Assignment #1 – A Vision for E-Learning

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Part 1: The Context

The following vision for e-learning has been created for the Science Department at Sardis Secondary School, a comprehensive public school for grades 10 to 12. Like many schools around the province, Sardis uses the provincially mandated BCeSIS for record keeping such as attendance, final marks, and student demographic information, although, many teachers choose to use IntegradePro for their day-to-day marks and communicating with parents. A school district server hosts a network for teacher and students files as well as a website for uploading course notes and information. Sardis is one of few schools in the province that runs a large international program, providing a source of revenue beyond the funding provided by the province.

The Science Department currently offers a range of courses from hands-on (Agriculture, Earth Science, and Science and Tech) to advanced placement (Honors Science 10, Honors Chemistry 11, AP Chemistry 12 and AP Physics 12). A Career Prep program that sees 60+ students enrolled annually provides additional funding for technology or initiatives the department wishes to invest in. All classrooms are equipped with computers and ceiling mounted projector and there is a shared mobile laptop cart.

There are 13 faculty in the Department with varying comfort in regards to technology. All but one are currently using some form of electronic technology in their classroom on a daily basis, with most relying heavily on PowerPoint supported lecture as their main mode of instruction. Electronic lab equipment (ex. Logger Pro motion detectors) has

replaced much of the old equipment (ex. Tickertape timers). Many use IntegradePro to regularly communicate progress via email to students and parents. The potential for a shift towards a blended model of e-learning is great, as there are currently 6 teachers either enrolled or who have completed a Masters in Educational Technology.

Aside from taking their core courses required for graduation (Science 10, Math 10, English 10, Socials 11, English 12), students have a lot of flexibility as to which courses they enroll in. Each year they must register for a minimum of 8 courses, 4 in each semester (September – January and February – June). Students must complete at least one grade 11 science in order to graduate. Students who have no desire to continue with science typically register for the hands-on courses, while students who are planning to take science at university will often enroll in Biology 11/12, Physics 11/12 and Chemistry 11/12. Motivated students also have the option of enrolling in the four advanced placement courses that are available, and occasionally students will complete university level courses concurrently with their high school studies. Informal surveys have shown that over 85% of students have smart phones or laptops at their disposal.

Part 2: The Environmental Scan

Because Sardis Secondary has some degree of autonomy with regards to how it operates (both financially and logistically), I have chosen to consider the School District Plan to be an external factor. The Strategic Plan for 2010-2015 states that the goal for

technology is to work and learn through the integration of appropriate technology stating the following objectives:

- Weave technology and learning into instructional practices
- Use technology to improve information gathering and evidence for formulating policy and making decisions
- Increase awareness and skill level in the use of technology for teaching and learning. (Chilliwack School District, 2010)

Although encouraging that one of four district goals references technology, the plan does very little to expand on the achievement of these objectives. This puts the onus on schools to develop their plan as they see fit. Plans for e-learning can therefore be tailored to the needs of the school and do not have to be a one-size fits all for the entire district.

While control of department funds occurs internally, the district ultimately has the final say. In past years, the department could build up savings and work towards a larger technology purchase, for example purchasing a mobile laptop cart with 15 units. Saving up for this purchase required carrying over a budget surplus in the Career Prep account from one year to the next. However as the district has encountered budget shortfalls, they have started to claw back unused funds at the end of each year. This has made saving for larger purchases nearly impossible, and has lead to spending for the sake of spending rather than in accordance with the technology plan of the department. The school district also controls the quantity of funds that are allocated towards the district technology department. This department has the task of supporting all of the schools in the

Chilliwack School District and thus funding for them will directly impact the speed at which technology issues can be dealt with.

More than 9 years ago, BC acquired and implemented BCeSIS as the province-wide Student Information System.   The rationale was the requirement to provide common access to each student's record (Gartner, 2011). BCeSIS was met with resistance from the teacher's union, citing student privacy concerns and frustrations with the "clunky" user interface. In 2011, Gartner conducted a review of BCeSIS and recognized that BC has evolving requirements and that personalized learning within a 21st century education context will require more accessible, flexible and responsive technology to enable learners to achieve success (Gartner, 2011). Given low user satisfaction and the inability of the program to adapt to a changing industry, BCeSIS is currently being phased out with a part of BC's education plan now being to find a replacement SIS (BC Ministry of Education, 2011). Gartner also points out that more vendors are offering LMS and SIS combinations thus affording different delivery methods including online learning and virtual learning. Should the Ministry of Education adopt one of the recommended products, there is a greater potential for blended e-learning models to be adopted in BC's classrooms.

While the shift in recent years has been towards Balanced Assessment, there is still a strong focus on summative assessment in education. The rationale for grade 12 provincial exams was to provide rigorous and consistent assessment so that universities and potential employers have a clear benchmark of student's knowledge, understanding

and skills. They provided a benchmark that determined whether a student would get into their desired university. As the larger universities across Canada stopped using provincial exam scores to determine academic ability, the smaller universities and colleges had no choice but to follow suit or risk declining enrollment. This lead to provincial exams being made optional and then finally dropped altogether, with the exception of English 12. This brings up two factors affecting e-learning potential. Firstly, the absence of summative exams in grade 12 has lead to greater perceived flexibility within the courses and gives teachers the confidence to implement new teaching models without the fear of low exam results. Secondly, it highlights the trickle down nature of the education system. As employers demand graduates who are able to learn independently and adapt, who have good communication skills and who are capable of knowledge navigation (Bates & Sangrà, 2011), university programs will have to change their teaching methods. If high schools don't change to reflect the changing landscape at the universities, the learning curve in the first year will be steep and students will be set up for failure. If one part of the system is going to be successful in changing, the other levels will have to follow suit.

Sardis Secondary has two pilot programs running that sees the high school partnering with outside enterprises. Spratt Shaw Community College purchased the required hardware and software for CAD lab to be set up in the school. Students have access to this technology during the day, while Spratt Shaw classes come in during the evenings. Sardis was also one of the first schools to sign on to the Cisco Networking Academy Program, with Cisco setting up the lab and providing continued support over the past 15

years. Many students obtain jobs after completing the program and there is an articulation agreement with University of the Fraser Valley that allows many of these students to start as second-year students. With successful examples of industry partnerships within our own school, and articulation agreements already in place, the framework is there for the Science Department to pursue similar types of ventures. The potential is there not only to partner with institutions such as UFV, but also tailor education to each student's specific goals, better preparing them for the job market.

The internal factor that will have the greatest potential to affect the use of e-learning is staff buy-in. Although there has been a push towards problem based learning and constructivists methods of teaching, many staff continue to use transmission modes of delivery. They view the addition of PowerPoint to their lectures and online notes as the necessary steps towards 21st century learning. In a course with a provincial exam at the end (Science 10), they see lecture as the only way of covering all of the material that will be tested. In non-provincially examinable courses, they still feel tied to the Prescribed Learning Outcomes (PLO) and the misconception that the only way to cover each of them is through lecture. Teachers are uncomfortable with the perceived idea of relinquishing control of the classroom in order to work collaboratively to construct knowledge. Bates and Sangrà point out that "*the response of universities and colleges has been ultraconservative, focusing on protecting and enhancing the traditional model of teaching and learning...*" (Bates & Sangrà, 2011, p50). Although they were referring to postsecondary institutions, the same can be said for secondary institutions.   The perceived pressure of needing to deliver large volumes of content, combined with a sense

of "this is the way it's always been done" will likely be a challenge in implementing e-learning.

Although teacher buy in will likely pose a challenge, it will likely be easier at this school than many others. The advantage is that six of fifteen faculty members are either currently working on or have already completed their Masters in Educational Technology. With such a high percentage of staff already well versed in the benefits of e-learning there will be a natural support network built into the department. Because these six instructors won't need to be convinced of the merits of e-learning, they make an obvious place to start the changes necessary to introduce a new e-learning model.

Part 3: The Vision

As Sarah waited for her turn to walk across the stage and receive her diploma, she couldn't help but reflect on her past three years at Sardis and how much she has enjoyed her time here. She thought back to the first September when she walked through the doors as a scared grade 10 student not knowing what to expect from this school and its "different" approach to teaching.

In middle school, she had always done well because she did her homework and listened quietly as the teacher lectured. While she did find classes boring, often struggling to stay awake, she knew what to expect and could fairly easily predict the types of questions that

would show up on exams. She had heard from friends that Sardis was teaching science differently, that students progressed at their own pace using guiding questions that THEY came up with. She remembered feeling nervous about having to come up with a question that was big enough to cover… well science. She had been worried about whether she would learn everything she needed to fulfill her dream of becoming a nurse.

In hindsight she realizes how silly she was to think that the teachers would just throw them into this new way of learning. She'd heard Mr. X use the term "scaffolding" on that first day of science class as he explained that the next three years would be a gradual transition towards independent learning. The 72 minutes that she spent in science each day was the highlight of her grade 10 year. Rather than lecturing model she was used to, Mr. X would facilitate a class discussion of the key concepts for that day before having them work on laptops. Online they would access the LMS for the course where they would have access to concept summaries, assignments, links to activities and demos, practice quizzes and discussion forums. She appreciated that she could work at her own pace and she enjoyed the discussion forums where Mr. X would post the question/problem of the day. As a class they would have to critique it or work together to explain it. By the end of the course, Mr. X was using problem suggestions from the class and she had been proud when he had used 6 of hers. She remembered how difficult the first Unit project had been. Students were expected to create some sort of record (wiki, podcast, portfolio) of what they had learned. She had done a YouTube video the first time because that's what she knew, but Mr. X had encouraged them to try different formats and now had confidence with all sorts of technology. As the end of the year had neared

and she started to prepare for the provincial exam, she had found that it wasn't as difficult as expected. Rather than having to cram forgotten material in the week before the test, she actually found herself remembering a lot of it. And what she didn't remember, she was able to deduce from the information given in the question.

Sarah she had felt much more confident entering grade 11 sciences, one of which she actually took during the second half of grade 10. Biology had been her favorite. At the beginning of each week, they would start with a class discussion of the readings posted on the course website. By the end of that discussion, the class would have to come up with one guiding question that they wanted to investigate further for that week. It would then be posted to the online forum, where students would have to come to a mutual agreed upon answer by the end of the week. The remainder of the class time that week would be spent working on their individual questions for the current unit. At the beginning of each unit they would work with Ms. Y to determine a question and a way to present their finding. When students had finished their required units for a course, they presented their work to two grade 12 students who would give feedback prior to the final assessment.

Grade 12 course, while similar in layout, were much more open ended, allowing students to work at their own pace. Grade 12 students were encouraged to come up with a guiding questions/problem that would span the majority of the course. She liked the fact that she was able to tailor the questions to her ultimate goal of nursing. Although they still had to participate in the Monday Class Discussions and subsequent online forums, students had been able to proceed through the course at their own rate, allowing for Sarah to finish the course in half the time. For the remainder of the course she was able

to use the time to work on online UFV courses that she would need for her nursing

degree. She feels especially fortunate, because the cost of these courses are covered by

funding from the ministry, helping to reduce the debt she will incur through her post

secondary.

Now as she stands there, ready to cross the stage, she feels fortunate to have attended

Sardis. She will be able to finish her nursing degree in three and half years and she feels

more than prepared for the UFV program that relies heavily on Problem Based learning.

Currently, high school is a one-size-fits-all approach to learning. Opportunities to work

ahead are teacher dependent and the pace of a course is determined by a ratio of content

to days in class, rather than student understanding or proficiency in the material. The

current generation of students is most comfortable in learner centered environments and

is accustomed to learning in interactive and reflective manners (Halse & Mallinson,

2009). Not only does the vision for e-learning accommodate this generation's learning

style but it also increases flexibility for students and increases access to learning

opportunities at postsecondary institutions. In addition, online simulations and virtual

learning environments will allow students to participate in labs that that would otherwise

be too expensive to run at the high school level.

Like universities, high schools still have the features of an industrial organization,

providing a standard product at a fixed location (online book page 7). As high schools

and universities come into line with the 21st century, this industrial model will need to

change. *"Workers in knowledge-based industries need to continue to learn throughout*

life, to keep up to date in their fields and indeed to develop new knowledge that can be

applied to their work…. Workers in such industries are expected to have the following:

- o *Good communication skills*

- o *Ability to learn independently*

- o *Social skills*

- o *Teamwork*

- o *Ability to adapt to changing circumstances*

- o *Thinking skills*

- o *Knowledge navigation (*Bates & Sangrà, 2011, p10)

Technology will afford students in the department the opportunity to engage in meaningful learning activities, embedded within real life scenarios. By analyzing real world problems, formulating questions and selecting their learning goals, students will be cultivating the skills required by industry professionals (Dirckinck-Holmfed, 2009). With discussions being first guided by teachers, and then transitioning to online forums, students will be scaffolded towards independent critical thinking. This blended model of e-learning will have the capacity to "exploit the benefits of both face-to-face learning and online teaching and learning" *(*Bates & Sangrà, 2011, p10).

Although PLOs will remain the same, how they are met will be different in this vision. Teaching methods, student learning activities and assessment methods will need to be reformulated. Teachers will work collaboratively using a LMS to develop a course

package for each class that is offered by the school. Students will have access to the section of each course they are registered in.

Part 4: Implications

While this scenario would be able to co-exist within the existing timetable for the school, there are organizational changes that would need to occur in order to achieve success:

- The Ministry of Education would need to adopt a new SIS and LMS combination. If not, then the school district would need to give permission for Sardis to use an LMS of its choosing.

- Computer technology in the department would need to be upgraded; either through funding from the international program, Career Prep or investments from outside entities similar to the CAD and Cisco programs.

- An agreement would have to be established with the school district that guaranteed no claw-back of unused funds at the end of the school year, allowing for departmental savings.

- Articulation agreements would need to be set in place with UFV to allow for students to enroll in university level courses prior to graduation.

- School level summative assessment would have to change as technology allows for new ways in which learners can demonstrate their knowledge

The biggest transition may initially appear to be for teachers, however as Bullen and Janes (Bullen & Janes, 2007) point out, expert teachers are excellent managers of their classrooms and possess a range of learning strategies at their disposal. A teacher in a blended e-learning environment must use much of the same skill sets while providing guidance and support for the learning process. "They should organize, plan, establish and maintain social relationships; provide intellectual stimulation; and encourage participation through the use of e-learning." (Bullen & Janes, 2007, p34). For an expert teacher already employing student centered learning, the jump to a blended environment will not be a large one.

For those teachers who rely on a transmission style, there will need to be greater supports in place as they move towards a blended model.   They will need to relinquish some level of control as students direct their learning. Their role in helping students formulate exemplary problems will become much more crucial in the learning process. If too little effort is put in students may focus on surface problems without much relevance. "Therefore, the preliminary phase of the problem setting is very important and must be supported by materials, lectures, preliminary investigations and review of former work" (Dirckinck-Holmfed, 2009). Rather than teachers creating material from scratch, they will instead help define goals and criteria for assessment and guide them in the process of realizing them. It will be the responsibility of the student to track down, assess and organize appropriate learning materials (Bates & Sangrà, 2011).

In conclusion, this vision for e-learning will see students shift from receiving information from their instructors to becoming active participants in constructing their knowledge. Learning will become specialized to each individual, while at the same time shared while knowledge is actively constructed within a community of learners. While receiving guidance from their instructors, the onus will be on students to record and document their learning process, which will provide them with an e-portfolio to be used to apply for jobs or postsecondary institutions.

References:

Bates, A.W. & Sangrà, A. (2011). *Managing Technology in Higher Educations: Strategies for Transforming Teaching and Learning. San Francisco: Jossey Bass.*

BC Ministry of Education. (2011). *BC's Education Plan.* Retrieved from http://www.bcedplan.ca/actions/technology.php#tabs-1

Bullen, M. & Janes, D. (Eds.)(2007). *Making the Transition to E-Learning: Strategies and Issues.* Information Science Publishing: Hershey, PA.

Chilliwack School District. (2010). *Strategic Plan 2010-2015.* Retrieved from http://www.sd33.bc.ca/sites/default/files/strategic_plan_2010_1.pdf

Dirckinck-Holmfeld, L. (2009). Innovation of Problem Based Learning through ICT: Linking Local and Global Experiences. *International Journal of Education and Development using Information and Communication Technology (IJEDICT), Vol. 5, Issue 1, 3-12.* Retrieved from http://ijedict.dec.uwi.edu/viewarticle.php?id=682&layout=html

Gartner. (2011). *A Report of BC Ministry of Education – Review of Student Information Systems.* (Engagement 330000937 – Version 1) Retrieved from the BC Ministry of Education website: http://www.bced.gov.bc.ca/pubs/review_of_student_information_systems.pdf

Halse, M.L., & Mallinson, B.J. (2009). Investigating popular internet applications supporting e-learning technologies for teaching and learning with Generation Y. *International Journal of Education and Development using Information and Communication Technology (IJEDICT), Vol. 5, Issue 5, 58-71.* Retrieved from http://ijedict.dec.uwi.edu/viewarticle.php?id=861&layout=html