

Michigan's K-12

Virtual Learning Effectiveness Report 2014-2015



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About Michigan Virtual Learning Research Institute

In 2012, the Governor and Michigan Legislature passed legislation requiring *Michigan Virtual University*[®] (*MVU*[®]) to establish a center for online learning research and innovation, and through this center, directed *MVU* to work on a variety of projects. The center, known formally as *Michigan Virtual Learning Research Institute*[™] (*MVLRI*[™]), is a natural extension of the work of *MVU*. Established in 1998, *MVU*'s mission is to advance K-12 education through digital learning, research, innovation, policy and partnerships. Toward that end, the core strategies of *MVLRI* are:

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- Research — Expand the K-12 online and blended learning knowledge base through high-quality, high-impact research;
 - Policy — Inform local, state, and national public education policy strategies that reinforce and support online and blended learning opportunities for the K-12 community;
 - Innovation — Experiment with new technologies and online learning models to foster expanded learning opportunities for K-12 students; and
 - Networks — Develop human and web-based applications and infrastructures for sharing information and implementing K-12 online and blended learning best practices.
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MVU dedicates a small number of staff members to *MVLRI* projects as well as augments its capacity through a Fellows program drawing from state and national experts in K-12 online learning from K-12 schooling, higher education, and private industry. These experts work alongside *MVU* staff to provide research, evaluation, and development expertise and support.

Abstract and Table of Contents

ABSTRACT

Based on pupil completion and performance data reported by school entities to the Michigan Department of Education (MDE) or the Center for Educational Performance and Information (CEPI), this report highlights 2014-15 enrollment totals, completion rates, and the overall impact of virtual courses on K-12 pupils. Over 91,000 K-12 students took virtual courses in 2014-15, accounting for almost 446,000 virtual course enrollments. Sixty-three percent of virtual enrollments were from non-cyber public schools through a provider other than the *Michigan Virtual School*. Enrollments were heaviest in the high school grades, but elementary and middle school showed large percentage increases. The percentage of virtual enrollments with a completion status of "Completed/Passed" was 60%; however, half of virtual learners passed every virtual course they took. One in four virtual learners, on the other hand, failed every virtual course they took. Thirty-one percent of Michigan public K-12 schools had one or more students take a virtual course in 2014-15. About 2.75% of all K-12 course enrollments in the state were delivered virtually.

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DISCLOSURE

Please note that *Michigan Virtual University* is the parent organization of both the *Michigan Virtual School* and the *Michigan Virtual Learning Research Institute*.

DISCLAIMER

This research result used data collected and maintained by the Michigan Department of Education (MDE) and/or Michigan's Center for Educational Performance and Information (CEPI). Results, information and opinions solely represent the analysis, information and opinions of the author(s) and are not endorsed by, nor reflect the views or positions of, grantors, MDE and CEPI or any employee thereof.

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Executive Summary

EXECUTIVE SUMMARY

Findings are based on data reported to the state by Michigan public schools. This self-reported data is known to contain reporting errors, but represents the most comprehensive data collected on virtual learning in Michigan.

Information on two distinct populations of Michigan K-12 learners are included in this report:

- **Virtual Learners** – students who took at least one virtual course in 2014-15; and
- **Non-Virtual Learners** – students who did not take any virtual courses in 2014-15.

Virtual Learners were categorized into three subsets:

- **Cyber** – enrollments from full-time, public cyber schools.
- **MVS** – virtual enrollments from students identified as taking at least one online course with *Michigan Virtual School (MVS)*.
- **Local** – virtual enrollments reported by non-cyber schools for courses other than those delivered by *MVS*.

Data provided by the state included information on both the virtual and non-virtual enrollments from virtual learners. *MVLRI* was also supplied with summary tables that included information about enrollments from non-virtual learners.

Key Findings

- Over 91,000 Michigan K-12 students took one or more virtual courses during the 2014-15 school year. This number is up over 15,000 students compared to the number reported last year (increase of 20%). Three out of four students taking virtual courses came from the Local virtual learner subset, 15% came from cyber schools, and 10% from *MVS*.
- Michigan K-12 students accounted for approximately 446,000 virtual course enrollments in 2014-15, surpassing the 2013-14 figure by more than 126,000 enrollments (increase of 40%). High school grade levels continued to account for the largest number of enrollments, though the elementary grade levels showed the largest year-over-year percentage increases. The Local virtual learner subset accounted for 63% of the virtual enrollments.
- Virtual enrollment patterns suggest that Michigan schools tend to enroll higher performing students in *MVS* courses, but rarely use *MVS* for lower performing students. In contrast, when Local schools provide their own virtual solution, they primarily enroll students who have failed several courses taken in the traditional classroom environment.
- As in past years, virtual enrollments were heaviest in the core subject areas, led by English Language and Literature (20%) and Mathematics (17%).
- Once again, males and females each accounted for roughly half of the virtual enrollments, and there was almost no difference in the percentage of males and females enrolling in core subjects.
- Over half (51%) of schools with virtual enrollments had 100 or more virtual enrollments in the 2014-15 school year, though the second most likely scenario was that they had less than 10 (19%). This “all” or “very few” phenomenon continues the trend observed over the past four years, despite the number of schools with virtual enrollments growing from 654 in 2010-11 to over 1,072 in 2014-15.
- The percentage of virtual enrollments that ended in a “Completed/Passed” completion status was 60% – up 3% from the previous year. As points of comparison, virtual learners in their non-virtual courses had “Completed/Passed” rates of 73% whereas non-virtual learners had a 91% “Completed/Passed” rate. Despite the data being pulled in December of 2015, 5% of virtual enrollments were still marked as “Incomplete.”
- Differences in virtual learners’ non-virtual course performance showed considerable differences in their virtual performance. Non-cyber virtual learners who took a minimum of three non-virtual courses and passed all of their non-virtual courses had a “Completed/Passed” rate of 87% in their virtual courses. Those who failed one or two of their non-virtual courses only passed their virtual courses 69% of the time. Students who failed three or more non-virtual courses in 2014-15 only passed their virtual courses 40% of the time.

Executive Summary

- There were considerable differences in the “Completed/Passed” rates for virtual learners based on virtual subsets. Cyber enrollments had a “Completed/Passed” rate of 52%, MVS had a 77% rate, and Locals had a 62% rate. These rates, however, also showed variation. Public Service Academy (PSA) cyber schools had a “Completed/Passed” rate of 52%, whereas Local Education Agency (LEA) cyber schools had a “Completed/Passed” rate of 38%. “Completed/Passed” rate differences in the supplemental virtual subsets nearly disappeared when controlling for differences in non-virtual performance.
- Twenty-eight percent of schools with virtual enrollments in 2014-15 had school-wide “Completed/Passed” rates of 90% or better. Fifty-three percent of schools with virtual enrollments had school-wide “Completed/Passed” rates of 70% or better. Clearly some schools are implementing virtual models that work for their students; many do not.
- Schools with lower virtual courses-to-virtual student ratios were associated with higher school-wide “Completed/Passed” rates for their virtual enrollments. Thirty-two percent of schools that averaged one to two virtual courses per virtual learner (Low), had “Completed/Passed” rates of 90%-100%. In comparison, only 23% of schools that averaged five or more virtual courses per virtual learner (High), had “Completed/Passed” rates of 90%-100%. This trend was consistent with findings from past years.
- Consistent with past years, virtual learners who took virtual courses as supplements to their non-virtual curriculum (excludes Cyber) tended to do worse the more virtual courses they took in a year. On average, students had the highest “Completed/Passed” rates (69%) in their virtual courses when they took one to two virtual courses in a year (categorized as “Low” use). Students who took five or more virtual courses in a year (categorized as “High” use) tended to have lower “Completed/Passed” rates (62%).
- Half of virtual learners passed all of the virtual courses they took in 2014-15. Twenty-five percent failed all of the virtual courses they took in 2014-15. Only one in four virtual learners experienced mixed results.
- The 60% “Completed/Passed” rate from virtual enrollments fluctuated by grade level. Elementary and middle school grade levels tended to have “Completed/Passed” rates that hovered in the high 60s or low 70s. Virtual enrollments from students in ninth grade had the poorest performance with a 50% “Completed/Passed” rate. Sophomores and juniors had rates of 54% and 59%, respectively, with 12th graders having the highest performance of the high school grades with 65%.
- Males (50%) and females (50%) enrolled in virtual courses at about the same rate. Females had a slightly higher “Completed/Passed” rate in their virtual courses (61%) compared to males (58%).
- Sixty-two percent of virtual enrollments for the 2014-15 school year came from students living in poverty. This was 15% higher than the 47% statewide average for all enrollments (virtual and non-virtual) during the same time period.
- Virtual learners who were flagged as living in poverty had a 12% lower “Completed/Passed” rate for their virtual courses than those who were flagged as not living in poverty. This discrepancy suggests that more must be done to realize the potential of virtual learning in helping reduce poverty effects on learning outcomes. That said, the gap for virtual learners in their non-virtual courses was even larger (19%).
- Seat time waiver students had a 53% “Completed/Passed” rate compared to 67% for non-seat time waiver students. In 2014-15, 28% of the virtual enrollments from non-cyber schools came from seat time waiver students.
- The percentages of virtual learners who met or exceeded the ACT college readiness benchmarks on the various subjects of the ACT were consistently lower than the state average, most often by 10% or more. ACT performance for virtual learners showed variations based on non-virtual performance, seat time waiver status, poverty status, and virtual subset.
- Virtual enrollments represented about 2.75% of all K-12 enrollments in Michigan during the 2014-15 school year. Thirty-one percent of Michigan K-12 entities had virtual enrollments in the 2014-15 school year.
- Students located within Wayne, Oakland, and Macomb ISD school districts yielded the highest percentage of PSA cyber enrollments. ISDs with the highest supplemental virtual learning rates included Berrien, COOR, Ingham, Jackson, Montcalm and Tuscola.

Overview

OVERVIEW

MVU was asked by the Legislature through Public Act 60 of 2013 to use data reported to the Michigan Department of Education (MDE) or Center for Educational Performance and Information (CEPI) to analyze the effectiveness of online delivery models. Specifically, Public Act 60 states:

Based on pupil completion and performance data reported to the department [MDE] or the Center for Educational Performance and Information [CEPI] from cyber schools and other online course providers operating in this state, analyze the effectiveness of online learning delivery models in preparing pupils to be college- and career-ready and publish a report that highlights enrollment totals, completion rates and the overall impact on pupils.

The data for this report came from the following sources:

- Michigan Student Data System – School Year 2014-2015;
- Educational Entity Master (EEM);
- Michigan Student Data System Teacher Student Data Link (TSDL) – Collection Year 2014-2015;
- *Michigan Virtual School* Student Enrollment List – School Year 2014-2015 (Supplied by MVU); and
- *Michigan's K-12 Virtual Learning Effectiveness Report (2015)* – Used for comparing this year's data with the 2013-14 school year. That report is available as a free download from http://media.mivu.org/institute/pdf/effectiveness_report_2014.pdf.

It is important to be aware that reporting errors exist due to the self-reported nature of some of the data contained within these sources; however, the data still represent the most comprehensive collection of information on K-12 virtual learning in Michigan.

Information on two distinct populations of Michigan K-12 learners are included in this report:

- **Virtual Learners** – students who took at least one virtual course in 2014-15; and
- **Non-Virtual Learners** – students who did not take any virtual courses in 2014-15.

Virtual learners were categorized into three virtual subsets:

- **Cyber** – enrollments from cyber schools. Cyber schools provide full-time instruction through online learning. Cyber schools were first created through Public Act 205 of 2009. Public Act 129 of 2012 expanded the number of cyber school contracts that could be issued in the state;
- **MVS** – virtual enrollments from students who were identified as taking at least one online course with *Michigan Virtual School (MVS)*. MVS is a state-supported supplementary virtual school program that was created by Public Act 230 of 2000; and
- **Local** – virtual enrollments reported by non-cyber schools for courses other than those delivered by MVS.

Table 1. Student Population, Virtual Subsets, and Types of Courses

Student Population	Type of Courses	
	Virtual Courses	Non-Virtual Courses
Virtual Learners	Y	Y/N
Cyber	Y	Y/N
MVS	Y	Y
Local	Y	Y
Non-Virtual Learners	N	Y

Overview

The majority of enrollments classified as virtual in this report were treated as such due to the TSDL virtual delivery field being set to “yes.” However, this field is known to contain inaccuracies. For the purposes of this report, additional methods were used to identify enrollments with a high likelihood of having been delivered virtually. Each of the methods used, along with the percentage of enrollments it contributed to the total, are outlined below.

1. **TSDL Virtual Delivery Flag = Yes.** Enrollments where the TSDL virtual delivery field was set to “yes” were treated as virtual. According to the TSDL Data Collection Manual, the virtual delivery field “indicates whether the student is receiving instruction via a virtual delivery method. This could be virtual learning, online learning or computer courses; distance learning; or self-scheduled virtual learning” (see page 48 of the manual available from http://www.michigan.gov/documents/cepi/2013-14_TSDL_coll_details_addendum_426879_7.pdf). This strategy yielded 91% (404,010) of the virtual enrollments.
2. **TSDL Local Course Title Field References MVS.** The strategy of searching the local course title field for common references to MVS yielded less than 1% (1,849) of the virtual enrollments. See Appendix for a list of search criteria.
3. **TSDL Local Course Title Field References Common Third Party Providers.** Searching the local course title field for common references to known third-party providers of virtual courses yielded about 4% (19,669) of the virtual enrollments. See Appendix A for a list of search criteria.
4. **TSDL Local Course Title Field References Common Generic Labels for Online or Virtual Learning.** Searching the local course title field for common references to online, distance, or virtual learning yielded 4% (17,455) of the virtual enrollments. See Appendix A for a list of search criteria.
5. **Enrollments from Cyber Schools.** An additional 2,949 enrollments from cyber schools that were not marked as virtually delivered were also classified as virtual enrollments, accounting for 1% of the virtual enrollments. Approximately 1,000 enrollments from cyber schools were not treated as being delivered virtually because the virtual method field was set to “Not Virtual.”

To determine student population, virtual subset, and type of course, the following process was used:

1. If a student was flagged as having at least one virtual enrollment with MVS, all virtually delivered enrollments for that student were flagged as being provided by MVS. It is worth noting that not all of the virtual enrollments from these students were delivered by MVS, but there was no clear way to determine which of the virtual enrollments were not from MVS. Therefore, this report attributes all virtual enrollments from these students to MVS.
2. All enrollments reported by schools labeled as “cyber schools” that were not from students who had taken a virtual course with MVS were labeled under the Cyber Virtual Subset.
3. All other enrollments that were delivered virtually were labeled under the Local Virtual Subset. A small number of students (585) had virtual enrollments recorded under both the Cyber and Local Virtual Subsets.

Make no mistake: some enrollments are counted as virtual in this report that should not be – either because they were mistakenly marked as virtual by the school and/or because the local course title searches implemented by the research team yielded false positives. On the other hand, it is also safe to assume that some enrollments that should have been marked as virtual were not, both because they were not correctly flagged by the school and because the local course title did not give an indication of its virtual nature that aligned with the conventions used in the strategies outlined above. Consequently, the figures in this report should be treated as estimates that, generally speaking, convey the trends observed for the school year.

Overview

One final caveat for interpreting the results published in this report: There is clear variability in what schools report to the state as a “course.” Some records align well with reporting conventions outlined by the U.S. Department of Education under their School Codes for the Exchange of Data (SCED). See for instance <http://nces.ed.gov/pubs2007/2007341.pdf>. However, a review of the data suggest that many schools submit course records that may be better described as course units or lessons. Hence, while one district may report a single course for a child, for instance Algebra I, another school might submit five such records, all with the same subject area and course identifier codes, but with different local course IDs. Table 2 provides a glimpse into such reporting variability. Consider the Local virtual subset. For that group, 46% of the students had 11 to 15 courses (includes both virtual and non-virtual enrollments), but many students had more than that.

Table 2. Student Virtual and Non-Virtual Course Record Counts by Virtual Subset

Course Count by Student	School Year			
	2014-15			
	Cyber	MVS	Local	All
1 to 5	4%	3%	10%	8%
6 to 10	19%	21%	22%	21%
11 to 15	52%	63%	46%	48%
16 to 20	15%	12%	15%	14%
21+	10%	2%	7%	7%
Total	100%	100%	100%	100%

Overall, however, such “over-reporting” seems to have more of an impact on enrollment counts than on the “Completed/Passed” rates reported. Negligible or no differences were seen in overall “Completed/Passed” rates for virtual learners in their virtual courses when students who had more than 20 virtual enrollments were removed from calculations. This held true even when investigating the “Completed/Passed” rates by virtual subset.

REPORT SECTIONS

For this report, findings are included that address each of the three categories requested by the legislature: pupil and enrollment totals, completion rates, and overall impact. Please note that in some tables and figures, the percentage data may not sum to 100% due to rounding.

Overview

PUPIL AND ENROLLMENT TOTALS

Based on data reported to the state for the 2014-15 school year, the number of Michigan K-12 students who took at least one virtual course was 91,261. This figure is up 15,139 students (20%) compared to the previous school year.

Table 3. Count of Michigan K-12 Students Taking a Virtual Course by Grade Level and School Year

Grade Level	School Year		Year over Year	
	2013-14	2014-15	# of Students	Rate of Change %
K	725	736	+11	+2%
1	472	873	+401	+85%
2	521	936	+415	+80%
3	582	1,070	+488	+84%
4	656	1,030	+374	+57%
5	816	1,239	+423	+52%
6	1,844	2,660	+816	+44%
7	2,412	3,049	+637	+26%
8	3,531	4,790	+1,259	+36%
9	10,044	13,573	+3,529	+35%
10	15,597	17,738	+2,141	+14%
11	15,536	17,740	+2,204	+14%
12	23,953	26,362	+2,409	+10%
Total	76,122	91,261	+15,139	+20%

Note: Because some students took courses across multiple grade levels for a single year, an individual student may be counted toward more than one grade level for a given school year. The total row, however, reflects the number of unique students for the year, and therefore may differ from the number one would get by summing the rows.

Like the 2013-14 school year, virtual students were most prevalent at the high school level and, to a lesser extent, the middle school level. However, elementary grade levels saw the largest year over year percentage increases. Also like the 2013-14 school year, the Local virtual subset continued to account for a majority of students, though the percentage of Cyber students increased by 3%.

Table 4. Count and Percentage of Michigan K-12 Students Taking a Virtual Course by Virtual Subset

Virtual Subset	School Year	
	# of Students	% of Students
Cyber	13,885	15%
MVS	9,244	10%
Local	68,717	75%
Total	91,261	100%

Note: 585 students had both Cyber and Local enrollments and appears in the Virtual Subset rows twice. However, the total count of students (91,261) is the unique student count.

Pupil and Enrollment Totals

An estimated 445,932 K-12 course enrollments were delivered virtually in 2014-15. This 2014-15 count is 126,302 enrollments more than the number reported for the 2013-14 school year (+40%).

Table 5. Count of Michigan K-12 Virtual Course Enrollments by Grade Level and School Year

Grade Level	School Year		Year over Year	
	2013-14	2014-15	# of Enrolls	Rate of Change %
K	5,070	6,808	+1,738	+34%
1	4,003	7,971	+3,968	+99%
2	4,579	8,177	+3,598	+79%
3	4,928	8,153	+3,225	+65%
4	6,588	9,320	+2,732	+41%
5	6,545	10,273	+3,728	+57%
6	8,731	14,804	+6,073	+70%
7	12,174	22,630	+10,456	+86%
8	16,001	29,557	+13,556	+85%
9	42,029	69,564	+27,535	+66%
10	59,759	80,485	+20,726	+35%
11	58,493	72,323	+13,830	+24%
12	90,730	105,867	+15,137	+17%
Total	319,630	445,932	+126,302	+40%

Percentage-wise, virtually delivered enrollments in K-8 saw the largest increases; still, the high school grades continued to have the largest increases in the number of enrollments. Consistent with the previous year, 9th grade had the highest percentage increased in enrollments for the high school level (+66%), yet still lags behind the other high school grades in the total number of virtual enrollments.

The shift of virtually delivered enrollments into elementary and middle school grades has continued. In the 2010-11 school year, 93% of virtual enrollments came from students in grades 9-12. This percentage dropped to 91% in 2011-12, 88% in 2012-13, and 79% in 2013-14 and 74% in the 2014-15 school year.

The number of enrollments by virtual subset follows the same pattern as unique students – the majority of enrollments came from Local, followed by Cyber, and finally *MVS*. However, enrollments from Cyber schools increased from 27% of virtual enrollments in 2013-14 to 32% of virtual enrollments in the 2014-15 school year. Ninety-six percent of Cyber enrollments came through public school academies (PSAs). Less than 4% of Cyber enrollments came from local education agency (LEA) schools.

Table 6. Count and Percentage of Michigan K-12 Virtual Course Enrollments by Virtual Subset

Virtual Subset	School Year	
	# of Enrolls	% of Enrolls
Cyber	143,691	32%
<i>MVS</i>	20,060	4%
Local	282,181	63%
Total	445,932	100%

It is important to keep in mind that these virtual subsets appear to address different populations of students. Cyber schools, for instance, provide opportunities for students to take 100% of their enrollments virtually (a small percentage of Cyber students had non-virtual enrollments presumably the result of switching into or out of a cyber school during the year). *MVS* and the Local virtual subsets both provide supplemental virtual learning where students take some courses face-to-face and some virtually. Yet despite this similarity, there were considerable differences in the non-virtual patterns observed between the two subsets. Local virtual learners had a sizable percentage taking only a few non-virtual enrollments. Twenty-seven percent of Local virtual learners had two or fewer non-virtual enrollments in 2014-15. In contrast, only 4% of *MVS* students had two or fewer non-virtual enrollments in 2014-15.

Pupil and Enrollment Totals

Such differences present challenges when looking at the relationship between non-virtual performance and virtual performance, particularly given the inverse relationship between non-virtual and virtual enrollments. Acknowledging that a relatively large percentage of Local virtual learners had too few non-virtual enrollments to include in such a comparative analysis, the data presented in Table 7 suggest there were clear distinctions in the virtual enrollment patterns for non-cyber school students who took three or more non-virtual courses. For instance, 36% of those virtual enrollments came from students who passed all of their non-virtual courses. Students who failed to pass only one or two of their non-virtual courses accounted for 18% of those virtual enrollments, and students who failed to pass three or more of their non-virtual courses accounted for 46% of those virtual enrollments.

Table 7. Count and Percentage of Michigan K-12 Virtual Course Enrollments by Non-Virtual Performance (Minimum of 3 Non-Virtual Enrollments)

Non-Virtual Performance	School Year	
	2014-15	
	# of Enrolls	% of Enrolls
Passed All Non-Virtual Courses	54,380	36%
Failed 1 or 2 Non-Virtual Courses	26,973	18%
Failed 3 or More Non-Virtual Courses	69,381	46%
Total	150,734	100%

Note: 295,198 virtual enrollments are not included in the table because the student did not have a minimum of three non-virtual courses or because the enrollments were from cyber schools. An enrollment was counted as passing only if the enrollment had a completion status of "Completed/Passed."

Enrollment patterns differed considerably between the two supplemental virtual subsets. About two-thirds of MVS virtual enrollments came from students who passed all of their non-virtual courses. This was double the amount (32%) of virtual enrollments from Local students who passed all of their non-virtual courses. Enrollments from Local were most likely (50%) to go to students who failed three or more of their non-virtual courses whereas 16% of MVS enrollments were from students who failed three or more of their non-virtual courses.

Table 8. Count and Percentage of Michigan K-12 Virtual Course Enrollments by Non-Virtual Performance (Minimum of 3 Non-Virtual Enrollments) and Virtual Subset

Non-Virtual Performance	2014-15 School Year				
	# of Enrolls			% of Enrolls	
	MVS	Local	Total	MVS	Local
Passed All Non-Virtual Courses	11,332	43,048	54,380	66%	32%
Failed 1 or 2 Non-Virtual Courses	3,058	23,915	26,973	18%	18%
Failed 3 or More Non-Virtual Courses	2,712	66,669	69,381	16%	50%
Total	17,102	133,632	150,734	100%	100%

Note: 295,198 virtual enrollments are not included in the table because the student did not have a minimum of three non-virtual courses or because the enrollments were from cyber schools. An enrollment was counted as passing only if the enrollment had a completion status of "Completed/Passed."

These patterns suggest that Michigan schools tend to enroll higher performing students in MVS courses, but rarely use MVS for their lower performing students. In contrast, when Local schools provide their own virtual solution, they primarily enroll students who are struggling in the traditional classroom.

Pupil and Enrollment Totals

New for the 2014-15 reporting cycle, schools were required to select a virtual method (blended learning, digital learning, or online course) when the school marked an enrollment as being delivered virtually. Page 505 of CEPI's 2014-15 MSDS Collection Details Manual (available from http://www.michigan.gov/documents/cepi/2014-15_MSDS_collection_details_454235_7.pdf#comp-stucourse) communicated the definitions of each of these categories. Those definitions were:

- **Blended Learning** - A hybrid instructional delivery model where pupils are provided content, instruction, and assessment at a supervised educational facility where the pupil and teacher are in the same physical location and in part through Internet-connected learning environments with some degree of pupil control over time, location, and pace of instruction. For a course to be considered blended, at least 30% of the course content is delivered online.
- **Digital Learning** - A course of study that is capable of generating a credit or a grade, that is provided in an interactive Internet-connected learning environment that does not contain an instructor within the online environment itself. There may be a teacher of record assigned to the course, but this teacher does not provide instruction to students through the online environment. For a course to be considered online as opposed to blended, all (or almost all) the course content is delivered online.
- **Online Course** - A course of study that is capable of generating a credit or a grade, that is provided in an interactive Internet-connected learning environment, where pupils are separated from their teachers by time or location, or both. For a course to be considered online as opposed to blended, all (or almost all) the course content is delivered online.

Since this report identified virtual enrollments using multiple strategies in addition to the virtual delivery flag (see page 4 for details), some of the virtual enrollments did not contain data for the virtual method field. Virtual enrollments that were missing data, but could be linked to MVS or a cyber school, were recoded as online courses. Table 9 shows the counts and percentage of virtual enrollments by virtual method.

Table 9. Count and Percentage of Michigan K-12 Virtual Course Enrollments by Virtual Method

Virtual Method	School Year	
	2014-15	
	# of Enrolls	% of Enrolls
Blended Learning	21,406	5%
Digital Learning	33,878	8%
Online Course	355,103	87%
Total	410,387	100%

Note: 35,545 virtual enrollments are not included in the table because of missing data for the virtual method field.

The statistics in Table 9 likely have the greatest value for establishing a benchmark for future years. Since virtual method was a new data field for the 2014-15 school year, the quality of its classification will hopefully improve over time. Most predictions about virtual learning suggest blended learning will become the predominant method over time.

Pupil and Enrollment Totals

As evidenced by Table 10, the percentage of virtual enrollments by subject area remained fairly consistent from the 2013-14 to 2014-15 school years. Mathematics, English Language and Literature, Social Sciences and History, and Life and Physical Sciences remain the subject areas with the highest percentage of virtual enrollments.

Table 10. Count and Percentage of Michigan K-12 Virtual Course Enrollments by Subject Area and School Year

Subject Area	School Year				Year over Year	
	2013-14		2014-15		# of Enrolls	% of Enrolls
	# of Enrolls	% of Enrolls	# of Enrolls	% of Enrolls	# of Enrolls	% of Enrolls
Agriculture, Food, and Natural Resources	39	0%	358	0%	+319	0%
Architecture and Construction	53	0%	88	0%	+35	0%
Business and Marketing	3,142	1%	4,664	1%	+1,522	0%
Communication and Audio/Visual Technology	1,433	0%	1,924	0%	+491	0%
Computer and Information Sciences	10,037	3%	12,436	3%	+2,399	0%
Engineering and Technology	477	0%	6,056	1%	+5,579	+1%
English Language and Literature	66,730	21%	89,732	20%	+23,002	-1%
Fine and Performing Arts	14,782	5%	23,424	5%	+8,642	0%
Foreign Language and Literature	11,677	4%	23,136	5%	+11,459	+1%
Health Care Sciences	1,250	0%	1,792	0%	+542	0%
Hospitality and Tourism	215	0%	241	0%	+26	0%
Human Services	231	0%	272	0%	+41	0%
Life and Physical Sciences	44,643	14%	61,387	14%	+16,744	0%
Manufacturing	11	0%	30	0%	+19	0%
Mathematics	58,501	18%	75,845	17%	+17,344	-1%
Military Science	10	0%	<10	0%	*	0%
Miscellaneous	32,827	10%	39,684	9%	+6,857	-1%
Nonsubject Specific	2,090	1%	794	0%	-1,296	-1%
Physical, Health, and Safety Education	17,442	5%	32,555	7%	+15,113	+2%
Public, Protective, and Government Services	457	0%	748	0%	+291	0%
Religious Education and Theology	26	0%	32	0%	+6	0%
Social Sciences and History	53,514	17%	70,655	16%	+17,141	-1%
Transportation, Distribution and Logistics	43	0%	73	0%	+30	0%
Total	319,630	100%	445,932	100%	+126,302	0%

Note: Enrollment counts for subject areas include both secondary (9-12) and prior-to-secondary (K-8) enrollments. Cells with low enrollment counts are displayed as <10 to address student confidentiality concerns. Because of this, some calculations were not possible. These cells are indicated with an asterisk. Percentages may not add to 100% due to rounding.

Pupil and Enrollment Totals

Tables 11 through 15 include the top 10 most popular course titles for virtual learners in the MVS or Local virtual subsets for each of the five highest virtual enrollment subject areas.

Table 11. Count and Percentage of the Top 10 Michigan Supplemental (Non-Cyber) Secondary Virtual Course Enrollments in English Language & Literature

English Language & Literature Course Titles	School Year	
	2014-15	
	# of Enrolls	% of Enrolls
English/Language Arts I (9th grade)	9,652	20%
English/Language Arts II (10th grade)	7,761	16%
English/Language Arts IV (12th grade)	7,715	16%
English/Language Arts III (11th grade)	7,480	16%
English Language and Literature—Other	2,164	5%
American Literature	1,815	4%
World Literature	1,361	3%
Strategic Reading	860	2%
Composition	683	1%
English/Literature (freshmen and sophomores)	645	1%

Table 12. Count and Percentage of the Top 10 Michigan Supplemental (Non-Cyber) Secondary Virtual Course Enrollments in Mathematics

Mathematic Course Titles	School Year	
	2014-15	
	# of Enrolls	% of Enrolls
Geometry	10,270	21%
Algebra I	9,260	19%
Algebra II	9,055	18%
Consumer Math	3,800	8%
Mathematics—Other	3,186	6%
Pre-Algebra	2,751	6%
General Math	2,210	4%
Algebra I—Part 1	1,507	3%
Algebra I—Part 2	1,208	2%
Business Math	633	1%

Note: Algebra I (ranked 2nd), Algebra I—Part 1 (ranked 8th), and Algebra I—Part 2 (ranked 9th) all cover related course content.

Table 13. Count and Percentage of the Top 10 Michigan Supplemental (Non-Cyber) Secondary Virtual Course Enrollments in Life and Physical Sciences

Life & Physical Sciences Course Titles	School Year	
	2014-15	
	# of Enrolls	% of Enrolls
Biology	10,896	28%
Chemistry	7,699	19%
Earth Science	3,962	10%
Physical Science	2,873	7%
Physics	2,681	7%
Life and Physical Sciences—Other	2,473	6%
Environmental Science	1,962	5%
Integrated Science	1,317	3%
Earth and Space Science	578	1%
Chemistry—Other	425	1%

Pupil and Enrollment Totals

Table 14. Count and Percentage of the Top 10 Michigan Supplemental (Non-Cyber) Secondary Virtual Course Enrollments in Social Sciences and History

Social Sciences & History Course Titles	School Year	
	2014-15	
	# of Enrolls	% of Enrolls
U.S. History—Comprehensive	6,996	15%
Economics	6,145	13%
World History and Geography	5,985	13%
World History—Overview	4,197	9%
U.S. Government—Comprehensive	4,007	9%
Psychology	2,597	6%
Civics	2,443	5%
Modern U.S. History	1,887	4%
Sociology	1,811	4%
U.S. History—Other	1,211	3%

Table 15. Count and Percentage of the Top 10 Michigan Supplemental (Non-Cyber) Secondary Virtual Course Enrollments in Miscellaneous

Miscellaneous Course Titles	School Year	
	2014-15	
	# of Enrolls	% of Enrolls
Miscellaneous—Other	8,891	28%
Career Exploration	3,950	13%
Study Skills	3,846	12%
Miscellaneous—Independent Study	2,717	9%
Dropout Prevention Program	2,555	8%
Life Skills	1,513	5%
Consumer Economics/Personal Finance	966	3%
Seminar	873	3%
Employability Skills	854	3%
Tutorial	809	3%

Pupil and Enrollment Totals

Table 16 features virtual enrollment counts for AP® courses. The 3,092 virtual enrollments in AP courses represent a very small fraction of virtual learning in the state. These small numbers may be particularly surprising given that many, if not most, AP titles are not offered face-to-face in high schools across Michigan. While small, this count is up 1,409 enrollments over the 2013-14 school year (+84%).

Table 16. Count and Percentage of Virtual Course Enrollments in AP Courses

AP Course Titles	School Year	
	2014-15	
	# of Enrolls	% of Enrolls
AP Psychology	321	10%
AP Biology	305	10%
AP U.S. History	227	7%
AP English Literature and Composition	201	7%
AP Statistics	192	6%
AP English Language and Composition	182	6%
AP Calculus AB	177	6%
AP Computer Science A	168	5%
AP Physics B	161	5%
AP European History	126	4%
AP Government	120	4%
AP Macroeconomics	110	4%
AP Human Geography	95	3%
AP Microeconomics	85	3%
AP Environmental Science	73	2%
AP U.S. Government and Politics	73	2%
AP Chemistry	70	2%
AP Calculus BC	68	2%
AP Spanish Language	68	2%
AP Physics C	60	2%
AP Art—History of Art	52	2%
AP Economics	52	2%
AP World History	50	2%
AP French Language	22	1%
AP Studio Art - 3D	14	0%
AP Computer Science AB	<10	0%
AP Studio Art—General Portfolio	<10	0%
AP German Language	<10	0%
AP Music Theory	<10	0%
Total	3,092	100%

It is worth noting that the quality of the AP data being reported is a challenge for this kind of reporting. There are specific SCED codes designated for AP courses, but only some schools use those codes. Several of the AP courses reported above were designated as such either because the Local Course Title field contained text indicating it was an AP course or because the school reported the Course Type as AP. This appears to be an area where more education is needed to ensure data are being reported accurately.

Pupil and Enrollment Totals

Table 17 includes subject area data on the count and percentage of males and females enrolling in virtual courses each year. As was the case in 2013-14, there remained little difference in the percentage of males and females enrolling in virtual courses within a particular subject area for the 2014-15 school year. Although once again males accounted for more virtual enrollments (225,032 compared to 220,900 for females), as a percentage both males and females were responsible for about half of the virtual enrollments.

Table 17. Count and Percentage of Michigan K-12 Virtual Course Enrollments by Subject Area, School Year, and Gender

Subject Area	School Year							
	2013-14				2014-15			
	#M	#F	%M	%F	#M	#F	%M	%F
Agriculture, Food, and Natural Resources	18	21	0%	0%	100	258	0%	0%
Architecture and Construction	33	20	0%	0%	72	16	0%	0%
Business and Marketing	1,529	1,613	1%	1%	2,182	2,482	1%	1%
Communication and Audio/Visual Technology	648	785	0%	0%	862	1,062	0%	0%
Computer and Information Sciences	5,509	4,528	3%	3%	6,545	5,891	3%	3%
Engineering and Technology	332	145	0%	0%	3,277	2,779	1%	1%
English Language and Literature	34,311	32,419	21%	21%	46,451	43,281	21%	20%
Fine and Performing Arts	7,171	7,611	4%	5%	11,030	12,394	5%	6%
Foreign Language and Literature	4,965	6,712	3%	4%	10,356	12,780	5%	6%
Health Care Sciences	429	821	0%	1%	561	1,231	0%	1%
Hospitality and Tourism	85	130	0%	0%	84	157	0%	0%
Human Services	40	191	0%	0%	34	238	0%	0%
Life and Physical Sciences	22,915	21,728	14%	14%	31,631	29,756	14%	13%
Manufacturing	<10	<10	0%	0%	28	<10	0%	0%
Mathematics	30,184	28,317	19%	18%	39,238	36,607	17%	17%
Military Science	<10	<10	0%	0%	<10	<10	0%	0%
Miscellaneous	16,939	15,888	10%	10%	19,910	19,774	9%	9%
Nonsubject Specific	1,059	1,031	1%	1%	426	368	0%	0%
Physical, Health, and Safety Education	8,495	8,947	5%	6%	16,644	15,911	7%	7%
Public, Protective, and Government Services	174	283	0%	0%	302	446	0%	0%
Religious Education and Theology	13	13	0%	0%	12	20	0%	0%
Social Sciences and History	26,602	26,912	16%	17%	35,222	35,433	16%	16%
Transportation, Distribution and Logistics	<43	<43	0%	0%	64	<10	0%	0%
Total	161,510	158,120	100%	100%	225,032	220,900	100%	100%

Note: a) Enrollment counts for subject areas included both secondary and prior-to-secondary enrollments. Cells with low enrollment counts are displayed as <[#] to address student confidentiality concerns. Suppressed cells with larger values (e.g., <43) correspond to the data presented in Table 10 above. b) M = Males. F = Females.

Pupil and Enrollment Totals

Similarly, Table 18 presents data on the percentages of enrollments in each subject area according to the locale (Rural, Town, Suburb, or City) in which the school was located. The 2014-15 data continued the trend that percentages were fairly consistent across locales. The largest variations observed in the 2014-15 school year existed in Miscellaneous (10% difference between Rural and City) and English Language and Literature (6% difference between City and Rural locales).

Table 18. Percentage of Michigan K-12 Virtual Course Enrollments by Subject Area, School Year, and Locale

Subject Area	School Year							
	2013-14				2014-15			
	Rural	Town	Sub	City	Rural	Town	Sub	City
Agriculture, Food, and Natural Resources	0%	0%	0%	0%	0%	0%	0%	0%
Architecture and Construction	0%	0%	0%	0%	0%	0%	0%	0%
Business and Marketing	1%	2%	1%	1%	1%	1%	2%	0%
Communication and Audio/Visual Technology	0%	1%	0%	1%	1%	0%	0%	0%
Computer and Information Sciences	5%	6%	2%	2%	3%	4%	3%	2%
Engineering and Technology	0%	0%	0%	0%	0%	0%	0%	2%
English Language and Literature	16%	15%	18%	28%	16%	17%	18%	22%
Fine and Performing Arts	3%	2%	3%	8%	3%	3%	5%	7%
Foreign Language and Literature	5%	5%	3%	2%	7%	5%	5%	5%
Health Care Sciences	0%	0%	1%	0%	1%	1%	1%	0%
Hospitality and Tourism	0%	0%	0%	0%	0%	0%	0%	0%
Human Services	0%	0%	0%	0%	0%	0%	0%	0%
Life and Physical Sciences	14%	12%	14%	13%	13%	14%	16%	14%
Manufacturing	0%	0%	0%	0%	0%	0%	0%	0%
Mathematics	17%	16%	20%	18%	16%	18%	19%	17%
Military Science	0%	0%	0%	0%	0%	0%	0%	0%
Miscellaneous	13%	18%	14%	7%	17%	15%	8%	7%
Nonsubject Specific	1%	0%	1%	0%	0%	0%	0%	0%
Physical, Health, and Safety Education	7%	4%	5%	5%	5%	4%	6%	8%
Public, Protective, and Government Services	0%	1%	0%	0%	0%	0%	0%	0%
Religious Education and Theology	0%	0%	0%	0%	0%	0%	0%	0%
Social Sciences and History	17%	17%	17%	16%	16%	18%	17%	15%
Transportation, Distribution and Logistics	0%	0%	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Note: Enrollment counts for subject areas included both secondary and prior-to-secondary enrollments. Enrollments that did not include locale information (73,527 for 2013-14 and 97,986 for 2014-15) were not included in the table.

Pupil and Enrollment Totals

Again in 2014-15, schools that had virtual enrollments were mostly likely to have 100 or more for the year. Fifty-one percent of schools with virtual enrollments had 100 or more enrollments, an increase of 2% over the previous year. The second most likely grouping, however, was that the school had less than 10 virtual enrollments for the year – something reported by 19% of the entities, also up 2% over the 2013-14 school year.

Table 19. Count and Percentage of Michigan K-12 Virtual Course Enrollments by School Total and School Year

# of Virtual Enrollments per School	School Year				Year over Year	
	2013-14		2014-15			
	# of Entities	% of Entities	# of Entities	% of Entities	# of Entities	% of Entities
1 to 9	168	17%	207	19%	+39	+2%
10 to 19	79	8%	70	7%	-9	-1%
20 to 29	68	7%	49	5%	-19	-2%
30 to 39	35	3%	31	3%	-4	0%
40 to 49	40	4%	41	4%	+1	0%
50 to 59	36	4%	34	3%	-2	-1%
60 to 69	30	3%	32	3%	+2	0%
70 to 79	26	3%	25	2%	-1	-1%
80 to 89	13	1%	18	2%	+5	1%
90 to 99	20	2%	19	2%	-1	0%
100+	492	49%	547	51%	+55	+2%
Total	1,007	100%	1,073	100%	+66	0%

This trend of little year-to-year fluctuation of the percentage of schools in each enrollment count group continued even though the number of schools with virtual enrollments has increased from 625 in the 2010-11 school year to 1,072 in the 2014-15 school year.

The idea of schools tending to report either light (one to 24 virtual enrollments) or heavy (100+ virtual enrollments) amounts of virtual enrollments held true when looking at locale. Over 40% of Rural and City schools with virtual enrollments had 100+ virtual enrollments. Over half of Suburban and Town schools with virtual enrollments had 100 or more virtual enrollments.

Table 20. Percentage of Michigan K-12 Virtual Course Enrollments by Entity Total, School Year, and Locale

# of Virtual Enrollments per School	School Year								Year over Year			
	2013-14				2014-15							
	Rural	Town	Sub	City	Rural	Town	Sub	City	Rural	Town	Sub	City
1 to 24	31%	31%	26%	36%	26%	31%	29%	32%	-5%	0%	+3%	-4%
25 to 49	12%	8%	11%	13%	11%	8%	10%	7%	-1%	0%	-1%	-6%
50 to 74	10%	6%	8%	5%	10%	5%	6%	8%	0%	-1%	-2%	+3%
75 to 99	5%	9%	2%	2%	7%	3%	4%	4%	+2%	-6%	+2%	+2%
100+	43%	46%	53%	44%	46%	53%	52%	49%	+3%	+7%	-1%	+5%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Note: Enrollments that did not include locale information (73,527 for 2013-14 and 97,986 for 2014-15) were not included in the table.

Completed/Passed Rates

COMPLETED/PASSED RATES

While enrollment counts provide an important glimpse into virtual learning in the state of Michigan, of even greater interest to many is information on the performance of virtual learners. One measure of how students perform in their virtual courses is the completion status for an enrollment. When schools report enrollment information to the state, one of the data components submitted is for a completion status field. A few examples of completion statuses schools can report for an enrollment include: Audited, Completed/Passed, Completed/Failed, and Withdrawn/Exited. For a list of all available completion statuses for the 2014-15 reporting cycle, see page 501 of the Michigan Student Data System (MSDS) Collection Details Manual Version 1.3 available from http://www.michigan.gov/documents/cepi/2014-15_MSDS_collection_details_454235_7.pdf#comp-stucourse.

When reading through this section, please keep in mind the following points:

- A course “completion” is not synonymous with “passing” a course. As noted, schools currently differentiate when reporting to the state those enrollments that were completed but failed (Completed/Failed) from those that were completed and passed (Completed/Passed). Thus, “completion” as it is traditionally used by schools when reporting data to the state conveys the meaning of “finished” or “remained enrolled” throughout the course timeframe and does not signify whether the student earned a passing grade in the course for which credit was granted.
- Enrollments with a completion status of “Audited” existed where the student enrolled in the course without expecting or receiving credit. Because there was no performance expectation for such instances, it may be prudent not to include the impact of Audits on performance calculations; however, for transparency purposes and to allow readers to make their own determination, “Audited” enrollments have been included in calculations – the effect of which is to lower the percentage of enrollments that were “Completed/Passed.”
- Guidelines for marking an enrollment as “Incomplete” specify that this is to be used for students who must meet additional requirements to receive a grade or credit for the course. As the data show, virtual learners had higher rates of enrollments with completion statuses of “Incomplete.” Like the inclusion of “Audited” enrollments, “Incomplete” enrollments have been included in calculations and have the same effect of lowering the percentage of enrollments that were “Completed/Passed.”
- It is unclear how to best treat enrollments with a Withdrawn status. For instance, 3% of the virtual enrollments in 2014-15 were marked as “Withdrawn/Passing,” meaning that the student was passing the course at the time the student was withdrawn. Should these enrollments be counted as failures and included in the completion rate formula? What about students whose enrollments were marked as “Withdrawn/Exited”? There is no way to determine whether that exit occurred in the first few weeks of class or the final weeks of class. The data do not provide insight into whether the student was reenrolled in a different course or whether it was too late for reenrollment in a credit-bearing opportunity for the student. Like “Audited” and “Incomplete,” “Withdrawns” have been included in performance calculations and have the same effect of lowering the percentage of enrollments that were “Completed/Passed.”
- As a proxy for a passing rate, the tables contained in this section emphasize the percentage of enrollments that ended with a completion status of “Completed/Passed.” There are no reporting guidelines for what counts as “passing.” It is likely best to assume that passing requirements differ among schools.

Tables 21-23 show how completion status differed in 2014-15 for virtual learners in their virtual courses (Table 21), virtual learners in their non-virtual courses (Table 22), and non-virtual learners (Table 23). The “Completed/Passed” rates ranged from 60% for virtual learners in their virtual courses to 73% for virtual learners in their non-virtual courses to 91% for non-virtual learners.

Completed/Passed Rates

Table 21. Count and Percentage of Enrollment Completion Statuses for Virtual Learners in Their Virtual Courses by School Year

Completion Status	School Year				Year over Year	
	2013-14		2014-15		# of Enrolls	% of Enrolls
	# of Enrolls	% of Enrolls	# of Enrolls	% of Enrolls		
Audited (No Credit Issued)	7,622	2%	11,453	3%	+3,831	+1%
Completed/Failed	50,126	16%	77,062	17%	+26,936	+1%
Completed/Passed	183,010	57%	265,446	60%	+82,436	+3%
Incomplete	24,623	8%	23,848	5%	-775	-3%
Ongoing Enrolled/Special Ed	26	0%	1,574	0	+1,548	0%
Testing Out	121	0%	46	0	-75	0%
Withdrawn/Exited	25,391	8%	27,071	6%	+1,680	-2%
Withdrawn/Failing	17,814	6%	25,155	6%	+7,341	0%
Withdrawn/Passing	10,897	3%	14,277	3%	+3,380	0%
Total	319,630	100%	445,932	100%	+126,302	0%

Table 22. Count and Percentage of Enrollment Completion Statuses for Virtual Learners in Their Non-Virtual Courses by School Year

Completion Status	School Year				Year over Year	
	2013-14		2014-15		# of Enrolls	% of Enrolls
	# of Enrolls	% of Enrolls	# of Enrolls	% of Enrolls		
Audited (No Credit Issued)	19,462	3%	4,554	1%	-14,908	-2%
Completed/Failed	84,449	12%	92,136	12%	+7,687	0%
Completed/Passed	493,048	71%	539,816	73%	+46,768	+2%
Incomplete	10,522	2%	6,691	1%	-3,831	-1%
Ongoing Enrolled/Special Ed	69	0%	3,557	0%	+3,488	0%
Testing Out	242	0%	315	0%	+73	0%
Withdrawn/Exited	59,482	9%	68,446	9%	+8,964	0%
Withdrawn/Failing	6,860	1%	6,338	1%	-522	0%
Withdrawn/Passing	18,832	3%	19,128	3%	+296	0%
Total	692,966	100%	740,981	100%	+48,015	0%

Table 23. Count and Percentage of Enrollment Completion Statuses for Non-Virtual Learners

Completion Status	School Year	
	# of Enrolls	% of Enrolls
Audited (No Credit Issued)	41,170	0%
Completed/Failed	609,095	4%
Completed/Passed	13,646,790	91%
Incomplete	26,205	0%
Ongoing Enrolled/Special Ed	28,871	0%
Testing Out	1,320	0%
Withdrawn/Exited	486,162	3%
Withdrawn/Failing	26,655	0%
Withdrawn/Passing	151,973	1%
Total	15,018,241	100%

Completed/Passed Rates

Upon closer inspection of the data, there were considerable differences in the "Completed/Passed" rates for virtual learners based on virtual subsets. *MVS* had a "Completed/Passed" rate of 77%, Locals had a 57% rate, and Cybers had a 52% rate. These rates, however, may be better judged not in comparison with each other, but rather in comparison to how the same set of students did in their non-virtual coursework.

In an attempt to create comparison groups for virtual learners' non-virtual learning, the research team used the following rules:

- The number of non-virtual enrollments attributable to cyber students was small, and given the 100% nature of cyber schools, no face-to-face comparisons were included in the table below.
- The non-virtual enrollments from students who were identified as taking at least one virtual course with *MVS* were used as the Non-Virt comparison group for *MVS* in Table 24. This represents 128,199 non-virtual enrollments.
- Finally, non-virtual enrollments reported by schools other than cybers and from students who did not take a virtual course with *MVS* during the year were allocated to the Local/Non-Virt column of Table 24. This includes 611,727 non-virtual enrollments.

Table 24. Percentage of Michigan K-12 Course Enrollments by Completion Status, Virtual Subset, and Delivery Type

Completion Status	2014-15 School Year					
	Cyber		MVS		Local	
	Virt	Non-Virt	Virt	Non-Virt	Virt	Non-Virt
Audited (No Credit Issued)	1%	NA	2%	0%	4%	1%
Completed/Failed	21%	NA	13%	3%	16%	14%
Completed/Passed	52%	NA	77%	91%	62%	69%
Incomplete	4%	NA	3%	0%	6%	1%
Ongoing Enrolled/Special Ed	0%	NA	1%	1%	1%	0%
Testing Out	0%	NA	0%	0%	0%	0%
Withdrawn/Exited	1%	NA	3%	2%	9%	11%
Withdrawn/Failing	16%	NA	0%	0%	1%	1%
Withdrawn/Passing	6%	NA	1%	1%	2%	3%
Total	100%	NA	100%	100%	100%	100%

The pass rate differed by the entity type of cyber schools. LEA cybers only had a pass rate of 38%, whereas the PSA cyber schools had a pass rate of 52% for virtual enrollments.

Table 25. Count and Percentage of "Completed/Passed" for Michigan K-12 Cyber Virtual Course Enrollments by Entity Type

Cyber Entity Type	School Year		
	2014-15		
	# Passing	# of Enrolls	% "Completed/Passed"
LEA Cybers	2,018	5,285	38%
PSA Cybers	72,261	138,406	52%
Total	74,279	143,691	52%

Note: An enrollment was counted as passing only if the enrollment had a completion status of "Completed/Passed."

Completed/Passed Rates

As should be expected, the “Completed/Passed” rate varied considerably depending on how successful students were in their non-virtual courses. Using the same methodology as Table 7, students who passed all of their non-virtual courses passed their virtual courses 87% of the time, compared to a 40% pass rate for students who failed three or more of their non-virtual courses in the 2014-15 school year.

Table 26. Count and Percentage of “Completed/Passed” of Michigan K-12 Virtual Course Enrollments by Non-Virtual Performance (Minimum of 3 Non-Virtual Enrollments)

Non-Virtual Performance	School Year	
	2014-15	
	# of Enrolls	Pass Rate
Passed All Non-Virtual Courses	54,380	87%
Failed 1 or 2 Non-Virtual Courses	26,973	69%
Failed 3 or More Non-Virtual Courses	69,381	40%
Total	150,734	62%

Note: 295,198 virtual enrollments are not included in the table because the student did not have a minimum of three non-virtual courses or because the enrollments were from cyber schools. An enrollment was counted as passing only if the enrollment had a completion status of “Completed/Passed.”

The general rates observed in Table 26 remained relatively stable when looking at the two supplemental virtual subsets.

Table 27. Count and Percentage of “Completed/Passed” of Michigan K-12 Virtual Course Enrollments by Non-Virtual Performance (Minimum of 3 Non-Virtual Enrollments) and Virtual Subset

Non-Virtual Performance	School Year			
	2014-15			
	# of MVS Enrolls	# of Local Enrolls	MVS Pass Rate	Local Pass Rate
Passed All Non-Virtual Courses	11,332	43,048	87%	86%
Failed 1 or 2 Non-Virtual Courses	3,058	23,915	70%	69%
Failed 3 or More Non-Virtual Courses	2,712	66,669	48%	40%
Total	17,102	133,632	78%	60%

Note: 295,198 virtual enrollments are not included in the table because the student did not have a minimum of three non-virtual courses or because the enrollments were from cyber schools. An enrollment was counted as passing only if the enrollment had a completion status of “Completed/Passed.”

Despite the extremely low pass rate for virtual learners who failed 3 or more of their non-virtual courses, a frequent argument made by educators is that this low rate is still often an improvement over what the students were doing in their non-virtual courses. The data showed that only 41% of the Local virtual learners included in Table 27 as having failed 3 or more non-virtual courses had a higher “Completed/Passed” rate in their virtual course than they did in their non-virtual courses. Fourteen percent had the same “Completed/Passed” rate in their virtual and non-virtual courses, and 45% had lower “Completed/Passed” rates in their virtual courses than they did in their non-virtual courses.

Analysis of virtual method showed that both blended and online courses hovered around 60% pass rates while those classified as digital learning only had a pass rate of 49%. As a reminder, digital learning courses differ from online courses in that the digital learning courses do not contain an instructor within the online environment itself.

Table 28. Count and Percentage of “Completed/Passed” of Michigan K-12 Virtual Course Enrollments by Virtual Method

Virtual Method	School Year	
	2014-15	
	# of Enrolls	Pass Rate
Blended Learning	21,406	60%
Digital Learning	33,878	49%
Online Course	355,103	61%
MISSING	35,545	58%
Total	445,932	60%

Completed/Passed Rates

The five subject areas marked with an asterisk in Table 29 reflect those subject areas that were identified in Table 10 as the top five subject areas for virtual enrollments for the year. Compared to the 2013-14 school year, "Completed/Passed" rates rose for all five of those subject areas with the biggest gains in Miscellaneous (+7%), Life and Physical Sciences (+3%) and Social Sciences and History (+3%).

Table 29. Percentage of "Completed/Passed" for Virtual Learners in Their Virtual Courses by Subject Area and School Year

Subject Area	School Year		Year over Year
	2013-14	2014-15	% of Comp/Passed
Agriculture, Food, and Natural Resources	72%	56%	-16%
Architecture and Construction	64%	65%	+1%
Business and Marketing	74%	67%	-7%
Communication and Audio/Visual Technology	60%	68%	+8%
Computer and Information Sciences	70%	64%	-6%
Engineering and Technology	78%	63%	-15%
*English Language and Literature	56%	57%	+1%
Fine and Performing Arts	56%	62%	+6%
Foreign Language and Literature	65%	66%	+1%
Health Care Sciences	85%	81%	-4%
Hospitality and Tourism	91%	71%	-20%
Human Services	80%	75%	-5%
*Life and Physical Sciences	55%	58%	+3%
Manufacturing	91%	83%	-8%
*Mathematics	53%	54%	+1%
Military Science	90%	100%	10%
*Miscellaneous	57%	64%	+7%
Nonsubject Specific	92%	51%	-41%
Physical, Health, and Safety Education	61%	63%	2%
Public, Protective, and Government Services	76%	72%	-4%
Religious Education and Theology	50%	84%	34%
*Social Sciences and History	57%	60%	+3%
Transportation, Distribution and Logistics	65%	88%	+23%
Total	57%	60%	+3%

Tables 30 and 31 allow for comparing the subject area "Completed/Passed" rates for virtual learners in their virtual courses (Table 29) with virtual learners in their non-virtual courses (Table 30) and non-virtual learners (Table 31). Using English Language and Literature as an example, the "Completed/Passed" rates ranged from 57% for virtual learners in their virtual courses to 73% for virtual learners in their non-virtual courses to 90% for non-virtual learners.

Completed/Passed Rates

Table 30. Percentage of "Completed/Passed" for Virtual Learners in Their Non-Virtual Courses by Subject Area

Subject Area	School Year
	2014-15
Agriculture, Food, and Natural Resources	84%
Architecture and Construction	84%
Business and Marketing	82%
Communication and Audio/Visual Technology	84%
Computer and Information Sciences	75%
Engineering and Technology	84%
*English Language and Literature	73%
Fine and Performing Arts	82%
Foreign Language and Literature	74%
Health Care Sciences	81%
Hospitality and Tourism	76%
Human Services	83%
*Life and Physical Sciences	71%
Manufacturing	81%
*Mathematics	68%
Military Science	63%
*Miscellaneous	71%
Nonsubject Specific	69%
Physical, Health, and Safety Education	76%
Public, Protective, and Government Services	82%
Religious Education and Theology	82%
*Social Sciences and History	71%
Transportation, Distribution and Logistics	79%
Total	73%

Table 31. Percentage of "Completed/Passed" for Non-Virtual Learners by Subject Area

Subject Area	School Year
	2014-15
Agriculture, Food, and Natural Resources	92%
Architecture and Construction	93%
Business and Marketing	91%
Communication and Audio/Visual Technology	91%
Computer and Information Sciences	93%
Engineering and Technology	92%
*English Language and Literature	90%
Fine and Performing Arts	94%
Foreign Language and Literature	92%
Health Care Sciences	91%
Hospitality and Tourism	91%
Human Services	92%
*Life and Physical Sciences	90%
Manufacturing	94%
*Mathematics	88%
Military Science	73%
*Miscellaneous	89%
Nonsubject Specific	92%
Physical, Health, and Safety Education	93%
Public, Protective, and Government Services	88%
Religious Education and Theology	92%
*Social Sciences and History	90%
Transportation, Distribution and Logistics	91%
Total	91%

Completed/Passed Rates

Tables 32 through 36 include “Completed/Passed” rates for the top 10 most popular course titles for subject areas with 10% or more of the total virtual enrollments for the year from virtual learners in the MVS or Local virtual subsets. In English Language and Literature (Table 32), “Completed/Passed” rates ranged from 79% in Strategic Reading to 46% in English Language and Literature—Other. In mathematics, Algebra I (41%) showed “Completed/Passed” rates well below the subject area “Completed/Passed” rate of 54% (Table 29). Pre-Algebra had a 48% “Completed/Passed” rate. Algebra I—Part 1 and Algebra I—Part 2 had rates of 46% and 52%, respectively.

Table 32. Completion Statuses for the Top 10 Michigan K-12 Supplemental (Non-Cyber) Secondary Virtual Course Enrollments in English Language & Literature

English Language & Literature Course Titles	# of Enrolls	2014-15 School Year									Total
		Completion Status									
		AU	CF	CP	I	OE	TO	WE	WF	WP	
English/Language Arts I (9th grade)	9,652	5%	24%	51%	8%	1%	0%	9%	1%	1%	100%
English/Language Arts II (10th grade)	7,761	5%	22%	52%	9%	1%	0%	9%	1%	2%	100%
English/Language Arts IV (12th grade)	7,715	4%	10%	68%	7%	0%	0%	7%	1%	5%	100%
English/Language Arts III (11th grade)	7,480	4%	16%	59%	8%	0%	0%	8%	1%	3%	100%
English Language and Literature—Other	2,164	4%	5%	46%	3%	0%	0%	42%	0%	0%	100%
American Literature	1,815	1%	27%	67%	1%	0%	0%	3%	0%	0%	100%
World Literature	1,361	0%	22%	76%	1%	0%	0%	1%	0%	0%	100%
Strategic Reading	860	0%	13%	79%	6%	0%	0%	1%	0%	0%	100%
Composition	683	14%	7%	76%	2%	0%	0%	1%	0%	0%	100%
English/Literature (freshmen and sophomores)	645	0%	16%	53%	6%	0%	0%	22%	2%	1%	100%
Total	40,136	4%	18%	58%	7%	1%	0%	9%	1%	2%	100%

Note: AU = Audited (No Credit Issued), CF = Completed/Failed, CP = Completed/Passed, I = Incomplete, OE = Ongoing Enrolled/Special Ed, TO = Testing Out, WE = Withdrawn/Exited, WF = Withdrawn/Failed, WP = Withdrawn/Passing

Table 33. Completion Statuses for the Top 10 Michigan K-12 Supplemental (Non-Cyber) Secondary Virtual Course Enrollments in Mathematics

Mathematics Course Titles	# of Enrolls	2014-15 School Year									Total
		Completion Status									
		AU	CF	CP	I	OE	TO	WE	WF	WP	
Geometry	10,270	4%	24%	52%	9%	1%	0%	8%	1%	2%	100%
Algebra I	9,260	6%	30%	41%	11%	1%	0%	9%	1%	1%	100%
Algebra II	9,055	2%	18%	60%	8%	1%	0%	9%	1%	2%	100%
Consumer Math	3,800	1%	8%	69%	9%	1%	0%	8%	1%	3%	100%
Mathematics—Other	3,186	2%	16%	53%	3%	0%	0%	25%	0%	0%	100%
Pre-Algebra	2,751	12%	22%	48%	5%	0%	0%	7%	2%	4%	100%
General Math	2,210	3%	18%	54%	15%	0%	0%	8%	0%	2%	100%
Algebra I—Part 1	1,507	0%	28%	46%	9%	2%	0%	13%	1%	1%	100%
Algebra I—Part 2	1,208	0%	28%	52%	9%	0%	0%	9%	1%	1%	100%
Business Math	633	1%	12%	66%	7%	3%	0%	10%	1%	2%	100%
Total	43,880	4%	22%	53%	9%	1%	0%	10%	1%	2%	100%

Note: AU = Audited (No Credit Issued), CF = Completed/Failed, CP = Completed/Passed, I = Incomplete, OE = Ongoing Enrolled/Special Ed, TO = Testing Out, WE = Withdrawn/Exited, WF = Withdrawn/Failed, WP = Withdrawn/Passing

Completed/Passed Rates

Table 34. Completion Statuses for the Top 10 Michigan K-12 Supplemental (Non-Cyber) Secondary Virtual Course Enrollments in Life and Physical Sciences

Life & Physical Sciences Course Titles	2014-15 School Year										Total
	# of Enrolls	Completion Status									
		AU	CF	CP	I	OE	TO	WE	WF	WP	
Biology	10,896	5%	22%	54%	8%	1%	0%	9%	1%	1%	100%
Chemistry	7,699	3%	17%	58%	8%	0%	0%	11%	1%	3%	100%
Earth Science	3,962	3%	18%	59%	7%	1%	0%	7%	2%	3%	100%
Physical Science	2,873	4%	22%	52%	7%	1%	0%	13%	1%	1%	100%
Physics	2,681	2%	21%	65%	5%	1%	0%	5%	0%	2%	100%
Life and Physical Sciences—Other	2,473	2%	10%	47%	3%	0%	0%	37%	0%	1%	100%
Environmental Science	1,962	7%	12%	65%	6%	1%	0%	6%	1%	2%	100%
Integrated Science	1,317	1%	21%	72%	2%	0%	0%	3%	0%	0%	100%
Earth and Space Science	578	0%	18%	44%	20%	0%	0%	12%	3%	3%	100%
Chemistry—Other	425	46%	6%	39%	1%	0%	0%	3%	0%	3%	100%
Total	34,866	4%	19%	57%	7%	0%	0%	11%	1%	2%	100%

Note: AU = Audited (No Credit Issued), CF = Completed/Failed, CP = Completed/Passed, I = Incomplete, OE = Ongoing Enrolled/Special Ed, TO = Testing Out, WE = Withdrawn/Exited, WF = Withdrawn/Failed, WP = Withdrawn/Passing

Table 35. Completion Statuses for the Top 10 Michigan K-12 Supplemental (Non-Cyber) Secondary Virtual Course Enrollments in Social Sciences and History

Social Sciences & History Course Titles	2014-15 School Year										Total
	# of Enrolls	Completion Status									
		AU	CF	CP	I	OE	TO	WE	WF	WP	
U.S. History—Comprehensive	6,996	1%	19%	62%	7%	1%	0%	9%	1%	1%	100%
Economics	6,145	2%	15%	64%	8%	1%	0%	8%	1%	2%	100%
World History and Geography	5,985	3%	14%	64%	8%	0%	0%	9%	1%	2%	100%
World History—Overview	4,197	6%	19%	55%	8%	0%	0%	9%	1%	2%	100%
U.S. Government—Comprehensive	4,007	5%	15%	65%	6%	0%	0%	6%	1%	1%	100%
Psychology	2,597	2%	12%	67%	6%	0%	0%	10%	1%	2%	100%
Civics	2,443	2%	19%	52%	12%	1%	0%	11%	1%	2%	100%
Modern U.S. History	1,887	3%	25%	56%	6%	0%	0%	6%	2%	2%	100%
Sociology	1,811	0%	6%	81%	2%	0%	0%	8%	0%	2%	100%
U.S. History—Other	1,211	17%	25%	38%	13%	1%	0%	6%	0%	0%	100%
Total	37,279	3%	16%	62%	8%	1%	0%	8%	1%	2%	100%

Note: AU = Audited (No Credit Issued), CF = Completed/Failed, CP = Completed/Passed, I = Incomplete, OE = Ongoing Enrolled/Special Ed, TO = Testing Out, WE = Withdrawn/Exited, WF = Withdrawn/Failed, WP = Withdrawn/Passing

Completed/Passed Rates

Table 36. Completion Statuses for the Top 10 Michigan K-12 Supplemental (Non-Cyber) Secondary Virtual Course Enrollments in Miscellaneous

Miscellaneous Course Titles	2014-15 School Year										Total
	# of Enrolls	Completion Status									
	AU	CF	CP	I	OE	TO	WE	WF	WP		
Miscellaneous—Other	8,891	10%	10%	62%	2%	0%	0%	15%	1%	0%	100%
Career Exploration	3,950	1%	13%	64%	10%	0%	0%	9%	1%	3%	100%
Study Skills	3,846	4%	8%	73%	4%	0%	0%	9%	1%	1%	100%
Miscellaneous—Independent Study	2,717	2%	25%	50%	4%	0%	0%	17%	1%	1%	100%
Dropout Prevention Program	2,555	5%	25%	54%	8%	0%	0%	7%	1%	1%	100%
Life Skills	1,513	0%	4%	64%	5%	0%	0%	24%	1%	2%	100%
Consumer Economics/Personal Finance	966	1%	15%	64%	6%	1%	0%	7%	2%	5%	100%
Seminar	873	0%	8%	50%	0%	1%	0%	39%	0%	2%	100%
Employability Skills	854	11%	14%	57%	6%	0%	0%	10%	1%	0%	100%
Tutorial	809	0%	15%	66%	3%	0%	0%	13%	0%	3%	100%
Total	26,974	5%	13%	62%	4%	0%	0%	13%	1%	1%	100%

Note: AU = Audited (No Credit Issued), CF = Completed/Failed, CP = Completed/Passed, I = Incomplete, WE = Withdrawn/Exited, WF = Withdrawn/Failed, WP = Withdrawn/Passing

Completed/Passed Rates

Not surprisingly, virtual learners taking AP courses virtually had a higher “Completed/Passed” rate than the virtual learner average of 60%. Eighty-eight percent of virtual AP enrollments earned a “Completed/Passed” status. However, this 88% rate is 3% below the AP “Completed/Passed” rate for virtual learners taking non-virtual versions of the same AP courses (See Table 38 on page 27).

Table 37. Completion Statuses for Virtual Learners in Their Virtual AP Courses

AP Course Titles	# of Enrolls	2014-15 School Year								Total
		Completion Status								
		AU	CF	CP	I	OE	WE	WF	WP	
AP Psychology	321	0%	5%	89%	1%	0%	2%	1%	3%	100%
AP Biology	305	0%	4%	85%	5%	1%	1%	0%	3%	100%
AP U.S. History	227	0%	11%	86%	2%	0%	0%	0%	0%	100%
AP English Literature and Composition	201	0%	5%	91%	2%	0%	1%	0%	0%	100%
AP Statistics	192	1%	7%	85%	3%	0%	4%	1%	0%	100%
AP English Language and Composition	182	1%	8%	88%	1%	0%	2%	2%	0%	100%
AP Calculus AB	177	1%	6%	90%	1%	0%	1%	1%	1%	100%
AP Computer Science A	168	1%	5%	89%	0%	0%	2%	2%	1%	100%
AP Physics B	161	0%	9%	89%	0%	0%	1%	0%	1%	100%
AP European History	126	0%	0%	99%	0%	0%	1%	0%	0%	100%
AP Government	120	0%	3%	95%	0%	2%	0%	0%	0%	100%
AP Macroeconomics	110	1%	4%	85%	2%	0%	3%	0%	5%	100%
AP Human Geography	95	0%	1%	98%	1%	0%	0%	0%	0%	100%
AP Microeconomics	85	0%	6%	82%	1%	0%	2%	0%	8%	100%
AP Environmental Science	73	0%	5%	93%	1%	0%	0%	0%	0%	100%
AP U.S. Government and Politics	73	1%	4%	81%	0%	0%	8%	0%	5%	100%
AP Chemistry	70	6%	19%	73%	0%	0%	3%	0%	0%	100%
AP Calculus BC	68	1%	9%	68%	4%	1%	0%	3%	13%	100%
AP Spanish Language	68	0%	12%	78%	3%	0%	1%	6%	0%	100%
AP Physics C	60	0%	12%	88%	0%	0%	0%	0%	0%	100%
AP Art—History of Art	52	0%	10%	77%	0%	0%	13%	0%	0%	100%
AP Economics	52	0%	4%	96%	0%	0%	0%	0%	0%	100%
AP World History	50	0%	8%	88%	0%	0%	2%	0%	2%	100%
AP French Language	22	0%	9%	77%	0%	0%	5%	5%	5%	100%
AP Studio Art - 3D	14	0%	0%	100%	0%	0%	0%	0%	0%	100%
AP Computer Science AB	<10	0%	13%	88%	0%	0%	0%	0%	0%	100%
AP Studio Art—General Portfolio	<10	0%	0%	100%	0%	0%	0%	0%	0%	100%
AP German Language	<10	0%	0%	100%	0%	0%	0%	0%	0%	100%
AP Music Theory	<10	0%	0%	100%	0%	0%	0%	0%	0%	100%
Total	3,092	0%	6%	88%	1%	0%	2%	1%	2%	100%

Note: AU = Audited (No Credit Issued), CF = Completed/Failed, CP = Completed/Passed, I = Incomplete, WE = Withdrawn/Exited, WF = Withdrawn/Failed, WP = Withdrawn/Passing

Completed/Passed Rates

Table 38. Completion Statuses for Virtual Learners in Their Non-Virtual AP Courses

AP Course Titles	# of Enrolls	2014-15 School Year									Total
		Completion Status									
		AU	CF	CP	I	OE	TO	WE	WF	WP	
AP Psychology	2,063	0%	5%	87%	0%	0%	0%	5%	0%	3%	100%
AP Biology	2,015	0%	2%	93%	0%	1%	0%	3%	0%	1%	100%
AP U.S. History	1,415	0%	4%	89%	0%	0%	0%	4%	0%	2%	100%
AP English Literature and Composition	3,756	0%	2%	95%	0%	0%	0%	2%	0%	2%	100%
AP Statistics	1,585	0%	3%	90%	0%	0%	0%	5%	0%	2%	100%
AP English Language and Composition	3,646	0%	3%	90%	0%	1%	0%	4%	0%	2%	100%
AP Calculus AB	2,618	0%	3%	92%	0%	1%	0%	2%	0%	2%	100%
AP Computer Science A	118	0%	5%	89%	0%	0%	0%	3%	0%	3%	100%
AP Physics B	780	0%	2%	89%	0%	0%	0%	6%	0%	2%	100%
AP European History	370	0%	3%	91%	0%	0%	0%	5%	0%	1%	100%
AP Government	666	0%	3%	93%	0%	0%	0%	2%	1%	1%	100%
AP Macroeconomics	265	0%	2%	89%	0%	0%	0%	3%	0%	6%	100%
AP Human Geography	80	0%	5%	76%	0%	0%	0%	10%	0%	9%	100%
AP Microeconomics	233	0%	2%	97%	0%	0%	0%	1%	0%	0%	100%
AP Environmental Science	679	0%	1%	95%	0%	0%	0%	1%	0%	2%	100%
AP U.S. Government and Politics	1,049	0%	3%	90%	0%	0%	0%	6%	0%	1%	100%
AP Chemistry	1,339	0%	2%	91%	0%	1%	0%	4%	0%	1%	100%
AP Calculus BC	817	0%	1%	92%	0%	0%	0%	4%	0%	3%	100%
AP Spanish Language	371	0%	0%	97%	0%	0%	0%	1%	0%	2%	100%
AP Physics C	449	0%	2%	94%	0%	0%	0%	1%	0%	3%	100%
AP Art—History of Art	181	0%	9%	83%	0%	0%	0%	8%	0%	0%	100%
AP Economics	152	0%	5%	95%	1%	0%	0%	0%	0%	0%	100%
AP World History	873	0%	5%	91%	0%	0%	0%	3%	0%	1%	100%
AP French Language	70	0%	0%	97%	0%	0%	0%	1%	0%	1%	100%
AP Studio Art - 3D	<10	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%
AP Computer Science AB	12	0%	0%	83%	0%	0%	0%	17%	0%	0%	100%
AP Studio Art—General Portfolio	383	0%	4%	89%	0%	0%	0%	4%	0%	3%	100%
AP German Language	51	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%
AP Music Theory	67	0%	4%	93%	0%	0%	0%	1%	1%	0%	100%
Total	26,104	0%	3%	91%	0%	0%	0%	3%	0%	2%	100%

Note: AU = Audited (No Credit Issued), CF = Completed/Failed, CP = Completed/Passed, I = Incomplete, WE = Withdrawn/Exited, WF = Withdrawn/Failed, WP = Withdrawn/Passing

Table 39 looks at how “Completed/Passed” rates varied by locale. In 2014-15, rural, suburban and city students had about the same pass rate while students from towns were slightly less successful in passing their online courses.

Table 39. Percentage of “Completed/Passed” Michigan K-12 Virtual Course Enrollments by Locale and School Year

Locale	School Year		Year over Year
	2013-14	2014-15	% Comp/Passed
Rural	65%	63%	-2%
Town	57%	59%	+2%
Suburb	56%	63%	+8%
City	53%	64%	+11%
MISSING	57%	47%	-10%
Total	57%	60%	+3%

Completed/Passed Rates

Fifty-two percent of schools with virtual enrollments in 2014-15 had school-wide “Completed/Passed” rates of 70% or better (see Table 40). Clearly some schools are implementing models that work better than others. It is not clear what specifically differs between successful and unsuccessful schools, but likely factors include the quality of course content, the skill of the online instructor (if one is included within the course), the readiness of students selected for virtual learning, and the wrap-around supports schools use to nurture their virtual learners.

Table 40. Count and Percentages of Entities by School “Completed/Passed” Rate Categories and School Year

School “Completed/Passed” Rate	School Year				Year over Year	
	2013-14		2014-15		Year over Year	
	# of Entities	% of Entities	# of Entities	% of Entities	# of Entities	% of Entities
0% to <10%	91	9%	93	9%	+2	0%
10% to <20%	38	4%	30	3%	-8	-1%
20% to <30%	50	5%	52	5%	+2	0%
30% to <40%	68	7%	58	5%	-10	-2%
40% to <50%	72	7%	80	7%	+8	0%
50% to <60%	75	7%	100	9%	+25	+2%
60% to <70%	89	9%	102	10%	+13	+1%
70% to <80%	113	11%	125	12%	+12	+1%
80% to <90%	125	12%	135	13%	+10	+1%
90% to 100%	286	28%	297	28%	+11	0%
Total	1,007	100%	1,072	100%	+66	0%

Table 41 shows how school-wide “Completed/Passed” rates for virtual enrollments varied by locale.

Table 41. Percentages of Schools by School “Completed/Passed” Rate Categories, School Year, and Locale

School “Completed/Passed” Rate	School Year								Year over Year			
	2013-14				2014-15				% of Entities			
	Rural	Town	Sub	City	Rural	Town	Sub	City	Rural	Town	Sub	City
0% to <20%	8%	11%	13%	20%	6%	12%	13%	18%	-2%	+1%	0%	-2%
20% to <40%	9%	13%	12%	14%	9%	8%	11%	9%	0%	-5%	-1%	-5%
40% to <60%	17%	13%	13%	11%	16%	22%	16%	15%	-1%	+9%	+3%	+4%
60% to <80%	21%	24%	21%	18%	25%	20%	22%	16%	+4%	-4%	+1%	-2%
80% to 100%	45%	40%	41%	38%	43%	37%	39%	43%	-2%	-3%	-2%	+5%
Total	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%

Completed/Passed Rates

One of the areas where schools appear to struggle is supporting a student when he or she takes a higher percentage of virtual courses. Table 42 shows how the average number of virtual enrollments per virtual learner is related to schools' "Completed/Passed" rates. About 32% of the low ratio schools (schools with an average of one to two virtual courses per virtual learner) for the 2014-15 school year had a "Completed/Passed" rate of 90% to 100%. Only 23% of schools with medium ratios (average of three to four virtual courses per virtual learner) and high ratios (average of more than four virtual courses per virtual learner) achieved the 90% to 100% rate.

Table 42. Percentage of Schools by School "Completed/Passed" Rate Categories, School Year, and Virtual Usage

School "Completed/Passed" Rate	School Year						Year over Year		
	2013-14			2014-15					
	Low	Med	High	Low	Med	High	Low	Med	High
0% to <10%	11%	7%	9%	10%	7%	8%	-1%	0%	-1%
10% to <20%	2%	5%	6%	2%	2%	6%	0%	-3%	0%
20% to <30%	2%	5%	10%	4%	3%	8%	+2%	-2%	-2%
30% to <40%	4%	8%	11%	2%	6%	12%	-2%	-2%	+1%
40% to <50%	4%	12%	8%	3%	12%	12%	-1%	0%	+4%
50% to <60%	6%	8%	9%	8%	12%	10%	+2%	+4%	+1%
60% to <70%	9%	7%	11%	9%	11%	8%	0%	+4%	-3%
70% to <80%	13%	11%	9%	14%	10%	8%	+1%	-1%	-1%
80% to <90%	14%	15%	6%	16%	13%	6%	+2%	-2%	0%
90% to 100%	37%	21%	21%	32%	23%	23%	-5%	+2%	+2%
Total	100%	100%	100%	100%	100%	100%	0%	0%	0%

Note: Schools with a virtual-course-to-virtual-student ratio of two or less were classified as "Low." Schools with a ratio greater than two but less than or equal to four were classified as "Medium," and schools with ratios greater than four were classified as "High."

Table 43 reaffirms the trend that lower numbers of virtual enrollments per year is linked with higher pass rates. On average, students had the highest "Completed/Passed" rates in their virtual courses (69%) when they took one to two virtual courses in a year (categorized as "Low" use). Students who took three to four virtual courses (categorized as Medium) and students who took five or more virtual courses in a year (categorized as "High" use) tended to have lower "Completed/Passed" rates.

Table 43. Count and Percentage of "Completed/Passed" Rates for MVS and Local Virtual Subsets by Virtual Usage and School Year

Student Level of Virtual Usage	School Year				Year over Year	
	2013-14		2014-15			
	# of Enrolls	% Comp/Passed	# of Enrolls	% Comp/Passed	# of Enroll	% Comp/Passed
Low	56,427	65%	62,372	69%	+5,945	+4%
Medium	38,038	58%	41,220	62%	+3,182	+4%
High	140,156	56%	198,649	62%	+58,493	+6%
Total	234,621	58%	302,241	63%	+67,620	+5%

Note: "Low" usage was classified as students taking two or fewer virtual courses in a school year. "Medium" usage was classified as students taking three to four virtual courses in a school year. "High" usage was classified as students taking five or more virtual courses in a school year.

Completed/Passed Rates

Continuing with students as the level of analysis, Table 44 shows that 50% of virtual learners passed all of their virtual courses. On the other hand, a quarter of virtual learners failed all of their virtual courses. Only 25% passed one or more virtual courses while also failing one or more virtual courses in 2014-15. Though 50% of students passed all of their virtual courses, that group only accounted for 37% of the year's virtual enrollments. Students with mixed results accounted for 43% of the virtual enrollments, and students failing all of their virtual enrollments accounted for 19% of the virtual enrollments.

Table 44. Count and Percentage of Students and Enrollments by Virtual Course Performance

Virtual Course Performance	School Year			
	2014-15			
	# of Students	% of Students	# of Enrolls	% of Enrolls
Passed All	45,872	50%	165,751	37%
Passed Some, Failed Some	22,655	25%	193,287	43%
Failed All	22,734	25%	86,894	19%
Total	91,261	100%	445,932	100%

The 60% "Completed/Passed" rate from virtual enrollments fluctuated by grade level (see Table 45). Students in grades K-5 had pass rates that hovered around 70%. Students in grades 6 and 7 dropped to the mid 60s and continued to drop to a low of 50% in 9th grade. The trend then rebounds to a 65% pass rate for 12th graders.

Table 45. Count and Percentage of Count with "Completed/Passed" Completion Status for Virtual Learners in Their Virtual Courses by Grade Level and School Year

Grade Level	School Year				Year over Year
	2013-14		2014-15		
	# of Enrolls	% Comp/Pass	# of Enrolls	% Comp/Pass	
K	5,070	76%	6,808	71%	-5%
1	4,003	73%	7,971	70%	-3%
2	4,579	67%	8,177	69%	+2%
3	4,928	68%	8,153	66%	-2%
4	6,588	69%	9,320	67%	-2%
5	6,545	69%	10,273	70%	+1%
6	8,731	66%	14,804	66%	0%
7	12,174	68%	22,630	64%	-4%
8	16,001	65%	29,557	59%	-6%
9	42,029	44%	69,564	50%	+6%
10	59,759	51%	80,485	54%	+3%
11	58,493	55%	72,323	59%	+4%
12	90,730	61%	105,867	65%	+4%
Total	319,630	57%	445,932	60%	+3%

See Tables 46 and 47 to compare how grade level "Completed/Passed" rates varied by virtual learners in their non-virtual courses and by non-virtual learners.

Completed/Passed Rates

Table 46. Count and Percentage of “Completed/Passed” for Virtual Learners in Their Non-Virtual Courses by Grade Level

Grade Level	School Year	
	2014-15	
	# of Enrolls	% Comp/Pass
K	1,102	63%
1	1,590	63%
2	2,808	42%
3	4,219	53%
4	2,250	64%
5	3,709	73%
6	18,457	78%
7	20,405	75%
8	39,201	72%
9	108,153	63%
10	155,402	68%
11	161,225	76%
12	222,460	79%
Total	740,981	73%

Table 47. Count and Percentage of “Completed/Passed” for Non-Virtual Learners by Grade Level

Grade Level	School Year	
	2014-15	
	# of Enrolls	% Comp/Pass
K	803,380	92%
1	834,585	93%
2	866,429	95%
3	986,212	94%
4	1,018,386	94%
5	1,111,310	94%
6	1,387,159	92%
7	1,474,214	91%
8	1,480,573	90%
9	1,498,086	87%
10	1,392,322	88%
11	1,155,318	90%
12	1,010,267	84%
Total	15,018,241	91%

Completed/Passed Rates

Females had a higher pass rate than did males. Females passed their virtual courses 61% of the time compared to 58% for males. Males, however, counted for slightly more enrollments than did females. See Table 48.

Table 48. Count and Percentage of Michigan K-12 Virtual Course Enrollments by Completion Status, School Year, and Gender

Completion Status	School Year								Year over Year			
	2013-14				2014-15							
	#M	#F	%M	%F	#M	#F	%M	%F	#M	#F	%M	%F
Audited (No Credit Issued)	3,902	3,720	2%	2%	5,912	5,541	3%	3%	+2,010	+1,821	+1%	+1%
Completed/Failed	25,924	24,202	16%	15%	40,817	36,245	18%	16%	+14,893	+12,043	+2%	+1%
Completed/Passed	91,324	91,686	57%	58%	130,150	135,296	58%	61%	+38,826	+43,610	+1%	+3%
Incomplete	12,793	11,830	8%	7%	12,747	11,101	6%	5%	-46	-729	-2%	-2%
Ongoing Enrolled/Special Ed	15	11	0%	0%	786	788	0%	0%	+771	+777	0%	0%
Testing Out	69	52	0%	0%	22	24	0%	0%	-47	-28	0%	0%
Withdrawn/Exited	13,431	11,960	8%	8%	14,970	12,101	7%	5%	++1,539	+141	-1%	-3%
Withdrawn/Failing	8,784	9,030	5%	6%	12,279	12,876	5%	6%	+3,495	+3,846	0%	0%
Withdrawn/Passing	5,268	5,629	3%	4%	7,349	6,928	3%	3%	+2,081	+1,299	0%	-1%
Total	161,510	158,120	100%	100%	225,032	220,900	100%	100%	+63,522	+62,780	0%	0%

"Completed/Passed" rates varied by race/ethnicity. "Asian" students had the highest "Completed/Passed" rate for their virtual courses at 79% whereas, "Native Hawaiian or Pacific Islander" students had the lowest "Completed/Passed" rates at 45% (see Table 49). Caution is recommended in drawing conclusions from this data about one race or another being "more successful" virtual learners. Differences such as the types of courses taken, the reasons the courses were taken, the local support provided to the student, etc., are likely factors in "Completed/Passed" rates and are not accounted for in the table.

Table 49. Completion Status by Race/Ethnicity for Virtual Learners in Their Virtual Courses

Completion Status	School Year								
	2014-15								
	Am. Indian or Alaska Native	Asian	African American	Nat. Hawaiian or Pacific Islander	White	Hispanic or Latino	2 or More Races	Unknown	
Audited (No Credit Issued)	1%	1%	4%	2%	2%	2%	1%	4%	
Completed/Failed	19%	10%	21%	17%	16%	17%	18%	19%	
Completed/Passed	56%	79%	56%	45%	60%	61%	57%	54%	
Incomplete	6%	2%	4%	9%	6%	5%	5%	15%	
Ongoing Enrolled/Special Ed	0%	0%	0%	0%	0%	0%	0%	1%	
Testing Out	0%	0%	0%	0%	0%	0%	0%	0%	
Withdrawn/Exited	9%	2%	7%	20%	6%	8%	6%	6%	
Withdrawn/Failing	7%	3%	5%	7%	6%	4%	8%	0%	
Withdrawn/Passing	2%	4%	3%	2%	3%	3%	3%	0%	
Total	100%	100%	100%	100%	100%	100%	100%	100%	

Completed/Passed Rates

The data indicate that students who were identified as living in poverty did not perform as well as their non-poverty peers. In the 2014-15 data, 67% of the virtual enrollments from students flagged as not living in poverty achieved the completion status of "Completed/Passed," whereas only 55% of the virtual enrollments from students flagged as living in poverty achieved the same completion status (see Table 50).

Table 50. Percentage of Michigan K-12 Virtual Course Enrollments for Virtual Learners in Their Virtual Courses by Completion Status, School Year, and Poverty Status

Completion Status	School Year				Year over Year	
	2013-14		2014-15		%Yes	%No
	%Yes	%No	%Yes	%No		
Audited (No Credit Issued)	2%	3%	2%	3%	0%	0%
Completed/Failed	18%	13%	19%	14%	+1%	+1%
Completed/Passed	53%	64%	55%	67%	+2%	+3%
Incomplete	8%	7%	6%	5%	-2%	-2%
Ongoing Enrolled/Special Ed	0%	0%	0%	0%	0%	0%
Testing Out	0%	0%	0%	0%	0%	0%
Withdrawn/Exited	9%	7%	7%	4%	-2%	-3%
Withdrawn/Failing	7%	3%	6%	4%	-1%	+1%
Withdrawn/Passing	4%	3%	3%	3%	-1%	0%
Total	100%	100%	100%	100%	0%	0%

Note: The "%Yes" column presents data on enrollments from students living in poverty. The "%No" column presents data on enrollments from students who were not living in poverty. Because their poverty status was unknown, 2,928 virtual enrollments were excluded from the 2013-14 school year and 2,987 virtual enrollments were excluded from the 2014-15 school year.

This discrepancy suggests that there remains much to do to realize the potential of virtual learning to help reduce the effects of poverty on learning outcomes. However, the gap for virtual learners in their non-virtual courses was even larger: virtual learners in poverty had a 19% lower "Completed/Passed" rate in their non-virtual courses than virtual learners who were not in poverty.

Table 51. Percentage of Michigan K-12 Virtual Course Enrollments for Virtual Learners in Their Non-Virtual Courses by Completion Status, School Year, and Poverty Status

Completion Status	School Year				Year over Year	
	2013-14		2014-15		%Yes	%No
	%Yes	%No	%Yes	%No		
Audited (No Credit Issued)	2%	4%	1%	0%	-1%	-4%
Completed/Failed	16%	8%	17%	7%	+1%	-1%
Completed/Passed	64%	80%	64%	83%	0%	+3%
Incomplete	2%	1%	1%	0%	-1%	-1%
Ongoing Enrolled/Special Ed	0%	0%	1%	0%	+1%	0%
Testing Out	0%	0%	0%	0%	0%	0%
Withdrawn/Exited	12%	5%	13%	5%	+1%	0%
Withdrawn/Failing	1%	0%	1%	0%	0%	0%
Withdrawn/Passing	3%	3%	2%	3%	-1%	0%
Total	100%	100%	100%	100%	0%	0%

Note: The "%Yes" column presents data on enrollments from students living in poverty. The "%No" column presents data on enrollments from students who were not living in poverty. Because their poverty status was unknown, 5,117 non-virtual enrollments were excluded from the 2013-14 school year and 5,987 non-virtual enrollments were excluded for the 2014-15 school year.

Completed/Passed Rates

Non-virtual learners also showed a drop (-8%) for students living in poverty (see Table 52).

Table 52. Percentage of Michigan K-12 Virtual Course Enrollments for Non-Virtual Learners by Completion Status and Poverty Status

Completion Status	School Year	
	2014-15	
	%Yes	%No
Audited (No Credit Issued)	0%	0%
Completed/Failed	6%	2%
Completed/Passed	87%	95%
Incomplete	0%	0%
Ongoing Enrolled/Special Ed	0%	0%
Testing Out	0%	0%
Withdrawn/Exited	5%	2%
Withdrawn/Failing	0%	0%
Withdrawn/Passing	1%	1%
Total	100%	100%

Note: The "%Yes" column presents data on enrollments from students living in poverty. The "%No" column presents data on enrollments from students who were not living in poverty. Because their poverty status was unknown, 41,730 non-virtual enrollments were excluded from the 2014-15 school year.

Like poverty level, students identified as seat time waiver students – which lifts the requirement for them to be physically in attendance at the school facility and lifts the cap on the number of online courses a student can take – experienced lower levels of success as measured by the "Completed/Passed" rate. Fifty-three percent of non-cyber virtual enrollments from seat time waiver students in the 2014-15 school year yielded a completion status of "Completed/Passed" compared with 67% from non-seat time waiver students (see Table 53). This gap expanded from the 5% difference in 2013-14. The increase in the gap occurred both because of increased performance from non-seat time waiver students taking virtual courses and because of decreased performance from seat time waiver students taking virtual courses.

Table 53. Percentage of Michigan K-12 Virtual Course Enrollments (Non-Cyber) by Completion Status, School Year, and Seat Time Waiver Status

Completion Status	School Year				Year over Year	
	2013-14		2014-15		%Yes	%No
	%Yes	%No	%Yes	%No		
Audited (No Credit Issued)	3%	4%	6%	2%	+3%	-2%
Completed/Failed	15%	13%	18%	14%	+3%	+1%
Completed/Passed	55%	60%	53%	67%	-2%	+7%
Incomplete	15%	8%	12%	4%	-3%	-4%
Ongoing Enrolled/Special Ed	0%	0%	0%	1%	0%	+1%
Testing Out	0%	0%	0%	0%	0%	0%
Withdrawn/Exited	10%	11%	8%	9%	-2%	-2%
Withdrawn/Failing	1%	1%	1%	1%	0%	0%
Withdrawn/Passing	1%	3%	1%	2%	0%	-1%
Total	100%	100%	100%	100%	0%	0%

Note: Because their seat time waiver status was unknown, 2,914 virtual enrollments were excluded from the 2013-14 school year and 2,987 were excluded from the 2014-15 school year.

Completed/Passed Rates

While completion status data provide another lens for understanding virtual learning, the ACT exam provides an external measure that offers another perspective. Table 54 below shows the percentages of virtual learners who met or exceeded the ACT college readiness benchmarks on the various subjects of the ACT and compares those percentages to the statewide averages for all students. Consistent with past years, each subject showed a lower percentage of virtual learners reaching the benchmark compared to the state average. English had the largest difference with virtual learners 13.8% below the state average while Reading had the smallest difference at 11.5%.

Table 54. Percentage of Virtual Learners Meeting/Exceeding ACT College Readiness Benchmark by Subject with Comparison to State Averages

ACT Subject	School Year		Virtual Learner Difference
	2014-15		
	Virtual Learners	State Average	
English	44.6%	58.4%	-13.8%
Reading	27.7%	36.1%	-8.4%
Mathematics	20.5%	33.5%	-13.0%
Science	20.9%	32.4%	-11.5%

Note: Statewide figures based on data provided through the MI School Data website:

<https://www.mischooldata.org/DistrictSchoolProfiles/AssessmentResults/Act/ActCollegeReadiness.aspx>

In light of the fact that virtual learners, in general, have lower pass rates than non-virtual learners, these data should not come as a surprise, but rather as additional confirmation of the trend noted throughout this report. When considering these data, it is important to keep in mind that some virtual learners only took a single virtual course for the year – and some not even in a subject tested – whereas others took several virtual courses in the year – even multiple in a subject tested. Some had taken virtual courses in previous years; others took their first virtual course this year. Also, there were sizable differences (displayed in Table 55) in the percentage of students who met or exceeded the ACT College Readiness benchmark based on their non-virtual performance.

Table 55. Percentage of Non-Cyber Virtual Learners Meeting/Exceeding ACT College Readiness Benchmark by Subject and Non-Virtual Performance (Minimum of 3 Non-Virtual Enrollments)

ACT Subject	2014-15 School Year		
	Non-Virtual Performance		
	Passed All	Failed 1 or 2	Failed 3 or More
English	65.5%	41.5%	27.1%
Reading	43.3%	24.2%	14.6%
Mathematics	38.7%	16.1%	7.6%
Science	37.5%	17.2%	8.5%

Note: Students who did not have a minimum of three non-virtual courses or were from cyber schools are not included.

Completed/Passed Rates

Some students were seat time waiver students, whereas others were not. Table 56 below shows how seat time waiver students performed compared to non-seat time waiver students. In all ACT subjects except for Reading, the percentage of non-seat time waiver students who met or exceeded the ACT college readiness benchmarks was about 10% higher or more than it was for seat time waiver students.

Table 56. Percentage of Virtual Learners Meeting/Exceeding ACT College Readiness Benchmark by Subject and Seat Time Waiver Status

ACT Subject	School Year			STW Difference
	2014-15			
	Virt Learners (STW)	Virt Learners (Not STW)	All Virtual Learners	
English	33.2%	46.0%	44.6%	-12.8%
Reading	21.5%	28.4%	27.7%	-6.9%
Mathematics	9.1%	21.9%	20.5%	-12.8%
Science	11.6%	22.1%	20.9%	-10.5%

Note: Some students were reported by more than one entity and with conflicting information about the student's seat time waiver status. For the purposes of this table, a student was counted as a seat time waiver student if any entity reported the student as such.

While there was clear variation for virtual learners based on seat time waiver status, there were much bigger differences based on poverty status. Table 57 below shows how virtual learners in poverty performed compared to virtual learners not in poverty. In all ACT subjects, the percentage of virtual learners not in poverty who met or exceeded the ACT college readiness benchmarks was more than 20% higher than it was for virtual learners in poverty.

Table 57. Percentage of Virtual Learners Meeting/Exceeding ACT College Readiness Benchmark by Subject and Poverty Status

ACT Subject	School Year			Poverty Difference
	2014-15			
	Virt Learners (In Poverty)	Virt Learners (Not in Poverty)	All Virtual Learners	
English	30.7%	58.6%	44.6%	-27.9%
Reading	16.2%	39.2%	27.7%	-23.0%
Mathematics	9.7%	31.5%	20.5%	-21.8%
Science	10.4%	31.6%	20.9%	-21.2%

Note: Some students were reported by more than one entity and with conflicting information about the student's poverty status. For the purposes of this table, a student was counted as in poverty if any entity reported the student as such.

Completed/Passed Rates

Table 58 looks at how ACT performance differed by virtual subset. *MVS* students always exceeded the state average by sizable margins – whereas students from the Cyber and Local subsets fell below the state average for every ACT subject (see Table 58).

Table 58. Percentage of Virtual Learners Meeting/Exceeding ACT College Readiness Benchmark by Subject and Virtual Subset with Comparison to State Average

ACT Subject	School Year			
	2014-15			
	Cyber	MVS	Local	State Av.
English	41.8%	74.0%	39.6%	58.4%
Reading	27.0%	53.6%	23.1%	36.1%
Mathematics	10.4%	48.4%	16.3%	33.5%
Science	13.6%	46.6%	16.9%	32.4%

The differences between *MVS* and the other two virtual subsets should also not come as a surprise given the data shared above that suggests *MVS* in general serves a larger percentage of high performing students (as measured by student performance in their non-virtual coursework). To better understand this issue, Table 59 provides a deeper level of analysis for the two supplemental virtual subsets—*MVS* and Local—by non-virtual performance. The data in Table 59 make a strong case that even when controlling for some of the differences in students' non-virtual performance, *MVS* students outperformed their Local peers on the ACT across all three non-virtual performance levels.

Table 59. Percentage of Non-Cyber Virtual Learners Meeting/Exceeding ACT College Readiness Benchmark by Subject, Non-Virtual Performance (Minimum of 3 Non-Virtual Enrollments), and Virtual Subset

ACT Subject	Non-Virtual Performance					
	Passed All		Failed 1 or 2		Failed 3 or More	
	MVS	Local	MVS	Local	MVS	Local
English	83.3%	59.2%	65.1%	37.5%	44.6%	25.4%
Reading	61.7%	36.8%	42.0%	21.2%	29.2%	13.3%
Mathematics	58.4%	31.8%	36.5%	12.8%	16.9%	6.9%
Science	55.6%	31.1%	34.4%	14.4%	20.6%	7.5%

Note: Cyber students were excluded from the table due to the lack of non-virtual performance. All cells had a minimum of 250 students, with most cells having more than 1,000 students.

The data in Table 59 are particularly interesting given the completion rate data presented in Table 27. In that analysis, the completion rates were fairly similar between *MVS* and Local virtual subsets when accounting for non-virtual performance. Those measures, however, are internal course measures whereas ACT is an independent measure of student understanding. As a research team, we offer two contradictory hypotheses to explain what may be occurring.

Example Hypothesis #1: The pro-*MVS* hypothesis might explain the differences in ACT performance as evidence that the *MVS* courses are considerably more rigorous than the local virtual courses. Students are required to (and do) learn more in order to earn high grades whereas the local courses do not yield similar levels of learning despite providing such an appearance based on final course grades. It is not until student understanding is evaluated using independent measures that differences in student outcomes become visible.

Example Hypothesis #2: The pro-Local hypothesis might explain the differences by suggesting that non-virtual performance categories insufficiently control for initial variation. For instance, it is possible that *MVS* has a significantly higher percentage of A and B students whereas the Local population has a higher percentage of C and D students (all of which are subsumed under the same "Passed All" category as long as the student did not fail anything). It may be these factors which were not controlled for that are creating the performance differences and not attributes of the local courses themselves.

So, while the data are clear that *MVS* students are outperforming their virtual counterparts on the ACT, more research is needed to better understand the various student- and course-level characteristics that lead to such results.

Overall Impact

OVERALL IMPACT

In 2014-15, the percentage of pupils in each of grades K-4 reported to have taken a virtual course remained below 1%. Students in grades 5-8 had percentages in the low single digits. Freshman students had the lowest percentage of virtual learners (10.64%) for high school students; however, freshman also had the biggest year-over-year increase at 2.72%. Seniors continue to have the highest percentage (22.67%) of students taking virtual courses. See Table 60.

Table 60. Percentage of Michigan K-12 Students Taking a Virtual Course by Grade Level and School Year

Grade Level	School Year						Year over Year
	2013-14			2014-15			
	Virtual	All*	%	Virtual	All*	%	%
K	725	117,943	0.61%	736	114,817	0.64%	+0.03%
1	472	113,337	0.42%	873	109,030	0.80%	+0.38%
2	521	111,901	0.47%	936	111,952	0.84%	+0.37%
3	582	110,437	0.53%	1,070	111,321	0.96%	+0.43%
4	656	113,420	0.58%	1,030	110,135	0.94%	+0.36%
5	816	112,175	0.73%	1,239	113,436	1.09%	+0.36%
6	1,844	113,459	1.63%	2,660	112,414	2.37%	+0.74%
7	2,412	117,440	2.05%	3,049	113,840	2.68%	+0.63%
8	3,531	118,441	2.98%	4,790	116,804	4.10%	+1.12%
9	10,044	126,849	7.92%	13,573	127,520	10.64%	+2.72%
10	15,597	127,820	12.20%	17,738	126,148	14.06%	+1.86%
11	15,536	116,283	13.36%	17,740	115,321	15.38%	+2.02%
12	23,953	116,866	20.50%	26,362	116,303	22.67%	+2.17%

Note: Because some students took courses across multiple grade levels for a single year, an individual student may be counted toward more than one grade level for a given school year. Total headcount data were obtained from the MI School Data website (<https://www.mischooldata.org/>).

As a percentage of overall enrollments, virtual enrollments represented about 2.75% of the enrollments in the state in 2014-15, a gain of about .82%. The pattern of growth over the past several years continued (see Table 61).

Table 61. Percentage of Michigan K-12 Virtual Enrollments by School Year

School Year	Virtual Enrollments	All Enrollments	% Virtual
2010-11	89,921	14,439,944	0.62%
2011-12	153,583	16,371,977	0.94%
2012-13	185,053	16,780,152	1.10%
2013-14	319,630	16,532,064	1.93%
2014-15	445,932	16,205,134	2.75%

Overall Impact

Virtual enrollments represented less than 3% of all K-12 enrollments in Michigan during the 2014-15 school year. Of the core subject areas, Mathematics had the highest percentage of virtual enrollments with 3.36%, followed by Social Sciences and History (3.32%), English Language and Literature (2.94%), and Life and Physical Sciences (2.93%). Subject areas with the highest rate of virtual enrollments were Public, Protective, and Government Services (11.39%) and Health Care Sciences (9.03%). See Table 62.

Table 62. Percentage of Michigan K-12 Virtual Enrollments Compared to All Michigan K-12 Enrollments by Subject Area

Subject Area	School Year		% of Enrolls
	2014-15		
	Virtual	All	
Agriculture, Food, and Natural Resources	358	10,842	3.30%
Architecture and Construction	88	27,486	0.32%
Business and Marketing	4,664	105,889	4.40%
Communication and Audio/Visual Technology	1,924	78,210	2.46%
Computer and Information Sciences	12,436	428,342	2.90%
Engineering and Technology	6,056	95,908	6.31%
English Language and Literature	89,732	3,056,241	2.94%
Fine and Performing Arts	23,424	1,833,618	1.28%
Foreign Language and Literature	23,136	721,804	3.21%
Health Care Sciences	1,792	19,843	9.03%
Hospitality and Tourism	241	8,642	2.79%
Human Services	272	12,655	2.15%
Life and Physical Sciences	61,387	2,094,931	2.93%
Manufacturing	30	43,450	0.07%
Mathematics	75,845	2,254,844	3.36%
Military Science	<10	13,463	<=0.07%
Miscellaneous	39,684	851,336	4.66%
Nonsubject Specific	794	1,042,547	0.08%
Physical, Health, and Safety Education	32,555	1,355,055	2.40%
Public, Protective, and Government Services	748	6,567	11.39%
Religious Education and Theology	32	894	3.58%
Social Sciences and History	70,655	2,129,645	3.32%
Transportation, Distribution and Logistics	73	12,942	0.56%
Total	445,932	16,205,154	2.75%

Overall Impact

Males (50%) and females (50%) enrolled in virtual courses at about the same rate in 2014-15, though there was some variability by grade level. For instance, the elementary grades saw higher percentages of virtual enrollments come from males than females, but the high school grades were fairly balanced (see Table 63).

Table 63. Count and Percentage of Michigan K-12 Virtual Enrollments by Grade Level, School Year, and Gender

Grade Level	School Year										Year over Year				
	2013-14					2014-15									
	#M	#F	Total	%M	%F	#M	#F	Total	%M	%F	#M	#F	Total	%M	%F
K	2,621	2,449	5,070	52%	48%	3,431	3,377	6,808	50%	50%	+810	+928	1,738	-2%	2%
1	2,007	1,996	4,003	50%	50%	4,327	3,644	7,971	54%	46%	+2,320	+1,648	3,968	4%	-4%
2	2,398	2,181	4,579	52%	48%	4,350	3,827	8,177	53%	47%	+1,952	+1,646	3,598	1%	-1%
3	2,710	2,218	4,928	55%	45%	4,417	3,736	8,153	54%	46%	+1,707	+1,518	3,225	-1%	1%
4	3,598	2,990	6,588	55%	45%	5,290	4,030	9,320	57%	43%	+1,692	+1,040	2,732	2%	-2%
5	3,268	3,277	6,545	50%	50%	5,432	4,841	10,273	53%	47%	+2,164	+1,564	3,728	3%	-3%
6	4,796	3,935	8,731	55%	45%	7,718	7,086	14,804	52%	48%	+2,922	+3,151	6,073	-3%	3%
7	6,580	5,594	12,174	54%	46%	12,058	10,572	22,630	53%	47%	+5,478	+4,978	10,456	-1%	1%
8	8,035	7,966	16,001	50%	50%	14,811	14,746	29,557	50%	50%	+6,776	+6,780	13,556	0%	0%
9	21,882	20,147	42,029	52%	48%	35,517	34,047	69,564	51%	49%	+13,635	+13,900	27,535	-1%	1%
10	30,015	29,744	59,759	50%	50%	39,753	40,732	80,485	49%	51%	+9,738	+10,988	20,726	-1%	1%
11	28,383	30,110	58,493	49%	51%	35,348	36,975	72,323	49%	51%	+6,965	+6,865	13,830	0%	0%
12	45,217	45,513	90,730	50%	50%	52,580	53,287	105,867	50%	50%	+7,363	+7,774	15,137	0%	0%
Total	161,510	158,120	319,630	51%	49%	225,032	220,900	445,932	50%	50%	+63,522	+62,780	126,302	-1%	1%

Of the 91,261 virtual learners in Michigan during the 2014-15 school year, 67% were White and 18% were African American; no other race accounted for at least 10% of the students. A correspondingly similar percentage of the virtual enrollments were attributed to students of each race (see Table 64). According to the public data available through the MI School Data website (<https://www.mischooldata.org>), about 68% of all students in the state for the 2014-15 school year were White and 18% were African American.

Table 64. Percentage of Virtual Learners and Virtual Enrollments by Race and Year

Race	School Year	
	2014-15	
	% of Virtual Learners	% of Virtual Enrollments
American Indian or Alaska Native	1%	1%
Asian	2%	2%
African American	18%	20%
Native Hawaiian or Pacific Islander	0%	0%
White	67%	63%
Hispanic or Latino	7%	8%
Two or More Races	3%	4%
Unknown	1%	1%
Total	100%	100%

Overall Impact

Sixty-two percent of virtual enrollments for the 2014-15 school year came from students living in poverty. That means over 272,000 virtual enrollments came from students living in poverty. This rate of poverty for virtual enrollments was 15% higher than the 47% statewide average for all enrollments (virtual and non-virtual) during the same time period (see Table 65).

Table 65. Michigan K-12 Virtual Enrollments by Grade Level and Poverty Percentage

Grade Level	School Year	
	2014-15	
	Virtual Students	MI Students
K	66%	52%
1	68%	53%
2	64%	52%
3	65%	51%
4	63%	50%
5	62%	49%
6	62%	47%
7	66%	47%
8	64%	45%
9	68%	45%
10	64%	42%
11	58%	38%
12	55%	36%
Total	62%	47%

Note: The percentage of total MI pupils in poverty per grade level was calculated from Fall free and reduced lunch count data available publicly from <https://www.mischooldata.org/Other/DataFiles/StudentCounts/HistoricalFreeAndReducedLunchCounts.aspx>. Because their poverty status was unknown, 2,987 virtual enrollments were excluded from the 2014-15 school year.

For the 2014-15 school year, approximately 28% of non-cyber virtual courses were taken by seat time waiver students (see Table 66).

Table 66. Count and Percentage of Michigan K-12 Virtual Enrollments (Non-Cyber) by Seat Time Waiver Status

Seat Time Waiver Status	2014-15	
	# of Enrolls	% of Enrolls
Yes	83,344	28%
No	216,016	72%
Total	299,360	100%

Note: Because their seat time waiver status was unknown, 2,881 virtual enrollments from the MVS or Local Virtual Subsets were excluded from the 2014-15 school year.

Overall Impact

Finally, the number of educational entities that had students who took a virtual course in 2014-15 continued to grow (see Table 67). Twenty-nine percent of Michigan K-12 educational entities had students who took at least one virtual course. Based on the observed grade level differences, the percentage of high school entities would likely be higher than this figure, whereas the percentage for elementary entities would likely be lower. Since the 2010-11 school year, this represents an increase of 13% in the number of schools with virtual learners.

Table 67. Count of Michigan K-12 Educational Entities with Virtual Enrollments by School Year

School Year	# of Entities	# of MI Entities	% of Entities
2010-11	654	3,656	18%
2011-12	850	3,625	23%
2012-13	906	3,748	24%
2013-14	1,007	3,497	29%
2014-15	1,072	3,457	31%

Note: Some enrollments from 2011-12 and 2012-13 school years did not have district codes or building codes. Therefore, the number of entities for these years are under-reported.

Conclusion

CONCLUSION

Michigan's K-12 Virtual Learning Effectiveness Report 2014-15 contains data from the fifth year of such data being reported to the state. Table 68 summarizes a few key virtual learning metrics that have been documented over the five-year period. The number of virtual learners has grown by 151% since 2010-11, and the number of virtual enrollments has risen by 396%. The percentage of entities using virtual learning has increased by 13%. During this rapid growth period, the "Completed/Passed" rate has dropped by 6%.

Table 68. Key Virtual Learning Metrics by School Year from 2010-11 to 2014-15

Key Virtual Learning Metrics	School Year					5-Year Change
	2010-11	2011-12	2012-13	2013-14	2014-15	
# of Virtual Learners	36,348	52,219	55,271	76,122	91,261	+54,913
# of Virtual Enrollments	89,921	153,583	185,053	319,630	445,932	+356,011
"Completed/Passed" Rate	66%	62%	60%	57%	60%	-6%
% of Entities Using Virtual Learning	18%	23%	24%	29%	31%	+13%
Total	100%	100%	100%	100%	100%	100%

Note: 2010-11 through 2012-13 figures can be found in the first year of the Effectiveness Report available from http://media.mivu.org/institute/pdf/effectiveness_report_2013.pdf.

The overall "Completed/Passed" rate for virtual learners continues to mask significant variation. Students who were successful in their non-virtual courses continued to be successful (though somewhat less so) when taking virtual courses. Students who struggled in their face-to-face courses continued to struggle, on average, when taking virtual courses. It is quite clear that virtual learning poses its own challenges and is not a panacea for solving some of education's more persistent problems. At the same time, the integration of the Internet into so many facets of everyday life is steadily elevating the importance of Internet-connected learning. Developing flexible learners who are highly effective in either modality—face-to-face or virtual—must be a focal outcome of the K-12 and higher education systems. Advances in the research base, theoretical frameworks, and the empirical results published through reports such as this one continue to provide converging evidence for practical principles geared toward those implementing virtual programs. Examples include:

- Learning to learn online is a skill that takes time and is its own educational outcome above and beyond subject matter.
- In moving from novice to expert, fewer virtual courses provided in a more highly scaffolded and regulated environment appears to yield the best results.
- This kind of scaffolding and regulation combines high quality online content and high-quality online instruction with high care and high touch principles implemented through on-site school supports and parent/guardian involvement.

These principles demonstrate the importance that training and professional development will play over the foreseeable future to realize the full potential of virtual learning, and the principles apply equally to education personnel as they do to student populations. The data contained in this report contribute vital statistics from shaping accurate perceptions of the K-12 virtual learning field in Michigan and provide virtual learning programs with statewide results to benchmark their local results against.

Appendix

APPENDIX

Wild-Card Search Criteria for MVS

'%MI Virtual%', '%Mich Virt%', '%MIVHS%', '%MIVS%', '%MVS%', '%MVU%', '%VH%', '%MVHS%', '%MIVU%', '%VHS%', 'MV%', '%MV', '%Michigan Virtual%', '%IS: MV%', '%IS:MV%', '%MI Virt%', '%MV HS%', 'Virtual HS%', and 'Mich. Virtual High School%'

Wild-Card Search Criteria for Common Third Party Providers

'%Apex%', 'APX%', '%Aventa%', '%BYU%', '%Brigham%', '%Compass%', '%Edgen%', '%2020%', '%20/20%', '%20-20%', '%E20%', '%Edison%', '%FLVS%', '%FVS%', '%GenNet%', '%Gen Net%', '%K12 Virtual%', '%K12:%', '%K12vs%', '%Lincoln Int%', '%Little Lincoln%', '%- Lincoln%', '%(Lincoln)%', '%Lincoln%', '%UNL%', '%Middlebury%', '%Nova net%', '%Novanet%', '%Odyssey%', '%Odware%', 'ODY%', '%(OD%', '%Edmentum%', and '%Plato%'

Wild-Card Search Criteria for Common Generic Labels for Online or Virtual Learning

'%Online%', '%On-line%', '%On line%', '%onl', '%onli', '%onlin', '%- OL', '%-OL', '%O/L%', 'OL %', '%STW%', '%E-Learn%', '%E-LRN%', '%Virtual%', '%- virt%', and '%- DL'

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