

MONTANA DIGITAL ACADEMY

A Report Prepared for the
Legislative Finance Committee

By
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November 13, 2012



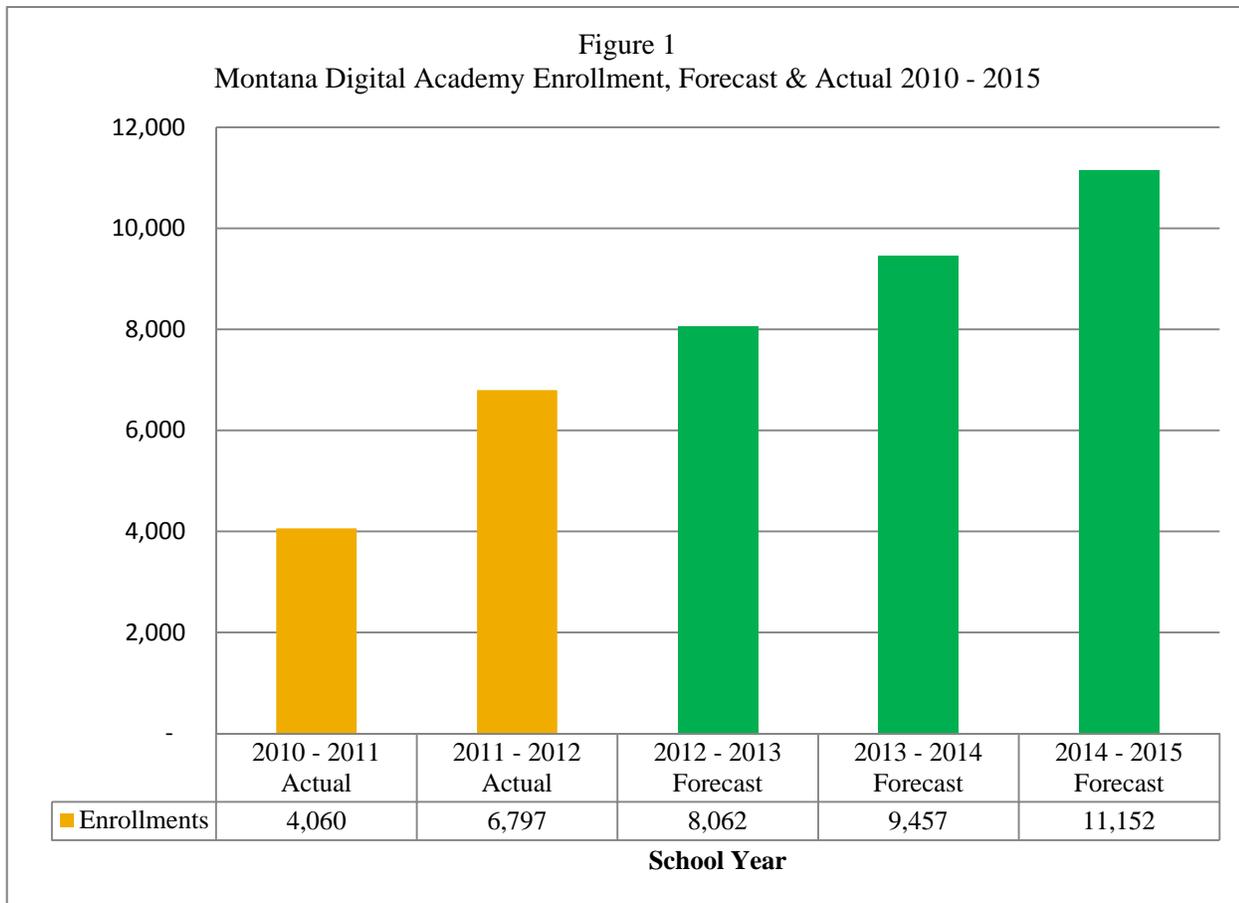
INTRODUCTION

The Legislative Finance Committee (LFC) directed staff of the Legislative Fiscal Division (LFD) to review the Montana Digital Academy (MTDA) in accordance with Senate Joint Resolution 26 (SJ 26).

Statute 20-7-1201, MCA authorized the formation of the MTDA to provide online education opportunities to public school students throughout Montana. MTDA was created, in part, to give all students regardless of school size or geographic isolation access to quality teachers and rigorous curriculum in core subject areas. See Appendix A for a description of MTDA. MTDA is not a school and therefore does not offer diplomas. The Academy supplements the curriculum offered in the various school districts of Montana.¹

EXECUTIVE SUMMARY

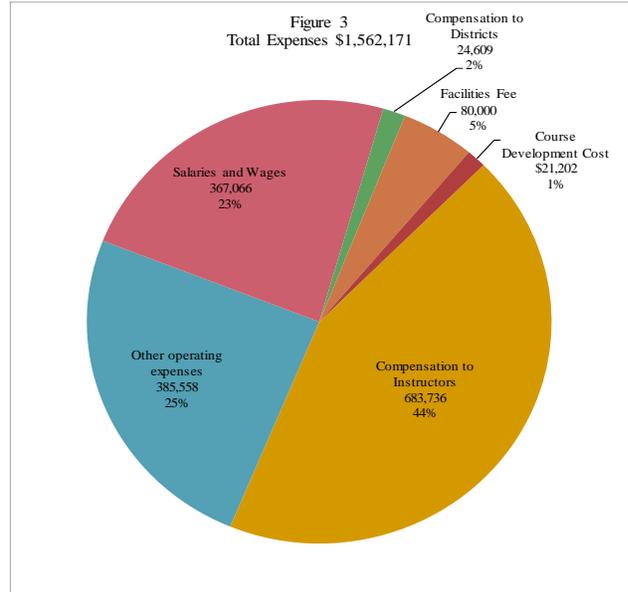
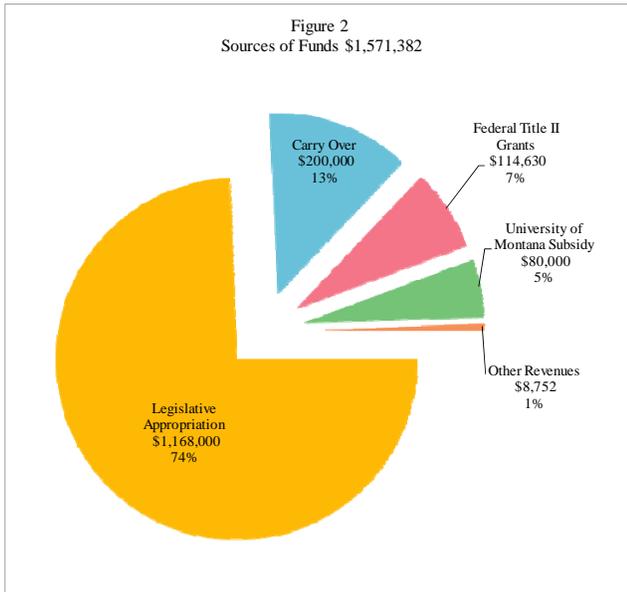
The MTDA completed its first year of operations within the 2011 biennium. During the 2011 legislative session the MTDA requested funding based on a forecast of between 4,000 and 4,500 enrollments per year. Enrollments for the 2011 – 2012 school year have exceeded that forecast by about 60% at 6,797 enrollments. For the current school year demand for courses is expected to top 8,000. For the 2015 biennium MTDA is forecasting enrollments to grow at about 17.6% per year reaching over 11,000 by the end of the biennium. See Figure 1. Break down of enrollments are available in the appendix. See appendix B for detailed description of the Academy and geographical distribution of students.



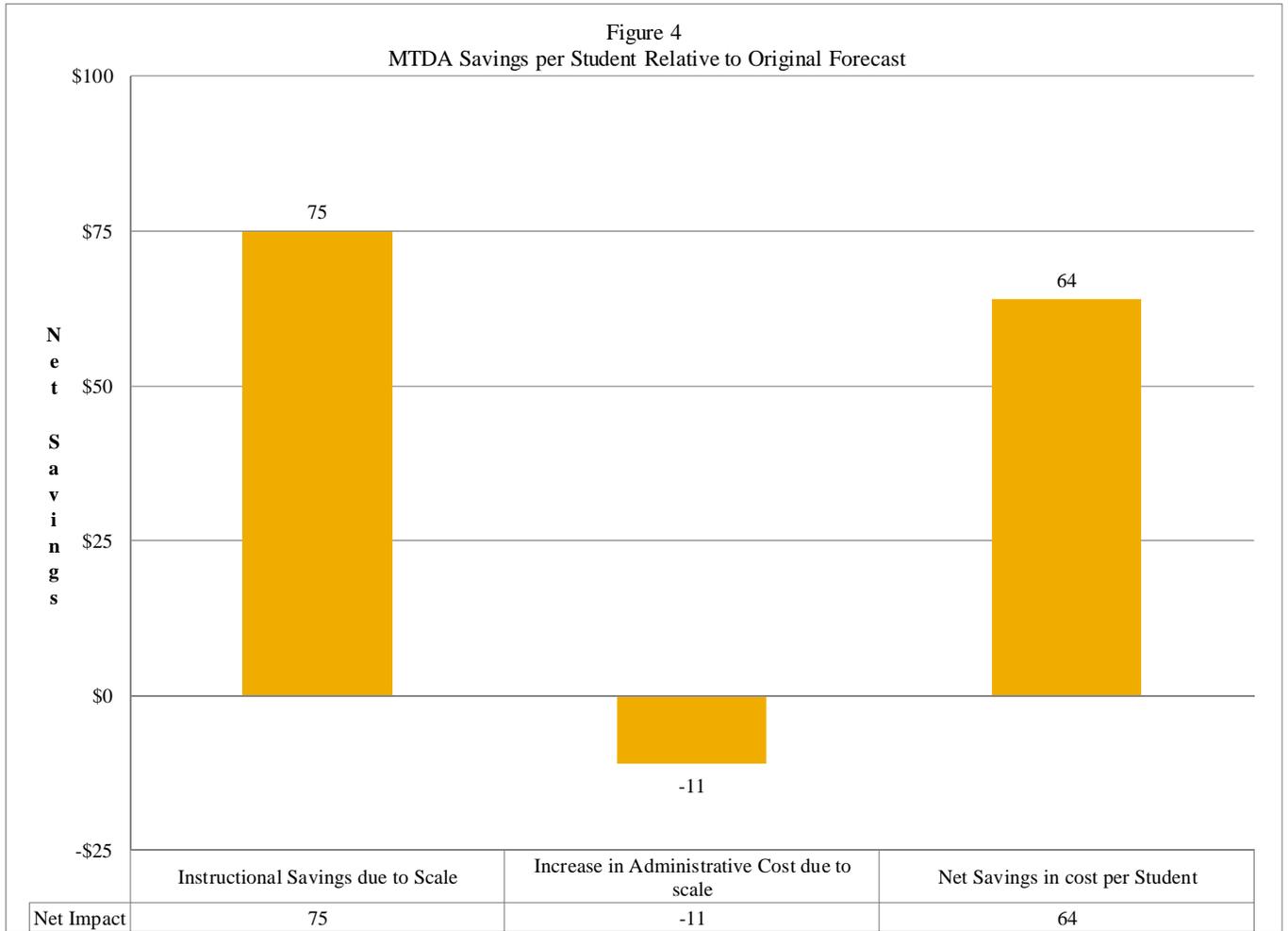
¹¹ See Appendix A

FY 2012 Expenditures, Funding Sources, and Enrollment

The 2011 legislature provided a \$1,168,000 per year general fund appropriation for the estimated enrollment. Due to the higher than anticipated enrollment, the MTDA found it necessary to supplement the appropriation with about \$400,000 from other sources which included federal grants, deferred revenues from FY2011 and a subsidy from the University of Montana. For FY2012 total funds available were \$1,571,382. Expenditures in FY 2012 were \$1,562,171. See Figures 2 and 3. For a detailed cost break down, see Figure 25 in Appendix E.



In FY 2012, MTDA benefited from economies of scale. Based on the original enrollment forecast and request for general fund, the cost per student would be about \$294, including the university subsidy. For the 2011 - 2012 school year, the academy's actual cost per student was \$230, including the university subsidy. Efficiencies of scale in operations saved the academy \$75 per student, which was offset by administrative costs that were higher by \$11 per student. The higher administrative cost is also attributable the higher than expected volume of students, as shown in Figure 4 on the following page. See appendix E for a discussion on the cost per student.



FY 2013 Projected Enrollment and Expenditures

Based on current funding MTDA will not be able to meet the forecasted demand for the remainder of this year.

Enrollment in the summer 2012 session was 1,493, and as of this writing fall enrollment is not yet finalized, it will likely exceed 3,000. Although the history is short, enrollments are typically higher in the spring as seniors who are short a few credits to graduate drive enrollments higher. It is very likely that enrollments will exceed 7,500 and may reach as high as 8,000. See Figure 1 for the forecast of enrollments through the next biennium. This would be an 18% increase over the previous year and an 88% increase over the original forecast provided during the 2011 legislative session. Based on this forecast and using FY 2012 operations, MTDA would need an additional \$470,000 to meet the projected number of students, as shown in Figure 5, FY 2013 forecast, line item “Surplus/(Shortfall)”. Assumptions and comments are shown in the right hand column.

Figure 5				
Montana Digital Academy Fiscal Forecast Through the 2015 Biennium				
	FY 2012 Actual	FY 2013 Forecast	FY 2014 Forecast	FY 2015 Forecast
Montana Digital Academy Expenses				
Original Credit and Advanced Placement	\$3,001	\$3,301	\$3,631	\$3,994
Credit Recovery	3,409	4,261	5,326	6,658
MLS	387	500	500	500
Total Enrollments	6,797	8,062	9,457	11,152
Sources of Funds				
Legislative Appropriation	\$1,168,000	\$1,168,000	\$0	\$0
Federal Grant	114,630	0	0	0
Carry Over From FY 2011	200,000	0	0	0
Other	8,752	0	0	0
Total Sources Of Funds	\$1,491,382	\$1,168,000	\$0	\$0
Total Salaries and Wages	\$367,066	\$377,600	\$442,500	\$451,200
Operations				
Direct Instruction				
Contracted Services Instructors and Districts	\$708,345	\$752,100	\$863,200	\$996,000
Contracted Services	21,202	21,800	22,500	23,200
Supplies	320,097	329,700	339,600	349,800
Total Operating Cost Direct Instruction	\$1,049,644	\$1,103,600	\$1,225,300	\$1,369,000
Other Operating Cost				
Dues	\$33,105	\$33,100	\$33,100	\$33,100
Travel	20,838	21,500	22,100	22,800
Other	6,303	6,500	6,700	6,900
Communications	5,215	5,400	5,600	5,800
UM Services	0	90,000	95,000	95,000
Total Other Operating Costs	\$65,461	\$156,500	\$162,500	\$163,600
Total Operating Expenses	\$1,115,105	\$1,260,100	\$1,387,800	\$1,532,600
Total Sources of Funds	\$1,491,382	\$1,168,000	\$0	\$0
Total Expenses	<u>\$1,482,171</u>	<u>\$1,637,700</u>	<u>\$1,830,300</u>	<u>\$1,983,800</u>
Surplus/(Short Fall)	<u>\$9,211</u>	<u>(\$469,700)</u>	<u>(\$1,830,300)</u>	<u>(\$1,983,800)</u>
Cost Per Student				
Direct Instruction	\$154	\$137	\$130	\$123
Other Operating Expenses	10	19	17	15
Total Cost per Student	164	156	147	137
Salaries and Wages per Student	54	47	47	40
Total Cost per Student	\$218	\$203	\$194	\$178

Funding for the remainder of the 2011 Biennium

For the remainder of FY 2013 the academy does not have the funding available to meet the forecasted demand. This raises several issues that the legislature may wish to consider. Options for controlling costs and revenues are listed in Figure 6.

- What are the highest priorities in the provision of on-line courses? Currently since sources of funding to MTDA are finite in nature, should the MTDA be required to prioritize its services to remain within its allocation?
 - Should courses be limited to those that are considered core courses for graduation
 - Limit access to students for which the course is not available in their local school
 - Give priority to juniors and seniors that need the courses for graduation
 - Give priority to students at risk of not graduating
 - Give priority to students taking advanced placement courses

- Is participation in on-line courses an entitlement? Should enrollment be capped or should the academy be required to give access to all students? If the access to MTDA is an entitlement, how should it be funded to ensure adequate funds are available?

For the current fiscal year (FY2013) LFD has identified five options for controlling costs and five for increasing revenues. See Figure 6.

Figure 6 Fiscal Drivers			
Control Expenses		Increase Sources of Funds	
1)	Renegotiate payments to the instructors and districts	1)	Charge districts a fee for using the academy
2)	Renegotiate agreements with administrative staff and UM	2)	Charge Students a fee for using the academy
3)	Cap enrollment for spring of 2013	3)	Obtain new funds via federal/state grants
4)	Limit students to only a single class	4)	Request a supplemental appropriation from the legislature
5)	Increase class size	5)	Locate other sources of funds within the education agency's

In the future, how the legislature chooses to fund the academy will influence how MTDA plans for the future, develops its curriculum, delivers its product, and develops its staff, as well as how many Montana students will be served. The list that follows provides some options for the legislature to consider, it is not meant to be all-inclusive.

1) State appropriation

The state would determine what portion of the general fund could be afforded to MTDA. Should this be the only source of funding it would in effect place a cap on enrollments. Based on the appropriation MTDA would calculate the total number of enrollments to be offered. The academy, the legislature or both may wish to prioritize which students have access to the limited enrollments. Since the legislature meets every two years, MTDA long-range planning would be influenced by this two-year cycle of funding.

2) Assign a quota of enrollments to each district based on a percentage of Average Number Belonging (ANB).

Each district would be given a quota of enrollments per school year based in student enrollment. The district could set its own priorities as to which students could enroll and what courses they could take. The district would be reimbursed only for the portion of their quota that they use. Options for schools that wish to exceed their quota could be provided. For example, schools might be required to pay a fee for each course over the quota. A quota implies that the state will not fund access to all students through the general fund.

3) Provide funding based on Average Number Belonging (ANB) for online curriculum.

Districts would be able to purchase online curriculum from any source including MTDA. Alternatively, the district could develop its own online school either individually or in consortium with other districts. Local districts would maintain control over enrollment levels and curriculum. Districts would be given greater flexibility and control in developing an online curriculum.

4) MTDA charges a fee to the district for each enrollment

Districts would be charged a fee for each enrollment. The legislature could subsidize none of the enrollments, some of the enrollments, or all of the enrollments. This would allow local districts to maintain control over enrollment levels and the courses students would be allowed to take. The MTDA funding would be based on actual enrollments, not forecasted. MTDA would be compensated on a “pay-as-you-go” basis.

5) Funding may be allocated by academic purpose

Portions of funding may be directed to be used for original credit, credit recovery, and advance placement, or middle school foreign language program.

6) Federal and other grants

Federal funds have been available in the past. These funds usually come as a block grant and are finite in nature. There is no guarantee that the funds would be available from year to year.

7) Funding for technologies in support of the MTDA

Nationwide 92% of students take their online courses on campus². Funding technologies related to implementing the Common Core Standards (CCS) will most likely be an issue in the 2013 biennium. The legislature may wish to consider funding CCS infrastructure improvements such that MTDA and its students also benefit.

Consideration for further study

There are a number of options for the legislature to consider regarding performance measurement, funding and mission of the MTDA. Among the issues for consideration are:

How well do students do? How rigorous are the courses? Since developing an alternative academic delivery system requires an additional investment, the courses should to be at least, if not better, than courses delivered in the traditional method. Current research on the effectiveness of on-line education focuses primarily on post-secondary and 2015 graduate programs; research on the effectiveness of on-line K-12 is sparse. The LFD could perform such a study in the 2015 interim. MTDA is located within the Phyllis J. Washington College of Education and Human Sciences the, human resources capable of such a study are available and convenient.

What questions should such a study ask and answer:

- o How rigorous are the courses
- o Does the MTDA have a positive impact on graduation rates
- o How do MTDA students do on SAT, ACT, state assessment
- o How do MTDA students perform in college (are MTDA students adequately tracked in GEMS)
- o How do MTDA students perform in the work place
- o How should a study be designed and over what period should it cover
- o What data should the academy be required to collect to support such a study
- o Who should execute the study, LFD, University of Montana, MTDA, or other
- o Are there other options for providing online curriculum
- o What is a fair way of compensating teachers and/or school districts

² International Association for K-12 Online Learning, February 2012

APPENDIX A

MCA 20-7-1201

20-7-1201. Montana digital academy -- purposes -- governance. (1) There is a Montana digital academy at a unit of the Montana university system.

- (2) The purposes of the Montana digital academy are to:
 - (a) Make distance learning opportunities available to all school-age children through public school districts in the state of Montana;
 - (b) Offer high-quality instructors who are licensed and endorsed in Montana and courses that are in compliance with all relevant education and distance learning rules, standards, and policies; and
 - (c) Emphasize the core subject matters required under the accreditation standards, offer advanced courses for dual credit in collaboration with the Montana university system, and offer enrichment courses.

- (3) The Montana digital academy must be governed by a board with equal representation from:
 - (a) the commissioner of higher education or a designee;
 - (b) the superintendent of public instruction or a designee;
 - (c) a Montana-licensed and Montana-endorsed classroom teacher appointed by the board of public education;
 - (d) a Montana-licensed school district administrator appointed by the board of public education;
 - (e) a trustee of a Montana school district appointed by the board of public education;
 - (f) the dean of the school of education of the hosting unit of the Montana university system or a designee as a nonvoting member; and
 - (g) the two officers provided for in subsection (5) as nonvoting members.

- (4) The governing board shall elect a presiding officer and vice presiding officer to 2-year terms without limitation on the number of terms.

- (5) The governing board shall hire a program director and a curriculum director who shall serve as chief executive officer and vice chief executive officer respectively on the governing board in a nonvoting capacity. The program director shall develop and, upon approval of the governing board, implement policies and guidelines for the Montana digital academy pertaining to:
 - (a) Course offerings;
 - (b) Software and hardware selection;
 - (c) Instructor selection;
 - (d) Partnering school agreements;
 - (e) Instructor training and curriculum development;
 - (f) Course evaluation;
 - (g) Grant opportunities; and
 - (h) Other activities that are essential to the success of a statewide distance learning program.

The following appendices are included to provide additional background information on the MTDA.

APPENDIX B

Description of The MTDA

The MTDA administration is housed on the campus of the University of Montana within the Phyllis J. Washington College of Education and Human Sciences in Missoula, Montana. The MTDA is currently administered by three education professionals with experience at various levels of public education. For more information on the staff, see Appendix B. The board of directors for the MTDA has representation from the Office of Public Instruction, the Commissioner of Higher Education, school board trustees, school principals, the University of Montana, and the Director of the MTDA. See Appendix C for a list of the board members.

Since all courses are taught by teachers currently employed within the Montana public school system, teachers are licensed by the state and have knowledge of or an endorsement in the subject area being taught. The MTDA provides the online curriculum and course management systems. Students, teachers or local districts must provide broadband internet access and computers. Certain courses may require special equipment such as headphones and microphones. Most of the students access the MTDA using computers and internet on the high school campus.

The curriculum and teachers provided by the MTDA are equally accessible to all students throughout the state. Schools that are not able to offer higher-level curriculum due to the lack of qualified instructors are now able to do so through the MTDA. The courses are offered year round and the student chooses when and where to take the instruction. Since MTDA is available 24 hours a day and 365 days a year it effectively lengthens the school day and the school year.

In the 2009 to 2010 school year there was an estimated 1,816,400 enrolments in online courses nationwide³. 74% of these enrollments were in high school courses⁴. This compares to enrollments of less than 50,000 in the year 2000. Nationwide the two most cited reasons for providing distance-learning opportunities for students are:

- 1) Provide courses not currently available; and
- 2) Provide the opportunity for students to make up courses that were not successfully completed⁵.

MTDA started operations in the summer of 2010 with a pilot program. Four teachers instructed 60 students in four courses: Algebra, Earth Science, English, and US History. During this pilot program MTDA began to develop policies, curriculum, and software, and selected a vendor for credit recovery courses.

In the 2010 – 2011 school year 2751 students accounted for 5530 enrollments, taught by 76 teachers. Since the pilot program enrollments have grown by 23%. In the most recent year of operations (summer 2011 to spring 2012), MTDA offered over 50 courses in nine academic areas taught by 97 teachers in 36 school districts to about 3850 students who accounted for 6,797 enrollments. In the 2011 – 2012 school year, MTDA has provided classes to Montana students in all but four counties in the state, as shown in Figures 7 and 8 below.

³ Watson, e. al. (2011) Keeping Pace with K-12 Online Learning: Evergreen Education Group

⁴ Queen B. and Lewis L. (2011). Distance Education Courses for Public Elementary and Secondary School Students

⁵ International Association for K-12 Online learning February 2012

Figure 7

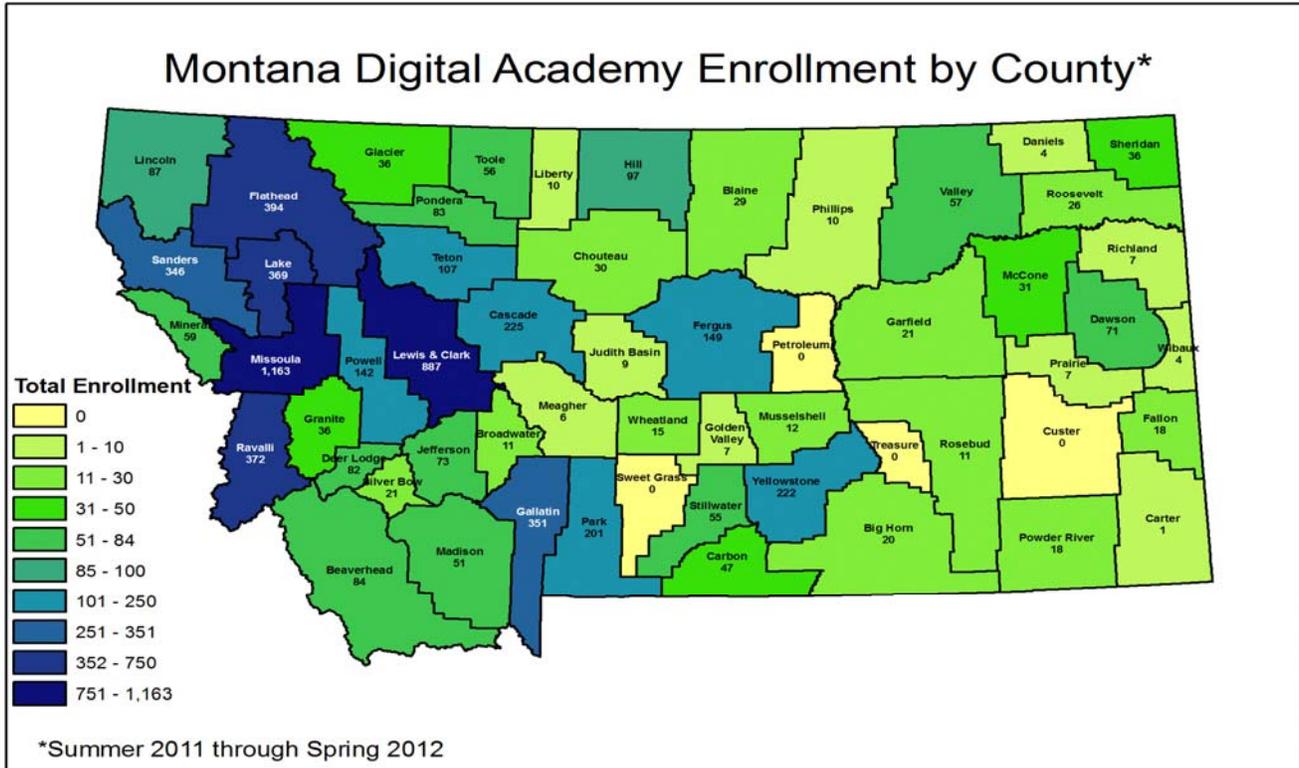


Figure 8

For the 2011 - 2012 School year there were 97 teachers on staff, employed in 36 school districts⁶

- | | | |
|--------------------------------|--------------------------------|------------------------------|
| Arlee Public Schools | Great Falls Public Schools | Phillipsburg School District |
| Billings Public Schools | Hamilton Public Schools | Plains Public Schools |
| Bonner Public Schools | Hardin School District | Plentywood |
| Bozeman Public Schools | Havre Public Schools | Ryegate Public Schools |
| Cascade Public Schools | Helena Public Schools | Shelby Public Schools |
| Colstrip Public Schools | Hot Springs Public Schools | Sheridan Public Schools #5 |
| Columbia Falls School District | Huntley Project | Sidney Public Schools |
| Columbus School District | Huntley Project Schools | Stevensville |
| East Helena Public Schools | Kalispell Public Schools | Terry Public Schools |
| Eureka Public Schools | Lewistown Public Schools | Thompson Falls Schools |
| Fairfield Public Schools | Missoula County Public Schools | Victor School District |
| Florence-Carlton Schools | Ophir Schools | Whitewater Public Schools |

⁶ Source: Montana Digital Academy

Curriculum and Usage

Currently the academy offers courses to middle school and high school students in nine academic areas, as shown below.

Figure 9 Current academic Areas within the Montana Digital Academy		
Mathematics	Science	Business
English Language	Health and Physical Education	The Arts
Social Studies	Career Technical Education	World Languages

Academic Purpose

The MTDA provides online curriculum for four academic purposes. A brief description of each academic purpose follows. See the appendix for tables describing student activity and academic performance by grade level.

Original Credit (OC)

OC students are attempting the course for the first time. OC courses coincide with the regular school semester schedule. Students must enroll at the beginning of the regular school semester and complete the course by the end of the same semester. Instructors for OC courses provide the syllabus, instruction, feedback as well as promoting and monitor online class discussions. Students must keep pace, meet deadlines for assignments and take exams when they are scheduled. See Appendix C enrollment and performance facts.

Advance Placement (AP)

AP curriculums are standardized courses that meet the requirements of the College Board. Many colleges and universities grant credit to students that achieve high enough scores on standardized AP exams. In 2010 33.7 percent of school districts nationwide offered AP courses in English, math, social studies, and science⁷. By gaining college credit students may be able to shorten the amount of time spent in college and therefore reduce the cost of a college education. Students that successfully complete AP courses may also gain an advantage in the admission process. MTDA currently offers AP courses in science, math, social studies, and English language arts. See Appendix C enrollment and performance facts.

Credit Recovery (CR)

Students have attempted the course at least once before and failed to complete the course or did not receive a passing grade. Students taking a course for credit recovery take a self-paced course where the content is provided by an outside vendor under contract with MTDA. They may enroll at any time during the year and complete the course at their own pace with the constraint that the course must be completed by the end of the school year. MTDA provides an online coach who is a Montana teacher, licensed in the subject area to support and mentor the student. The coach does not give lectures or design the curriculum. The coach is available online to answer questions, grade written offline assignments and mentor the student as he or she moves through the course. Since this is a mastery learning based model students can be exempted from portions of the course where they can exhibit mastery. The student takes a pretest to see what knowledge was retained from the first attempt at the course. After the pretest is the course is tailored to the specific needs of the student. See Appendix C enrollment and performance facts.

Middle School Multiple Language Sampler (MLS)

MLS is a seven-week course that provides middle school students the opportunity to explore several foreign languages. Based on this experience the student will be more informed when choosing a language to study in

⁷ Lee, Jr., M. et. Al (2011). The College Completion Agenda 2011 Progress Report.

high school. Each session is seven weeks and there are four session per year. Students can receive an introduction to Spanish, French, German, Latin or Mandarin Chinese. At present each session is limited to 125 enrollments (500/year). See Appendix C enrollment and performance facts.

Enrollments By Academic Purpose

For the most recent year or operation credit recovery courses accounted for 50.2% of enrollments. MTDA is forecasting the demand for credit recovery will grow at 25% per year. OC and AP courses combined accounted for 44.2% of enrollments and demand for these courses is expected to grow at 10%. MLS accounted for 5.7% of enrollments. MTDA plans to cap enrollment in MLS at 500. If the above forecast holds by FY2015 CR will comprise 60% of total enrollments while OC will comprise 36% and MLS will comprise 4%. See Figure 10.

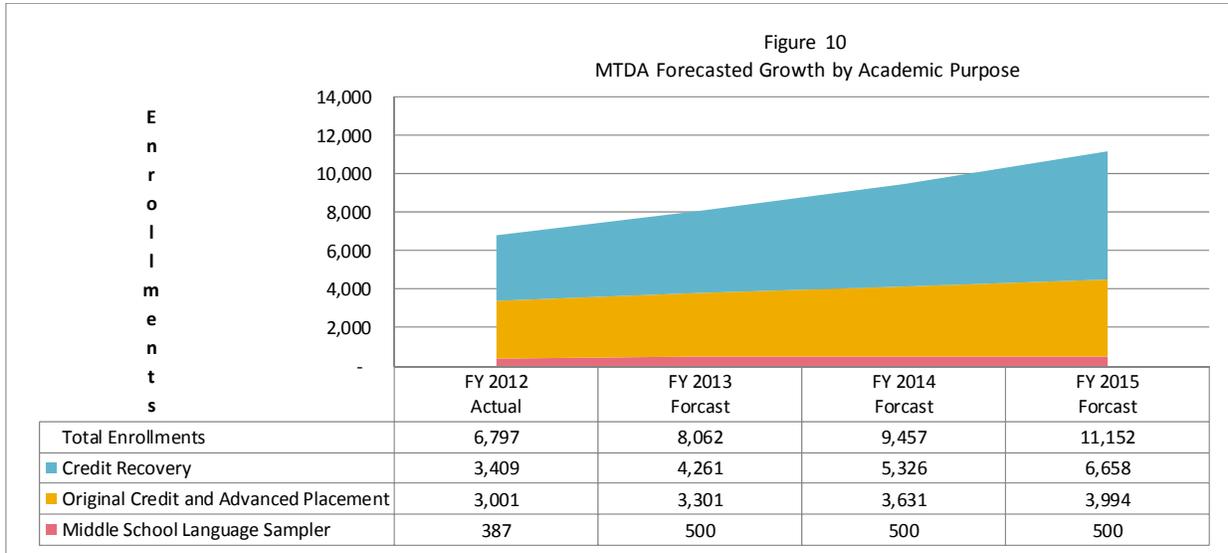


Figure 11 breaks out those percentages by academic purpose for the recent school year. The most common enrollment was in English Language Arts at 24% (figure 11), while 19% of total enrollments were English Language arts for credit recovery (Figure 12). For OC the most common course was in World Languages, which comprised 18% of total enrollments of which 12% was high school and 6% was MLS. There were no world language enrollments for credit recovery. Figure 13 shows the distribution and total enrollments for each subject area by academic purpose.

Figure 11
Montana Digital Academy Enrollment
Fall 2011 to Spring 2012

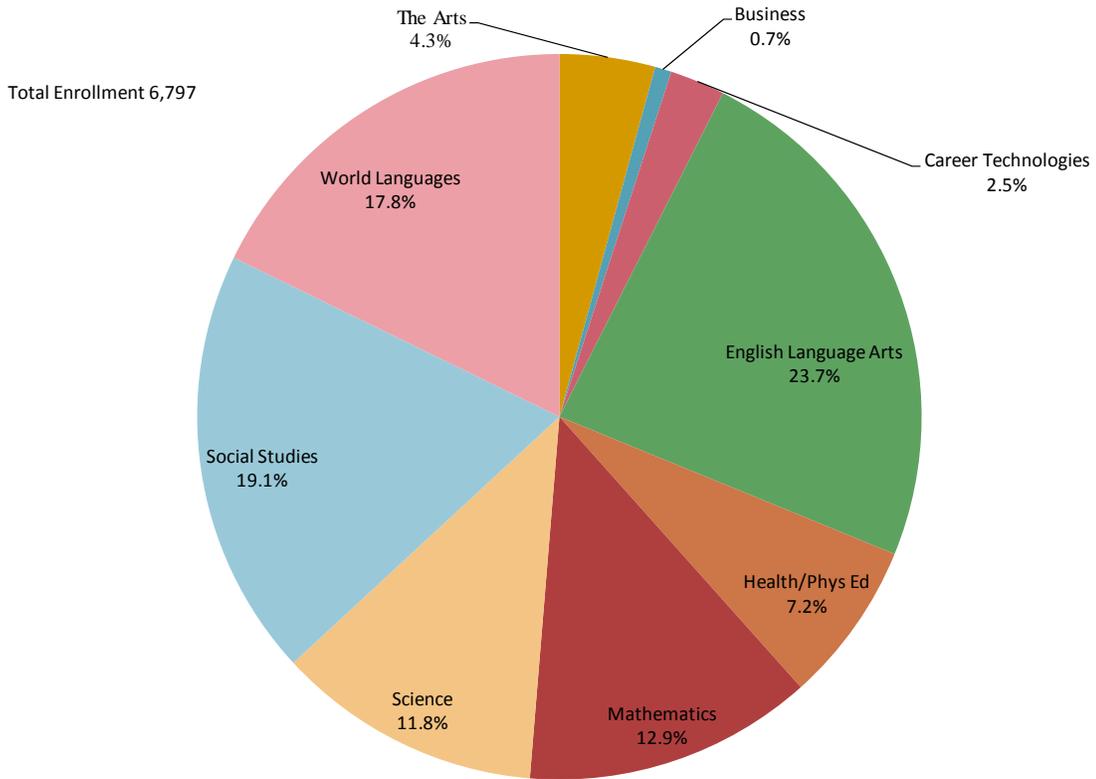
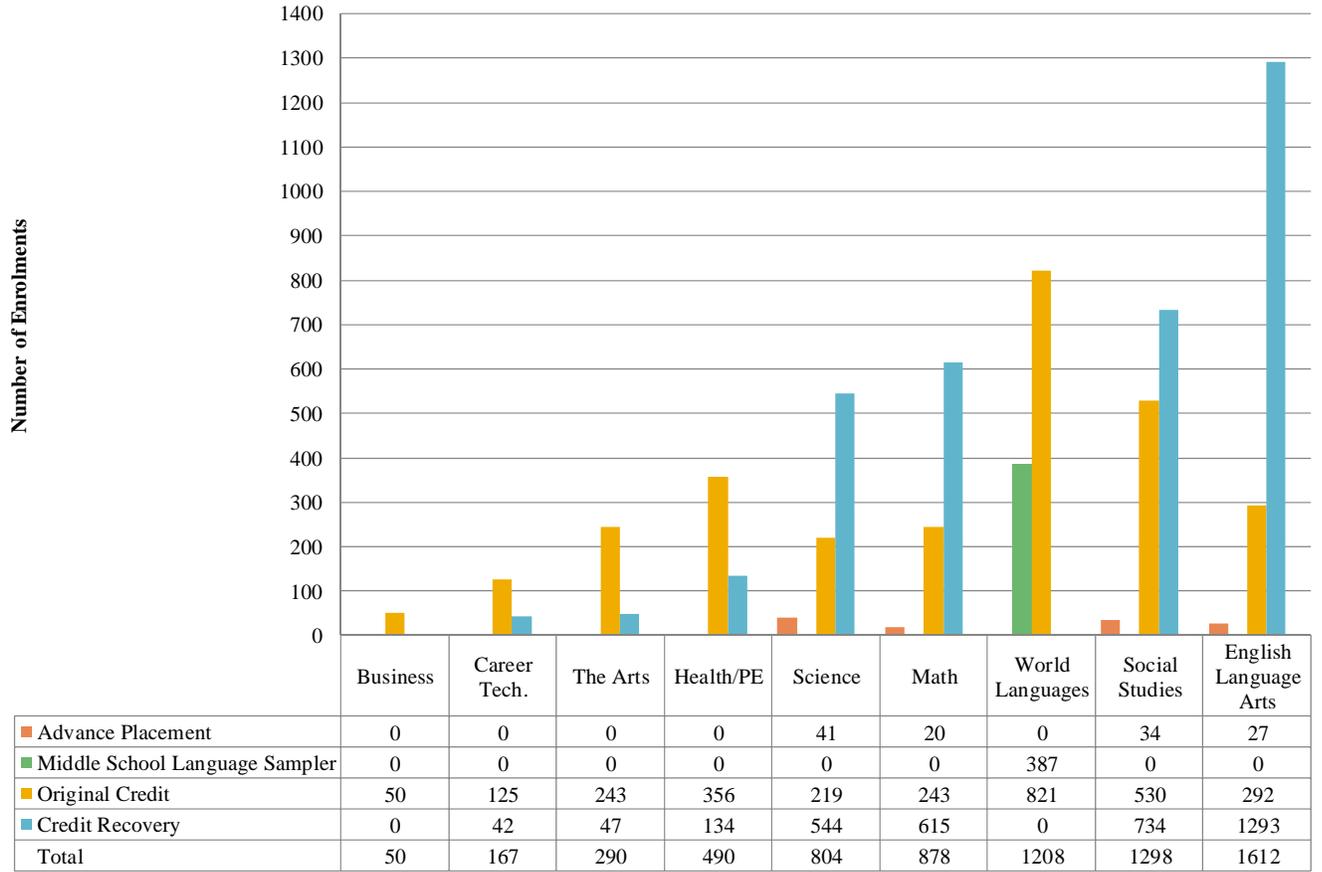


Figure 12
Percent of total Enrollments by Academic Purpose and Subject

	Advance Placement	Middle School Language Sampler	Credit Recovery	Original Credit
Business	0.00%	0.00%	0.00%	0.70%
Career Technologies	0.00%	0.00%	0.60%	1.80%
The Arts	0.00%	0.00%	0.70%	3.60%
Health and Physical Education	0.00%	0.00%	2.00%	5.20%
Science	0.60%	0.00%	8.00%	3.20%
Math	0.30%	0.00%	9.00%	3.60%
World Languages	0.00%	5.70%	0.00%	12.10%
Social Studies	0.50%	0.00%	10.80%	7.80%
English Language Arts	0.40%	0.00%	19.00%	4.30%

Figure 13
MTDA Enrollments by Academic Purpose
2011 - 2012 School Year



APPENDIX C

ACADEMIC PERFORMANCE

Academic performance is measured by the total points accumulated within the MTDA student management system. The management system is the system by which teachers track progress and provide feedback to the student. Final grades are not assigned by MTDA but are calculated by the instructor and reported to the local districts. Since the LFD does not have access to the final grades, the points accumulated in the student management system will be used as a proxy for student performance. For the purposes of this report 60% or better is considered a passing grade.

GENDER

Total enrollment was almost evenly split between male and female students, 50.5 and 49.5% respectively. The most popular courses for the girls were World Languages and English Language Arts, and for the boys English Language Arts and Social Studies. See Figure 14.

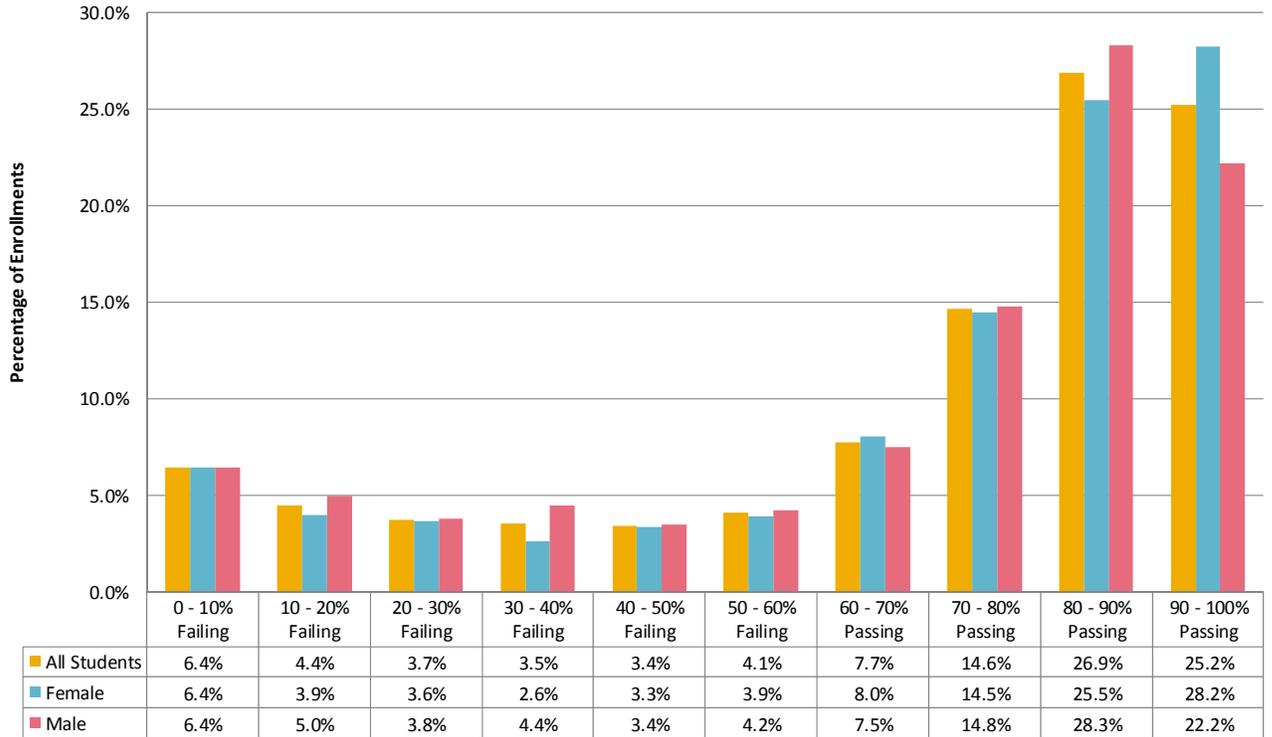
Figure 14
MTDA 2011 – 2012 School Year Enrollment by Gender

Subject Area	Female		Male		Total	Percent of Total
	Enrollments (50.5%)	Popularity ¹	Enrollments (49.5%)	Popularity ⁸		
The Arts	186	7	104	7	290	4.30%
Business	33	9	17	9	50	0.70%
Career Technologies	82	8	85	8	167	2.50%
English Language Arts	699	2	913	1	1,612	23.70%
Health/PE	298	6	192	6	490	7.20%
Mathematics	370	5	508	4	878	12.90%
Science	390	4	414	5	804	11.80%
Social Studies	672	3	626	2	1,298	19.10%
World Languages	702	1	506	3	1,208	17.80%
Total	3,432		3,365		6,797	

⁸Ranked by enrollments

Based on a scale of 100, the average score was 69, and the average passing score was 84 for all enrollments. Girls did slightly better than the boys: 76% of the girls passed their courses with a passing grade of 85, 73% of the boys passed with a passing grade of 84. See Figure 15.

Figure 15
MTDA Grade Distribution All Enrollments by Gender
for the 2011 - 2012 School Year



PERFORMANCE BY ACADEMIC PURPOSE

Figure 16 provides distribution of grades by academic purpose. The graph shows 94% of advance placement students passed their classes followed by original credit at 81%, Middle School Language Sampler students passed their courses at a rate of 72% and credit recovery students 69%.

In the first semester the percentage of students earning credit in their courses was quite low. Counselors and teachers believed that there was expectation by students that the online courses would be much easier than the traditional in seat courses.

In addition, there was a learning curve for the instructors. Techniques for delivering an online course differ from those in the traditional class setting. New skill sets needed to be mastered. Instructors without the proper online skills sets struggled with managing their courses and students. See the section that follows describing the qualities of a good online teacher.

Many districts also found that having a facilitator on campus dedicated to online instruction as a mentor and liaison between students and the MTDA greatly improved students' performance.

Figures 17 through 21 provide data for student performance by academic purpose.

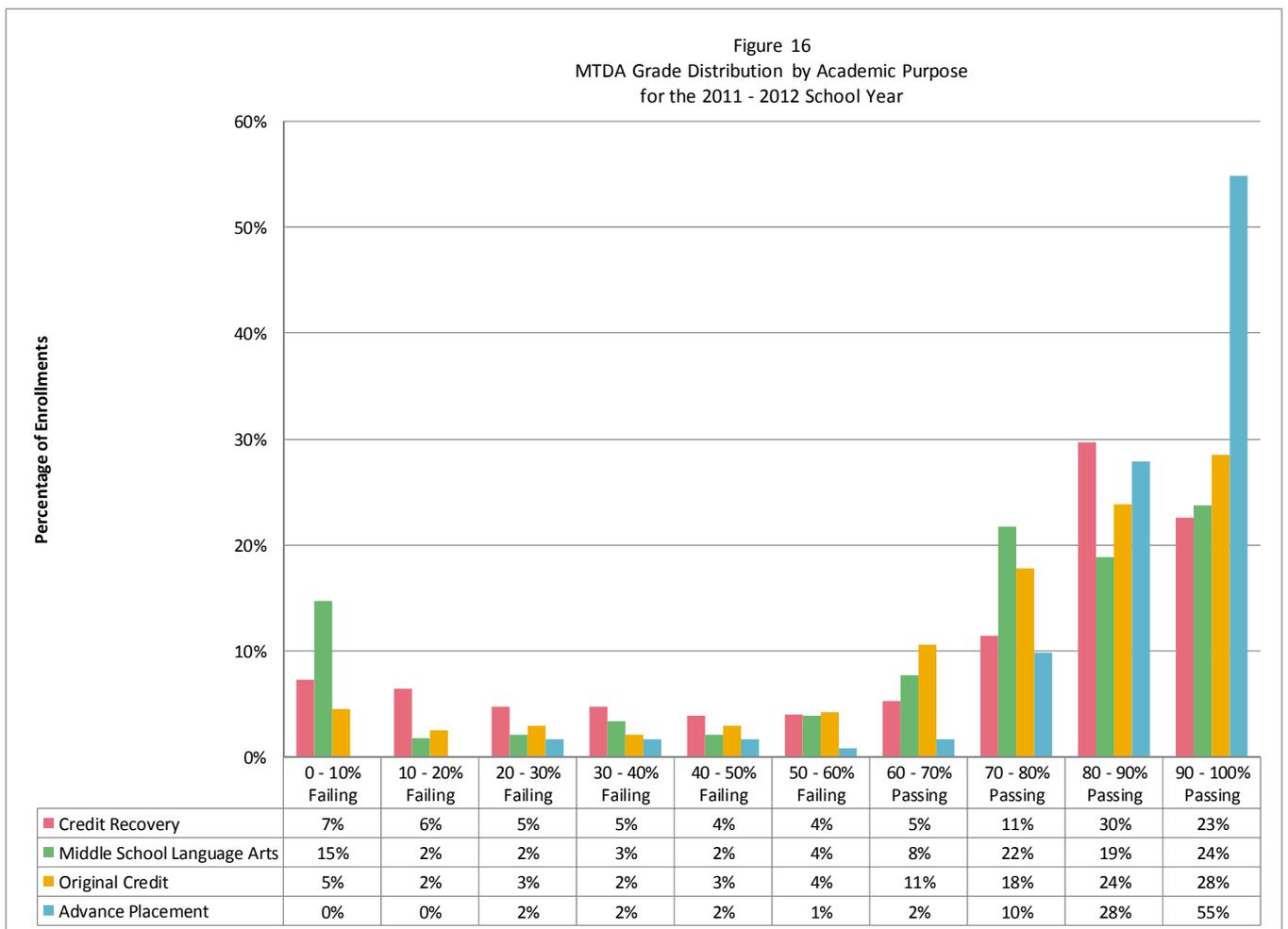


Figure 17 Original Credit Enrollments for 2011 – 2012 School Year						
Grade	Enrollments	Total Passing	Passing Average	Failing	Failing Average3	Total Enrollments Passing
6	7	6	88	1	59	86%
7	26	19	89	7	47	73%
8	58	48	85	10	42	83%
9	496	399	83	97	30	80%
10	742	613	83	129	28	83%
11	819	641	83	178	28	78%
12	<u>731</u>	<u>591</u>	<u>83</u>	<u>140</u>	<u>30</u>	<u>81%</u>
Total	<u>2879</u>	<u>2317</u>	<u>83.1</u>	<u>562</u>	<u>29.4</u>	<u>80.50%</u>

Figure 18 Advance Placement Enrollments for 2011 - 2012 School Year						
Grade	Enrollments	Total Passing	Passing Average	Failing	Failing Average3	Total Enrollments Passing
9	5	3	75	2	52	60%
10	14	14	91	0	N/A	100%
11	41	39	91	2	38	95%
12	<u>62</u>	<u>59</u>	<u>88</u>	<u>3</u>	<u>30</u>	<u>95%</u>
Total	<u>122</u>	<u>115</u>	<u>89</u>	<u>7</u>	<u>38.6</u>	<u>94%</u>

Figure 19 Credit Recovery Enrollments for 2011 - 2012 School Year						
Grade	Enrollments	Total Passing	Passing Average	Failing	Failing Average3	Total Enrollments Passing
7	1	1	98	0	N/A	100%
8	4	1	87	3	27	25%
9	289	150	83	139	26	52%
10	660	378	82	282	26	57%
11	1064	757	85	307	24	71%
12	960	752	85	208	24	78%
Unknown	<u>431</u>	<u>311</u>	<u>90</u>	<u>120</u>	<u>27</u>	<u>72%</u>
Total	<u>3409</u>	<u>2350</u>	<u>85.1</u>	<u>1059</u>	<u>25.1</u>	<u>68.90%</u>

Figure 21 Summary of Enrollments for 2011 - 2012 School Year						
Grade	Enrollments	Total Passing	Passing Average	Failing	Failing Average3	Total Enrollments Passing
6	49	42	85	7	23	86%
7	166	127	83	39	28	77%
8	262	181	84	81	20	69%
9	790	552	83	238	28	70%
10	1416	1005	83	411	27	71%
11	1927	1440	84	487	26	75%
12	1756	1403	85	353	26	80%
Unknown*	<u>431</u>	<u>311</u>	<u>90</u>	<u>120</u>	<u>27</u>	<u>72.00%</u>
Total	<u>6797</u>	<u>5061</u>	<u>84.3</u>	<u>1736</u>	<u>26.3</u>	<u>74.50%</u>

APPENDIX D

THE MTDA AND AT RISK STUDENTS

Slightly over 50% of the students are enrolled in credit recovery courses. Many of these students are classified as at risk students. For the purposes of this report, at risk students are students that are failing academically and are in danger of not graduating. Students may be at risk for reasons ranging from learning disabilities, medical issues, transient life styles and economic stresses on the family. LFD interviewed several school counselors that had students who either were the sole breadwinner or contributed significantly to family income. These factors influence their ability to succeed in a traditional academic 8 am to 3 pm environment.

At risk students can be identified in middle school or the first year of high school. Typically they will fail one or more classes in their freshman or sophomore year. The window for students to obtain their high school diploma is short. In a four-year period students must complete the following credits:

Montana requires 20 units to earn a high school diploma⁸

- Four units of English Language arts
- Three units of mathematics (a third year is now required by common core standards)
- Two units of social studies
- Two units of science
- One unit of health
- One unit of arts
- One unit of vocational/technical education
- Six units of electives

To complete this requirement a student must complete on average five courses per year to graduate on time. If a freshman fails two classes, he or she must now complete on average six classes per year. Traditionally credit recovery was accomplished in summer school. In some summer school programs, a student can only earn one-half credit and the problem becomes compounded if the local district does not offer the required classes in summer school. At some point, from the student's perspective, the task may seem to be insurmountable.

MTDA provides flexibility in course offerings and schedule, effectively expanding the school day to 24 hours and school year to 12 months. Online education also offers the student a different learning environment in which the student can work at their own pace, receive instant formative feedback and monitor progress toward the end goal on a daily basis.

Many schools are incorporating MTDA credit recovery curriculum as a key component of their own credit recovery programs. Helena High provides one example. At Helena High, at risk students are identified through a school wide screening process and then are placed in the schools credit recovery program. Students in the program take their classes on campus in a computer lab dedicated to credit recovery. Helena hired an educational professional with advanced degrees in social work and expertise in counseling at risk students to run the lab. For at risk students there is a definite need to have a face-to-face mentor to keep them on task and help with technical problems or other issues related to the course. Helena High believes the mentor is critical to the success of their program. One counselor commented, "There is no reason to believe that an unmonitored at risk student working an online course would fare any better than an unmonitored at risk student studying from a book or lecture notes at home without supervision." Another reason for having students take the courses on campus is that it provides a secure environment for them to work as well as maintaining contact with the high school staff and student body

⁸ Administrative Rules of Montana 10.55.905

In 2011, 101 students were enrolled in the Helena High credit recovery program. 64 of these students used the credit recovery lab and 76.5% of them earned credit. Of the 37 students that did not use the lab only 18.9% earned credit.

Prior to online courses the only way for Helena High student to get credit recovery was through summer school. In summer school Helena High students were only able to make up ½ credits. For juniors or seniors two or three credits short the task of making up those credits can be perceived as insurmountable. The flexibility of online credit recovery transforms the insurmountable task into a difficult but doable task.

COMMENTS FROM AT RISK STUDENTS:

LFD arranged, through local school administrators, interviews with students that were identified as at risk of graduating. A summary of their comments are presented below.

One of the most common comments about the MTDA courses is that they allow the student flexibility in scheduling courses. This is important for students who have outside jobs, medical issues or family issues that prevent them from being in class from eight in the morning to three in the afternoon. Courses also allow the student to work at their own pace.

Several of the students complained that their instructors in the traditional setting often grew frustrated and impatient when the student kept asking questions because they did not understand the material. To please the instructor the student would claim to understand when really they just wanted to get out of there. The online courses have infinite patient with student's questions. A student can rewind the lecture repeatedly until they understand. Additionally a well-designed online course will only allow the student to progress when the student proves that they understand, not when they claim to understand. All of the students interviewed said that they genuinely liked this aspect.

More than one student had no interest in earning a high school diploma in the first two years of school. In their junior or senior year they were presented with career opportunities or found an interest that required a college education and therefore a high school diploma. There was a renewed motivation, and hope, when they realized they could make up the lost ground using the scheduling flexibility of MTDA.

Several students in their junior or senior year had failed classes as freshmen. They did not want to make up those classes due to the stigma associated sitting in a freshman class as an upper classman. The online courses gave them anonymity they needed to avoid the stigma.

More than one student was 19 years old and needed to earn credits for graduation before they turned 20, at which point they were not entitled to a free public education. Once again the flexibility of access to any course at any time during the year will enable them to complete their high school education within the public school system.

APPENDIX E

THE COST OF INSTRUCTION

The Digital Academy contracts with teachers licensed and employed by the various school districts of Montana. One model is used for compensating teachers for OC and AP, and a different model is used for compensating coaches for credit recovery courses.

Compensation for Instructing OC, AP and MLS

Teachers are paid a base fee of \$500 (\$200 for MLS) and \$100 (\$40 for MLS) for every student that remains enrolled after the local districts add drop date for classes, typically two to three weeks after the start of the semester. The base fee is intended to cover expenses related to administrative work required of the instructor before class can begin as well as encouraging instructors for taking small classes should that be necessary.

MTDA does not pay the teachers directly. Rather, the local district is reimbursed and then the district pays the teacher through their payroll system. MTDA reimburses the district for instructor compensation and the school districts receive 20% of the compensation to cover payroll expenses such as FICA, MEDICARE, Worker’s Compensation, Unemployment and Teachers Retirement (TRS). Another 4% is reimbursed to the district to cover administrative expenses related to payroll. By this method, MTDA avoids the need to set up their own payroll system and is able to leverage off the payroll systems of the various districts. Below is an example calculation for an original credit course with an enrollment of 20.

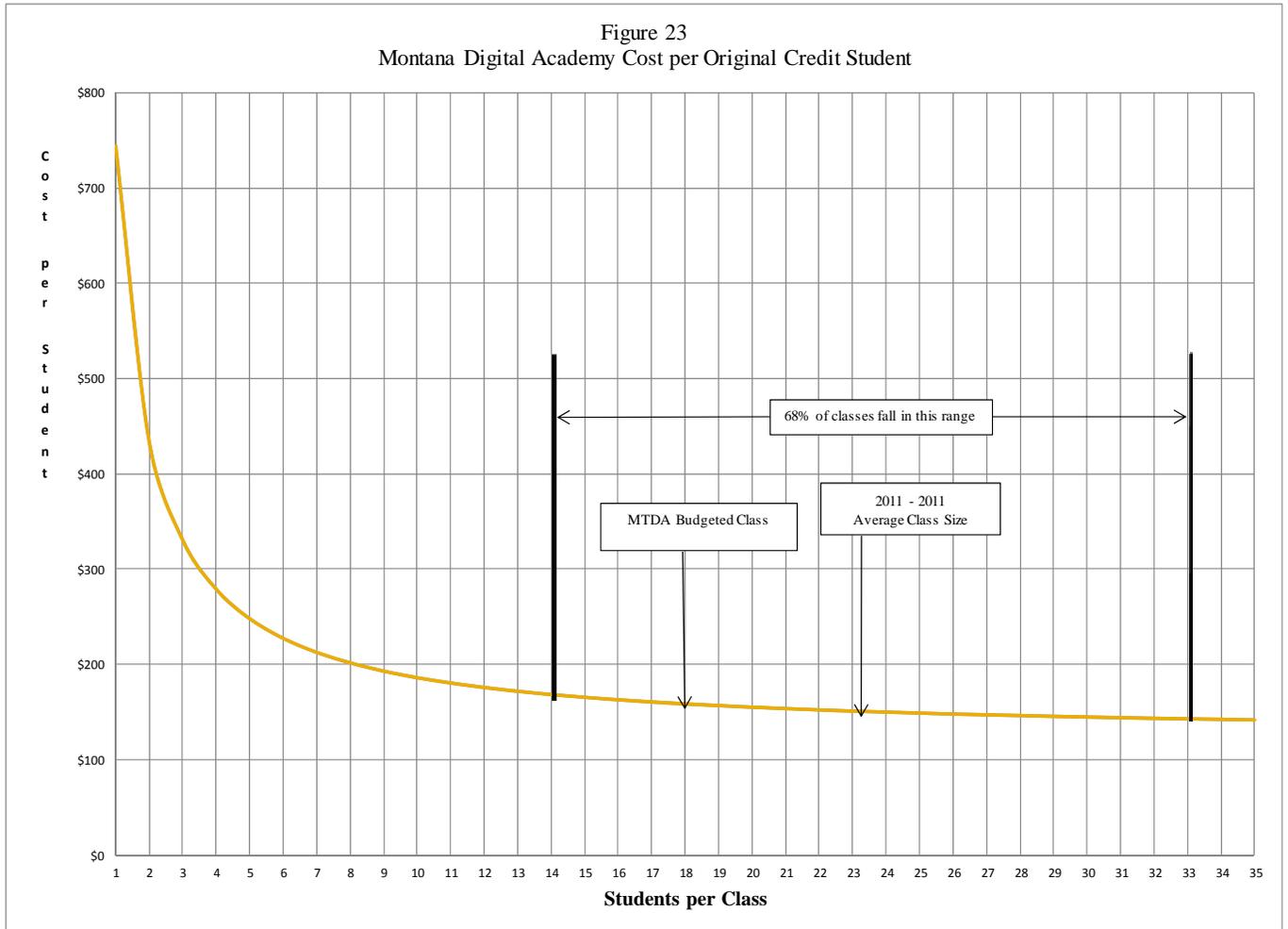
Example 1	
Compensation to Instructor and District for Original Credit course with 20 students	
Number of Students	20
Base Amount for class	\$500 \$500 per course
Compensation for Enrollment	2,000 \$100 per student
Total Compensation for Teachers	<u>\$2,500</u>
Compensation for District	
Payroll Taxes	\$500 20% of total compensation for teacher
Administrative Compension	100 4% of total compensation for teacher
Total Compensation for District	<u>\$600</u>
Total Compension to the Instructor & District	\$3,100 Compensation of teacher and district
Incremental Cost	\$124 The cost of adding one more student to the class
Total Cost Per Student (at enrollment of 20)	\$155 This will vary with enrollment

Larger class sizes allow the academy to leverage the base payment for the class as can be seen in the chart below. Figure 23 is a plot of the following formula.

$$\frac{\text{Total Cost}}{\text{Total Pupils}} = \frac{1.24[500 + P \cdot 100]}{P} = \$620 \cdot P^{-1} + \$124 \quad : \text{Where } P = \text{number of students}$$

Currently MTDA is budgeting for 18 students per original credit class or \$158/student. Under ARM 10.55.711 a maximum size for a high school class is 30 students or \$145/student. In the 2010 – 2011 school years, the average class size was 23.3 students with a standard deviation of 9.3 students. Assuming normal distribution slightly more than two thirds of the classes will be in the range of \$168 to \$143 per student.

The figure below shows that as the class size increases the cost advantage, due leverage of base payment of \$500, of adding one more student decreases. Once a class size reaches 30 the fiscal advantage of adding the 31st student to the class is less than one dollar per student. See Figure 23.



Credit Recovery Compensation to Coaches and the District

Students may enroll in credit recovery at any time during the year. Credit recovery courses are provided by an outside vendor learning. MTDA purchases seats from a vendor that are available to students 24 hours a day 7 days a week. When a student logs on a seat is occupied and is relinquished for use when the student logs off. In 2012, MTDA paid the vendor \$148,270 and the system supported 3,409 credit recovery enrollments for an average cost of \$43 per enrollment. Every course comes with an online coach, which is provided by the various school districts throughout the state. The coach is paid a flat fee of \$3,000 to handle a load of no more than 100 students at any given time. Since students can enroll at any time and they complete the course at their own pace a coach may serve more than 100 students during a semester but never more than 100 at one time. Assuming that the instructor only has 100 students an estimate of the total the cost per student would be \$73.

$$\frac{\$3,000}{100 \text{ students}} + \$43(\text{average cost for Plato}) = \$73/\text{student}$$

Other Costs

Original credit courses are either developed in house by teachers or obtained from an outside source. See Figure 24.

Due to the short time frame for start-up prior to the 2010 school year the MTDA obtained most of its curriculum from outside sources. About 50 courses were offered in the first year with course content provided by Florida Virtual School®, Powerspeak® world language program, Plato® and Aventa Learning®. MTDA was able to negotiate perpetual license agreements for some of this curriculum. The long-term plan for MTDA is to own 90 – 95% of its content either exclusively or in association with Open Educational Resources (OER) partners such as the National Repository of Online Courses. Courses that cannot be obtained through these partnerships or cannot be developed in house by MTDA will be purchased from outside vendors. Currently MTDA owns 77% of the course content and licenses 23% on an annual basis.

Courses developed by the MTDA our through contracts with licensed teachers within the state. A teacher is contracted to develop the course and then that course becomes part of the MTDA course catalog. Teachers may be paid a few hundred dollars to take an existing or third party course and develop it for use within the MTDA system. If a teacher develops a course from scratch, the compensation may be as high as \$3,500.

Content Source	Number of Courses	Percentage of Catalog
Owned by MTDA		
MTDA Internal	16	28%
National Repository of Online Courses	10	17%
Florida Virtual School	15	26%
State Virtual School Leadership Alliance	2	3%
Open High School	<u>1</u>	<u>2%</u>
Total	<u>44</u>	<u>78%</u>
Licensed Annually		
Powerspeak	10	17%
Carone Fitness	2	3%
Giant Campus	<u>1</u>	<u>2%</u>
Total	<u>13</u>	<u>22%</u>

Figure 25 supports the data shown in figures 2 and 3.

Figure 25		
MTDA Financials For FY 2012		
Sources of Funds		
Legislative Allocation for FY 2012	1,168,000	1/2 of the 2011 legislative appropriation
Carry over from 2010-2011	200,000	\$200,000 of unused appropriation from FY2011
Title II Grant	114,630	\$128,300 in Title II federal grants less 9% to UM
Facilities Fee	80,000	University of Montana Facilities Fee, Waived for FY2012
Other Revenue	<u>\$8,752</u>	Speaking fees, and other accounting adjustments
Total Sources of Funds	<u>\$1,571,382</u>	
Total Expenses		
Compensation to Instructors	683,736	Instruction - Teacher Costs
Other operating expenses	385,558	Licenses to Plato, Carone Fitness, Genius Inc. etc.
Salaries and Wages	367,066	Staff of Digital Academy
Compensation to Districts	24,609	Payroll taxes and administration
Facilities Fee	80,000	University of Montana Facilities Fee
Course Development Cost	<u>\$21,202</u>	Fee to teachers for developing course content
Total Expenses	\$1,562,171	
Net for 2012	<u>\$9,211</u>	

APPENDIX F

MTDA CURRICULUM⁹

Montana Digital Academy course offering as of September 2012	
Course Title	Course Description
Mathematics	
Pre-Algebra	The goal of Pre-Algebra is to develop fluency with rational numbers and proportional relationships. Students will extend their elementary skills and begin to learn algebra concepts that serve as a transition into formal Algebra and Geometry. Students will learn to think flexibly about relationships among fractions, decimals, and percents. Students will learn to recognize and generate equivalent expressions and solve single-variable equations and inequalities. Students will investigate and explore mathematical ideas and develop multiple strategies for analyzing complex situations. Students will analyze situations verbally, numerically, graphically, and symbolically. Students will apply mathematical skills and make meaningful connections to life's experiences.
Algebra I	This is an introductory course focusing on algebraic concepts and skills and their applications to real life situations. Students are encouraged to think about the geometrical and numerical meaning of what they are doing. Major topics include: linear equations, linear inequalities, ratios, geometric concepts, statistics and probability. Students will be introduced to the technological innovation called the TI-84 graphing calculator and computer software. The graphing calculator is used to solve problems, evaluate expressions, analyze data and visualize algebra.
Geometry	Geometry is the study of geometric concepts using Algebra 1 math. Technology (graphing calculators and software programs) is used to explore and demonstrate geometric concepts when appropriate. Visualization skills are used for plane and three-dimensional objects. Major topics include: basic geometric concepts, reasoning and proofs, angles and parallel lines, triangles, quadrilaterals, circles, congruency and similarity, transformations area, surface area and volume.
Algebra II with Trigonometry	This course will study, model and apply linear, quadratic, logarithmic, exponential and trigonometric functions along with probability and sequences/series. The course is an extension of the graphical, numerical and symbolic aspects of Algebra 1 along with the geometric relationship studied in Geometry. The graphing calculator is used throughout the year. This course also covers the foundations of trigonometry. This is a recommended course for students planning on attending a four-year college.

⁹ MTDA Website October 2012

Pre-Calculus	Pre-Calculus is available for Dual Credit from UM-College of Technology, Missoula. Dual credit required separate registration with UM-COT and fees and tuition paid to that institution.
AP Calculus AB	AP Calculus AB is a college-level course that prepares students for the AP Calculus AB exam in May. Before studying calculus, all students should complete four years of secondary mathematics designed for college-bound students. Students must be familiar with the properties of functions, the algebra of functions and the graphs of functions. Students must also understand the language of functions and know the values of the trigonometric functions of the numbers 0, $\pi/6$, $\pi/4$, $\pi/3$, $\pi/2$ and their multiples. Use of the graphing calculator is an integral part of this course. For a more extensive course description visit: http://www.collegeboard.com/student/testing/ap/sub_calab.html
Introduction to Statistics	This is a high school-level introduction to probability and statistics. It covers the basic concepts, displays, and computations of statistical measures
English/Language Arts	
English I	English I focuses on the development of language arts skills including reading, writing, speaking, listening and media literacy. Students examine short stories, poetry and novels by a variety of well-known authors in order to gain a deeper understanding and appreciation of literature. Special attention is directed toward improving students' grammar, expository writing and research skills. Vocabulary study includes Greek root words.
English II	English II emphasizes language arts skills including reading, writing, speaking, and listening. Coursework focuses on the reading and understanding of difficult texts selected from British and Western literature. The objective is for students to develop their writing performance, comprehend and analyze literature, and deepen their understanding of the organic process of revision. Special attention is given to improving students' research skills and writing abilities.
English III	English III includes the comprehensive teaching of writing, speaking, listening and media literacy skills. Emphasis is on understanding and appreciating United States literature from all genres and time periods. A variety of cultural texts will be used, including Native American literature. The goal of analyzing such texts is to develop the student's writing ability through effective use of language, organization, fluency and proper command of grammar. Students practice the type of writing required for the Montana University System, SAT and ACT writing assessments.

English IV	English IV is a further exploration of language arts skills including reading, writing, speaking, listening and media literacy. Studies here emphasize world literature in the form of poetry, essays, drama and fiction. This includes the recognition and appreciation of the diversity of human experience expressed through world mythology, literature, and culture. The focus is on expanding critical and analytical writing skills, timed writing and research.
AP Language and Composition	This course is a demanding, college-level class that prepares students for the AP* English Language and Composition exam in May. Students focus on becoming skilled readers of prose written from different time periods and rhetorical contexts, as well as becoming skilled writers who compose for a variety of purposes. Emphasis is on expository, analytical and argumentative writing that forms the basis of academic and professional communications, as well as the personal and reflective writing that fosters the ability to write in any context. Students should check with their intended college to see which AP* English exams may exempt them from freshmen English composition requirements. For a more extensive course description visit: http://www.collegeboard.com/student/testing/ap/sub_englang.html?englang
AP Literature and Composition	This course is a demanding, college-level class that prepares students for the AP* English Language and Composition exam in May. While enrolled in the MDTA AP Literature and Composition course students will engage in close reading (active and thoughtful) of literary works in a rigorous, college-level curriculum. Through the deep study of works of literary merit, students will sharpen their awareness of language and how writers use language to create meaning. In addition, students will develop an independent appreciation of literary works while becoming sensitive to literature as shared experience. Students will discuss and write about the individual work (novels, plays, poems, essays) as well multiple sources. This course's literary study will look at style and structure, diction, figurative language, imagery, selection of detail, language, tone and syntax. Writing well about literature is a key component of the course. In addition to essay writing, students will be expected to write clear, supported posts and responses in threaded discussion. For a more extensive course description visit: http://www.collegeboard.com/student/testing/ap/sub_englit.html?englit
Creative Writing	This course covers reading and writing for those interested in different forms of creative writing (course description update in process)
Social Studies	
Global Studies	Global Studies is an introductory social studies course. Students explore the cultural, political, geographical and economic issues facing Africa, Asia, the Middle East, North and South America and Europe. Current events and issues are emphasized in connection with the curriculum.

World History	World History is a survey course designed to introduce students to the wide spectrum of events that constitute the history of World civilizations. Using a chronological approach, students will study the political, social and economic history of the World from pre-history until modern times.
Montana History	Montana History explores the political, social and economic history of the state of Montana in context of the larger western United States. The course will cover pre-history through modern times and include different perspectives including Native American cultures.
US History	US History is a comprehensive survey course designed to acquaint students with the wide spectrum of events that constitute the history of the United States. Using a chronological approach, students will study the political, social and economic history of the United States from pre-history until modern times.
Current Issues in Government	A study of current events related to government and related issues. The curriculum is current events driven and involves projects and in-depth studies of content taught in the American Government curriculum.
Psychology	Psychology is the study of the human mind and human behavior. This one-semester course covers topics such as history, research, biopsychology, sensation and perception, consciousness, learning, memory, intelligence, personality, psychopathology and therapy. Coursework integrates multicultural approaches and themes to make psychology meaningful to students of diverse backgrounds.
AP US History	AP* United States History prepares students for the AP* exam in May. This rigorous course provides students with the necessary skills to critically analyze events in United States history. Students learn to assess historical materials and to weigh the evidence and interpretations presented in historical scholarship. For a more detailed course description, visit: http://www.collegeboard.com/student/testing/ap/sub_ushist.html?ushist
American Government	This is a comprehensive study of American, Montanan, local and Tribal governments. The course includes a focus on law, economics and contemporary issues in order to provide students with a sound foundation in the essential components of functioning democracy. This course meets the state graduation requirement for government in a single semester. Students in districts that require a full year of government are encouraged to take the Current Issues in Government class that complements this course.

AP Government and Politics	This course prepares students to take the AP U.S. Government & Politics exam in May. It is designed to give students an analytical perspective on government and politics in the United States. It includes both the study of general concepts used to interpret U.S. government and politics as well as the analysis of specific case studies. It also requires familiarity with the various institutions, groups, beliefs and ideas that constitute U.S. political reality. For a more detailed course description, visit: http://www.collegeboard.com/student/testing/ap/sub_usgov.html?usgovpol
Science	
Earth Science	This course will study the phenomena affecting the formation, history and current conditions of Earth, including its oceans and atmosphere. Topics include astronomy, geology, oceanography and meteorology. Students will discover how earth science affects their lives by exploring topics related to Montana.
Biology	Biology is the study of living organisms and their interrelationships with each other. Topics in this class include: scientific method, ecosystems, populations, cells and cell processes, biochemistry, genetics, evolution, classification and organism diversity. The goal of the course is to promote scientific literacy in both lab skills and content knowledge. Current research applications of the course content are emphasized throughout
Chemistry	The purpose of this course is to study electrons and their interactions as they relate to matter. Topics include atomic structure, bonding, measurement, reactions, acids and bases, stoichiometry and gas laws. Students predict, design, experiment and describe the chemical interactions of everyday life. Problem-solving skills will be developed and enhanced. Mathematical relationships are emphasized as well as modern scientific theory.
Physics	The goal here is to understand our world by recognizing and defining problems and then observing, measuring, and making hypotheses and theories. Topics include energy, motion, sound and light. Students will solve problems, measure physical properties in a virtual lab setting, perform calculations and write comprehensive lab reports.
Oceanography	Oceanography provides an excellent opportunity to gain knowledge about the biological, physical, and chemical properties of marine ecosystems. Through an interdisciplinary approach, the oceanography topics are explored through hands-on labs, research projects and video field trips. Oceanography encourages students to investigate both the marine world and the environmental issues that people must consider when using the oceans many resources.
Environmental Science	In this course students learn about ecosystems and the organisms that live within them. They learn how important it is to protect the many species on Earth and study ways of achieving that goal. In addition, students explore how their own habits affect the Earth's environment. By the end of the course students will have developed scientific literacy in these areas in order to participate effectively in a democratic society.

AP Physics B	AP Physics B is an intensive study of physics that prepares students for the AP exam in May. The course covers each of the following five content areas: Newtonian mechanics, fluid mechanics and thermal physics, electricity and magnetism, waves and optics, and atomic and nuclear physics. Knowledge of algebra and basic trigonometry is required. Calculus basics may be introduced in connection with physical concepts, such as acceleration and work. For a more expansive course description, visit: http://www.collegeboard.com/student/testing/ap/sub_physicsb.html?physicsb
AP Biology	The AP Biology course is a year-long course designed to be the equivalent of a college introductory biology course usually taken by biology majors during their first year of college. Non-science majors often use this course to fulfill a basic requirement for a laboratory-science course. Primary emphasis in this course will be on developing an understanding of concepts rather than on memorizing terms and technical details. Cell's structure, chemistry and physiology as well as genetics are taught in the first semester.
Health and PE	
Physical Education I	This course is designed to provide students with the basic skills and information needed to begin a personalized exercise program and maintain an active and healthy lifestyle. Students participate in pre- and post fitness assessments in which they measure and analyze their own levels of fitness based on the five components of physical fitness: muscular strength, endurance, cardiovascular fitness, flexibility, and body composition. In this course, students research the benefits of physical activity, as well as the techniques, principles, and guidelines of exercise to keep them safe and healthy. Throughout this course students participate in a weekly fitness program involving elements of cardio, strength, and flexibility.
Physical Education II	This course takes a more in-depth look at the five components of physical fitness touched on in Fitness Fundamentals I: muscular strength, endurance, cardiovascular health, flexibility, and body composition. This course allows students to discover new interests as they experiment with a variety of exercises in a non-competitive atmosphere. By targeting different areas of fitness, students increase their understanding of health habits and practices and improve their overall fitness level. Students take a pre- and post fitness assessment. Throughout this course students also participate in a weekly fitness program involving elements of cardio, strength, and flexibility.
Health	This comprehensive health course provides students with essential knowledge and decision-making skills for a healthy lifestyle. Students analyze aspects of emotional, social, and physical health and how these realms of health influence each other. Students apply principles of health and wellness to their own lives. In addition, they study behavior change and set health goals to work on throughout the semester. Additional topics of study include healthy relationships, reproductive health, disease transmission, substance abuse, safety and injury prevention, environmental health, and consumer health.
Career/Technical Ed	

Microsoft Office Career Technology	In process; course is being updated for Fall 2012
Web Design	This project-based course is an introduction to the design, creation and maintenance of webpages and websites. Students will learn about netiquette, copyright and how to critically evaluate website quality. Students will learn how to plan, design and create web pages in a WYSIWYG program, HTML coding, Cascading Style Sheets (CSS) and JavaScript. Students will learn how to resize images, the function of pixels, image optimization, image filters, create navigation bars and how to test and publish websites.
Personal Finance	Draft Course Description: Personal Finance is a course designed to help students understand the impact of individual choices on occupational goals and future earnings potential. Real world topics covered will include income, money management, spending and credit, as well as saving and investing. Students will design personal and household budgets; simulate use of checking and saving accounts; demonstrate knowledge of finance, debt, and credit management; and evaluate and understand insurance and taxes. This course will provide a foundational understanding for making informed personal financial decisions.
Health Occupations	This Career and Technical course provides an overview of what it means to be a health care professional. Students will explore the topics of history and trends of medicine, professionalism, leadership skills, legal and ethical responsibilities, communication, cultural diversity, health care systems, medical math, and infection control as they relate to health care. Additionally, students will research and reflect on the compatibility of various health care professions with their personal traits and goals for the future.
Special Elective	
Native American Studies	This course employs the 7 Essential Understandings about Montana Indians as a framework or organizing principle; students will investigate each of the 7 EUs in depth with use of primary sources from the 12 Montana tribes throughout, and an emphasis on critical thinking, interaction with others, and digital projects that display understanding of the course content.
Art and Fine Arts	
Digital Photography	In Digital Photography, students will learn the basics of photographic composition and lighting, the basics of using a digital camera and the basics of preparing a digital darkroom. Students will also learn basic color theory and the fundamentals of image processing. Students will be introduced to the basic elements and principles of art and create a portfolio demonstrating understanding of course material. This course is designed for the student who has no background in photography.

Art History/Appreciation	This course introduces students to the fundamentals of art and a brief history of art focusing on early art through early modern art movements.
Music	
Music Appreciation	This course will use an overview of music theory and music history to create a foundation on which each student can build a deeper appreciation of all music. There is no prerequisite for this course; those of you with a musical background may find some activities easy, but everyone can access and learn from this course content.
World Language	
Spanish I	A multi-media, game-based approach makes this introductory Spanish course different from traditional approaches to language learning. Advanced teaching techniques are used to turn compelling adventures and activities into rigorous lessons in grammar and vocabulary. This course provides a solid foundation for reading, speaking, writing, and understanding Spanish and cultivates a passion for the language through exposure to culture and dynamic experiences of real people and real places. This course also features cutting-edge adaptive learning technology that lets students select the learning style that's right for them.
Spanish II	Students with a beginning foundation in Spanish will see their skills soar through compelling lessons that give them access to content so interesting that they forget that they are learning Spanish. This unique learning methodology, which relies heavily on games and stories, works effectively to take students from a tentative understanding of Spanish basics to a greater level of sophistication. This course concentrates on students' ability to articulate more and more complex thoughts and to understand authentic native language from a variety of enticing sources.
Spanish III	Intermediate Spanish students who have a strong base of vocabulary, speaking and listening skills will reach a new level of mastery and fluency in this course. This course teaches advanced grammar and vocabulary and emphasizes correct accents and comprehension of "real world" native speech. The high energy excitement of the content, the challenging games and the wide variety of compelling stories contained in this course combine to make advanced learning as exciting as ever. Our unique error recognition technology helps students to eliminate common mistakes from their speaking and writing.
French I	A multi-media, game-based approach makes this introductory French course different from traditional approaches to language learning. Advanced teaching techniques are used to turn compelling adventures and activities into rigorous lessons in grammar and vocabulary. This course provides a solid foundation for reading, speaking, writing, and understanding French and cultivates a passion for the language through exposure to culture and dynamic experiences of real people and real places. This course also features adaptive learning technology that lets students select the learning style that's right for them.

French II	Students with a beginning foundation in French will see their skills soar through compelling lessons that give them access to content so interesting that they forget that they are learning French. This unique learning methodology, which relies heavily on games and stories, works effectively to take students from a tentative understanding of French basics to a greater level of sophistication. This course concentrates on students' ability to articulate more and more complex thoughts and to understand authentic native language from a variety of enticing sources.
French III	Intermediate French students who have a strong base of vocabulary, speaking and listening skills will reach a new level of mastery and fluency in this course. This course teaches advanced grammar and vocabulary and emphasizes correct accents and comprehension of "real world" native speech. The high energy excitement of the content, the challenging games and the wide variety of compelling stories contained in this course combine to make advanced learning a blast. Our unique error recognition technology helps students to eliminate common mistakes from their speaking and writing.
German I	A multi-media, game-based approach makes this introductory German course different from traditional approaches to language learning. Advanced teaching techniques are used to turn compelling adventures and activities into rigorous lessons in grammar and vocabulary. This course provides a solid foundation for reading, speaking, writing, and understanding German and cultivates a passion for the language through exposure to culture and dynamic experiences of real people and real places. This course also features cutting-edge adaptive learning technology that lets students select the learning style that's right for them.
German II	Students with a beginning foundation in German will see their skills soar through compelling lessons that give them access to content so interesting that they forget that they are learning German. This unique learning methodology, which relies heavily on games and stories, works effectively to take students from a tentative understanding of German basics to a greater level of sophistication. This course concentrates on students' ability to articulate more and more complex thoughts and to understand authentic native language from a variety of enticing sources.
Latin I	Latin is the foundation for French, Spanish and Italian as well as the basis for much of the sophisticated vocabulary of modern English. Law, Medicine and Science still rely heavily on Latin terminology. Latin may be a "dead" language, but not for students in this course. Games, modern content, multi-media exercises and engaging stories together make this Latin experience vibrant and alive. Although students receive a strong foundation in skills to decode the classics, the course also emphasizes the ability to speak and understand in Latin. Students will be able to read and understand excerpts of authentic classical works by the end of the course.
Latin II	Latin is the foundation for French, Spanish and Italian as well as the basis for much of the sophisticated vocabulary of modern English. Law, Medicine and Science still rely heavily on Latin terminology. Latin may be a "dead" language, but not for students in this course. Games, modern content, multi-media exercises and engaging stories together make this Latin experience vibrant and alive. Although students receive a strong foundation in skills to decode the classics, the course also emphasizes the ability to speak and understand in Latin. Students will be able to read and understand excerpts of authentic classical works by the end of the course.

Chinese I	Pronunciation and Chinese characters are taught in this course forming the base for students' listening, reading, speaking and writing abilities. Students learn basic Chinese vocabulary and simple sentence structures. Texts introduce daily life customs and culture in China. Through this course students can understand the main points of clear standard expressions on familiar matters regularly encountered in work, school, leisure, etc.
Irish Language	This course introduces students to the rudiments of the Irish language, including phonemes and pronunciation, syntactical structure, and verbal conjugations. In addition, a history of the language is provided, as well as a general introduction to Irish culture, including discussions of family and place names. Students are encouraged to begin speaking with basic sentence structures.

MTDA Connect Courses Note: The following courses are offered for credit recovery.

<u>Math</u>	<u>Science</u>	<u>Social Studies</u>
Algebra 1A & 1B	Biology A & B	American History A & B
Algebra 2A & 2B	Earth and Space Science A & B	Economics A & B
Geometry A & B	Chemistry A & B	Geography A & B
<u>English</u>	Physics A & B	US Government A & B
English 9A & 9B	<u>Electives</u>	World History A & B
English 10A & 10B	Art History & Appreciation	<u>Supplementary Courses</u>
English 11A & 11B	Computer Applications & Technology	Consumer Mathematics
English 12A & 12B	Health	Pre-Algebra A & B