive consistent results.

Appendix A contains a list of relevant and recent research articles as well as the evidence-based suggestions they make for solving the dropout crisis. This list is not meant to be inclusive of every research article on dropouts and retention; it is meant to provide a sample of some of the early and more recent work that contains promising practices.

There are at least ten obvious conclusions of the synthesized literature.

1. Researchers and practitioners have found the most promising results when creating and applying solutions that directly address the reasons why students drop out. These programs or practices look at the individual/institutional and push/pull factors of students dropping out.
2. There is no single reason why students drop out of school. As such, there is not one single, simple solution to solve the crisis.³⁸
3. Dropping out is a process. The extent to which programs, schools, families, and communities can be successful is related to the supports they can provide over time.
4. There is a critical need for the collection and use of data. Early warning systems can help identify at-risk students and may help prevent students from dropping out.
5. Students need both instructional and personal support. This support can come from tutors and mentors, family members, other students, or from the community.
6. Instruction works best when curricula and teachers are innovative. Innovation here refers both to the use of tools and pedagogical practices.
7. Individualized instruction provides students with just-in-time support. Much like the research on general education populations, students get lost when they need and do not get remedial or advanced instruction.
8. Communication is an important tool. Communication is a critical component, and it includes the parent, teacher, and student. However, it also highlights the need for collaboration between teachers, within the community, and even with local businesses.
9. Any retention efforts must attempt to re-engage students.^{39 40 41} As Mosher & McGowan (1985) so aptly put it, attendance can be legislatively mandated, engagement cannot.⁴² Engagement, for most, is defined as the interaction of the behavioral (actions), the affective (attitudes and perceptions), and the cognitive (e.g., student competence). Dropping out is a culmination of a student disengaging over time; thus, a focus on engagement also helps contextualize these factors as a process rather than an end measurement.⁴³
10. Technology is important for supporting students at risk of dropping out. It can provide opportunities for authentic learning, handling multiple intelligences, and individualizing instruction.⁴⁴

3. A K-12 Online Response

3.1 The potential impact of virtual schooling

K-12 virtual schools are online programs that provide electronic-based education for students throughout the United States and the rest of the world. According to a recent report, 45 states now have a state-led virtual school or online initiative, a full-time online school, or both.⁴⁵ K-12 virtual education has grown exponentially since its inception in the mid 1990s, with some estimates at over 1.2 million students taking online K-12 classes last year alone. And, in 2006, Michigan became the first state to require some sort of online experience prior to high school graduation.

From their start, online programs have been touted as potential solutions to student dropout and retention. There are a number of theorized reasons why online programs might succeed where other retention programs have not.

1. Push and Pull factors. There is a number of push and pull factors that prevent students from actually attending school. Long-term illnesses (personal or family), teen pregnancy, detention/prison, family mobility, and the need to earn income often prevent students from getting to class. Online programs deliver content to the student at their own time and their own place, allowing them to get access to their content.
2. Course Diversity. Students taking online classes can get exposed to diversity in at least four new ways.
 - a. Access to content not necessarily available in their schools
 - b. Access to teachers outside of their existing brick-and-mortar building, often finding new mentors and separating them from teachers they may have had conflicts with. This may provide access to qualified staff.
 - c. Access to students outside of their hometown. Students who have felt out-of-place with existing classmates can find new friends and colleagues online.
 - d. Access to pedagogical diversity; they access content from teachers who may not share the instructional approaches that left them disillusioned with their K-12 experiences.
3. Personalized & individualized instruction. Educational research has demonstrated the importance of individualizing instruction to meet the remedial and advanced needs of each student. Pedagogically and theoretically, this is an important strategy. Pragmatically, it is often difficult to do in a classroom with 25-30 students. The use of web and blended learning environments provides teachers with support tools to individualize instruction for each student, as well as providing advanced and remedial resources where appropriate.
4. Rigorous & relevant curriculum. Inferior and high quality content exists in both face-to-face and online programs. The difference is that students in face-to-face programs do not necessarily have a choice in the content that is provided to them. With the number of online programs and online courses available, students and parents can find programs that meet the student's individual needs.
5. Innovative mentoring. Many recommendations suggest adult advocates. It is often difficult to find time for this in a school day. And, students may or may not be willing to seek or accept help due to peer pressure or past experiences. In online and blended programs, students can interact online with their instructors in a safe and semi-anonymous manner. Additionally, rather than just relying on one mentor or advocate, online and blended programs can bring in additional mentors from other classes, the community, and/or businesses.
6. Data-driven decision-making. Data collection happens in face-to-face schools. However, in online programs, because the work is done online, data is instantly available and can be viewed and reviewed by the teacher, the parent, and other teachers in the school. Thus, if dropping out is a process, students don't enter as blank slates ... they enter as individuals with prior demonstrated needs and abilities.
7. More time-on-task. Some recommendations suggest retaining at-risk students through academic support and enrichment activities such as providing more study time. Finding time within the budgetary and daily constraints of a school day is almost impossible. Online learning is now being seen as a legitimate way to extended learning time in schools.⁴⁶

8. Family connections. The aforementioned dropout research demonstrates parental involvement as a key factor in retaining students. Getting parents involved, particularly at the higher grades, is not always feasible or easy to accomplish. Online programs provide syllabi, homework, and schedules to help parents engage their child.
9. Real-world connections. Students do not often see the connection between the skills they are learning and the things they will do post-graduation. Online education offers “students the opportunity to engage interactively with businesses, museums, scientists, artists and any number of resources connecting classroom learning to the real world”.⁴⁷
10. Local and worldly community connections. Getting students involved in real-world activities is critical to their success, particularly for students who don’t see value in the skills they are learning. Online classes can provide access to local community resources, businesses, and agencies; however, they can also let students explore a larger world through virtual field trips and connections with other classrooms and students.
11. Career exploration. Another key individual risk factor is the concern that students might be myopic. Online classes can provide students with an opportunity to explore their future career paths. This is done through coursework, connections with businesses and communities, and even online experiences directly aimed at career exploration (e.g., Michigan Virtual University’s CareerForward® course).⁴⁸
12. Ensuring success at key transition points. Online programs are not set in buildings. The learning and content management systems that students encounter, as well as their individualized learning plans, generally remain consistent across the educational career of the student. Thus, as buildings change in their face-to-face programs, their online programs now offer classes throughout much of the K-12 curriculum.

3.2 Existing K-12 efforts

It should be evident from 3.1 that, at least hypothetically, online programs could substantially aid in the dropout crisis. However, it needs to be clearly stated that simply putting a program online does not mean that these positive outcomes will occur. These ideas are listed as the promise of online education. Research is currently being conducted to determine the ways in which these promises can be realized while using online and blended learning for credit recovery, student retention, and alternative dropout programs. A list of some of these programs and the corresponding case studies can be found in Appendix B.

Although research is ongoing, the issue of dropout and credit recovery has received attention in the K-12 online learning research community. Three particular publications prove relevant, as they move the theoretical benefits of online learning to a practical level.

1. Roblyer (2006).⁴⁹ Roblyer interviewed participants from five leading virtual schools. She found key ingredients that supported student retention in virtual schools. Those ingredients included:
 - a. Preparing both students and teachers for success. Preparing teachers for success meant continued professional development, not just in their content areas, but also in learning how to use technology. This preparation was also critical for students. The often-hyped “digital natives” may have technology ubiquitous in their lives, but that does not mean they know how to use it, particularly for educational purposes.
 - b. Using flexible course designs. Some students want individualized, self-paced instruction. Other students want to start and stop the course with another cohort of students; they don’t relish one-on-one interactivity with an authority figure.
 - c. Monitor and support both teachers and students. Monitoring teachers provided a way to give just-in-time professional development on important areas of need. Monitoring students allowed teachers and mentors to provide remedial or advanced activities before students were disengaged.

2. (Watson & Gemin, 2008).⁵⁰ The *International Association for K-12 Online Learning* (iNACOL) has published two reports related to the dropout crisis. The first was a document on using online learning for at-risk students and credit recovery. The authors found that schools used online courses for graduation credit recovery, to meet graduation deadlines, to prepare students for state exams, to get dropout students back in school, and to provide educational equity for all students. In doing so, several key outcomes emerged.
- a. Online learning can help at-risk students. Schools found that they could use online programs to motivate and individualize instruction for at-risk students. This often happened through self-pacing so that they could move ahead or spend more time in remediation; students also benefitted from gaining credit for work or community service.
 - b. Blended support is important. Online learning provided 21st century digital skills while the blended mentor provided face-to-face and instant support.
 - c. Putting programs online for at-risk students had to be done thoughtfully and with committed partners. Doing so helped schools meet budgetary concerns while serving multiple students. In the end, most of the programs reviewed paid for themselves in many ways.
3. (Archambault et al., 2010).⁵¹ The second report from iNACOL was a research committee issues brief that described two research surveys. Much like the Roblyer and Watson and Gemin report, this document highlighted the importance of:
- a. Individualizing instruction
 - b. Providing professional development for teachers
 - c. Providing support structures
 - d. Using online orientation programs
 - e. Translating current pedagogy into instructional strategies
 - f. Capitalizing on early identification, screening, and data collection.⁵²

In sum, there are theoretical and hypothetical reasons why online learning might positively impact student retention. There is also early research-based evidence to support the move from theory to practice. This research, as with all technology research, has provided evidence that putting content online is not a panacea or instant cure for student dropout. There are a number mitigating factors that might determine why at-risk students succeed or fail to succeed in online programs. More research is needed to help understand the affordances and constraints of the strategies within these programs.

4. A case study of Michigan Virtual School

To further explore retention and dropout issues, a case study of Michigan Virtual School (MVS) is presented. MVS is an online resource that enables Michigan high schools and middle schools to provide courses (all taught by certified teachers) and other learning tools that students wouldn't otherwise have access to. It was funded by the Michigan Legislature in July 2000 to be operated by the Michigan Virtual University, a private, not-for-profit Michigan corporation. MVS works in cooperation with individual school districts to grant course credit and diplomas.

Two studies of Michigan Virtual School are presented. In the first example, credit recovery data are presented. It is important to note that credit recovery is not exactly the same thing as dropout/retention. In other words, there are students who are not at-risk of dropping out who take online classes to recover credits they may have lost from changing schools or for health reasons. However, losing credits is one of the important factors in the dropout process. And, it is also an important activity that face-to-face and online schools can undertake to help students before they have already dropped out.

The second study is specifically aimed at using online courses for students who have already dropped out. Both studies are presented to ask and answer three important questions:

1. Do students currently utilize online learning for credit recovery?
2. How do students perform when enrolled for credit recovery?
3. Can students who have dropped out succeed in online classes?

4.1 Exploring student outcomes

Over the course of the past two years (2008-2009 & 2009-2010), MVS enrolled 31,482 students (not including summer, 2010). During that time frame, 5,740, or approximately 18%, of students enrolled for credit recovery. (It should be noted that reporting the reason why a student was enrolled is a volunteer response for the parent or school counselor; thus, numbers might be higher than 18%.)

Most of the students who were enrolled for credit recovery came from large, suburban cities. Overall, almost 50% of credit recovery courses came from suburban areas; non-AYP schools enrolled students at twice the rate as AYP schools.⁵³ During the two year cycle, a majority of students enrolled in teacher-led courses (58%). A majority of the students were male (61%); this differed from the overall population of MVS enrollees where the split was 48% male and 52% female for 2008-2010. Most of the enrollments came from English/Language Arts (26%) and Mathematics (25%), followed by Social Studies (19%), Science (16%), Other (13%), and World Language (1%) (see Chart 1). There was almost no variation in the gender selection of courses; in other words, almost the same percentage of females took credit recovery science as did the percentage of males.

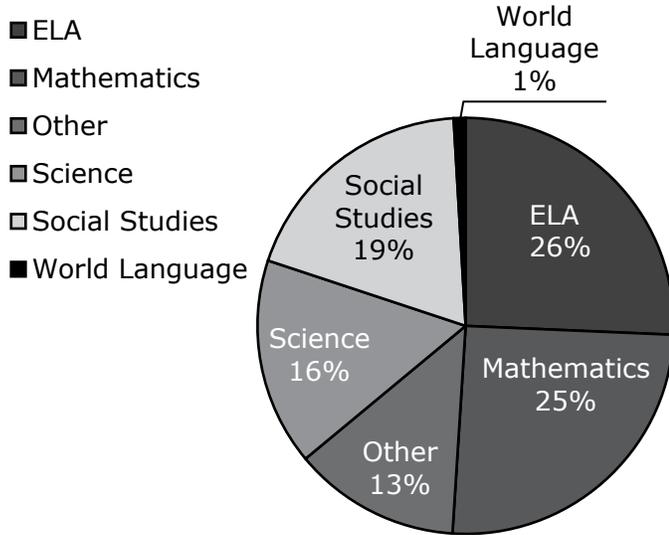


Chart 1. 2008-2010 MVS Credit recovery courses by content area.

During this timeframe, as expected by the content layout presented in Chart 1, the highest course enrollments included Algebra 1A & 1B, Geometry, and English 9 & 11. However, the top three courses for credit recovery students were Career Planning, Employability Skills, and Study Skills. *Credit recovery students were utilizing Michigan Virtual School to succeed both in- and out-of-school.*

Data analyses were run examining outcomes of students who selected credit recovery as their reason for enrollment. Because Michigan Virtual School does not assign grades, a completion percentage was used. A completion percentage can best be defined as the number of students who scored 60% or above divided by the total number of students with 10% or more. Anyone under 10% was dropped from the analyses; this commonly-used practice corrects for students who started but did not continue in their course. The positive news is that credit recovery students are successfully completing online courses. Chart 2 provides an overview of completion rates for all data recovery students. Chart 3 provides the same data but separated by gender. It is interesting, but somewhat reflective of the existing literature, to note that females did better on English/Language Arts and Social Studies and males did better on Math and Science.

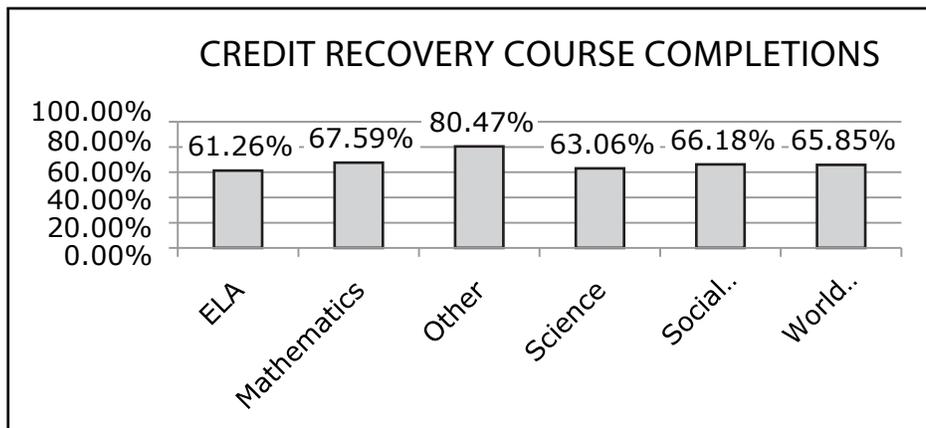


Chart 2. Credit recovery completion rates by content area.

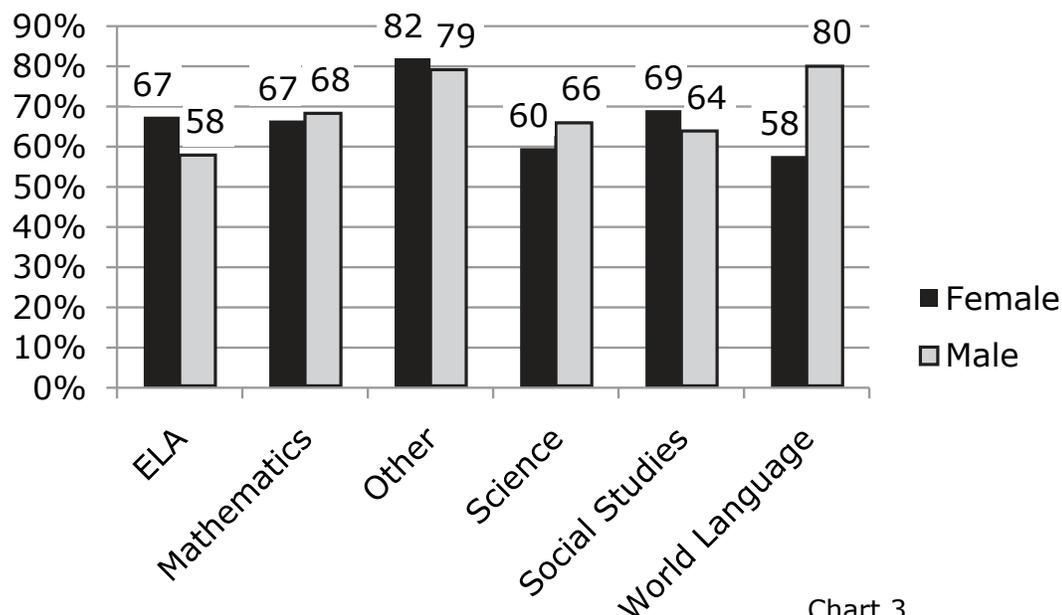


Chart 3. Credit recovery completion rates by gender and content area.

The MVS data for 2008-2010 did show a distinct difference in completion percentages for those taking credit recovery classes vs. the general population. The average completion rate of all MVS students during that timeframe was 82.4%. The average completion rate of credit recovery students was 68.4% vs. 84.2% for the rest of the population. Chart 4 summarizes the differences by content area.⁵⁴

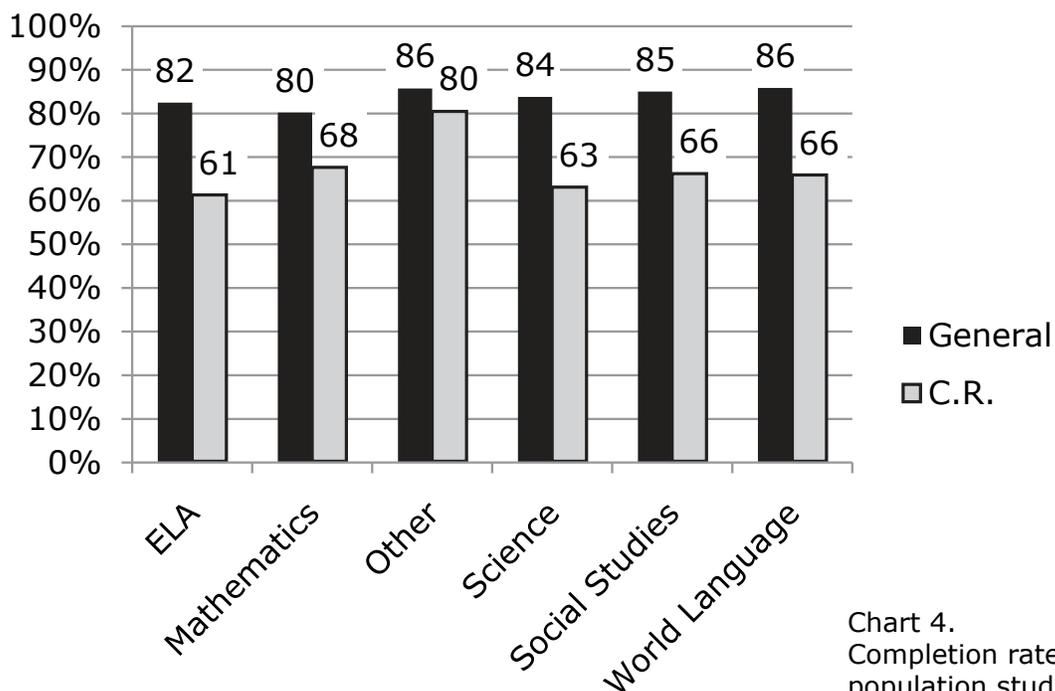


Chart 4. Completion rates of credit recovery vs. general population students by content area.

4.2 Exploring a project aimed at student retention

There are at least two conclusions that can be drawn from the data presented in 4.1. First, *virtual schools can deliver online learning as a means by which to help students recover credit and either stay in school or graduate through an alternative means.* Second, although successful, more research needs to help determine how to help improve the overall completion of credit recovery students.

In the Spring semester of 2009, the St. Clair County Regional Educational Service Agency (RESA) partnered with Michigan Virtual School to offer courses to students who have voluntarily stopped attending school or to students who have been expelled. The focus of the St. Clair County RESA project was two-fold: a) a community concern for learning support for all students, regardless of age, grade level, or academic ability; and b) a commitment to 21st century learning that is collaborative and disruptive (focused directly on the customization of student learning).⁵⁵ An evaluation of this work was completed to determine if this population of students could be successful in an online environment and, if so, why.

Demographics. Thirty students originally enrolled in the spring study. Three students dropped out because of health, behavior, or 'unknown' reasons. The 27 remaining students enrolled in 26 different MVS courses. The students who enrolled were allowed to do the work from anywhere, but had to check in to see their St. Clair County RESA mentor at least two days a week. The 27 students who enrolled in the program included 15 male students and 12 female students. Twenty-one of the students had dropped out and 6 had been expelled for selling drugs (4), possession of drugs (1), or being a threat to the teacher (1). They came from 6 different districts, with the largest participation coming from the home district (12). Students who attended were anywhere between 1 and 21 credits short of graduation, with an average of 13 credits required. Most had been referred to the program by their parent, although they had also come on their own (2) or had been recommended by a probation officer (1), mental health counselor (2), or family member (2). There were multiple reasons these students left school, including boredom, anxiety, drugs, fighting, and mental health issues. Table 2 includes a complete summary of why students dropped out and their related health issues.

Reasons students left school	Mental health diagnoses
<ul style="list-style-type: none"> Absences over limit and lost credit (3) Anger issues/Fighting (2) Anxious in school environment (5) Authority figure issues (4) Bored (5) Family had bad reputation/prejudiced (2) Peer Pressure/Drama (3) Public school atmosphere would trigger substance abuse relapse (3) Seat time requirement too strict (4) 	<ul style="list-style-type: none"> ADHD (5) Anxiety (5) Bipolar Mood Disorder (1) Childhood Sexual Abuse (2) Health issues (4; scoliosis, heart condition, stomach issues, kidney) Oppositional Defiance Disorder (1) Self-Mutilation (2) Substance Abuse Disorder (3) Teen Parent (1)

Table 3: Reasons students dropped out and related mental health issues.

Metrics. Both quantitative and qualitative data were collected. Quantitative data were used to measure student outcomes in these courses. An end of course survey was also given to all students. The survey asked students to report on their demographics, their experiences in their classes, and their suggestions/advice for other students/the program leaders. Based on the survey sent to all students, six students were then selected for more in-depth interviews. The goal of quantitative outcomes was to determine if students succeeded in their online learning. The goal of the surveys and interviews was to determine if they succeeded, how they succeeded, and why.

Student course outcomes. In the pilot study that was conducted at this same school in 2008, 22 at-risk, expelled, or dropped-out students were enrolled in a single course at the same time that 32 other 'traditional' students were also enrolled. Although the "n" of both sets of students was small, it was easier to compare student outcomes because students were making their way through the same content with the same teacher in relatively the same timeframe. In this study, 27 students completed 66 course offerings across 26 separate courses. That means that although some students took the same course, there were often occasions where they were the only "experimental" student in the group. Often the courses they took had total enrollments of 30 students; other courses only had 5 or 6.

This complexity of data is often the reason why so little research is done within virtual schooling — how does one make sense of students coming from different locations with different teachers with courses that have different time structures? More importantly, how can one evaluate whether these outcomes were 'positive' and worth replicating? Table 3 lists the courses taken, the range of course completions, the final completion scores, and the rank of the "experimental students" in the course.

Course Title	Enrollments Total (At-Risk)	Completion Rate Range	Average-All Students	At Risk Student Scores (Rank)
Algebra 1A	19 (1)	26.7-80.4	51.6	56.0 (7 th)
Algebra 1A MMC	11 (1)	19.2-82.9	57.8	55.5 (6 th)
Algebra 1B MMC	5 (2)	24.3-57.6	40.6	57.1 (1 st) 50.5 (2 nd)
Basic Software Applications	16 (1)	16-92.3	68.0	16.0 (16 th)
Biology 1A MMC	8 (1)	44.2-69.6	58.8	69.6 (1 st)
Biology 1B MMC	14 (2)	29.6-76.0	59.8	76.0 (1 st) 69.6 (3 rd)
Civics MMC	34 (1)	19.7-100.7	75.0	26.7 (32 nd)
Digital Photography	196 (6)	10.2-106.3	83.9	101.1 (13 th) 91.5 (100 th) 80.2 (135 th) 76.5 (145 th) 76.1 (147 th) 61.1 (174 th)
English 10A MMC	2 (1)	51.6-71.6	61.6	71.6 (1 st)
English 12A MMC	25 (1)	12.6-96.1	57.9	23.4 (23 rd)
English 9A MMC	27 (6)	10.5-94.9	45.9	80.6 (2 nd) 70.0 (3 rd) 69.0 (7 th) 63.3 (9 th) 40.9 (13 th) 24.0 (21 st)
English 9B MMC	22 (2)	18.3-87.9	57.0	70.5 (7 th) 48.8 (15 th)
Forensic Science	69 (1)	11.2-100	75.0	25.4 (67 th)
Geometry 1A MMC	17 (3)	10.0-85.9	54.1	81.0 (3 rd) 40.7 (11 th) 35.0 (12 th)
Geometry 1B MMC	5 (1)	42.9-93.6	72.1	81.5 (3 rd)
Global Issues	31 (1)	11.0-106.4	73.3	11.0 (31 st)
Health MMC	53 (2)	14.5-96.0	71.5	79.0 (22 nd) 49.0 (46 th)
Mathematics of Baseball	33 (3)	17.2-102.8	77.1	55.9 (27 th) 51.6 (30 th) 48.9 (32 nd)
Native American History	24 (1)	13.8-96.9	77.1	81.1 (12 th)
Reading for the Digital Age	8 (2)	24.5-95.5	73.5	82.1 (4 th) 24.5 (8 th)
World History and Geography A MMC	16 (1)	10.3-85.8	49.9	74.9 (3 rd)
World History and Geography B MMC	8 (1)	26.5-94.3	72.1	26.5 (8 th)

Table 3: Student outcomes in MVS courses.

With the small number of at-risk students in each section, the total number of sections, the differences in teachers and the differences in students in each class, ANOVAs, T-Tests, and other statistical measures are not useful in this setting. In a different setting, results might suggest whether the groups were significantly different in their final outcomes.

However, the goal of this work is not to compare whether students who are at-risk are significantly different than those that are not defined at risk; they have been assigned a label of “at-risk,” which indicates they are different. It is also not to use a statistical measure to determine if at-risk students do better or worse than their traditional counterparts. The focus here is on the outcomes and hoped for success of students who may have otherwise dropped out of school. The goal is not whether they can do better than their face-to-face counterparts, the concern is to get these students to succeed — students that have normally failed and are at-risk of being lost by our traditional education system. And if they did succeed, why? How can these positive outcomes be replicated?

In eight of the 22 classes, at-risk students placed in the top 3 rankings of all students taking that course. In other courses, students in the experimental group placed near the bottom. And in larger classes, as expected, students fell across a normal distribution of positive and not so positive outcomes. These data suggest that students who struggled to the point of expulsion or dropping out of traditional school are enrolling, completing, and passing online classes. Every single one of the 27 students passed at least one class during their time with the St. Clair County RESA.

Student end of course survey - success. Success can be defined as students passing classes, particularly focusing on student end of course grades. However, success can also be defined as a change in student attitude and growth in skills. To learn more about this definition of success in and through their online courses, all 27 students were asked to complete an end of course survey. Nineteen of the 27 students completed the survey. The average age of responders was 17.1, with 8 female and 12 male respondents. Students had an average face-to-face GPA of 1.76; they had taken or were taking an average of 2.5 online classes. Every student shared that their primary language at home was English; all student respondents were white, non-Hispanic.

Perhaps the most important outcome of any at-risk intervention is to get students motivated to continue their education. In that light, this program was

also a success. Eighty-four percent of the students surveyed said that these online courses made them more willing to continue their education. Eighty-eight percent said they were more willing to take online courses in the future. And, one-hundred percent of students said they would recommend online classes, with 17 recommending it be for grades 9-12 and 2 recommending it as low as 7th or 8th grade.

One expected successful outcome of the online classes was that students would learn more about technology, as these classes were delivered electronically. Prior to the class, students self-reported their level of expertise as novice (4), intermediate (9), or expert (6); after the class, no student reported their expertise as novice, with 10 students now at intermediate and 9 at the expert level. A majority of students also shared that this experience had helped their development of self-direction, time management, computer skills, and research skills (see Table 4).

These online classes aided in the development of:	
Development of Self-Direction	73.7% (14)
Development of Time Management	63.2% (12)

Development of Computer Skills	57.9% (11)
Development of Research Skills	52.6% (10)
Development of Reading Skills	36.8% (7)
Development of Writing Skills	21.1% (4)

Table 4: Student development of skills through online courses.

Finally, students were asked whether their online learning experiences had any impact on their life (vocation, school, employment, etc.) and what experiences they would like to share. Two of the students wrote that it had not impacted them. However, the other 17 students shared important and interesting outcomes. Students wrote:

- They’ve been great. It’s easier to figure out online than on paper. I like being able to work at my own pace.
- It was helpful to work at my own pace. Some of it was easy, some was hard. Helped me learned to pace myself and manage my time. It helped me in a good way; I know now there are other ways I can finish school.
- Aided in time management and organization. Traditional school was

easier to understand for me. I like using books and pens. I was more familiar with that layout.

- It helped with my time management.
- I'm more responsible overall. I'm more aware of managing my time and getting to work and not procrastinating (as much). I have better priorities and am making better choices. Helped me realize I need to make responsible decisions. It made me think about how I need to take school more seriously as I re-enter traditional schooling.
- I was able to complete my courses and earned my diploma! I felt less distracted and more focused.
- I feel that it has helped me prepare for other classes. At my old job I ran a register and it helped me calculate things quicker.
- I feel that it has impacted me a lot. I feel that I have a second chance now. I learned a lot and it gave me a second chance.
- They have made me a little better, but I have some things I still need to work on. I think it has impacted me to commit myself to going back to school and get it done.
- Online classes helped me by giving me a chance to succeed. Traditional schooling was not the place for me. My attitude now is generally more upbeat and hopeful. I even quit smoking cigarettes! It gave me the chance that the local high school didn't. I was finally told, "you can do this." I felt like a statistic before and am now so grateful to have been a part of this program and hope that my participation will help start other programs for students who struggled like me.
- I like learning by myself and these classes made me feel I could do things for myself. It has made me become more of an individual and boosted my self-confidence.
- I plan to go to college for computer information systems so I get to use the tips I learn on the computer now in college. These computers are helping me prepare for my future.

- I feel I can concentrate a lot better now, both inside and outside of school. My online courses have also helped me be more social; at my former school, I didn't feel comfortable socializing as much. It made me feel better because it showed me I can do anything.
- It's cool. I can focus easier.
- It helped a lot. It has helped me out with many different things.
- It's helped with daycare problems because I can stay home with my son and go to school. Also, it's built up my confidence with knowing more about computers and dealing with technical problems. Therefore, with all the legal issues I've had with my Mom I could juggle going to school, be with my son 24/7, build my confidence, and plus dealing with other issues down the road with taking care of my responsibilities. Well no matter the technical problems you can do it. It built my confidence up a lot.
- They have helped me to release more of my creativity. It gave me more confidence and helped me believe that I can get a diploma.

In sum, students in this online learning experience had dropped out, failed out, or had been expelled from traditional schooling experiences. In this environment, they succeeded, as evidenced by their end of course completions. However, they also left the experiences knowing more about technology and computer skills, self-direction, time management, and research. And, the students themselves recognized this growth, whether it was to spend more time with their child, to quit smoking, to gain confidence, or to help prepare them for the future. By all definitions, at-risk students in this study succeeded online. But, that is only one of the two important questions. The second important question is to understand why they succeed and how these successes can be replicated.

Student end of course survey – defining why. In order to learn more about their experiences (and why they succeeded), students were asked in the survey to compare their face-to-face experiences with their experiences online. In each of the seven options, students shared that the online

experiences were either better or much better than their face-to-face experiences. The two that had moderate differences were online content delivery and communicating with other students. Online classes have occasionally been critiqued for traditional methods (like reading text) and for their inability to allow peer-to-peer communication. As such, these two outcomes were not surprising. However, students responded that in the online classes, they could communicate better with the teacher (which positively supported their progress), the materials were better organized, they had an opportunity to use problem-solving skills, and they could better express themselves (see Table 5).

Compared to Face-to-Face classes in High School...						
Answer Options	Much better	Better	The same	Not as good as	Much Worse	Response Count
Online course content, including modules/lessons and special software programs was taught...	21.1	36.8	42.1	0	0	19
Communicating with the teacher in the online classes was done...	26.3	26.3	26.3	15.8	5.3	19
Communicating with other students in the online classes was done...	26.3	21.1	31.6	15.8	5.3	19
The online course materials were well written and organized...	26.3	57.9	15.8	0	0	19
The online courses provided opportunities for me to use problem solving and critical thinking skills...	42.1	26.3	31.6	0	0	19
Teacher communication positively supported my course progress...	42.1	26.3	26.3	5.3	0	19
In online classes, I feel like I can express myself...	57.9	26.3	10.5	5.3	0	19

Table 5: Student comparison of face-to-face and online learning experiences.

Students also felt more accepted by their online peers (63.1% vs 36.9% for similar acceptance) and felt more accepted by the face-to-face students taking online classes at the same time in the St. Clair County RESA project (68.4% vs. 31.6% for similar acceptance) than they did in their face-to-face classes. Students felt more accepted by their online teachers than they did by their face-to-face teachers (57.9% vs. 43.1% for similar acceptance) and 100% of the students felt accepted by their face-to-face mentor. Although a majority of student respondents did not know their online peers or did not know if they were like them (52.6%), 68.5% percent said their online peer group contained students that were like them or a lot like them.

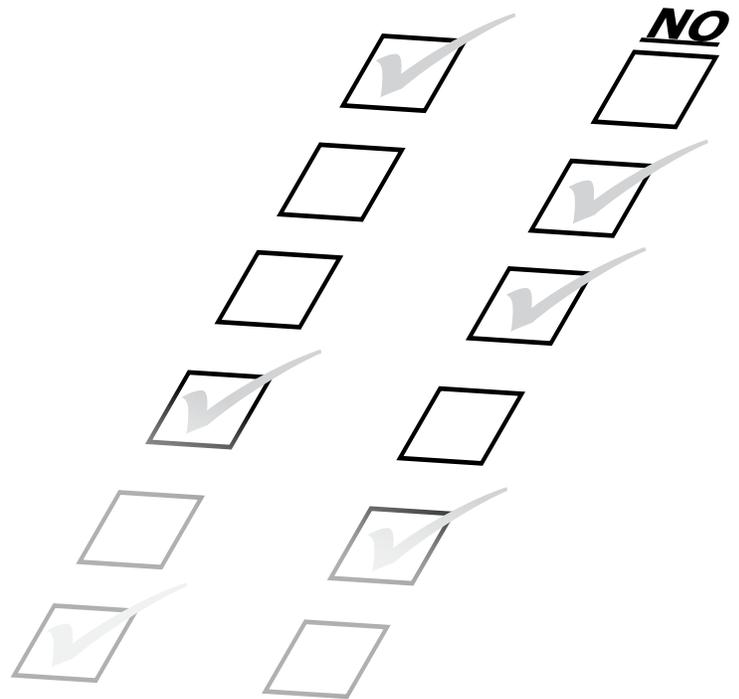
Students were also asked about their learning styles and how they learned best in their online classes. At first glance, there seems to be no clear indicator how learning styles helped students succeed online. Although 73.7% of students said they learned through texts/readings, other answers ranged in popularity from video presentations to online work (See Table 6). Perhaps what was 'significant' in this answer is that students each had their own individualized way of learning. As good as face-to-face teachers try to individualize both the curriculum and the delivery methods, there are often too many individual differences and too many constraints in a face-to-face school, particularly with students who are at-risk. Online teachers, conversely, had numerous tools at their fingertips; they were able to teach students where they were at and with the tools that best suited the students' learning styles.

In my online classes, I learned best through (select all that apply):	
Texts/Readings	73.7% (14)
Graded Assignments	62.2% (12)
Individual Work	47.4% (9)
Video Presentations	47.4% (9)
Interactions with my Teacher	42.1% (8)
Audio Presentations	26.3% (5)
Non-Graded Assignments	26.3% (5)
Interactions with my Peers	15.8% (3)
Group Work	5.3% (1)
Note Taking	5.3% (1)

Table 6: Student preferred learning styles/delivery methods.

Each student had access to a face-to-face mentor; they were required to visit this mentor at least two days a week. However, 16 of the 19 students also reported receiving extra help. Fourteen of those students received help from their parents or other family members and seven also received help from friends. All 19 students reported that they accessed their classes from the St. Clair County classroom, where they received support from their mentor. However, 18 of the 19 students also reported getting access from home — a reason the support structure from family and friends was important.

In summary, course outcome data and interview data suggests at-risk students were successful in their online classes. Further interview questions suggest that there were a number of reasons why these students were successful. One of the seemingly most important reasons was the various opportunities online learning offered. Those opportunities included the ability to communicate with the teacher, the ability of the teacher to provide individualized learning for the student, the ability to hide one’s past (not having to share too much with one’s peers), and the ability to be with like minds and backgrounds at the St. Clair County RESA. Students also shared a strong appreciation for being accepted by their online teachers and for the support they received from the mentor and their family and friends outside of class.



5. Recommendations

"... On average, online learning students performed better than those receiving face-to-face instruction."

(Means, Toyama, Murphy, Bakia, & Jones [2009], p. ix)

5.1 Suggestions for virtual schooling

A 2009 U.S. Department of Education report "found that, on average, online learning students performed better than those receiving face-to-face instruction."⁵⁶ Evidence presented in this report provides additional support for the benefit of using online learning for students who have dropped or are at risk of dropping out of school.

There are four global findings from this work.

1. Students who are considered at-risk, including those who have dropped out, have been expelled, or who have health problems, can succeed in online K-12 learning, given learning contexts and support personnel that meet their individual needs. Students, given the right support, innovative content, and teachers and mentors who care, will be able to find a way to succeed. However, designers of curriculum, online teachers, and mentors who mirror traditional environments where these students have already failed, will fail these students again. In other words, this is not as simple as "build it and they will come."
2. Schools, communities, parents, and students should continue to examine online learning as a graduation avenue for at-risk students. Although research evidence is only now forthcoming, online learning provides opportunities to meet many of the necessary requirements of working with students who have dropped out or are at risk of dropping out. The research that does exist provides

evidence that students do succeed online.

3. The ability of a student who had dropped out of formal schooling to succeed online is related to the use of both a high quality teacher and a mentor or set of mentors. Research has highlighted the importance of the mentor; more research needs to help practitioners understand the role of face-to-face, blended, and online mentoring. However, research has also provided evidence that simply putting content online does not ensure success. Students, particularly those who have dropped out, succeed with high quality instruction and a mentor that can support their activities.
4. More research needs to be undertaken to examine best practices in working with at-risk students online. For instance, "motivating students who have failed in the traditional classroom setting is a key to success for credit recovery programs."⁵⁷ Many students are motivated by the novelty of taking a course through technology; they are also often motivated by selecting courses of interest. Future research could explore how to motivate students in required courses, particularly if students do not see a connection to the real world.

In addition to these global outcomes, there are specific strategies that online educators can use to enroll, retain, and help at-risk students succeed. A summary of those strategies and recommendations can be found in Table 7.

	Factor	Recommendations
Individual Factors	Educational Performance	<ul style="list-style-type: none"> • Use learning and content management systems to identify and share information about students that are at-risk of falling behind, failing, and/or dropping out • Provide pre-courses, remedial courses, and refresher courses for students, particular at key transition stages (e.g., the summer before ninth grade) • Have course developers create multiple opportunities for feedback throughout the course; using one or two tests as the sole indicator of performance may come too late to support students • Require online orientation programs for students; students may not end up getting to the content because they get stuck on how to use the technology • Develop courses that have multiple pathways; some students need self-pacing while others need group work; some students need visual resources and some need more • Develop courses that have both remedial and advanced support within them so that the student can seek help or follow a new path without having to wait for an instructor; develop intelligent systems that provide this automatically • Provide mentors and/or tutors for the students through multiple means (e.g., online chats, recorded tutorials, etc.) • Collect and analyze data on what strategies and what teachers are having the best outcomes with at-risk students
	Behavior	<ul style="list-style-type: none"> • Many students drop out because their situations prevent them from attending (e.g., teen pregnancy, detention, health issues, etc.); create programs to get students knowledgeable about or enrolled in online classes before these problems occurs so they are aware of their options; use high interest courses rather than required content to pique their interest • Provide online examples of success stories so that students in similar situations understand that success is possible • Develop blended programs and practice “online days” where students can get adjusted to the environment • Implement collaborative projects so that students can begin to work outside their existing peer networks; go outside the community and develop international conversations in online classes
Individual Factors	Attitudes	<ul style="list-style-type: none"> • Create content that has real world applications; work with businesses and community leaders so that online students work on real-life projects • Provide online career mentoring and courses to give students insight into future goals • Work with parents and students to develop graduation trajectories and career options • Develop online vocational programs so that students have alternative education options • Maintain rigorous standards for students so that they feel challenged, yet support them with tutoring and mentoring • Utilize innovative technologies for teaching and learning to keep them motivated in the content; virtual reality, 3D, gaming, mobile devices, and social networks are all examples of innovative and motivating tools
	Background	<ul style="list-style-type: none"> • Utilize data collection and reporting systems to detect early warning signs of students in the process of disengaging • Provide just-in-time, online support, tutoring, and professional development for teachers in working with diverse audiences

Institutional Factors	Family	<ul style="list-style-type: none"> • Work with parents to set rigorous expectations and yet support structures in place for their students. Develop online courses for parents who might not have graduated themselves; this can help break the cycle • Create free online resources for parents to teach them about online education, about promoting their children, and about the importance of transitions and early starts (e.g., preschool) • Provide professional development for parents on how to connect to the content management system to be able to check on student grades and performance
	School	<ul style="list-style-type: none"> • Provide tutors and mentors for students; monitor teachers and mentors; provide continuous and end of course survey data to both • Provide online professional development for teachers in the use of innovative technologies and innovative pedagogical strategies • Create content that is individualized and personal • Create connections with community and business resources to provide real-life contexts for student learning • Create connections with parents and teachers; create connections with teachers across content areas, grades, and schools so that a student's past can be used to support their learning • Provide courses of interest to get students re-engaged to the learning community • Help develop and sustain a community of learners so that students see themselves as more than just a set of misfits; publicize student work and give them opportunities for visibility of their performances (e.g., online student journal)

Table 7. Recommendations for online educators to help at-risk students.

5.2 The counterargument

There are some who believe that this much effort should not be expended on the dropout crisis. Weissberg (2010), for instance, writes that:

Apprehension over students dropping out of school has existed for decades, but current attention is an exceedingly well-funded sky-is-falling Holy Crusade ... And with dozens of confirming "scientific" analyses of wasted brain power and countless social pathologies that, supposedly, can be cured by handing out pieces of paper, the rush is on to keep youngsters on the path to diplomas. This frantic pursuit is nonsense, and even a cursory glance shows it to be pointless, and of the utmost importance, improving the quality of American schools — tougher courses, higher grading standards — will inevitably worsens the dropout problem. Quality education and retention are values to be traded off, not complementary, so if we seriously want world-class schools, we must accept the exodus. It is ludicrous to insist that filling classrooms with reluctant bodies improves education" (p. 301).^{58 59}

In his economic argument, Weissberg suggests that we use the time and money to educate students who do not want an academic education but a vocational one. He explains that "rather than force youngsters into boring dumbed-down courses to obtain a degree of marginal economic use, let them study fields with an immediate vocational pay-off ... Put another way, there are no dropouts; dropping out is only temporary and can readily be reversed as reality sets in though this may require decades."⁶⁰

Whether one agrees or disagrees with Weissberg, there are two important implications for online learning. First, if economics is a key factor, there seems to be good value in educating students online. "A survey of the directors of 20 virtual schools in 14 states found that the average annual cost for a full-time online student was \$4,310 in 2008, while the U.S. average per-pupil expenditure in public schools was \$9,138, as of 2006."⁶¹ Regardless if that education is academic or vocational, educators seem to be doing more with less online.

Second, you cannot force or legislate engagement. "A country benefits from asking its students to remain in school for a longer period of time only if the students are learning something as a consequence ... In other words, higher levels of cognitive skill appear to play a major role in explaining international differences in economic growth."⁶² Online learning presents an important opportunity to rethink vocational education. If students are not engaged with traditional content, why not motivate them with studies within their chosen career path?

5.3 Future research and practice

More research is obviously required to understand existing practices and support networks that can serve at-risk, dropout, and credit recovery students. As virtual schools and online educators create specific strategies (e.g., career mentoring), research can help inform practice on how to integrate these into classrooms across the country. However, there are also other specific areas of concern.

5.4 Resources

In 2009, a group of researchers and K-12 virtual school leaders gathered in Orlando, Florida, to attend a Retention Seminar. The goal of the seminar was to explore the role virtual schools can play in dropout prevention. The itinerary included national speakers from the National Center for Dropout Prevention, The Rodel Community Scholars, and the University

Namely, in citing reasons why students are at-risk for dropping out-of-school, a major omission from the list was the individual aspect of a student who has a physical or learning disability. "Over 13% of K-12 students receive special education services and they are increasingly drawn to online courses to meet their unique needs."⁶³ So far, virtual schools "have developed online course designs that electively educate students who have needs ranging from acceleration to credit recovery, including students with physical and learning disabilities."⁶⁴ However, there is very little research in this area. It was listed in this final section by itself to draw attention to that fact. More research needs to determine what special needs a student with physical or learning disabilities has in an online environment and how that impacts the ability of an online educator to keep them in school. A recent policy forum was convened in 2010 by Project Forum, with the hope of identifying such issues.⁶⁵ Their list of recommendations is an important step in the gaining more research in this critical area.

of Florida Department of Special Education. A monograph from that seminar is forthcoming; however, the videos and PowerPoint presentations are all available online at the Virtual School Clearinghouse website: <http://www.vsclearinghouse.com/Retention/Retention.aspx>. Other resources include:

- IES *Dropout Prevention* Practice Guide - http://ies.ed.gov/ncee/wwc/pdf/practiceguides/dp_pg_090308.pdf
- Michigan Virtual School - <http://www.mivhs.org/>
- National Dropout Prevention Center/Network - <http://www.dropoutprevention.org/>
- NDPC/N's Effective Strategies for Dropout Prevention - <http://www.dropoutprevention.org/effstrat/default.htm>
- NEA's *Preventing Future High School Dropouts* - <http://www.nea.org/assets/docs/dropoutguide1108.pdf>
- The National Dropout Prevention Center for Students with Disabilities - <http://www.ndpc-sd.org/>
- Virtual School Clearinghouse - <http://www.vsclearinghouse.com/>
- What Works Clearinghouse ratings of Dropout Prevention Programs - <http://ies.ed.gov/ncee/wwc/reports/Topic.aspx?tid=06>
- Cobb, B., Sample, P., Alwell, M., & Johns, M. (2005). *Effective interventions in dropout prevention: A research synthesis. The effects of cognitive behavioral interventions on dropout for youth with disabilities*. National Dropout Prevention Center for Students with Disabilities http://www.ndpc-sd.org/documents/Research_Syntheses/Research_Synthesis_Effects_of_CBI.pdf
- Virtual K-12 Public School Programs and Students with Disabilities: Issues and Recommendations (A Policy Forum Proceedings Document) - <http://www.projectforum.org/docs/VirtualK-12PublicSchoolProgramsandSwD-IssuesandRecommendations.pdf>
- Thurlow, M.L.; Sinclair, M.F.; & Johnson, D.R. (2002). *Students with disabilities who drop out of school: Implications for policy and practice. Issue Brief: Examining Current Challenges in Secondary Education and Transition*. National Center on Secondary Education and Transition. http://www.ncset.org/publications/issue/NCSETIssueBrief_1.2.pdf

Appendix A: Recommended best practices for reducing the dropout crisis

Article	Recommendations for Solving the Dropout Crisis
<p>Bridgeland, J.M., DiIulio, J.J. & Morison, K.B. (2006). <i>The silent epidemic: Perspectives of high school dropouts</i>. Civic Enterprises and Peter D. Hart Research Associates. For the Bill and Melinda Gates Foundation.</p>	<ul style="list-style-type: none"> • Additional supports and adult advocates • Build a school climate that fosters academics • Different schools for different students • Early warning systems • Ensure that students have a strong relationship with at least one adult in the school • Improve instruction, and access to supports, for struggling students • Improve teaching and curricula to make school more relevant and engaging and enhance the connection between school and work • Improve the communication between parents and schools • More accurate data • Parent engagement strategies & individualized graduation plans
<p>Bridgeland, J.M., Balfanz, R., Moore, L.A., & Friant, R.S. (2010). <i>Raising their voices: Engaging students, teachers, and parents to help end the high school dropout epidemic</i>. Civic Enterprises and Peter D. Hart Research Associates. For the AT&T Foundation and the America’s Promise Alliance.</p>	<ul style="list-style-type: none"> • Teachers should make explicit connections between coursework and the real world; using resources in the community can make examples tangible • Teachers should demonstrate how classroom skills translate to the real world • Schools should engage businesses in the community (and their business leaders) • Schools should engage community leaders as speakers or to host interactive workshops • Teachers should have high expectations of their students; however, those expectations should be accompanied with support • High expectations, standards, and best practice approaches should start in elementary and middle school
<p>Christenson, S., Sinclair, M., Thurlow, M., Evelo, D. (1995). <i>Tip the balance: Policies & practices that influence school engagement for youth at high risk for dropping out</i>. Minneapolis, MN: University of Minnesota, Institute on Community Integration.</p>	<p>Strategies that work:</p> <ul style="list-style-type: none"> • Team teaching (interdisciplinary work) • Multicultural recognition • Afterschool activities • Educational support of parents (e.g., GED) • Collaboration with and from parents • Collaboration with businesses and service organizations <p>Strategies that do not work</p> <ul style="list-style-type: none"> • Rigid adherence to roles and boundaries (content only) • Schools not building on community/business resources • Teacher’s inaccurate assumptions about families • Lack of school awareness about home • Failure to make accommodations for those with special needs • Systematic disincentives to change and innovation
<p>Dianda, M. (2008). <i>Preventing future high school dropouts: An advocacy and action guide for NEA state and local affiliates</i>. National Education Association</p>	<ul style="list-style-type: none"> • Make sure students are successful at key transition points — entry into kindergarten; at-grade level performance in reading and math in the early grades; and the transitions to middle school, high school, and adulthood • Features that worked <ul style="list-style-type: none"> ○ Personalization ○ Rigorous and relevant curriculum and instruction ○ Substantive assistance to students ○ Qualified instructional staff

<p>Dynarski, M., Clarke, L., Cobb, B., Finn, J., Rumberger, R., & Smink, J. (2008). <i>Dropout prevention: A practice guide (NCEE 2008-4025)</i>. Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.</p>	<ul style="list-style-type: none"> • Recommendation 1. Utilize data systems that support a realistic diagnosis of the number of students who drop out and that help identify individual students at high risk of dropping out (diagnostic). • Recommendation 2. Assign adult advocates to students at risk of dropping out (targeted intervention). • Recommendation 3. Provide academic support and enrichment to improve academic performance (targeted intervention). • Recommendation 4. Implement programs to improve students' classroom behavior and social skills (targeted intervention). • Recommendation 5. Personalize the learning environment and instructional process (schoolwide intervention). • Recommendation 6. Provide rigorous and relevant instruction to better engage students in learning and provide the skills needed to graduate and to serve them after they leave school (schoolwide intervention).
<p>Heppen, J. B. & Thierrault, S. B. (2008). <i>Developing early warning systems to identify potential high school dropouts</i>. Washington, DC: National High School Center.</p>	<ul style="list-style-type: none"> • The use of an early warning system through rigorous data collection, analyses, and use is critical, particularly in the ninth grade • Early warning systems should include: <ul style="list-style-type: none"> ○ Attendance ○ Course Performance <ul style="list-style-type: none"> ▪ Freshman course failures ▪ Freshman GPA ▪ Credits Earned
<p>Rodriguez, L.F. & Conchas, G.Q. (2009). Preventing truancy and dropout among urban middle school youth: Understanding community-based action from the student's perspective. <i>Education and Urban Society</i>, 41(2), 216-247.</p>	<ul style="list-style-type: none"> • Create both social and academic support systems • Understand the connection between schools and community; the school-community bridge can effectively curb truancy and dropout; schools are not exclusive from the environments they are in • Deliberately create safe spaces for meaningful, student engagement (e.g., after school clubs). Such spaces allow students to engage with adults and peers
<p>Rumberger, R. W., & Lim, S. A. (2008). <i>Why Students Drop Out of School: A Review of 25 Years of Research, California Dropout Research Project Report #15</i>. Santa Barbara, CA: University of California, Santa Barbara.</p>	<ul style="list-style-type: none"> • There is no single factor that predicts dropout • It is not just what happens inside of school that predicts dropout • Dropping out is a process that must be monitored and evaluated • Dropping out is a process that involves the context of the family and the community

<p>Smink, J. & Reimer, M.S. (2005). <i>Fifteen Effective Strategies for improving student attendance and truancy prevention</i>. National Dropout Prevention Center/ Network.</p>	<ul style="list-style-type: none"> • School and Community Perspective <ul style="list-style-type: none"> ○ Systemic Renewal ○ School-Community Collaboration ○ Safe Learning Environments • Early Interventions <ul style="list-style-type: none"> ○ Family Engagement ○ Early Childhood Education ○ Early Literacy Development • Basic Core Strategies <ul style="list-style-type: none"> ○ Mentoring/Tutoring ○ Service-Learning ○ Alternative Schooling ○ After-School Opportunities • Making the Most of Instruction <ul style="list-style-type: none"> ○ Professional Development ○ Active Learning ○ Educational Technology ○ Individualized Instruction ○ Career and Technology Education (CTE)
<p>White, S.W. & Kelly, F.D. (2010). The school counselor's role in school dropout prevention. <i>Journal of Counseling & Development, 88(2), 227-235.</i></p>	<ul style="list-style-type: none"> • Provide Protection (e.g. enhancing strengths) <ul style="list-style-type: none"> ○ Social support ○ Monitoring and mentoring ○ Personal and social skill development ○ Parental involvement • Reduce Risk <ul style="list-style-type: none"> ○ Increase quality academic instruction ○ Increase academic support (e.g., tutoring)

Appendix B: List of sample, online credit recovery and dropout retention programs

<p>Archambault, L., Diamond, D., Brown, R., Cavanaugh, C., Coffey, M., Foures-Aalbu, D., Richardson, J., & Zygoris-Coe, V. (2010). <i>Research committee issues brief: An exploration of at-risk learners and online education</i>. International Association for K-12 Online Learning.</p>	<ul style="list-style-type: none"> • Commonwealth Connections Academy (PA) • Hope Online Learning Academy (CO) • Learn at My Pace (MN)
<p>Watson, J. & Gemin, B. (2008). <i>Using online learning for at-risk students and credit recovery</i>. Washington: International Council for K-12 Online Learning.</p>	<ul style="list-style-type: none"> • Aldine Independent Schools, Texas • Florida Virtual School • Jackson School District, Alternative School, Jackson, Michigan • Online Learning Programs, Los Angeles Unified School District, CA • The Bridge Program, Salem-Keizer School District, Oregon • Volusia County Schools, Florida

Endnotes

- ¹ Bridgeland, J.M., DiIulio, J.J. & Morison, K.B. (2006). *The silent epidemic: Perspectives of high school dropouts*. Civic Enterprises and Peter D. Hart Research Associates. For the Bill and Melinda Gates Foundation.
- ² National Center for Education Statistics. (2006). *The average freshman graduation rate for public high schools from the common core of data: School years 2002-03 and 2003-04 (NCES 2006-606rev)*. Washington, DC: U.S. Department of Education.
- ³ Heckman, J. & LaFontaine, P. (2007). *The American high school graduation rate: Trends and levels*. National Bureau of Economic Research, Working Paper No. 13670, p.5.
- ⁴ Ibid, p. 26.
- ⁵ Bridgeland, J.M., 2006, op. cit., p.i.
- ⁶ The difference in reported graduation rates relates to a variety of key factors. For instance, defining dropout can be difficult. Is a dropout someone who fails to finish with their incoming freshman class? Is it someone who leaves school and fails to finish their high school diploma? Is a dropout someone who fails to finish a high school equivalency program? Even something as simple as including GED recipients as high school graduates can bias graduation rates by 7-8 percentage points (Heckman et al., 2007). Another problem is data collection. Due to national and state mandates, as well as self-direction to improve data-driven decision making, many schools have improved their data collection and reporting systems. This has helped define and identify school dropouts. However, there are still problems with data collection. For instance, when a student leaves a school, regardless if the reason is for dropping out or moving between multiple schools or districts (a factor in dropping out), it is difficult and uncommon for districts to collect and/or share data.
- ⁷ Bridgeland, J.M., 2006, op. cit.
- ⁸ Some estimate that high school dropouts are three times more likely than college graduates to be unemployed (Bridgeland et al., 2006). Of those that are employed, those over 18 with a high school credential had a median income of \$20,431. Those who dropped out and were over 18 had a median income of \$12,184 (White & Kelly, 2010). Estimates are that these differences will result in over \$260,000 over a lifetime (Dynarski, Clarke, Cobb, Finn, Rumberger, & Smink, 2008). The numbers change to about \$1 million less when comparing high school dropouts to college graduates. These numbers are far worse for female dropouts than they are for male dropouts (Appleton et al., 2008).
- ⁹ Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in Schools, 45*, 239-386.
- ¹⁰ Bridgeland, J.M., 2006, op. cit.
- ¹¹ Gonzales, R., Richards, K., & Seeley, K. (2002). *Youth out of school: Linking absence to delinquency*. Denver, CO: Colorado Foundation for Children and Families.
- ¹² White, S.W. & Kelly, F.D. (2010). The school counselor's role in school dropout prevention. *Journal of Counseling & Development, 88*(2), 227-235.
- ¹³ Dianda, M. (2008). *Preventing future high school dropouts: An advocacy and action guide for NEA state and local affiliates*. National Education Association
- ¹⁴ Bridgeland, J.M., 2006, op. cit.
- ¹⁵ Dianda, M. op. cit.
- ¹⁶ Dynarski, M., Clarke, L., Cobb, B., Finn, J., Rumberger, R., & Smink, J. (2008). *Dropout prevention: A practice guide (NCEE 2008-4025)*. Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
- ¹⁷ Dianda, M. op. cit.
- ¹⁸ Alliance for Excellent Education. (2006). *High school dropouts cost the U.S. billions in lost wages and taxes, according to Alliance for Excellent Education*. Press Release available online: http://www.all4ed.org/press_room/press_releases/03012006
- ¹⁹ Researchers have also argued that the dropout problem has caused problems for colleges (Heckman et al., 2007). "The decline in high school graduation since 1970 has flattened college attendance and completion rates as well as the skill attainment of the U.S. workforce" (p. 29).

²⁰ Rumberger, R.W., & Lin, S.A. (2008). *Why Students Drop Out of School: A Review of 25 Years of Research, California Dropout Research Project Report #15*. Santa Barbara, CA: University of California, Santa Barbara.

²¹ Meeker, S.D., Edmonson, S., & Fisher, A. (2009). The voices of high school dropouts: Implications for research and practice. *International Journal on School Disaffection*, 6(1), 40-52.

²² Rumberger, R. W. op. cit.

²³ Bridgeland, J.M., 2006, op. cit.

²⁴ Much of the research over the last 40 years has supported these delineations. For instance, one recent study interviewed 228 dropouts and asked them what prevented them from completing school (Meeker et al., 2009). Some students responded that they felt pushed out due to a conflict with a teacher (or set of teachers), the fact that they did not fit in, they had discipline problems, or they were lacking credits with no way to make up for them (institutional "school" factors). Other students cited personal issues such as family illnesses and death, moving too often, or a dysfunctional home as responses for their departure (institutional "family" factors). Finally, many students cited personal reasons like pregnancy, a bad attitude, work, and substance abuse as their deciding factors (individual factors).

²⁵ Early emphasis has been placed on the home-to-school transition through preschool and kindergarten. And, more recently, "Students enter high school with varying levels of preparedness, emotional stability, and social adaptability. Some of them are unable to cope with the new, more rigorous and stressful high school environment. This gap in preparedness invariably leaves students to fall behind once they reach high school or drop out entirely, frequently during the ninth grade" (Cohen et al., 2009, p. 182). Student transitions from one school to the next, often disrupting their relationships with their peers. This occurs at the same time students are going through physical, emotional, and even hormonal changes; and at a time when they are gaining independence from their parents.

²⁶ Cohen, J. S., & Smerdon, B. A. (2009). Tightening the dropout tourniquet: Easing the transition from middle to high school. *Preventing School Failure*, 53(3), 177-184. (p.182)

²⁷ Ibid, p. 178

²⁸ Oreopoulos, P. (2007). Do dropouts drop out too soon? Wealth, health and happiness from compulsory schooling. *Journal of Public Economics*, 91, 2213-2229.

²⁹ Ibid, p. 2227

³⁰ Bridgeland, J.M., 2006, op. cit.

³¹ Bridgeland, J.M., Balfanz, R., Moore, L.A., & Friant, R.S. (2010). *Raising their voices: Engaging students, teachers, and parents to help end the high school dropout epidemic*. Civic Enterprises and Peter D. Hart Research Associates. For the AT&T Foundation and the America's Promise Alliance.

³² Ibid, p. 7.

³³ Rumberger, R. W. op. cit.

³⁴ Bridgeland, J.M., 2006, op. cit.

³⁵ Dianda, M. op. cit.

³⁶ http://www.dropoutprevention.org/resource/major_reports/communities_in_schools.htm; Hammond, C., Linton, D., Smink, J., & Drew, S. (2007). *Dropout risk factors and exemplary programs: A technical report*. Clemson, SC: National Dropout Prevention Center Network and Communities in Schools, Inc.

³⁷ <http://ies.ed.gov/ncee/wwc/reports/Topic.aspx?tid=06>

³⁸ For instance, a student who drops out because she is pregnant may or may not need the same support as someone who is at risk of dropping out because of academic support issues. Researchers working on the ninth grade transition have even found that programs that only target one aspect of the transition failed to have an independent effect on retention overall (Cohen et al., 2009).

³⁹ Archambault, I., Janosz, M., Fallu, J.S., & Pagani, L. S. (2009). Student engagement and its relationship with early high school dropout. *Journal of Adolescence*, 32(3), 651-670.

⁴⁰ Appleton, J. J., op. cit.

⁴¹ Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research*, 59, 117 – 142.

⁴² Mosher, R., & McGowan, B. (1985). *Assessing student engagement in secondary schools: Alternative conceptions, strategies of assessing, and instruments*. University of Wisconsin, Research and Development Center. (ERIC Document Reproduction Service No. ED 272812).

⁴³ Notwithstanding individual factors (e.g. pregnancy, family death/illness, etc.), one of the most discussed retention solutions is to get students engaged. The construct of engagement is actually central to most theories and models for understanding dropout and for providing retention solutions. The idea is that many indicators of dropout are measured at a point in time, generally late in the student's school career. "The likelihood that a youngster will successfully complete 12 years of schooling is maximized if he or she maintains multiple, expanding forms of participation in school-relevant activities. The failure of a youngster to participate in school and class activities, or to develop a sense of identification with school, may have significant deleterious consequences." (Finn, 1989, p. 117). Most research-based definitions of school engagement focus on three key components: behavioral, affective, and cognitive (Appleton et al., 2008). Behavior refers to a student's actions within the school, both in terms of relationships and in school work. Behavior can also include after school or extracurricular activities. Affective means their attitudes, perceptions, and feelings towards school. It can include their sense of belonging and their perceived value of education. Finally, cognitive is defined as the student's competence, learning skills, ability to self-regulate, etc. (Archambault et al., 2009). In a 2009 study, Archambault et al. studied 11,827 students. They found that the global concept of engagement, as measured by behavioral, cognitive, and affective measures, was associated with dropout. They also found that when broken into individual components, only behavior predicted dropout. "That is, student compliance and attendance forecasted dropout better than student willingness and effort to learn the basic curriculum and how much pleasure was associated with school-related issues. This finding is not surprising, as impoliteness, truancy, and absenteeism are all behaviors that express some degree of alienation from school" (p. 666). This does not mean that the cognitive and affective measures were unimportant. The authors acknowledged that students disengage psychologically first; behavior became a more important predictor because of its proximity to the outcome (e.g., dropping out). Being able to identify students with those risk factors over time "will help researchers to develop or improve realistic, cost-effective, and context-based prevention and intervention strategies" (Archambault et al., 2009, p. 667). Adding the family, school, and community supports to the individual risk reduction strategies may assist in re-engaging students.

⁴⁴ Smink, J. & Reimer, M.S. (2005). *Fifteen Effective Strategies for improving student attendance and truancy prevention*. National Dropout Prevention Center/Network.

⁴⁵ Watson, J., Gemin, B., Ryan, J., & Wicks, M. (2009). *Keeping pace with K-12 online learning: An annual review of state-level policy and practice*. Evergreen, CO.: Evergreen Education Group.

⁴⁶ Cavanaugh, C. (2009). *Getting students more learning time online: Distance education in support of expanded learning time in schools*. Washington, DC: Center for American Progress.

⁴⁷ Bridgeland, J.M., 2010, op. cit., p. 15.

⁴⁸ <http://nroc.careerforward.org/>

⁴⁹ Roblyer, M.D. (2006). Virtually successful: Defeating the dropout problem through online school programs. *The Phi Delta Kappan*, 88(1), 31-36.

⁵⁰ Watson, J. & Gemin, B. (2008). *Using online learning for at-risk students and credit recovery*. Washington: International Council for K-12 Online Learning.

⁵¹ Archambault, L., Diamond, D., Brown, R., Cavanaugh, C., Coffey, M., Foures-Aalbu, D., Richardson, J., & Zygouris-Coe, V. (2010). *Research committee issues brief: An exploration of at-risk learners and online education*. International Association for K-12 Online Learning.

⁵² To do this, they found that "virtual school programs use a variety of methods to identify at-risk students including formal and informal assessments, self-reported academic data including grades, attendance history, and demographic data. In addition, some programs take a more holistic approach and rely on school-based team referrals from home schools, teacher initiated referrals/notification, communication between special education teachers and the program, administrators from other schools communicating with the program, and communication with community workers" (Ibid, p.3).

⁵³ Currie, R. & Freidhoff, J. (2009). Red light, green light: Using data to support credit recovery students. Paper presented at the *Virtual School Symposium*, Austin, TX.

⁵⁴ Data for these charts came from Michigan Virtual School with the support of Dr. Joe Freidhoff.

⁵⁵ Christensen, C.M., Johnson, C., & Horn, M. (2008). *Disrupting class: How disruptive innovation will change the way the world learns*. New York: McGraw-Hill.

⁵⁶ Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2009) *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies*. U.S. Department of Education, Office of Planning, Evaluation, and Policy Development; Washington, D.C. (p. ix)

⁵⁷ Watson, J., 2008, op. cit.,, p. 14

⁵⁸ Weissberg, R. (2010). The phony war to “keep them in school.” *Society*, 47(4), 301-307.

⁵⁹ Weissberg’s argument is multi-faceted, but it includes an economic perspective. His idea is that dropping out does not equate to poverty for students and may actually lead to recession proof-jobs that are seldom shipped overseas. He continues by suggesting that the arguments for curing the crisis have been “one-sided bookkeeping” (p. 303) and that it actually costs more to keep students in school than to help guide them out. “One tip off regarding the economic foolishness of the anti-drop campaign is the explosive growth of community colleges rehashing high school material to those with a high school degree. This is accounting skullduggery — what should be measured is the cost of a given level of learning whether obtained in high school or “college.” This deception is painfully familiar to many colleges required to, yet one more time to teach basic English and math (and much of this effort again fails). It has been estimated that American colleges annually spend between \$2.3 and \$2.9 billion on remedial education. According to federal data, some 43% of community college students and nearly 30% of four-year college students require remediation. So, why all the remediation if the degree actually signified learning?” (p.303).

⁶⁰ Weissberg, R., op. cit., p. 307.

⁶¹ Cavanaugh, C., op. cit., p. 12.

⁶² Hanushek, E., Jamison, D. T., Jamison, E. A., & Woessmann, L. (2008). Education and economic growth: It’s not just going to school, but learning something while there that matters. *Education Next*, 8(2), 62-70. (p. 66)

⁶³ Archambault, I., op. cit., p. 12.

⁶⁴ Cavanaugh, C., op. cit., p. 3.

⁶⁵ <http://www.projectforum.org/docs/VirtualK-12PublicSchoolProgramsandSwD-IssuesandRecommendations.pdf> (p.2)

Michigan Virtual University

Vision

To provide leadership by expanding, improving and innovating learning opportunities for K-12 students and educators.

Mission

To serve as a catalyst for change by providing quality Internet-based programs that strengthen teaching and learning for K-12 education.

