**Abstract:** *I-DEA 2.0* is a two year project dedicated to redefining the way our school uses technology as a tool for instruction, assessment, enrichment, and increasing efficiency for our teachers. The two year project represents development of a learning structure that will take our school into the future and provide a framework for future expansion as new technologies develop. Key features of *I-DEA 2.0* are: expanding the use of our instructional management system (Moodle) to go from grades 9-12 to encompass our entire K-12 student body, pilot the use of digital textbooks and support teachers in the the development and use of open source digital texts, provide students access to a digital library, and integrate the use of next generation hardware and video systems (iPads, laptops, IEN, Bluejeans). The ultimate goal of *I-DEA 2.0* is to build a unified distance learning environment through the use of technology that will encourage and support higher student academic achievement and increased use of technology as a tool for learning, communication, and collaboration.

The implementation of *I-DEA 2.0* within our school will allow our students who are located across the state access to high quality instruction, interact with other students, and meet face to face with teachers and other instructors. The next generation learning environment will bridge the geographical gap between our students leading to a bigger sense of community within our school and increasing student academic achievement by providing all students with the access they need to curriculum, teachers, and other students. Examples of direct benefit to students and teachers include:

- Ability for students to collaborate, create, and publish projects so that others can view and comment, provide an audience.
- Students will function comfortably in an online learning environment and have anytime, anywhere access to learning resources, assignments, etc.
- Increased usage of IEN dual credit courses and virtual field trips
- Increased accountability – students will create ePortfolios and upload assignments within Moodle. Teachers and students will access all work and assignments in one system. Administrators can more easily observe and evaluate instructional quality and effectiveness through the use of a common schoolwide learning management system.
- The LMS and usage of videoconferencing software will provide a place for students to share completed projects and presentations allowing other students to see and give feedback. Parents will be able to see what grade level appropriate work looks like.

- Opportunities for students to collaborate in a “walled garden” environment in Moodle and Mahara. This is a critical component of implementing the Idaho Core within a distance education environment.
- The development of digital textbooks and course content that can be immediately updated will allow our students access to the most current content, without waiting for adoption and rollout of curriculum on “adoption cycles”.
- Equal access to quality instructional resources and course content will be possible for all I-DEA students across the state, regardless of their zip code.
- Provides global access to interactive virtual field trips and opportunities that students would not be able to experience in Idaho due to socio-economic status. This in turn will let students examine opportunities that would lead to development of resources and careers in Idaho.
- Teachers and administrators will have information about student academic progress readily available in the LMS to compare with assessment data in order to ensure that student learning objectives are met.
- Data needed to measure schoolwide goals will be easier to access through the use of a schoolwide LMS.

Grant funding will be used to train all I-DEA teachers on the Moodle LMS, to purchase upgraded server hardware for the current Moodle system to support expanded usage of the system, to implement a digital library checkout system, to provide stipends for teachers to develop digital textbooks and content. Initial hardware and training costs are the biggest expenditures necessary for the implementation of *I-DEA 2.0*. Ongoing training and hardware upgrades throughout the years will be needed to maintain the Learning Management System. However funds for these future maintenance needs will be available from the savings gained because future yearly subscription/maintenance fees and textbook expenditures will be significantly reduced because of the shift to an open source LMS and course content. The use of an open source LMS and texts/digital content that are also free increases the scalability of this project should other schools desire to replicate it. *I-DEA 2.0* will be possible for any school district to implement (both virtual and traditional schools). The backend technologies used in the system are all easily scalable to fit the needs of any district big or small. Moodle, Mahara, Google Apps for Education, and CK12 are free resources available to all. The IEN is available to all Idaho high schools and is coming online for junior high schools next year. This model could work in any school model due to schools having the technology infrastructure to currently proctor ISAT tests.

**Education Needs and Goals:** Currently I-DEA has implemented a Moodle LMS in grades 9-12, with a couple of 7th and 8th grade courses. Our K-8 teachers have relied on various forms, face-to face portfolio conferences, progress monitoring via AIMSWeb, review of student work in online subscriptions, and submission of student work via email to review and assess student progress toward meeting learning objectives. The goals of *I-DEA 2.0* are to: a) expand the use of the Moodle to create a seamless and comprehensive instructional management system throughout all grades K-12, and b) to expand the use of digital textbooks and content in the existing 7-12 online courses within Moodle. While our school has reached achievement level rating of five stars in the Idaho 5 Star Rating system, we feel our current system of instructional delivery and course assessment is disjointed and unevenly accessible by our student body. We have identified weaknesses in the areas of Language Usage and successful transition of our students through the math course progression that is critical to preparation for postsecondary education. The percentage of our 8th grade students prepared to take Algebra I in the 8th grade has remained flat for the past two years in the <30% range, despite our efforts to improve. Academic growth is not being demonstrated consistently across grade levels with our special needs students according to our IRI and ISAT data—a critical area of focus as ELL/IEP/504 students make up 9% of our student population. We believe that creating a unified school wide learning management system that is rich in digital content and accessible by all our students is vitally important as we move forward. Our teachers must have the technology tools and training necessary to successfully implement this system and continue to build it into the future.

Our secondary teachers have seen the benefits of using Moodle to provide a means for students to interact with them and other students within an online classroom environment, and to have student assignments and course assessments housed and tracked within a comprehensive LMS. According to one secondary teacher, "*Moodle's base and most important feature is the ability to post, grade, and return assignments. Simply having twenty-four seven access to classroom materials makes a big difference in student performance. Through Moodle I am able to post all the necessary coursework and link outside resources and videos to support it…Viewing daily coursework from students across the state has opened a wonderful new avenue of understanding regarding individual student learning styles and academic levels… Moodle has several features that encourage online interaction. Each time I communicate with a student via Moodle by posting or commenting on individual assignments, the course management software sends an automatic email through the IDEA Gmail system to the student. This allows the student a backup notification regarding coursework without even getting into the Moodle system. However, once they are logged on to Moodle they have a whole host of communication techniques from discussion boards, blogs and wikis to a widely used instant message system at their fingertips they can employ to communicate with teachers and fellow students.*"

Our K-8 teachers have expressed need for a more comprehensive way to collect and review student work, provide instructional support, and to foster student-teacher and student-student communication. These teachers have heard the positive feedback from our 9-12 teachers on the use of Moodle and are eager to develop online learning environments for their students as well. Additionally all teachers have expressed the need for further technology training on tools they can use within the Moodle LMS to improve instruction, such as AirServer, as well as tools such as GoogleTalk and GoogleDrive. Teacher buy-in for increasing the use of our LMS and digital tools has never been higher.

We have piloted the use of digital texts during 2012-13 in Science for grades K-5, and have seen measurable increases in our 5th grade Science ISAT scores for the pilot group. On the Spring 2012 Science ISAT, **74.1**% of I-DEA 5th graders scored Proficient or better. On the Spring 2013 Science ISAT, **88%** of I-DEA 5th graders using the Science Fusion online textbook scored Proficient or better. Additionally the benefits of having transparency on how often students access the text, and their progress moving through the content, has given teachers more information about how students are using the text as they work with course content. *I-DEA 2.0* will extend those benefits into more courses as digital texts and course content are developed and implemented using open source materials.

I-DEA also has a need to provide every student equal access to learning resources as the student population is drawn from across the state of Idaho. Forty percent of I-DEA students live in rural or more isolated areas and are unable to come into one of the regional facilities for portfolio conferences, library checkouts, or student events. Implementing *I-DEA 2.0* will give all students equal access to these resources through access to a digital library (OverDrive), and the use of videoconferencing software (BlueJeans/IEN) to allow students to join face-to-face events virtually. This same software will be used for teacher training, saving the cost of travel as we move forward in development of I-DEA 2.0, participation in current school wide improvement efforts such as Go On Idaho, and implementation of the Idaho Core. Technology training events for parents, teachers, and students will also be delivered via videoconference on a monthly basis.

**Scope and Sequence:**

- *Summer 2013*: Moodle LMS server hardware will be upgraded and Moodle LMS will be updated by the technology department. Start initial phases of Overdrive digital library implementation by purchasing Overdrive and begin developing implementation procedures that will include account creation, student/parent/staff training, and management of system. Technology Staff will create tutorials on the usage of HMH digital textbooks and Overdrive system with both PC's and iPads. New teacher laptops will be configured and issued to teachers.

- *Fall 2013*: The Overdrive digital library system will be accessible to students. Secondary teachers begin development of digital textbooks and expanded digital content. *I-DEA 2.0* team will work together on planning the K-8 grade Moodle using the knowledge we have from prior implementation in the high school and will create a common template for each grade level K-6 online classroom in Moodle. Teachers will participate in Moodle training. HMH digital textbooks will be available to 7-12 grade students. Grades earned by students on report cards for Q1 and Q2 will be collected and reviewed by the *I-DEA 2.0* team, as well as feedback from parent, student, and teacher surveys to evaluate the impact of the HMH textbooks.

- *Spring 2014*: Teachers on the *I-DEA 2.0* team will pilot ePortfolios with their students and evaluate usage of online texts. Evaluation of the OverDrive digital library will take place via digital surveys of parents, students, and teachers and results will be reviewed.

- *Summer 2014:* Technology staff will create user accounts and transfer the pilot system to a production environment. Teachers, students, and parents will be trained on the new portfolio system. Create new staff, student, and parent training materials for all systems. Using surveys gathered over SY13-14 from teachers, students, and parents we can develop a comprehensive training program to implement in SY14-15 for all new incoming persons. HMH texts in *I-DEA 2.0* project will be phased out and replaced with new open source texts and digital content developed by I-DEA teachers.

- *Fall 2014:* Moodle LMS with ePortfolio system will be rolled out school wide. Continue gathering data through surveys and student achievement to monitor the success of the program. The technology department will perform all training on this system based on input from surveys of staff, students, and parents to determine what types of additional training are needed. Fine-tuning of LMS format and adjustments to internal processes will be made.

- *Spring 2015:* Evaluate Moodle LMS usage by K-8 students and teachers, and impact on student performance as measured by grades and standardized testing data by the *I-DEA 2.0* team.
- *Ongoing:* Adjust and adapt the system based on student results and survey results.

Our Tech Department, administrators, and teacher leaders will form an *I-DEA 2.0* team dedicated to planning, implementation, and evaluation of a schoolwide Moodle LMS system containing an ePortfolio component, digital library, and open source digital texts and content. The team will meet monthly and use our existing framework of professional development days each month to deliver teacher training. School year 2013-14 will entail Moodle training for teachers, and development behind the scenes of the K-8 LMS online classrooms and digital content in preparation for full implementation in school year 2014-15. Teachers will be provided the resources needed in terms of time, technology, and support to develop online classrooms in our Moodle LMS, work with the ePortfolio and other plug-ins to create digitally rich learning environments for students while ensuring the assessment and communication tools are in place to ensure all students are making progress toward established learning objectives. Input from stakeholders such as teachers, parents, and students in the form of quarterly surveys will be reviewed to ensure obstacles are identified and mitigated, and that progress toward full implementation is being made. Additional resources such as professional development funds provided directly by the SDE will dovetail with grant resources and school funds dedicated to the implementation of *I-DEA 2.0*.

**Sustainability and Scalability**

Vendor-provided online textbooks such as the ones in the I-DEA 2.0 budget for FY 2014 incur an annual cost. However, I-DEA plans to initially utilize paid online textbooks to allow our teachers time to develop open source online textbooks and digital content, which will eliminate the need to purchase digital textbooks for those subjects. The intent is to create a fiscally sustainable way to provide high quality curriculum to students. Utilizing paid online textbooks for 2 years will allow students to reap the benefits of interactive texts which are more fully aligned to the Idaho Core Standards than older traditional texts, while open source textbooks are being developed. For scalability, other schools may look at the process I-DEA utilized to develop their own texts, or may utilize the materials developed as part of the *I-DEA 2.0* project.

We plan to provide training to existing staff in the use of Moodle and ePortfolios. After this initial training has occurred, we will develop video tutorials for new staff to view as they are hired in the future, keeping training costs to a minimum for new teachers and staff—while ensuring they are able to effectively work with students within the LMS

environment. The impact of this plan will allow more time-efficient training of new teachers and staff. Currently, all training is conducted fully by our existing staff for every new hire—taking time and effort to prepare and facilitate. When this plan is implemented, new hires will be asked to watch these trainings online within the LMS before attending face-to-face training, which will focus on more personalized training. Because Moodle is an open-source LMS, I-DEA incurs no ongoing costs. Schools around the state may also utilize this program at no cost.

The core of this project revolves around the Moodle LMS/ePortfolio system. These are free open source programs. They are inherently scalable and financially viable for any school to use. The programs require no support or ongoing funding. A vast online community surrounding Moodle is available to obtain free help and support for the system. Our school has successfully implemented and maintained a Moodle LMS for 3 years at the high school level at little to no cost. As we look to expand the LMS to encompass more grade levels and integrate an ePortfolio system and online textbooks, there are no software costs and minimal training expenses incurred up front.

There will be an initial cost for hardware to sustain *I-DEA 2.0*, which includes a server for the Moodle LMS as well as updated laptops for teachers. The laptops will include a 3 year warranty with accidental damage which eliminates any maintenance costs for the first three years. The expected life of the laptops is 5 years. At this time, there will be a cost to replace the laptops. The server is expected to last 7 years; through those 7 years there may be the need to expand storage which would be an additional cost. These items can easily be scaled to larger schools. Some schools may not require the initial investment if they have recently purchased laptops for teachers and have extra servers or the capability to expand a virtual server.

Overdrive's upfront costs include building a library of books for students to choose from. However, once the library of books has been built, the ongoing costs are only $2,000 per year which will expand the available library book titles each year. Schools across Idaho could look to provide Overdrive for students who have access to any digital device, rather than spend money on adding hard-copy books to their libraries. When compared with the amount of money spent retrieving lost or overdue books, purchasing new books, and replacing damaged books, the costs seem scalable for any forward-thinking school.

*I-DEA 2.0* has an initial investment that will reduce exponentially after the first two years. After the initial investments of the Moodle server, trainings, laptops, and teacher stipends to develop our own digital textbooks and content, the online textbook costs will be eliminated-- leaving Overdrive and turnover in equipment every 5-7 years where a new purchase of laptops and server upgrades will be needed. The reduction in costs associated with the purchase of curriculum and library books, and the selection of,

purchasing, and distribution/inventory of these items from an overhead standpoint could cover the ongoing costs. The estimated per student cost of implementation of *I-DEA 2.0* is $82.23. However some of the costs are fixed and would not increase depending on the size of a school attempting to replicate this project. Professional development funds from SDE could be used to augment the training investment necessary for planning and implementation.

**Budget Narrative**

The purchases for the first year of *I-DEA 2.0* are all necessary to initiate the project; many of the purchases will need to be made during the June-August timeframe for use during the school year. Moodle training, HMH digital textbooks, OverDrive, and laptops will ensure that teachers have the resources needed to fully develop the schoolwide LMS at each grade level in K-6 and for all courses offered in grades 7-12. Additional server space to house the Moodle LMS will need to be installed by the I-DEA technology department. Teacher stipends will be paid out at the end of each semester to teachers engaged in development of open source digital texts/content that will be used for classroom instruction during the 2014-15 school year.

Purchases for FY 2015 will continue and complete the buildup of library book titles in the digital library system OverDrive, continue the purchase of a reduced number of HMH digital texts that will be phased out in FY 2016, and fund teachers stipends to develop open source digital texts and content that will replace the HMH texts in FY 2016.

| | FY 2014 | Purchase Date | Description | | | FY 2015 | Purchase Date | Description |
|---|---|---|---|---|---|---|---|---|
| Equipment | | | | | | | | |
| Moodle LMS Server | $6,000.00 | Jul-13 | HP ProLiant DL380 G7 | | | | | |
| Teacher Laptops | $17,325.00 | Jul-13 | (15) Lenovo T530 2392 Core i5 w/ 3 year warranty | | | | | |
| Secondary Teacher online training | $1,499.95 | Aug-13 | Basic Moodle and Navigation, Learning Management, Course Management - 10 participants, 6 hours | | | | | |
| Elementary Teacher onsite training | $7,181.95 | Jul-13 | Basic Moodle and Navigation, Learning Management, Course Management, Rapid Course Development - 25 participants, 16 hours, airfare, lodging, mileage and per diem for staff | | | | | |
| Teacher Stipends | $8,000.00 | Dec. 2013, June 2014 | Develop open source digital text. 1/2 paid in Dec., 1/2 paid in June | | | $8,000.00 | Dec. 2014, June 2015 | Develop open source digital text. 1/2 paid in Dec., 1/2 paid in June |
| Holt McDougal Biology | $921.90 | Jul-13 | Purchase 1 yr. subscription for digital text until Open Source digital text are developed | | | | | Open Source digital text will be developed for Biology by end of FY14 |
| Modern Chemistry | $351.20 | Jul-13 | Purchase 1 yr. subscription for digital text until Open Source digital text are developed | | | $351.20 | Jul-14 | Purchase 1 yr. subscription for digital text until Open Source digital text are developed |
| Holt McDougal World Geography | $1,216.60 | Jul-13 | Purchase 1 yr. subscription for digital text until Open Source digital text are developed | | | $1,216.60 | Jul-14 | Purchase 1 yr. subscription for digital text until Open Source digital text are developed |
| World History Full Survey | $1,716.00 | Jul-13 | Purchase 1 yr. subscription for digital text until Open Source digital text are developed | | | $1,716.00 | Jul-14 | Purchase 1 yr. subscription for digital text until Open Source digital text are developed |
| High School United States Government: Principles in Practice | $129.30 | Jul-13 | Purchase 1 yr. subscription for digital text until Open Source digital text are developed | | | | | Open Source digital text will be developed for US Government by end of FY14 |
| The Americans Survey | $1,564.50 | Jul-13 | Purchase 1 yr. subscription for digital text until Open Source digital text are developed | | | $1,564.40 | Jul-14 | Purchase 1 yr. subscription for digital text until Open Source digital text are developed |
| Overdrive book titles | $6,000.00 | Jul-13 | One time expense for access to electronic book titles for student checkout. Cost per title ranges from $12.95 to $42 per copy. (does not include $1,000 annual maintenance fee) | | | $3,000.00 | Jul-13 | One time expense for access to electronic book titles for student checkout. Cost per title ranges from $12.95 to $42 per copy. (does not include $1,000 annual maintenance fee) |
| **Total** | **$51,906.40** | | | | | **$15,848.20** | | |