What's Happening

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Online credit recovery: Enrollment and passing patterns in Montana Digital Academy courses

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Key findings

This study of 2013/14 Montana Digital Academy (MTDA) online credit recovery courses found that:

- More male students than female students enrolled in MTDA online credit recovery courses, and students in grades 10 and 11 accounted for a larger proportion of MTDA student enrollments than those in grades 9 and 12.
- Enrollments in MTDA online credit recovery courses were higher in English language arts than in any other subject.
- The passing rate in MTDA online credit recovery courses was 57 percent of student enrollments.
- Passing rates in MTDA online credit recovery courses were lowest in math (49 percent) and English language arts (52 percent).
- Passing rates were lower for students who took one MTDA online credit recovery course per semester (40 percent of enrollments) than for students who took multiple courses in a semester (nearly 80 percent).

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Summary

Most U.S. school districts (88 percent) offer credit recovery courses or programs for students. In rural states such as Montana, online credit recovery options are especially popular because they allow schools to serve students in remote areas throughout the year, across a range of subjects, and with few additional resources (Carver & Lewis, 2011; Oliver, Osborne, Patel, & Kleiman, 2009). Such programs offer students greater flexibility and choice, which results in more opportunities to make up classes and a greater likelihood that students will stay in school and stay on track to graduate (Oliver et al., 2009).

Despite the growing popularity of online credit recovery courses, there is little research about which students take these courses or how well they perform. This report addresses this information gap by examining 2013/14 data from the Montana Digital Academy (MTDA), the only state-funded program offering online credit recovery courses in Montana. The report provides a descriptive analysis of course enrollment and passing rates. It also draws on interviews with eight district leaders and one MTDA representative to provide context for the analysis and to describe other credit recovery strategies in Montana. The report offers educators an early look at the potential of online credit recovery courses to help struggling students get back on track to graduation. It can also help state leaders compare the MTDA with other online programs and identify possible areas for investigation or improvement when designing credit recovery options.

The report's key findings are:

- More male students than female students enrolled in MTDA online credit recovery courses, and students in grades 10 and 11 made up a larger proportion of MTDA student enrollments than those in grades 9 and 12.
- Enrollments in MTDA online credit recovery courses were higher in English language arts than in any other subject.
- The passing rate in MTDA online credit recovery courses was 57 percent of enrollments.
- Passing rates in MTDA online credit recovery courses were lowest in math (49 percent) and English language arts (52 percent).
- Passing rates were lower for students who took one MTDA online credit recovery course per semester (40 percent) than for students who took multiple courses in a semester (nearly 80 percent).

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Why this study?

The social and economic costs of not completing high school are enormous. Students who drop out of high school earn less over their lifetime than graduates and are more likely to be unemployed (Day & Newburger, 2002; Heckman & LaFontaine, 2007; U.S. Bureau of Labor Statistics, 2015). Students who drop out also experience more health problems, have a shorter life expectancy, and are at a higher risk for incarceration (Muennig, 2005; Sum, Khatiwada, & McLaughlin, 2009). High school dropouts from a single graduation cohort can represent $150 billion in lost wages (Alliance for Excellent Education, 2011; Rouse, 2005). At current graduation rates that would result in economic losses totaling $1.5 trillion over the next decade (Alliance for Excellent Education, 2011). The country also spends billions of dollars in additional public funds on health care, public assistance, and other services for adults without high school diplomas (Levin, Belfield, Muennig, & Rouse, 2007).

Despite the growing use of online credit recovery programs, research on their efficacy remains limited

Staying on track for graduation depends heavily on the continual accrual of required course credits. Students who fall behind in earning credits toward graduation are at a high risk of leaving school prior to graduation (Allensworth & Easton, 2007; Bruce, Bridgeland, Fox, & Balfanz, 2011). A student who fails just two semester courses during grade 9 has little more than a 50 percent chance of graduating in four years; a student who passes all his or her courses has an 85 percent chance of graduating (Allensworth & Easton, 2007).

Given the importance of credit accrual, state and local leaders across the country have turned to credit recovery courses as a strategy to prevent high school dropouts and improve graduation rates (Greaves & Hayes, 2008; Picciano & Seaman, 2009). Credit recovery programs allow students to retake courses they failed. As of 2011, 88 percent of U.S. school districts offered some type of credit recovery program or course that employs various approaches, including alternative school models, extended learning time programs (for example, after school), traditional face-to-face summer school, and online learning options (Carver & Lewis, 2011; Berliner, Barrat, Fong, & Shirk, 2008).

States and districts with large rural populations find online credit recovery options to be particularly attractive because they allow schools to serve students in remote areas throughout the year, across a range of subjects, and with few additional resources, while offering greater flexibility and choice for students (Oliver, Osborne, Patel, & Kleiman, 2009). States with large rural populations, such as Kentucky, Michigan, Missouri, and Montana, have recently invested in online credit recovery programs for struggling students.

Despite the growing use of online credit recovery programs (Picciano, Seaman, Shea, & Swan, 2012), research on their efficacy remains limited. The research on student performance in online classes has generally found passing rates of 30–60 percent (Blazer, 2009). Early, small-scale studies suggest that online credit recovery may boost graduation rates (Franco & Patel, 2011; Mileaf, Paul, Rukobo, & Zyko, 2012). Yet, there are many gaps in what is known about student performance in these classes. For example, very little is known about who enrolls in online credit recovery courses, the rate at which students complete a course and receive a passing grade, or how enrollment and passing rates vary by student subgroups, subject area, or the time of year when courses are taken.

This report looks specifically at 2013/14 course enrollment and passing rate patterns in the Montana Digital Academy (MTDA), a statewide program that offers online credit recovery

courses. Although the report also describes other credit recovery strategies in Montana, it focuses on the potential of online credit recovery courses to help struggling students get back on track to graduation. The findings can help state leaders compare the MTDA with other online programs and identify areas for additional investigation or improvement when designing credit recovery options.

Credit recovery in Montana

The Montana Office of Public Instruction launched the Graduation Matters Montana initiative in 2010 to encourage schools and communities across the state to focus on keeping students on track to graduate from high school. Graduation Matters Montana supports communities that implement local initiatives to address high school graduation and postsecondary readiness. Since the start of Graduation Matters Montana, the state's high school dropout rate[1] decreased from 4.3 percent in 2010/11 to 3.4 percent in 2014/15, and the graduation rate rose from 82.2 percent to 85.4 percent (Montana Office of Public Instruction, Graduation Matters Montana, 2015).

The report focuses on the potential of online credit recovery courses to help struggling students get back on track to graduation

Many Graduation Matters Montana districts include credit recovery programs, defined as courses or coursework for students who have failed a class, as a strategy for improving graduation rates. What constitutes failure can vary from district to district, but generally indicates end-of-year course grades below 60 percent. Many districts in Montana also have a course attendance requirement, which results in automatic course failure if a student has more than 10 unexcused absences.

"Rural states face unique challenges in implementing federal reforms and overcoming geographic and economic barriers," according to Montana Superintendent of Public Instruction Denise Juneau (Hagen, 2011). These challenges can include lack of access to a large pool of certified teachers or expansive community-based supports and a growing student population. Nationally, growth in rural enrollment is outpacing growth in nonrural enrollment, with rural schools now serving more than 23 percent of public school students (Strange, Johnson, Showalter, & Klein, 2012). In Montana, school and district staff members said that some employees commute one to two hours each way, making it difficult to provide student services outside of regular school hours. Given this context, demand for online credit recovery options in Montana is projected to grow steadily (Miller, 2012).

The Montana Digital Academy

The MTDA is the only state-funded provider of online courses used by Montana public schools. Hosted at the University of Montana, the MTDA offers online courses for credit recovery and original credit. The MTDA Connect Credit Recovery Program offers more than 50 options for credit recovery to high school students in core subjects such as English language arts, math, social studies, and science, as well as a limited number of elective courses. The MTDA aligned its curriculum with the Common Core State Standards in English language arts and math after Montana officially adopted the standards in fall 2011, according to the MTDA administrator (see box 1 for a description of how the MTDA program has changed over time).

Most MTDA credit recovery classes have three to six units, with pretests that allow students to test out of individual modules in each unit. The program blends MTDA staff

Box 1. Changes to the Montana Digital Academy structure over time

The Montana Digital Academy (MTDA) credit recovery program has evolved based on feedback from educators and students since it began offering classes in 2011. One change in the 2012/13 school year was to allow open enrollment throughout the year. Districts using the MTDA reported a need for year-around enrollment for a number of reasons, including credit-deficit students transferring into the district after the enrollment period closed and students whose grades were too low after six weeks in their traditional course to be able to catch up and pass by the end of the semester.

Another change in the 2012/13 school year was to limit the number of students who can enroll in more than one course at a time. Schools wanting to enroll students in multiple courses simultaneously must lobby for students to do so by proving that the district can supply the student with sufficient time and support to complete the courses. This change resulted from an internal MTDA review of course passing rate data that suggested that students who took multiple classes simultaneously were less likely to finish any of them.

Montana Digital Academy offers more than 50 options for credit recovery to high school students in core subjects, as well as a limited number of elective courses

(certified teachers who serve as academic area coaches) and local school personnel to help students through the course. (See box 2 for a description of other credit recovery options in Montana.)

Although it is not mandatory, the MTDA encourages districts to provide a supportive environment to students taking online courses (Montana Digital Academy, n.d.).[2] The MTDA describes a supportive environment as a local site that:

- Addresses technical issues such as enrollment, setting up a username and password, logging in, finding the course guide, accessing the materials, and assisting students with access and facilities.
- Addresses academic issues such as monitoring progress, engaging slow-paced or unresponsive students, and helping students access local resources (for example, tutors, one-on-one assistance).
- Ensures that students have daily access to a computer with high-speed Internet service at home and before, during, and after school.
- Ensures that students have regularly scheduled access to school-based mentoring/counseling services, strong parental support, and use of best practices to support them as online learners as identified in district policies.
- Offers on-site proctoring of student exams.

This support can range from helping fill out entrance counseling forms and reviewing transcripts to determining proper course placement and ensuring reliable computer access. The MTDA also requests that districts provide adult monitoring and oversight at the beginning of the course and at least weekly throughout the course, as well as proctoring for unit and semester finals.

What the study examined

This study responds to a request from Montana district and state education leaders for information on enrollment and course outcomes in online credit recovery classes offered through the MTDA. It builds on an earlier report (Miller, 2012) that used data from the initial implementation of the MTDA in the 2011/12 school year. This Regional

Box 2. Proactive strategies to support students from failing courses in Montana

Interviews with district leaders showed that in addition to using online recovery courses through the Montana Digital Academy, districts also use such online programs as Acellus, Odyssey Ware, and Compass. In addition, schools offer face-to-face recovery options during nonschool hours, such as after school, on Saturday, evenings, and during school breaks. Students can also repeat courses during the regular school year at their own school or at an alternative high school.

Some districts have begun to think about how to support more students before they fail a course and need credit recovery. One strategy that Montana districts have found promising is catch-up sessions during breaks in the school year—often referred to as "just in time" credit recovery. Districts across the country are using this proactive model with greater frequency (Mileaf et al., 2012). With this option, teachers and administrators continuously monitor students' progress and provide extra support as needed.

One school district leader reported that during a few days over winter break certified teachers administer course content tailored to fill each referred student's gap in knowledge. The initiative requires collaboration and buy-in from all classroom teachers, who must identify what the student needs and prepare a concise set of materials that allow students to demonstrate their understanding of the course content. Teachers who proctor the catch-up sessions are compensated.

"The catch-up sessions used to span five days over [winter] break, but we found that we lost the kids [at] about day three," said one district assistant superintendent. "Now we try to focus more on the specific content by asking the teachers what exactly the kids need to know to move on to the next content area."

This district expanded the program by offering catch-up days periodically throughout the year. The catch-up days serve as an incentive to all students. Those who are missing work and struggling in their courses must come to school on these days to make up missed assignments, while students who are doing well get the day off. Some Montana districts also find early warning system indicators—designed to flag students when they first begin to struggle—useful for proactively tracking students in need of credit recovery (Frazelle & Nagel, 2015).

Other proactive examples of credit recovery include targeting course accrual for students in grades 9 and 10. As one administrator explained, "If a student is missing an English language arts credit at the end of their freshmen year and we require four English credits to graduate, we know they're going to need to make up a credit eventually."

Some districts are eliminating or altering the 10-day absence policy, which states that students cannot receive credit for a course if they have 10 or more absences, even if they demonstrate mastery of the content. Several district administrators said that this policy can be a barrier as they strive to make the credit accrual process less reactive and more proactive. These administrators offered a critique of the conventional wisdom that students must have near-perfect attendance and complete every assignment to make the grade. One administrator described the effort to move beyond this mindset: "Some school staff members were resistant to credit recovery because they questioned the rigor or fairness of the credit recovery practices. It took about a year of meetings and discussions to move on from that and get everyone on board. [You have to] consider your own struggles or step into the shoes of these students. What if you got sick or your parents got divorced and you became depressed? Those are the kinds of students the credit recovery program is designed [for]. Additionally, teachers taking ownership of their students' success was essential."

Educational Laboratory Northwest study examines data from the 2013/14 school year and describes how enrollment patterns and passing rates have changed since the first year of the program. All data are reported as total enrollments, not individual students, because a student may enroll in multiple classes. The report addresses five questions:

- Who enrolls in the MTDA, by gender and grade level?
- How is student enrollment distributed across subject areas?
- What are the MTDA course passing rates, and how do they vary by gender and grade?
- How do passing rates vary across subject areas?
- How do passing rates vary based on the number of courses a student takes?

This study draws on data provided by the MTDA, as well as interviews with one representative from the MTDA and eight school district leaders across the state to provide context for the descriptive analysis. Because Montana stakeholders were also interested in learning about other credit recovery strategies across the state, the interviews addressed this topic as well (see box 2). Details on the data sources and methodology for this study are in appendix A.

The Montana Digital Academy's overall passing rate is 57 percent, which falls at the high end of the range found in prior studies of online classes

What the study found

The MTDA's overall passing rate is 57 percent. This falls at the high end of the range found in prior studies of online classes, according to Blazer (2009), indicating that students in the MTDA online credit recovery programs do at least as well as students in other online courses. The following section describes detailed findings on enrollment and passing rates in MTDA online credit recovery courses.

More male students enrolled in Montana Digital Academy online credit recovery courses than female students, and students in grades 10 and 11 make up a larger proportion of student enrollment than those in grades 9 and 12

A total of 2,452 students accounted for 3,763 unique enrollments in MTDA online credit recovery courses during the 2013/14 school year. Sixty percent of MTDA enrollments were male students, 34 percent were in grade 10, and 31 percent were in grade 11. Only 19 percent of enrollments were in grade 9. The remaining 16 percent were in grade 12 (figure 1).

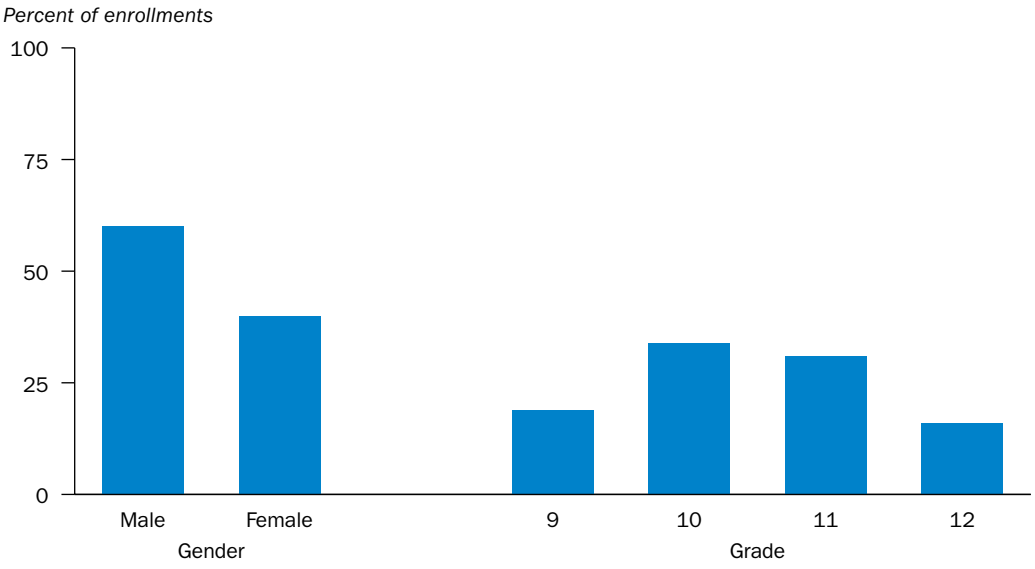
More students enrolled in English language arts Montana Digital Academy online credit recovery courses than in any other subject area

English language arts credit recovery courses accounted for the largest share of MTDA enrollments (37 percent; figure 2). Enrollments in the remaining courses were fairly evenly divided among math (19 percent), social studies (19 percent), and science (17 percent). These course enrollment patterns mirror those in the MTDA's first year of implementation, in 2011/12. Of the 3,409 credit recovery course enrollments in 2011/12, 38 percent took an English language arts class, 22 took social studies, 18 percent took math, and 15 percent took science (Miller, 2012, p. 14).

Fifty-seven percent of Montana Digital Academy online course enrollments resulted in a passing grade, representing a 12 percentage point drop in passing rates compared with 2011/12

The MTDA defines a passing grade as an end-of-course score of 60 percent or better. Of students who did not receive a passing grade, all but five dropped out of their course

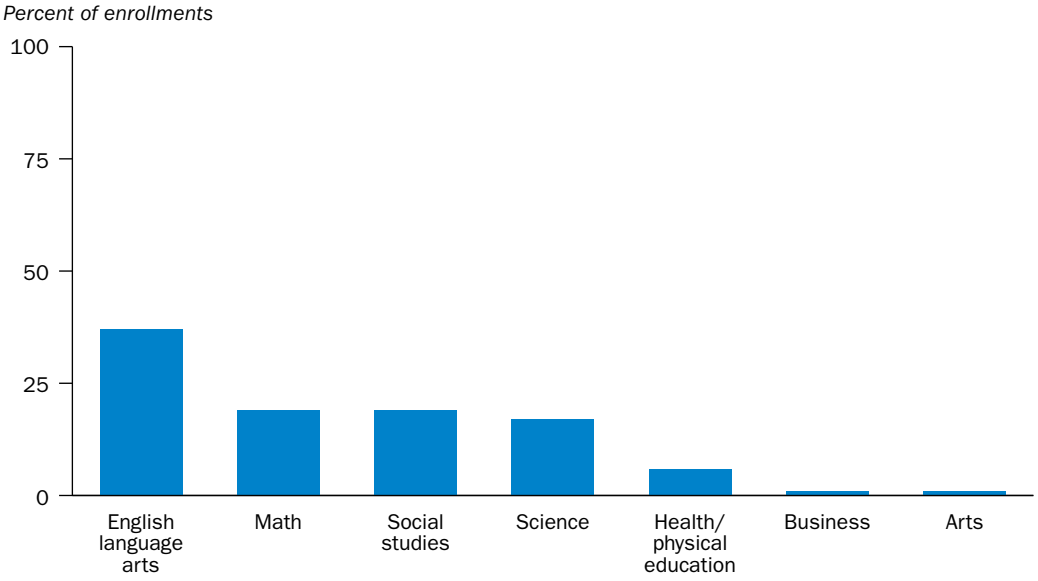
Figure 1. More male students and grade 10 and 11 students enrolled in Montana Digital Academy credit recovery courses, 2013/14



n = 3,763 unique course enrollments.

Source: Authors' analysis of 2013/14 Montana Digital Academy enrollment data.

Figure 2. English language arts had the highest enrollment of Montana Digital Academy credit recovery courses by subject, 2013/14



n = 3,763 unique course enrollments.

Source: Authors' analysis of 2013/14 Montana Digital Academy enrollment data.

before receiving a grade.[3] Passing rates were fairly consistent across gender and grade levels, although female students (60 percent) and grade 12 students (63 percent) performed slightly better than other student subgroups (figure 3). In 2013/14, 57 percent of students enrolled in an MTDA online credit recovery course received a passing score, compared with 69 percent in 2011/12—a 12 percentage point drop (Miller, 2012).

Passing rates in Montana Digital Academy online credit recovery courses were lowest in math and English language arts classes

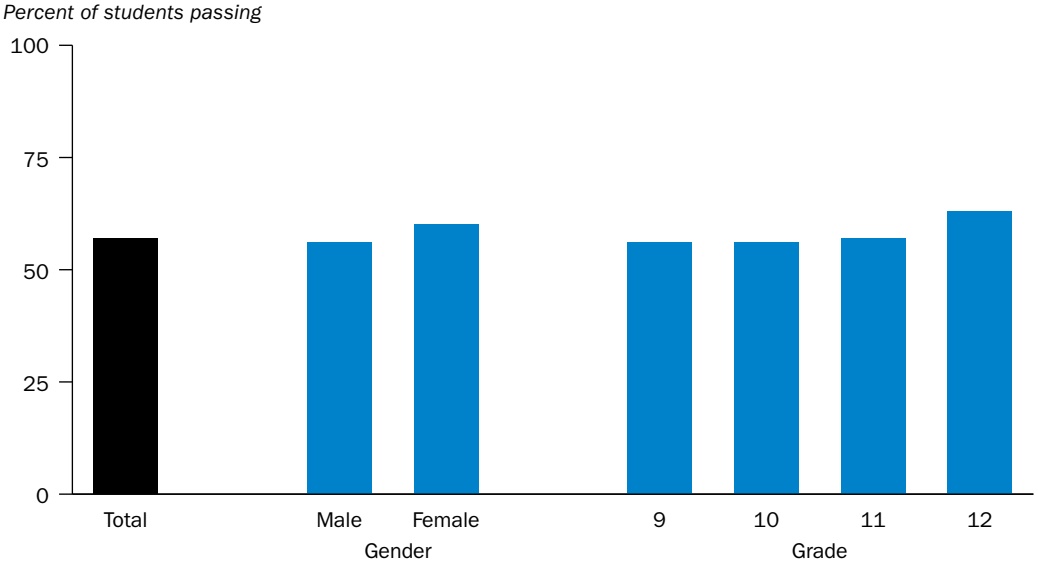
Passing rates were just 49 percent for students attempting to recover math credits in 2013/14 (figure 4). Despite the high demand to recover English language arts credits, passing rates were similarly low in these courses (52 percent). Social studies courses had the highest passing rates of all classes (71 percent).

English language arts credit recovery courses accounted for the largest share of enrollments; enrollments in the remaining courses were fairly evenly divided among math (19 percent), social studies (19 percent), and science (17 percent)

Students taking one Montana Digital Academy online credit recovery course per semester had lower passing rates than those taking multiple courses in a semester

Among students taking only one MTDA online credit recovery course in a semester, 60 percent ultimately failed or dropped the course. However, the 21 percent of students (570 students) who simultaneously took multiple courses in at least one semester had consistently higher passing rates (figure 5). For students taking multiple MTDA credit recovery courses in any semester, the passing rate was 68 percent for students who enrolled in two courses, 82 percent for students who enrolled in three courses, and 85 percent for students who enrolled in four courses. Only a few students took more than four courses. This trend was consistent across the fall 2013, spring 2014, and summer 2014 semesters (see box 3 for a discussion of challenges that may affect MTDA passing rates).[4] The MTDA requires schools to provide extra time and supports for multiple course takers (see box 1).

Figure 3. Passing rates for Montana Digital Academy recovery courses were higher for female students and for grade 12 students than for other subgroups, 2013/14

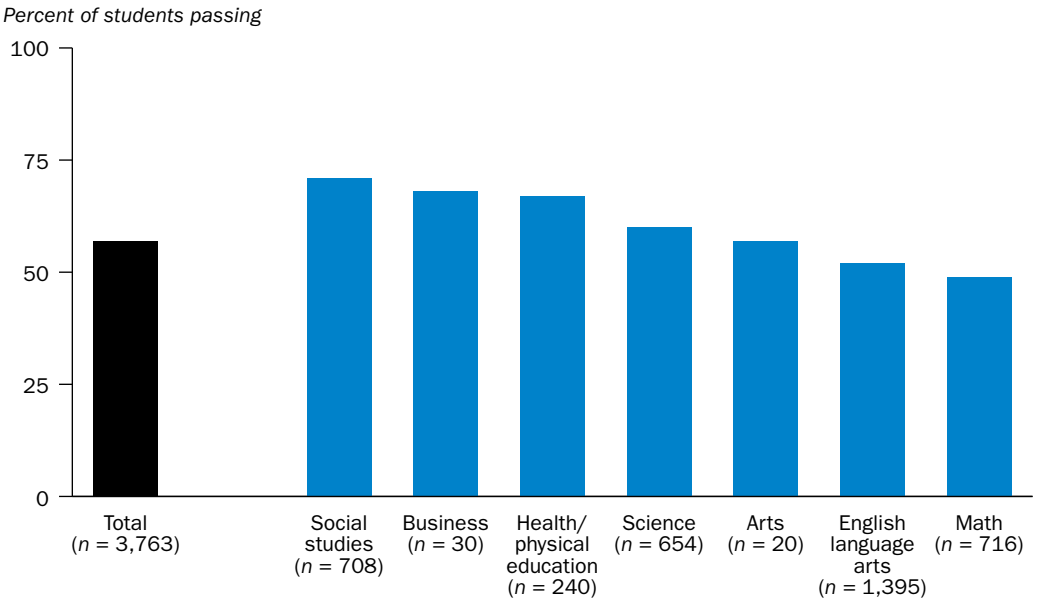


n = 3,763 unique course enrollments.

Note: Course passing is defined as students earning a grade of 60 percent or higher.

Source: Authors' analysis of 2013/14 Montana Digital Academy enrollment data.

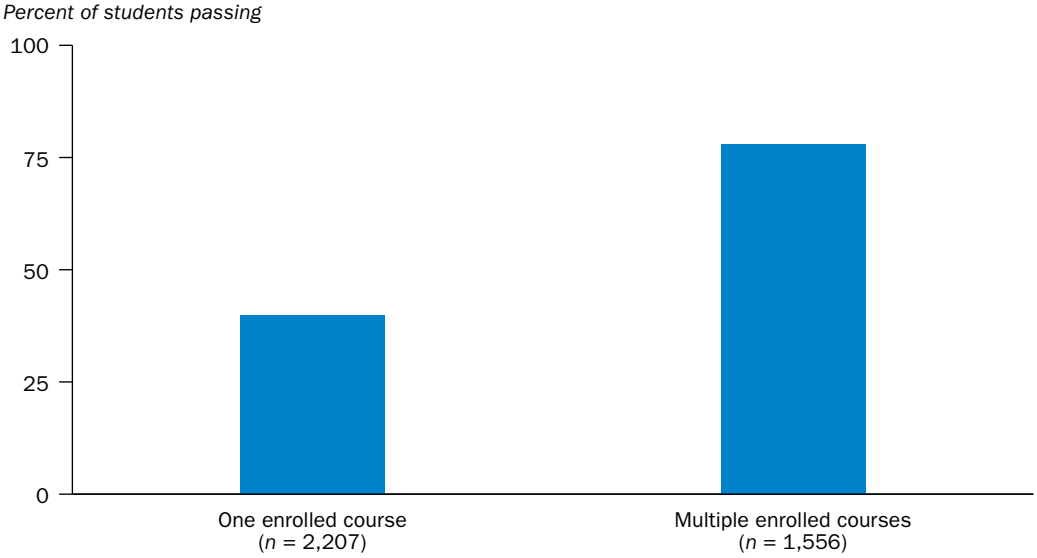
Figure 4. Student passing rates were highest in social studies courses and lowest in English language arts and math courses, 2013/14



Note: Course passing is defined as students earning a grade of 60 percent or higher.

Source: Authors' analysis of 2013/14 Montana Digital Academy enrollment data.

Figure 5. The aggregate percentage of students passing Montana Digital Academy online credit recovery courses was higher for students enrolled in multiple courses in one semester, 2013/14



Note: *n* values are the number of unique course enrollments. Course passing is defined as students earning a grade of 60 percent or higher. Calculations of passing rates for multiple enrolled courses are based on the total number of students taking multiple courses in any one semester, regardless of time of year. Since the same student has the potential to take multiple courses in each semester (fall, spring, and summer), the total number of students exercising this option is more than the number of unique students who enrolled in a course over the 2013/14 school year.

Source: Authors' analysis of 2013/14 Montana Digital Academy enrollment data.

Box 3. Challenges to passing Montana Digital Academy online courses

Interviews with school and district leaders charged with administering credit recovery programs in Montana suggested several factors that may undermine students' ability to pass MTDA credit recovery courses. First, students taking credit recovery courses often display low levels of engagement, such as not regularly attending school, which may have contributed to their initial course failure. "We're still faced with the challenge of attendance," one leader observed. "The kids have not always had good attendance, and it can be hard to change that." Another coordinator explained that poor attendance can stand in the way of accruing recovery credits because of the 10-day absence policy many districts employ: "Some kids are right down to the wire—if they could come for one full day they would get credit, and they don't show up." Thus, absences and other forms of disengagement may be serious barriers to recovering needed credits.

Second, many schools using the MTDA do not provide extensive support to help students pass online courses. Most interviewed educators reported that supports took the form mainly of assisting with technological issues and providing computers for students to use for online classes. They reported that academic support was generally limited to tracking students' progress through the curriculum and providing updates on the coursework students still need to complete. For example, one educator said that while monitoring classes, "I'll remind them of the progress they're making. I can not only track their weekly progress in a class, but also how many classes they've completed, how long it's taken them, and so on. So, if someone is a sophomore or junior I talk to them about their pace—'You're never going to make it at this rate.'"

While a few interviewees said they do provide support to students after they fail a quiz or test, most stated that they considered the classroom instructors' primary role as managing the online process. The MTDA provides a list of recommended student supports (appendix B), but districts are not required to provide them unless students are simultaneously enrolled in multiple courses.

Finally, the academic difficulty of the courses appears to have increased. When describing the impact of aligning the online credit recovery courses with Common Core State Standards, the assistant director/curriculum director for the MTDA stated: "Generally speaking, [based on] internal evaluations with our teachers, all the courses did take a pretty heavy step forward in rigor. Typically, in the English language arts courses, we're requiring a lot more deep reading, which is similar to the Common Core. Of course, the challenge is that in a lot of cases students are taking these as make-up courses, and the original course at their local school may or may not have been aligned to the Common Core."

District administrators confirmed this challenge, stating that some students have struggled with the increased academic rigor of the online credit recovery courses, especially when courses introduced concepts or approaches that students had not been exposed to in the traditional classroom.

Implications of the study findings

As online credit recovery programs across the country continue to expand, stakeholders will need more information on student success in these programs compared with other credit recovery options, as well as clear guidance on how to implement these programs successfully. The findings in this report present several implications for district and state leaders in Montana and potentially elsewhere to consider.

Schools may want to monitor when students are attempting to recover credits and in which courses

Failing a course in grade 9 is one of the strongest predictors of not graduating from high school (Allensworth & Easton, 2007). Research has also shown that many students experience academic challenges as they transition from middle school to high school (Benner & Graham, 2009; Rosenkranz, de la Torre, Stevens, & Allensworth, 2014; Simmons & Blyth, 1987). Given that only 19 percent of students who enrolled in MTDA credit recovery courses were in grade 9 and that other studies have documented that about half of grade 9 students fail at least one course (see, for example, Allensworth & Easton, 2007), it is possible that students may be waiting to recover credits later in high school, when the consequences of unsuccessful recovery attempts put them at greater risk of not graduating.

In subjects that require four credits to graduate (such as English language arts for Montana schools), monitoring credit accrual rates could be crucial for increasing on-time graduation rates. While online course enrollments from the MTDA provide one picture of the types of courses students across the state need to recover, districts should examine their own data to decipher which courses the majority of their students are struggling with. Schools might consider how to help students prevent or recover failed classes immediately and stay on track for graduation (see box 2 for a discussion of proactive credit recovery strategies used by Montana administrators). Districts implementing early warning systems often use credit accrual as an indicator of whether a student is on track for graduating in four years (Frazelle & Nagel, 2015). Combining an early warning system that flags grade 9 students who fail a course with access to a credit recovery option could keep more students on track for graduating with their cohort.

Online courses in social studies, business, and health/physical education had the highest completion rates

Montana Digital Academy may want to examine potential differences in the structure of courses with higher completion rates

Online courses in social studies, business, and health/physical education had the highest completion rates. The MTDA may want to examine the content delivery structures used in these courses and compare them with those used in English language arts and math—the courses with the lowest completion rates. Potential differences could be explored to see whether the way content is provided and tested in the courses with the highest passing rates makes it easier for students to learn in an online environment.

If the difference in passing rates stems from an increased rigor of courses aligned with the Common Core State Standards, as interviews with MTDA and district leaders suggest (see box 3), a broader discussion of the role of credit recovery may be called for, particularly as original course credit content offered in the districts is still transitioning to meet new content standards.

Students taking Montana Digital Academy online credit recovery courses may benefit from additional supports from schools and districts

According to interviews with district leaders, students taking MTDA online credit recovery courses sometimes engage in poor academic behaviors, such as not regularly attending school or not completing their coursework on time. These types of behaviors put credit recovery students at a higher risk of failure, regardless of the format of the course. In addition, the MTDA's efforts to align credit recovery courses to more demanding Common

Core State Standards may increase the likelihood of failure, since increasing academic rigor often leads to declining grades (Allensworth, Gwynne, Pareja, Sebastian, & Stevens, 2014). Thus, additional supports from schools and districts may be important for credit recovery students. These supports may be especially beneficial for students taking their first course in an online environment or in English language arts and math, which have relatively low passing rates.

The finding that students had higher completion rates when enrolled in multiple MTDA courses in a semester may highlight the potential positive impact of additional supports. The assistant director/curriculum director of the MTDA Connect program explained that districts that request that a student be allowed to take more than one course in a semester are required to show that they can provide a supportive environment or supply the student with more than one scheduled period in which to complete the courses. Although this study did not examine whether additional supports contribute significantly to increased completion rates, that conclusion is consistent with findings in the current literature. Other studies suggest that the benefits of online credit recovery may not be fully realized without supplemental academic and emotional supports for students, as well as technical supports (Archambault et al., 2010; Bakia et al., 2013; Pettyjohn, Kennedy, & LaFrance, 2013).

Additional supports from schools and districts may be especially beneficial for students taking their first course in an online environment or in English language arts and math, which have relatively low passing rates

The higher passing rates of multiple-course takers may also be due to a selection effect. Since schools need to justify why students should be allowed to take multiple courses in a semester, students who receive this endorsement may have shown the ability to handle increased academic challenge in the past and therefore are more likely to pass recovery courses. Alternatively, it is reasonable to assume that students who need to recover multiple courses struggle with schoolwork in general, since they have failed more than one course, and therefore may have more difficulty completing multiple courses than students who need to make up only one course. In addition, students taking more than one online credit recovery course in a semester would typically have less time to study for each class if their class schedules were not adapted to accommodate the additional course load. Thus, these descriptive findings should be interpreted with caution until future research teases out possible explanations.

Limitations of the study

While providing useful descriptive information, this study was unable to address many questions because of restrictions in available data. For instance, because data on overall course failures in Montana were unavailable, the study did not calculate the percentage of students who failed a class and subsequently enrolled in the MTDA program. Therefore, it is unknown how many Montana students need to recover credits but are not using the program.

Additionally, enrollment and passing rate data for credit recovery options outside of the MTDA were not available, making it impossible to compare the effectiveness of the MTDA with other programs offered in Montana. Thus, the findings are not generalizable to other online credit recovery programs. The study did not examine completion rates by student subgroups such as race/ethnicity, special education status, and English learner status, because the small sample sizes could make it possible to identify individual students.

Finally, information provided by interview respondents may not be representative of views more broadly held by districts across Montana because of the relatively small number of interviews. For example, the proactive strategies presented in this report may not cause fewer students to fail courses. Rather, readers may use these strategies as a discussion piece when considering their own systematic approach to credit recovery.

Appendix A. Study methodology

This appendix describes the data sources and study methodology.

Description of qualitative data

To provide context for the results of the descriptive analysis of Montana Digital Academy (MTDA) data, the study team interviewed representatives from the MTDA and eight Montana school districts (table A1).

Participants were asked to describe the challenges they faced in implementing credit recovery programs, including challenges related to diagnostic testing, tracking student participation in credit recovery, and tracking student progress in the courses. The interview questions were modeled on a survey from the New York Comprehensive Center, which provided a useful way of looking at credit recovery implementation through delivery methods, program characteristics, staff roles, and the successful recovery of course credits (Mileaf et al., 2012). However, that instrument was intended for interviewing vendors, not school or district staff members implementing credit recovery programs. Therefore, the interview protocol for this study was based on a subset of the New York Comprehensive Center questions supplemented with original questions to elicit contextual information about the challenges the Montana districts face. (See appendix C for the interview protocol.)

Qualitative data sample

The qualitative data for this report are based on nine interviews with one representative from the MTDA and one from each of eight Montana school districts. While it is beyond the scope of this study to provide complete documentation of credit recovery efforts across the state, the study team used purposeful sampling in selecting the districts to reflect the breadth of Montana districts and the different credit recovery programs offered. Factors considered in selecting the districts included the credit recovery programs offered and the district size and location (for example, both large urban districts and small rural districts were included) so that the study would represent the widest possible variety of districts. By selecting the sample purposefully, the study team was able to avoid selecting districts without replicable credit recovery programs or oversampling districts that offer the same program. This method gives voice to the diversity of districts in Montana, which includes a large number of Native American reservation districts in addition to rural and urban locations.

Table A1. Description of districts with interviewees

District	Enrollment	Region of state	Urban/rural
A	1,090	Four Rivers	Rural
B	467	Western	On/near reservation
C	1,966	North Central	On/near reservation
D	1,808	South Central	On/near reservation
E	8,078	Four Rivers	Urban
F	5,778	Northwest	Urban
G	841	Northeast	On/near reservation
H	397	Hi-Line	On/near reservation

Source: Montana Office of Public Instruction.

The study team worked with staff members from Montana's Office of Public Instruction to select the eight school districts included in the study. These staff members collaborate closely with educators across the state to support districts' activities through the Graduation Matters Montana initiative and were therefore familiar with the contexts of these districts. Additionally, Graduation Matters Montana provides opportunities for districts to share the broad concepts of their initiatives. This type of information helped Office of Public Instruction staff members identify a diverse group of districts, by size, location, and type of program offered. Once the potential sample was identified, the study team contacted the selected districts to discuss their participation in the study.

Description of quantitative data

This study is based on MTDA enrollment data for the 2013/14 school year for students who enrolled in online credit recovery courses. Only the latest full year of data was used for two reasons: to describe enrollment in online credit recovery programs as they are currently delivered and to avoid pooling data across multiple years because online credit recovery course offerings or program policies may have changed over that time, making it difficult to make inferences from the full dataset or to make year-to-year comparisons.

The MTDA provided the following student data for the fall, spring, and summer terms of the 2013/14 school year:

- Student identifier.
- District identifier (for enrollment data from the MTDA).
- Student grade level.
- Academic subject area (for example, math).
- Student's grade in the course.

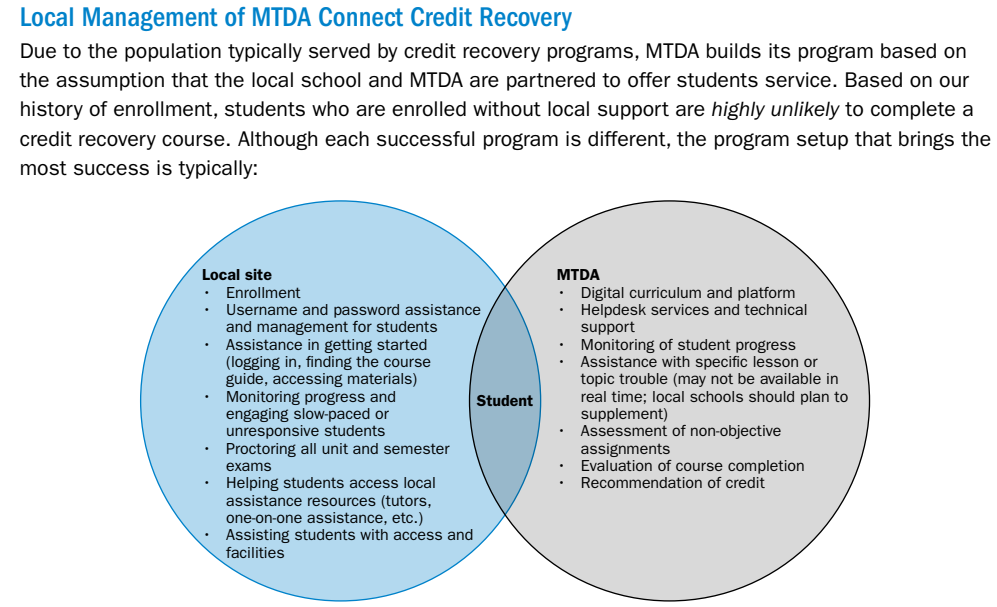
Data collection

Through a data-sharing agreement with Regional Educational Laboratory Northwest, the MTDA shared student data in a secure manner that complies with the Family Educational Rights and Privacy Act (FERPA). To protect the privacy of the districts and their representatives who participated in interviews, district names, individuals' names, and the names of specific credit recovery programs are not included in the report. To protect student privacy, the MTDA agreed to uphold FERPA compliance as a precondition for participating in the enrollment analysis.

Appendix B. Local management

This appendix includes a diagram from the credit recovery handbook that the Montana Digital Academy (MTDA) provides to districts considering whether to participate (figure B1). The diagram shows a list of supports that the MTDA commits to providing, as well as expectations for supports at local sites. Note that sites are not required to provide these supports unless their district requests that students take more than one course at a time. Other districts and schools considering online credit recovery might consider how their supports overlap with the list of expectations for local sites.

Figure B1. Supports recommended for local sites and Montana Digital Academy supports for students taking online recovery courses



Source: Montana Digital Academy's credit recovery handbook provided via email.

Appendix C. Interview protocol

This appendix shows the interview protocol used to collect information about credit recovery options and implementation challenges.

Program background

1. Why did you choose to offer each type of credit recovery program? Please describe any innovative features of your programs.

2. Based on your observations, is the need for credit recovery higher at certain student grade levels? Why do you think that is?

3. Based on your observations, do you think more or fewer students need to recover credit compared to credit deficiencies in the past? Why do you think that is?

4. What kind of training, if any, do you provide for staff about facilitating these credit recovery programs?

5. What are the provisions for students with disabilities?

6. What different courses or accommodations are offered for English learner students?

7. If you do not track student outcomes, what data are you missing or what supports would you need to measure student success?

Course information

1. Please provide a list of the specific courses for which you offer credit recovery (for example, first semester geometry). (Probe, if applicable: for which courses do you offer diagnostic pre-tests and allow students to test out of sections of the course?)

2. Based on your observations, are there certain subject areas or certain specific courses for which more students need to recover credit? Why do you think that is?

3. What roles do local staff and remote instructors play for online programs?

4. For online courses: What technical and instructional supports are available for students (for example, help lines for website or software questions, help lines or in-person staff support for course content questions, resources such as online dictionaries or calculators)?

5. How are student participation and progress tracked throughout the course?

Challenges

1. What are some of the challenges the program has faced (for example, start-up difficulties, resource constraints, staff and/or student buy-in, implementation, diagnostic testing, tracking student participation and progress)? How have you overcome these challenges?

2. What supports would help you overcome the challenges you still face?

3. What advice would you give to other districts that want to provide credit recovery options for their students?

Notes

1. The Montana high school dropout rate counts students who were enrolled in school on the date of the previous year's October enrollment count or at some time during the previous school year and were not enrolled on the date of the current school year's October count.
2. Districts are not required to provide these supports unless a student is taking more than one course at a time. In addition, district supports provided to a student taking more than one course may not be applied to all students taking an MTDA credit recovery course in the district.
3. According to an MTDA representative, students may receive a "course dropped" status for one of four reasons: 2–3 weeks of inactivity, followed by warnings; the student transferred to another school, dropped out, or moved to another state; the student was misenrolled; or the student did not complete the coursework and the academic coach requested that the student be dropped rather than fail the course.
4. Possible interpretations of these findings are explored in the implications section. The MTDA discourages students from taking multiple courses during the same semester, and schools must file a request justifying why a student should be allowed to do so.

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