

MTA Commentary--10/30/08  
E-Learning in Montana

It is generally agreed that distance learning is a powerful instrument in our education toolbox. With modern telecommunications technology, and—it turns out—some other not-so-modern other components, a rural school, for example, can offer an upper level language course to its students, even though the school may not have an upper level language teacher on premise. The school can conduct live videoconference courses with other locations to offer coursework that otherwise would not be available. The teacher can be on one location and the students in an entirely different location. Thus, distance learning provides opportunities for robust curricula to be offered in the most rural locations without having to move schools or students.

So with the goal of accelerating deployment of e-learning in Montana, a group of government, telecommunications industry, and education leaders has been meeting recently to discuss the state of distance learning in Montana. What began as an inquiry into the availability of broadband capabilities at to our state's high schools, quickly grew a life of its own and morphed into a general exploration of distance learning opportunity in Montana. And, as with so many public policy drills, there are both opportunities and challenges on the road to ubiquitous distance learning deployment.

First there was the issue of whether our high schools even had the technical telecommunications capacity to conduct distance-learning courses. That issue was quickly resolved. The group determined that a high school needs a minimum of 1.5 Mbps of bandwidth to be able to run a quality videoconference e-learning session, plus have bandwidth left over to connect a reasonable number of computers to the Internet concurrently. To put that in perspective, a dial-up connection to the Internet uses between 14-56 Kbps of bandwidth. That's considered pretty slow these days. A broadband connection, on the other hand, offers between 200 Kbps and over 1,000 Kbps, or one Mbps. A high quality videoconference can use around 750 Kbps. So, twice that, or 1.5 Mbps provides

plenty of bandwidth for both videoconference and other stuff. So, the group settled on a minimum standard of 1.5 Mbps per school and set about determining if there were any high schools in Montana that did not have access to 1.5 Mbps, and if so, what would it take to bring the “missing” schools up to speed, so to speak.

Montana’s telecommunications providers conducted a survey of all 168 public high schools, plus 4 alternative learning centers and 3 state-funded high schools in Montana. They never got to the second part of the question: that is, what it would take to get all 175 schools up to speed, because the first question yielded the answer that all 175 schools have access to at least 1.5 Mbps of bandwidth today. Some schools, mind you, may not be using the full 1.5 Mbps that is available; but that’s a different matter. The first step of the e-learning group was to find out where, if anywhere, schools lacked access to sufficient bandwidth to enable distance learning at the schools. It turns out that nowhere are schools unable to obtain the minimum bandwidth they want.

In fact, over 1-third of Montana’s high schools already have state-of-the-art videoconference facilities on site, and are conducting distance-learning courses today. And in many locations, the minimum standard can be exceeded several times. Many of these schools can obtain bandwidth in the 3-10 Mbps range. And a good number of both rural and urban schools have fiber optic connections which facilitate bandwidth speeds in the range of 10 to 100 Mbps, or even 1,000 Mbps, or one Gigabit.

So with the technical issue of connectivity largely settled, the e-learning group moved its sights to the less-technical, more “human” components in the distance-learning equation. And therein lies a thicket of entirely surmountable challenges.

Despite the fact that many schools are already using distance learning applications quite successfully by teaching courses to remote school locations, or conducting “virtual tours” of the Museum of the Rockies, for example, educators have identified a number of issues that need to be resolved before ubiquitous statewide distance learning will reach critical mass.

For example, the e-learning group earlier this week identified issues like, development of course content, teacher training, software applications, technical support, and the elephant in the room: governance.

School districts understandably are sensitive to any potential loss of local control. Any top-down command structure will meet with considerable resistance. On the other hand, a distance learning environment that involves coordination among the various stakeholders, including government, university system, public schools, teachers and telecom providers will likely end up with a robust menu of e-learning opportunities for current and future students.

So, what would an e-learning Report Card in Montana look like today? Well, we're only in the first quarter. Final grades aren't in yet. But so far, we look pretty good on technology and connectivity. We could use some improvement on implementation, but the student shows excellent potential and is making good progress. I anticipate solid results in the near future.

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Contact: Geoff Feiss, General Manager  
Montana Telecommunications Association  
406/442.4316  
[gfeiss@telecomassn.org](mailto:gfeiss@telecomassn.org).