South Dakota Legislative Research Council

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TECHNOLOGY IN THE CLASSROOM

If one were to conduct a survey of people on the street as to the definition of technology in schools, the range of answers might be quite surprising. It is likely that respondents would mention everything from temperature control to security systems to distance learning. If the focus of the query is limited to technology in the classroom, however, people generally tend to think along the lines of computers and other tools for learning. Schools in South Dakota, like those in the rest of the country, are rapidly incorporating '90s technology into their curricula as well as their methods.

A recent article in NEWSWEEK, however, indicated there may be some problems with the approach many of the country's schools are taking to adding technology or upgrading what they may already have. "In the current academic year alone, some estimates put technology spending in K-12 public schools at $4 billion, twice the amount spent on textbooks....But after years of hype and hope for electronic education, despite the best of intentions, the revolution isn't upon us." The problem, according to the article, is lack of guidance. ("The Silicon Classroom," NEWSWEEK, April 22, 1996, p. 60.)

So, what is the problem, if there is one, and is it a problem in South Dakota? On one hand, schools across the

Thus, there might even be danger that, unless some things change, technological advances in the classroom could begin to slow. According to "Promises, Promises: Technology and the Schools," a documentary production of South Carolina Educational Television made possible by a grant from Toyota, computers in the classroom might be the latest addition to the list of education "revolutions" that never really materialized. The documentary cites historical innovations such as the film projector, Radio Schools of the Air, television language labs, teaching machines, and 8mm film strips and projectors as tools that, in their respective times, were delivered with a lot of promise and hoopla--much as computers are today--yet even with their serious use and "[d]espite all their promises, not much has changed." It may happen that decisionmakers for schools could grow disillusioned with the rate of advancement of education performance improvements and curtail necessary continued spending on technology.

country have spent considerable sums of money on technology, especially computers. It is estimated there are

between 4 million and 5.5 million computers in this country's schools. South Dakota schools have done their share, investing in many hundreds of computers. For example, the Lead-Deadwood School District has undertaken an ambitious approach to acquiring computers for its schools. Using capital outlay funds and a lease/purchase schedule over the next three years, the school is buying more than 80 new, powerful computers. A district of some 1,500 average daily membership ("ADM" in State Aid to Education terminology), Lead-Deadwood's plan will soon mean approximately 1 computer for every 3.7 students. That means a total of some 400 computers district-wide, with most of them being new and powerful enough to access the Internet and create multi-dimensional presentations.

On the other hand, as the National Governors' Association asserts, "the sad truth is that schools are technologically impoverished" and that, even when schools are forward-thinking enough to purchase computers, the technology "is all too often used with styles of teaching that fail to maximize its full potential." ("Technology and Education Standards," a National Governors' Association Issue Brief, March 4, 1996.) This latter point might manifest in South Dakota if the schools buying computers approach them merely as one-dimensional tools for drill and practice routines or rote learning, or if the schools confine their new computers and their use strictly to isolated computer labs or rooms. Clearly, the ideal situation, with all that is available in the way of technologies such as the Internet and distance learning, is for schools to incorporate computers into their curricula and use them as much as

possible *right in the classroom*. That means the school would become part of the big picture of technology, incorporating a full and diverse range of interactive and distance learning technologies, rather than just using the computers as automated flashcards.

South Dakota may be fortunate by comparison to other states in that the physical infrastructures of its actual school buildings may allow for the use of computers in classrooms easier than other schools around the country. According to surveys, some 31 percent of school buildings in the United States were built before World War II and another 43 percent were built during the 1950s and 60s. With so many school districts operating on very limited revenues, most of those are operating with antiquated, or slightly improved, electrical systems. Thus, in well over half of all school buildings in the country, the wiring is not sufficient to operate more than a few computers, if that, in each classroom, especially when fans, air conditioners, or whatever else might be needed to keep the rooms comfortable and conducive to learning. The impossibility of actually running a bank of new computers would certainly be a source of frustration in their utilization by eager learners. Unfortunately, there are actual instances of schools in some cities where the district has gone ahead with ordering a number of shiny, new machines without checking beforehand to see that they can safely be used.

It is conceivable that such an event can happen in South Dakota. Like so many other states, there is precious little here in the way of state-level planning. In fact, the state Department of Education and Cultural Affairs (DECA), which

oversees K-12 and public postsecondary technical education, does not even attempt to coordinate or plan computerization in the state's 176 school districts. While several states in recent years have allocated money to school districts for technology, DECA offers no assistance or guidance to

In several states, the legislatures have taken a strong and active role in encouraging growth of technology in the classroom, according to the Education Commission of the States (ECS). For example, in 1995, Georgia appropriated state funding of such an amount that each school received $15,000 for classroom computers and their university system received more than $85 million for technology and equipment purchases and facilities construction. Neighboring states Iowa and Minnesota both had proposals in their 1995 assemblies to allow, as well as fund, technology in the classrooms. In 1994 North Carolina appropriated $75 million to effect the recommendations of their Commission on School Technology and to establish and fund a State School Technology Fund.

When a South Dakota school district is considering a purchase or investment and decides to first seek advice, it doesn't come from DECA. Instead of being a technology leader or even a resource or clearinghouse, DECA contracts with an entity known as Technology and Innovations in Education (TIE), located in Rapid City, to purchase those services. TIE has been in operation since 1986 with a "mission to help educators better use computers, telecommunications, and other evolving technologies." TIE, which is attached to the Black Hills Special Services Cooperative, publishes a quarterly newsletter and conducts an

schools as to how to best upgrade their technology or even what to consider in making initial purchases. In this instance, local control reigns supreme, so districts are free to invest--seeking advice *or not*-- as they see fit.

annual conference, but otherwise provides guidance to districts on an as-requested basis. TIE is funded, in part, with state funds of some $66,000 in state Fiscal Year 1996. According to contracts signed with DECA, TIE agrees to "provide leadership and expertise to school districts and cooperative service units" in technologies such as computers, telecommunications, and distance learning.

For years, TIE has had a partnership with the Rural Development Telecommunications Network (RDTN) to offer or coordinate delivery of satellite courses to high schools. Both entities, having had their genesis in the Mickelson administration, have taken on different capacities in the past months. TIE now conducts the day-to-day management of distance learning in South Dakota, as opposed to DECA through RDTN. It may be just as significant that the state's RDTN is not necessarily the technological or state-of-the-art leader in distance learning. Even though RDTN was being received by over 64 satellite sites, with 62 of those being public or private schools, the only fully interactive RDTN sites were the 18 that exist in places like the Capitol, the technical institutes, Sioux Valley Hospital, etc. As for operational control of the satellite uplink/downlink system, that has been turned over to Mitchell Technical Institute (MTI). Like TIE, MTI is not a state entity. (Despite receiving more than 50 percent of their funding

from the state general fund, the technical institutes are owned by four school districts.) The true, fully interactive distance learning systems in South Dakota involving public schools exist at two consortiums, the Sanborn Interactive Video Network and the North

Central Area Interconnect. Both of these networks are funded by their members and were started with grants from the Rural Electric Association. They receive no direct state funding.

With all that having been said, South Dakota's state government may resume control of at least planning the telecommunications and distance learning infrastructures it has effectively relinquished in the past year. On November 22, 1995, the state's Bureau of Information and Telecommunications entered a contract with nationally-known education technology consultant Peter Kelman and his company, Telecommunications Planning Institute. For the total sum of $106,000, Kelman and the Institute are to "produce and deliver to the State The Vision for . . . South Dakota's telecommunications information network infrastructure by June 26, 1996," according to the contract. The consultants are to "produce and deliver to the State The Plan for South Dakota's telecommunications information network infrastructure by September 30, 1996."

In several other states, again according to the ECS, this has already been done as the legislatures and executives have enacted statewide plans "to improve course offerings available to high school students," as in Arkansas, and "plan for

the greater use of computing and communications technology in the schools," as in California. These states, as well as states like Idaho and Kentucky, the legislatures are providing millions of dollars to implement the plans, too.

While it is true a school could operate, even with the most sophisticated computers in all its classrooms, as an island, no school should want that. With all that is already available, schools will be providing the best educations possible when they allow students access to telecommunication and distance learning technologies. Yet, with the cost of technology being such that schools must turn to creative financing techniques such as lease/purchase over periods of years, the right decisions need to be made at the outset. It is to be hoped that there will be strong guidance and/or quality advice for schools embracing as many of the technologies as they can, and that those schools will use it wisely.