

Technology planning in Virginia: A trend analysis

by Karen Richardson

Technology is often the handmaiden of school reform. This relationship is evident in the 1986 report, *Excellence in Education: A Plan for Virginia's Future*, commissioned by Governor Gerald Baliles and completed by The Governor's Commission of Excellence in Education [GCEE] (GCEE, 1986). This report spawned the Literacy Passport Test, the state's first standardized test, while also leading to the creation of a state-level position related to educational technology and the state's first educational technology plan. Increasing access to technology and making effective use of it were seen as ways to support other educational goals including reducing illiteracy and decreasing the wide disparity between school divisions in the state. According to the report, "For Virginia's educational system to be among the nation's best, it must operate on the cutting edge. Today that cutting edge is educational technology" (p. 13).

While some technology planning had taken place in the Commonwealth in the 1970s—mostly related to electronic classrooms and distance learning—the Excellence in Education report widened the focus to look at all the new technologies that were rapidly becoming available and really began the process of formal technology planning in Virginia. The Commission's foresight to include technology as part of the school reform effort meant that Virginia got an early start on thinking about technology in schools and was able to help further a more organized state-wide approach to implementation, providing much-needed funding and guidance for localities as they faced the expensive tasks of rewiring schools and purchasing hardware and software, and then later as they developed their own policies and practices around the use of technology in the instructional program. Technology was part of the policy and planning conversation from the beginning; it took on an importance it might otherwise not have had. Indeed, by 1992, when some states still did not even have a state technology plan, the Standards of Quality in Virginia called for local school biennial plans to have a technology component, and technology was identified as one of the Department of Education's five focus areas (Virginia Educational Technology Advisory Committee [VETAC], 1996, p. 1).

The Initial Plan (1988-1994)

The first technology plan, which seemed at times more like a shopping list for Circuit City with its specifications for computers, wires, and even storage cabinets, was published in 1988 and covered a six-year time period. It has been followed by two more plans, with the current plan published in 2003 (Virginia Department of Education [VDOE], 2003). These plans reflect state policies towards technology and education, and by studying these

The VSTE Journal is published by the Virginia Society for Technology in Education. Permission is granted to copy and distribute single articles from this publication for non-profit use with copyright notice.

Contents copyright © 2006, VSTE
All rights reserved.

Technology planning, continued

plans, we can identify trends in state support for technology use in the Commonwealth's schools.

Recent Trends Related to Implementation

Several of the trends can be directly traced to the original Excellence in Education report and even earlier educational technology efforts. These include a concern for equity, using technology to support student achievement, and the need for more automated data collection.

Equity was a major concern of the Excellence report, and that concern is reflected in the first technology plan. The report specifically mentioned the use of technology to close the gap between wealthier urban divisions and poorer rural divisions by using electronic classrooms, which had already been developed in Virginia in the 1970s. This initial focus on distance learning has been reflected throughout the three technology plans, and currently the Department of Education is developing a Virtual Advanced Placement School that provides students throughout the state the opportunity to earn college credit even if their local high school does not offer Advanced Placement courses.

The report also recommended the use of technology in support of the state's new Literacy Passport Test (LPT). This relationship between standardized testing and technology has remained a prominent theme throughout all three technology plans. The first plan focused on placing microcomputers in the middle grades since that is where the LPT was given. In subsequent plans, technology use in the schools was tied to instruction and remediation related to the Standards of Learning. The state's current Web-based SOL Technology Initiative, which will be discussed in detail later, represents the most recent effort to use technology to support student achievement.

Finally, another major theme of the original Excellence in Education report that has remained in place throughout the past 16 years was that technology be used to "reduce the paperwork burden which is piling up for teachers and administrators" (GCEE, 1986, p. 14). Beginning with the first plan and continuing through the current plan, the state has focused on developing databases that could be used to track student, financial and teacher information. The second plan could report that such a system—the Virginia Student Information Management System (VASIMS)—had been developed and adopted by over 100 school divisions in the state (VETAC, 1996, p. 15). More recently, that system has been updated and replaced by a Windows-based version. By the third report, the focus was on web-based data applications for state data collection, warehousing, and reporting. It also calls for a common set of data definitions that allows standard communication and interpretation of student information. Yet, while the technology has gotten more sophisticated, the purpose remains the same: to provide divisions with support for collecting, analyzing, and storing student data in a way that will be useful to individual districts and the state.

Thus, the 1986 report provided the seeds of several technology initiatives still in place today. The first technology plan, published in 1988, addressed the concerns of the report, but also began several trends that remain part of Virginia's plan for technology today. One of those is the recommendation that schools "designate a responsible

Technology planning, continued

person in each school division and school to coordinate staff development and application of technology” (VDOE, 1989, p. 9). According to that first plan, this person might be a teacher, administrator, media specialist or other instructional specialist working in either a part-time or full-time capacity. By the time of the publication of the second plan, the state had come to recognize the need for “the consistent support and assistance of a building technology designee to show best technology applications for best teaching practices” (VETAC, 1996, p. 27). The plan recommends specialized training for this designee and the development of guidelines for technology competencies and endorsement requirements. The most recent plan takes this position one step further, calling for establishing and maintaining “instructional technologists” in school divisions. The plan clearly defines this new position as a licensed educator who works directly with teachers to help them integrate technology in their classrooms (VDOE, 2003, p. 34). In addition, the Standards of Quality (SOQ) that are used to set benchmarks for Virginia’s schools were recently amended to reflect this new position (VDOE, 2004, p.8). The SOQ call for a minimum of two technology positions for each 1,000 students with one being technical and the other one to serve as an instructional technology resource specialist.

A Focus on Integration

This growing concern for actually using technology in schools rather than simply collecting hardware can be clearly seen in the most recent report. This is a reaction to research in both Virginia and across the United States that has increasingly shown that while school have spent billions on hardware, software and connectivity, very few teachers are using the computers with any regularity or for much beyond drill and practice or word processing. The first two plans shared an emphasis on creating foundation levels for computer technology and networking infrastructures within the schools. They each set target goals for student/computer ratios beginning with 10 to 1 in the first plan and 5 to 1 in the second plan. Much is made, at least in the first plan, of specific technologies that should be purchased, and the second plan makes similar recommendations for types of networks that should be established within schools. Basically, the focus of the first two plans was to bring the state school divisions up to speed with technology. The third plan took a somewhat radical departure from this trend, with the focusing moving from “stuff” to “what to do with the stuff.” The plan emphasizes the importance of integrating technology into instruction by devoting the first, and most extensive part of the current plan, not to hardware and wires as it did in previous plans, but with classroom use of computers and the express goal of improving teaching and learning through the appropriate use of technology (VDOE, 2003, p. 21). Hardware and software now take a back seat to teaching and learning in terms of the planning process although the state still recognizes that many school divisions do not provide the necessary access to support the targets identified by the plan and continues to recommend that schools meet a 5 to 1 computer to student ratio (VDOE, 2003,). Access is clearly tied to student achievement rather than, as in past plans, where the effort seemed simply to accumulate technology resources.

Technology planning, continued

The other area in which the move from accumulation to integration can be seen is in the changing trends regarding professional development. Training and a concern for skills has been a part of all three technology plans, but like the move from technical specifications to concerns about teaching and learning found in the integration section of the third report, the focus of the recommended types of professional development has changed as well, again most radically from the second to the third plans. The first two plans were concerned mainly with skills in using technology, calling for basic level training in “computer utilization” (VDOE, 1989, p. 24) and “available technologies and software” (VETAC, 1996, p. 29). Thus, teachers took courses in PowerPoint and Word, learned how to create web pages, and sometimes even performed technical work like installing memory or replacing a hard drive. But the third plan refocused this professional development on helping teachers learn to use the technology to support teaching and learning with programs including “effective approaches to integrating technology into K-12 education” (VETAC, 1996, p. 6).

Research-Based Decision Making and Introducing Standards

One major trend had its roots in the 1980s but has only become a recent priority as a result of national policies. Using research to identify best practices, guide decisions about technology use, and justify expenditures for technology has been a trend throughout the history of technology planning in Virginia although it has taken on a more prominent role over the years, particularly with the passage of the federal No Child Left Behind legislation that emphasizes the need to support education practices with evidence-based research. The first plan made little mention of specific research studies but called for

more research studies...to provide answers to legislators who are responsible for appropriating funds for technology and to educational administrators and teachers who decide how to use the funds. Informed decisions based upon valid, reliable research will promote public confidence in and support for educational technology. (VDOE, 1989, p. 29)

By the time of the second plan, evaluation had taken on a larger presence, warranting its own section and making only one clear recommendation: “To assess on a continuing basis the impact of technology in schools to learn which technologies provide the most benefit to student achievement” (VETAC, 1996, p. 34). An appendix described research studies related to each of the plan’s major sections and demonstrated how it had been used to develop the plan. In the current plan, evaluation has been renamed “accountability,” but the goal is essentially the same: “Assess the value that information technology adds to teaching and learning environments” (VDOE, 2003, p. 7). More significantly, research has been moved from the appendix and to the front of the plan. The Executive Summary makes much of the research base that supports the plan and indeed, each of the five sections of the plans begins with a review of recent research in that particular area. In addition, the Introduction points to various studies

Technology planning, continued

and reports that have been commissioned by the state over the years and whose results have contributed to the current plan. It seems to be all about research now.

Certainly, creating standards is a trend seen throughout the three plans. They reflect a concern for defining minimum requirements both for technologies and the people who use them. The first plan was more concerned with setting standards for foundation-level technologies that should be found in every school. But standards for teachers and students were not far behind. One of the direct results of the second technology plan was the creation of the Technology Standards for Instructional Personnel in 1998, which in 1999, the General Assembly declared that all teachers had to meet in order to qualify for licensure. In addition to teacher standards, the state had already created Technology Standards for Students as part of the Standards of Learning. Currently, the state is working on technology standards for school administrators, which will be based on the National Educational Technology Standards for Administrators (VDOE, 2003). In addition, the state is considering updating the technology standards for instructional personnel to reflect new technologies and the emphasis on the use of technology to support teaching and learning, a trend seen in other areas as well.

Of course, none of this would have happened without funding. While Virginia has never had an annual funding stream for technology, it has consistently funded technology in schools with an annual average expenditure of about \$50 million (Richard, 2003). The need for a consistent funding stream was highlighted by Larry Hoover, school superintendent and first chair of the Virginia Educational Technology Advisory Committee, formed in 1988 at the recommendation of the Baliles' commission. In remarks to the General Assembly in 1999, Hoover pointed out that it would be nice if school divisions were able to rely on a predictable amount of technology money from the state each year. But he also commended that General Assembly for its ongoing support that has been "instrumental in advancing instructional technology in our public schools" (Hoover, 1999, p. 1).

Embracing New Technologies

The final trend evidenced throughout the planning program is Virginia's willingness to embrace new technologies, particularly the World Wide Web. Despite the fact that the first technology plan was published several years before the words "world wide web" or "internet" became part of the vernacular, its third section—entitled Connections—focused specifically on developing an electronic network that would link the DOE and local school divisions with the rest of the world. It envisioned the creation of a shared network called Virginia Net where users could communicate and share information and resources with other users around the world. By the time the second plan was published, Virginia Net had become Virginia's Public Education Network, or VA PEN, a state-wide internet system serving the local school divisions. Indeed, the state provided many teachers and students with their first email addresses as well as dial up access to this new electronic network called the internet. In fact, by 1996, the system had over 18,000 users and had had to impose severe limitations on the use of the network because of the overwhelming demand (VETAC, 1996). Eventually, the state

Technology planning, continued

gave up the role of internet service provider, preferring to leave that function to the school localities.

Now, the state is making innovative use of the web again with the web-based SOL Technology Initiative. According to the State Superintendent of Education, this initiative is intended to use web-enabled systems to improve Standards of Learning instructional, remedial, and testing capabilities of high schools. Funding for this program is targeted to reach three general goals in each high school. These goals are: a) providing student access to computers with a ratio of one computer for every five students, b) creating internet-ready local area network capability in every school, and c) assuring adequate high speed, high bandwidth capability for instructional, remedial, and testing needs (DeMary, 2000).

Specifically, the state wanted to be able to administer the SOL high school tests online beginning in 2003, an initiative that required much work to bring various localities up to the standards. This emphasis has been noteworthy; according to Education Week's annual *Technology Counts* report, Virginia is one of the most advanced states when it comes to online testing (Richard, 2003).

Conclusion

As the state has moved away from the detailed technical requirements outlined in the first plan, the plans seemed to indicate a changing relationship between the Department of Education, schools of education, and local school divisions. At the beginning, the state realized that if any of this was going to happen, they were going to have provide direction and funding: "Educational technology...must take a central place in public school education. This will not happen without state leadership and commitment" (GCEE, 1986, p. 13). Once school divisions began to take more local control by purchasing their own technology and hiring division and school staff to direct its use, the state could begin to work more as a collaborative partner with the divisions. Subsequent technology plans have had far fewer recommendations than the first one and were to be seen less as than as guides for local divisions to use in their own technology planning (VETAC, 1996, p. 1). Currently, localities are required to have plans that are "consistent with the state technology plan" (VDOE, 2003, p. 8). This focus on alignment between state and local plans helps further the state-wide vision for educational technology put into place nearly two decades ago.

The state technology plans have provided clear directions for the past 16 years for a variety of stakeholders related to technology integration from Department of Education employees to classroom teachers to business leaders to school administrators. Besides funding, the state has taken a variety of steps over the years to support school divisions in their efforts to grapple with technologies that seem to change every day. Through the use of its website which offers resources related to technology, professional development related to technology, and an annual technology conference, the Department of Education works to promote the fundamental purpose of the technology plan which is "to enhance students' academic achievement through the use of technology" (VDOE, 2003, p. 1).

Technology planning, continued

References

- DeMary, J. (2000, June 2). Superintendent's Memo No. 113. Retrieved November 1, 2005, from <http://www.pen.k12.va.us/VDOE/suptsmemos/2000/inf113.html>
- Governor's Commission on Excellence in Education. (1986). *Excellence in Education: A Plan for Virginia's Future*. Richmond, VA: Virginia Department of Education.
- Hoover, L. (1999). Remarks to the general assembly subcommittee on science and technology on December 20, 1999. Retrieved from <http://jcots.state.va.us/Studies/Education/1999/Hoover.pdf>
- Richard, A. (2003). Virginia state profile. From *Technology Counts 2003*, published by Education Week. Retrieved from http://counts.edweek.org/sreports/tc03/state_profile.cfm?slug=35va.h22
- Virginia Department of Education. (1989). *A six-year technology plan for Virginia*. Richmond, VA: Virginia Department of Education, Office of Educational Technology.
- Virginia Department of Education. (2003). *2003-2009 educational technology plan for Virginia*. Retrieved November 1, 2005, from <http://www.pen.k12.va.us/VDOE/Technology/plan2003-09.pdf>
- Virginia Department of Education. (2004). *Virginia standards of quality*. Retrieved November 1, 2005, from http://www.pen.k12.va.us/VDOE/VA_Board/Standards/index.html
- Virginia Educational Technology Advisory Committee. (1996). *Six-year educational technology plan for Virginia*. Richmond, VA: Virginia Department of Education, Division of Technology.

About the Author

Karen Richardson is the assistant director for VITAL, a grant related to technology and administrative leadership. As such, she works with technology resource teachers (ITRTs) and administrators across the state. Karen is a member of the VSTE Board of Directors, and also is a full-time doctoral student in the School of Education at the College of William and Mary, studying Curriculum and Educational Technology. She may be reached at karen@ivyrun.com.

