



**PRAIRIE LAND REGIONAL SCHOOL
DIVISION:
ONE-TO-ONE MOBILE COMPUTING
“SMALL SCHOOLS PREPARING
STUDENTS FOR BIG FUTURES.”**

*Enhancing Teaching and Learning
for Specific Student Populations*

Alberta Education's Emerge project will enhance the teaching and learning environment for students undertaking video-conferencing courses in our Division by providing them with access to laptop computers with wireless internet capability. This proposal fits within the parameters of Alberta Education's Theme 2:

"Enhancing Teaching and Learning for Specific Student Populations".

Our project is also supported by Goal 1, Strategy 1:10 of the Alberta Education Business Plan (2006-2009):

"Focus on using current and emerging technologies to increase program choice and access for students in rural communities".

One of the greatest challenges facing our Division is providing quality programming for students, especially in some of our small rural high schools where the enrolment has been continually declining. In response to this challenge, our principals have been engaged in the development of a proposal to develop "clusters or pods of schools" that have a common timetable. Our purpose is to view the students within these schools as part of a common campus and to ensure that the overall staffing in these schools has the knowledge and expertise to offer a quality high school program. In the past, we have attempted to staff each of these schools with subject specialists teachers. This has become increasingly more difficult in the current labour market. With the advent of video-conferencing technology and the implementation of the Super-Net, we can now offer video-conferencing courses throughout the Division by means of a stable network. By providing laptop computers to students taking video-conferencing courses and to teachers delivering these courses our goal is to enhance communication between students and teachers. This will also enhance communications between students and students in each of the school sites. Because of this, student learning will be significantly increased.

Our Division has a well-defined technology plan and an effective technology support team to carry out this plan. I am confident that our experienced team are committed to this project and will make it a successful. PLRD has been involved in a number of technology initiatives in the past, the most recent of which has been the use of video-conferencing technology to deliver courses at our remote rural sites. Although our Division received funding from this initiative to install VC suites at 5 of our schools, once the project was completed and the trustees were able to determine the benefits accruing to students, a decision was made by the Board to use Division reserve funds to install VC suites at all of our schools. This decision is indicative of the support for quality learning opportunities the Board is prepared to provide to students in Prairie Land.

Bill Lee
Superintendent of Schools
Prairie Land Regional Division #25

Initiative Description:

Over the past two years, one of the most significant challenges facing the effective implementation of program delivery via video-conferencing has been the issue of diverse school calendars and timetables. After much discussion and deliberation, Prairie Land school administrators determined that the most likely solution would be the creation of “pods” of similar schools forming virtual campuses that would operate under the same calendar and high school timetable. This would not only facilitate course scheduling on a daily basis, but would also ensure that course cycling in the schools would follow the same pattern. Specialized staff in different schools would then be available to deliver content in their areas of expertise to all students in the “pod”, thereby guaranteeing student access to that expertise regardless of their physical location.

The schools in the eastern portion of the jurisdiction are not only similar in size, but also similar in community demographics and form the target group for this initiative. These schools have extremely small class sizes, which typically result in multi-grade class configurations at all levels. Even at the high school level, courses are cycled in such a way that more than one age group must access the 10, 20 or 30 level courses they require at the same time. Video-conferencing is seen to be the most efficient means of ensuring students in this pod have access to quality learning opportunities and professional expertise, and it is assumed that all students at the high school level will access at least one course per semester by VC. Additionally, grade 9 students have been a significant population in the receipt of instructional content in this format. It is anticipated that during the initial three years of the project, the target group would include an average of fifty-four students per year, (maximum in any of those years being approximately fifty-nine students) and seven teachers.

In a VC environment, students and teachers need to be able to interact effectively outside the restrictions imposed by the nature of that particular classroom environment. In the traditional classroom, students may participate in group projects, share resources, develop social skills, and readily communicate one-on-one with their teacher. These are critical components of a positive classroom experience. However, while these activities can occur in a VC classroom, it is far more difficult to facilitate without the use of additional computer resources, access to which may vary incredibly from school to school. In addition, it is important for students to be able to communicate and collaborate on projects outside school hours with relative ease. Not only will the one-to-one mobile computing initiative extend the learning environment for VC students beyond the classroom walls and broaden the ability of students to access digital resources to support the curricular content of the courses in which they are engaged, it will also enhance their ability to compete in a “flattened” global economy where on-line collaboration is becoming the rule rather than the exception (Friedman 2006). With increased access to network based resources on a continual basis throughout the day, they will be able to directly contribute to the learning process, both for themselves, and for their peers.

Existing research clearly indicates that student interest, engagement and motivation increase with the use of one-to-one mobile computing. (Alberta Education 2006b) At the same time, in VC environments where student participation was seen as a necessity rather than a choice, engagement was not as high as may be desirable (Alberta Education 2006a). Obviously, ensuring student engagement is critical to learner success and teacher satisfaction. Research in video-conferencing education indicates that the best approach to technology adoption utilizes a blend of interactive/non-interactive, synchronous/asynchronous and independent/collaborative learning technologies (Alberta Education 2006a). By building on and enriching the existing divisional CMS, and by implementing one-to-one mobile computing, PLRD will explore the effectiveness of this combined approach to distance delivery, particularly as it relates to the acquisition of 21st century skills and student engagement. This approach will enrich and expand student learning opportunities as identified in Provincial Goal 1, Strategy 1.8. As well, it will help the jurisdiction meet other provincial and local goals and outcomes such as Provincial Goal 1, Strategy 1.10 on the use of technology to “increase program choice and access for students in rural communities” and the PLRD strategy of supporting “schools in providing for alternative delivery of programs (i.e. online courses, outreach programs, video-conferencing).”

Sustainability:

Assuming a laptop life-span of five years, sustaining the program beyond that initial time will be a challenge given current funding levels. However, conventional wisdom seems to suggest that laptop prices will continue to follow the current downward trend in pricing. Within five years, the costs may be such that this will cease to be as significant an issue. If future laptop prices approximate the current desktop prices, sustainability could be incorporated into the jurisdiction’s existing evergreening practice. PLRD will be exploring sustainability options throughout the life of the project, as well as the potential viability of expanding the scope of the program to the next level. While funding factors will clearly dictate the extent to which it can be both sustained and expanded, it is worth noting that both parents and the board have typically been supportive of programs, which are clearly shown to benefit student learning.

Knowledge Sharing:

PLRD will participate in the knowledge sharing activities coordinated by Alberta Education, and actively pursue opportunities to release its findings to local stakeholders, jurisdictional and zone agencies and other interested groups both provincially and inter-provincially. In the past, PLRD staff members have shared information resulting from a vast array of initiatives at such diverse events as the National Congress on Rural Education in Saskatoon, JTC events, post-secondary institutions, and the Summer Broadband Institute. PLRD looks forward to continuing this practice.

Monitoring and Evaluation:

Participation in the one-to-one mobile computing initiative in PLRD is expected to have similar outcomes to those found in jurisdictions already using this technology, as well as some unique to the division. For example, one side benefit to students who may be the member of a grade group made up of only one or two students may be in an improved social life and sense of self. In order to measure the success of the initiative, both quantitative and qualitative measures will be used. Measurement instruments will include student, staff, and parent satisfaction surveys, analysis of academic results, and determination of actual use of the CMS by staff and students (increase or decrease). Specific outcomes that will be measured are as follows:

1. **Outcome:** Students will display increased engagement in their VC courses
 - a. Measure: Students reporting satisfaction with their courses.
 - b. Measure: Access by students to the CMS outside school hours.
 - c. Measure: Parents reporting satisfaction with student interest and participation in VC classes.
 - d. Measure: Number of queries students post in course discussion boards.
2. **Outcome:** Students will display an overall increase in 21st century skills
 - a. Measure: Testing of critical thinking and problem solving using assessment tools integrated in the CMS.
 - b. Measure: Changes in amount of tech support access to resolve simple issues with the use of both hardware and software.
3. **Outcome:** Academic achievement, writing skills, and attitudes will improve.
 - a. Measure: Changes in student scores in PATs and Diplomas.
 - b. Measure: Changes in the caliber of student writing across the curriculum and in computer mediated communication (CMC) applications as measured by HLATs.
 - c. Measure: Students reporting overall satisfaction with their schooling.
4. **Outcome:** Teachers will move away from traditional practice and increase participation in professional learning communities and report increased job satisfaction.
 - a. Measure: Measurable change in the quantity of on-line course development resources in the CMS.
 - b. Measure: Teachers reporting a sense of satisfaction/accomplishment with their VC classes.
5. **Outcome:** Students will build social relationships with their classmates from other schools and develop skills in computer mediated communication.
 - a. Measure: Students identifying their peers at remote sites as “friends”.
 - b. Measure: Parents and teachers reporting increased social confidence in students.
 - c. Measure: Students who engage in curricular specific dialogue using CMC.

Prairie Land has finished year one of the Emerge Project with visitations from the University of Calgary, Metiri Research and Distributed Learning branches. Focus groups, class visitations, and online surveys will be completed by June 2008. Data from this will be sent to our Central Office staff for review in the fall.