

# More Bandwidth, Sir?!

Innovative learning technologies, no matter what their potential for increased student achievement, can't be implemented without an **adequate technology infrastructure** and Internet access. In this guest editorial, Tom Rolfes sounds the alarm for this capacity in U.S. schools.



GUEST EDITORIAL

**T**hank you, Tom Greaves and Jeanne Hayes, for using the *America's Digital Schools 2006 Report* (<http://ads2006.net/ads2006/>) to illuminate one of the most important technology problems of the 21<sup>st</sup> century—the looming bandwidth crisis.

Over the past 15 years I have observed the rapid development of technology-based learning, fueling the e-mail and Web surfing demand all the way from 56kbps dial-up modems to T-1s to DS-3s to 100Mbps, and now gigabit connections. In this brief essay, I hope to get you to rethink the status and direction of our nation's educational telecommunications infrastructure.

**Internet bandwidth has become consistently faster and cheaper over time.** However, as Internet access has become more affordable, the infrastructure to carry it hasn't. In fact, as networks have become more IP-based, I have noticed a trend with smaller independent companies pricing their last-mile transport infrastructure higher, possibly as an offset for the future loss of land line and long distance revenue due to Voice Over IP.

**Innovative learning technologies have become more diverse and more bandwidth intensive.** Videoconferencing, media streaming, secure data submission, voice over IP, social networking, digital downloading, online courses, and 1:1 computing all require more bandwidth and a more robust network. Schools that have been “pegged” with only one or two T-1s of copper access now question how and when they might make the jump to higher bandwidth.

**The U.S. spends too much time scrutinizing the effectiveness of technology and not enough**

**time developing tech capacity.** If we proved that technology did *not* improve student learning, would we remove all the computers? Did the pencil and the overhead projector have to endure such exhaustive research before adoption?

**Technology is a utility, not a commodity.** Tech infrastructure competes with personnel, paper, and activity expenditures for district budgetary attention rather than having a dedicated line item as an indispensable utility like water or electricity. We've all witnessed the deferment of tech purchases. When's the last time you heard an administrator say she will postpone the electricity or water payment until next year?

**Overcoming the bandwidth crisis requires local and state advocacy.** During the 2006 session of the Nebraska Legislature, local ed tech advocates flooded their senators with information about the need for high bandwidth infrastructure and enhanced distance learning to maintain and improve the educational opportunities for students across the state, especially in rural areas.

The governor and legislature responded with passage of a nine-year lottery fund benefit worth approximately \$34 million in equipment and incentives and an additional \$4 million per year in state aid infrastructure support. The result should properly position Nebraska districts to meet the needs of innovative learning technologies well into the next decade.

**Districts should use the America's Digital Schools 2006 report to self-assess their infrastructure on a kbps per student basis** and begin planning an upgrade path for fiber or fast copper connectivity for the future. Educators, how about Wiring Schools 2.0? ■

By Tom Rolfes

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