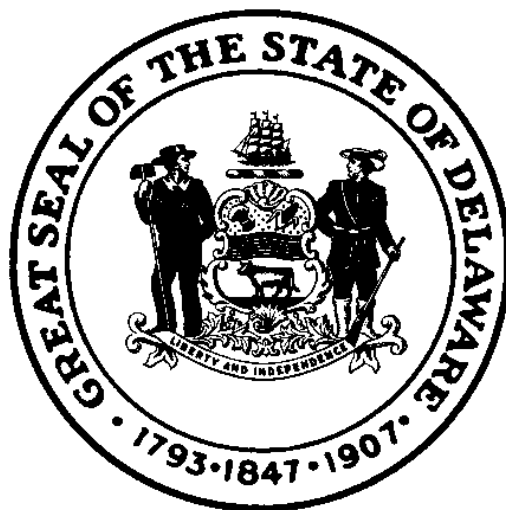


DELAWARE CENTER FOR EDUCATIONAL TECHNOLOGY

ACTION PLAN FY2004

OCTOBER 2002



STATE OF DELAWARE

Delaware Center for Educational Technology Action Plan

Introduction

The Delaware Center for Educational Technology (DCET) has completed a large-scale, state government project, on-time and under-budget, that made Delaware the first state in the nation to have Internet and wide-area network connectivity in every public school classroom. In a very short time, Delaware has leaped from being technology-poor to having the most solid foundation for growth in deploying education technology. These efforts resulted in the DCET receiving a Computerworld Smithsonian Award for classroom networking.

Acquiring and putting in place the operational resources to achieve and nurture the full potential of the Delaware Education Network and the information superhighway in our classrooms are the most challenging and important “next steps” for ensuring successful deployment of these new resources. There is consensus in Delaware that, beyond infrastructure, DCET should focus on three major areas to make these next steps: support/maintenance, professional development, and procurement. The Action Plan of DCET reflects this consensus.

To achieve these goals, we must build on the work of others. The DCET Action Plan does just that. The Plan builds upon the previous and current efforts of the school districts, the Department of Education, the Department of Technology and Information, and DCET. The Action Plan and Delaware’s progress are also consistent with the two sets of national goals for education technology (1996, 2000) established by the United States Department of Education.

In 1996, *Getting America's Students Ready for the 21st Century: Meeting the Technology Literacy Challenge*, set four national educational technology goals:

- All teachers in the nation will have the training and support they need to help students learn using computers and the information superhighway.
- All teachers and students will have modern multimedia computers in their classrooms.
- Every classroom will be connected to the information superhighway.
- Effective software and on-line learning resources will be an integral part of every school's curriculum.

The 2000 US DOE plan, *eLearning: Putting a World-Class Education at the Fingertips of All Children* set new national educational technology goals that move beyond the goals established in 1996.

- All students and teachers will have access to information technology in their classrooms, schools, communities and homes.
- All teachers will use technology effectively to help students achieve high academic standards.
- All students will have technology and information literacy skills.
- Research and evaluation will improve the next generation of technology applications for teaching and learning.
- Digital content and networked applications will transform teaching and learning.

Delaware is far along in achieving these goals and is ready to take the next steps.

This Plan aims to synthesize the information generated by the many committees that have worked toward the ultimate goal of bringing technology to the classroom and to give direction for further initiatives and funding. This Plan also addresses issues of policy and management in attempt to better coordinate and plan information policy with the state's education system. This Action Plan will present, prioritize, and determine an implementation schedule for the strategic initiatives in the DCET Strategic Plan that:

- follows the intent of the General Assembly,
- is consistent with technology plans at the federal and state level, and
- reflects the aspirations and goals of educators throughout the state.

Action Plan Priorities

The Delaware Center for Educational Technology FY2004 Action Plan identifies the top priorities for FY2004 and the ongoing activities DCET will be involved with during the year.

The top priorities for FY2004, in order of priority, are:

1. Symantec Norton Anti-Virus Software
2. Switches and Electronics for the Districts
3. Technology Block Grant
4. Level of Technology Implementation (LoTi) Questionnaire

The ongoing activities are:

- Maintenance and Support of Wire, Cable, and Electronics
- Windows 2000 Implementation, Migration, and Administration
- Professional Development with respect to Technology
 - Delaware Instructional Technology Conference
 - Delaware Technology Academy
 - Traveling Integration Lab
 - Marco Polo Professional Development
- Annual School Technology Survey
- Collaboration with Department of Technology and Information
 - Dial-in Access for Educators
 - Web-Hosting
 - E-mail for Faculty and Staff
 - Internet, Copyright, and Filtering Policies
- Procurement Agreements
- Communication
- Integrated Pupil Accounting and Curriculum Management

The FY2004 DCET Action Plan addresses 17 of the 25 strategic initiatives from the Strategic Plan. The top priorities directly relate to 4 strategic initiatives and the ongoing activities directly relate to 15 strategic initiatives. Each priority and activity is discussed below.

FY2004 Priorities - #1

Symantec Norton Anti-Virus Software

Improvement (Strategic Initiative #7)

Continue to implement improvement and expansion of the infrastructure to meet the needs of the educational community.

Purchasing Policy (Strategic Initiative #24)

Establish a focal point within DCET, working closely with DOE and the Division of Administrative Services, for the preparation of technology related RFPs, vendor negotiations, and site licenses for software.

The DCET brokered the purchase of Symantec Norton AntiVirus Software in FY02 to ensure that all computers and servers on the Delaware Education Network were licensed for anti-virus software through July 31, 2003. This initiative allowed the DCET to negotiate a considerably lower price per computer for the software and have all the licenses expire at the same time. This will result in additional savings in the future beginning in FY04. *To ensure that all districts continue to have anti-virus software on every computer and server and the state receives the best possible pricing, the DCET is requesting funding to cover the cost of the anti-virus software.*

The installation of anti-virus software has saved hundreds, if not thousands, of hours of labor by support personnel dealing with the virus cleanup on the network.

If the funding request is denied, the school districts will need to fund the purchase of anti-virus software. This could have a negative effect on the network and the best possible pricing. Since there will be a cost, some districts might opt not to purchase the licenses, hence a vulnerability to viruses propagating on the network. In addition, if districts choose not to purchase, the price per computer might go up due to having a smaller number of computers in the price calculations. Thus, districts purchasing the licenses might have to pay more per computer for the software.

Recommendation

- ❑ *The DCET should purchase and renew Symantec Norton AntiVirus Software for every computer and server on the Delaware Education Network at a cost of \$125,000 per year.*

FY2004 Priorities - #2

Switches and Electronics to the Districts

Improvement (Strategic Initiative #7)

Continue to implement improvement and expansion of the infrastructure to meet the needs of the educational community.

In 1995, the Delaware Center for Educational Technology was charged to wire all the classrooms in Delaware, providing Internet access to all students and staff in Delaware public schools. During the three years that followed, the classrooms in Delaware were wired with the most cost effective and best available technologies. The wire and cable had a life expectancy of 25 years and the LAN electronics had a life expectancy of 5-7 years.

As the LAN electronics reached the end of the life expectancy, the DCET explored upgrade options, requested configuration and design alternatives, and prepared cost estimates. The DCET requested funding to start a five-year replacement cycle. The request was denied.

The DCET began the first replacement/upgrade cycle of the LAN electronics in the schools in March 2001 with existing one-time funding. When the one-time funds were exhausted, the DCET re-appropriated existing funds in the annual operating budget (OISNet to LAN Electronics) to continue the project. By August 2002, there were 40 schools / district offices that had not been upgraded. The DCET will use the re-appropriated annual operating funds to upgrade these schools / district offices over the next two years.

With the remaining schools / district offices, the biggest concern is obsolescence / life expectancy of the current electronics (switches and hubs), not performance. The electronics have been running 24 hours a day / 7 days a week for 4 to 6 years depending upon initial installation date. The life expectancy is 5-7 years and anything beyond the initial 5 years is borrowed time.

The DCET is starting to see a higher rate of failure. In addition, 3Com has ceased most support functions on these devices in accordance with their Product Obsolescence Policy and the repair option will cease next year. Of course, the cost of repair may now exceed the cost of replacement. The biggest concern with obsolescence and the lack of support is that of the switch's software (firmware). The firmware will not be updated to address issues with new hardware.

Currently, the DCET has reallocated \$100.0 in the annual operating budget to complete the first replacement cycle over the next two years. The estimated replacement / upgrade cost for the second replacement cycle is \$3,000.0 or \$600.0 annually over 5 years. With the re-allocation of \$100.0 in the existing annual operating budget, a permanent five-year replacement cycle will require an additional \$500.0 annually beginning in FY06.

Recommendation

- *The DCET should continue the commitment to incrementally upgrade the LAN electronics in all schools with \$100.0 in re-appropriated annual operating funds and prepare a funding request for a permanent five-year replacement cycle beginning in FY06.*

FY2004 Priorities - #3

Technology Block Grant

Support Infrastructure (Strategic Initiative #16)

Establish formal organizational roles and responsibilities for a variety of support personnel, both technical and curricular, at the school, district, and state levels.

Help Desk (Strategic Initiative #17)

Develop and staff a centralized help desk to provide support for wide scale applications with reasonable response times to the educational community.

During FY2000, the DCET created a *Long-term Maintenance and Support of the Statewide Education Telecommunications Network Report*. This report shows a need for additional maintenance and support personnel at the district and school level. A \$2.5M Block Grant for Maintenance and Support was requested that would supplement the ongoing maintenance and support provision from the classroom technology funding for ongoing equipment maintenance, repair, replacement, contractual services, and support personnel.

The need for maintenance and support of technology is without question, and the Legislature committed \$1.0 million to a Technology Block Grant beginning in FY2001. This is an excellent start to addressing the maintenance and support issues across the state.

Due to budgetary constraints in FY2002 and FY2003, the requests for an additional \$1.5 million to complement the \$1.0 million Technology Block Grant for maintenance and support have been denied.

The predominant use of the Technology Block Grant is for personnel, either for salary or for contract personnel. Keeping in mind the maintenance and support calculations that determined the \$2.5M were done in FY2000, those costs have increased as the technology capacity in the schools has increased. Although there is no formal request due to current budget concerns, the Technology Block Grant should be increased to at least \$2.5M.

Recommendation

- *Although the DCET is not making a formal request to increase the Technology Block Grant, the DCET needs to keep the Administration and Legislature aware of the need to increase funding for maintenance and support of technology in our schools.*

FY2004 Priorities - #4

Level of Technology Implementation (LoTi) Questionnaire

Process (Strategic Initiative: #1)

Establish a structure and process to develop, manage, and assess staff development for technology.

Technology Survey (Strategic Initiative #25)

Conduct an annual technology survey of every school and determine what exists as a foundation for future planning.

The LoTiQ (Level of Technology Implementation Questionnaire) was first conceptualized in 1995 in an effort to create a consistent set of measures that accurately reflected the progressive nature of teaching with technology. Based partially on the works of the Concerns-Based Adoption Model (Hall, Wallace, and Dossett, 1973; Hall, George, and Rutherford, 1977; Hall and Loucks, 1979) and findings from ACOT's research (Apple, 1995), *the LoTi instrument provides an assessment of three critical attributes impacting technology use in the classroom: **Current Instructional Practices (CIP)**, **Personal Computer Use (PCU)**, and **Level of Technology Implementation (LoTi)***. The LoTi framework consists of seven specific stages of technology implementation: Awareness, Exploration, Infusion, Mechanical Integration, Routine Integration, Expansion, and Refinement.

Each teacher in the state will be given the opportunity to take the questionnaire on the Web (20-30 minutes to complete) and be provided with immediate feedback. The schools, districts, and state will receive aggregated information of the individual results providing data that can be used to better plan professional development activities.

Recently, the LoTi instrument has been folded into a larger, more expansive web-based portal that enables teachers to create professional development plans, enroll in courses, and track their continuing education credits based on the results of their LoTi data profile.

Recommendation

- Use existing funds in the annual operating budget (\$25.0) to implement the LoTi Questionnaire for all teachers.*

Ongoing Activities

Maintenance and Support of Wire, Cable, and Electronics

Support Infrastructure (Strategic Initiative #16)

Establish formal organizational roles and responsibilities for a variety of support personnel, both technical and curricular, at the school, district, and state levels.

Help Desk (Strategic Initiative #17)

Develop and staff a centralized help desk to provide support for wide scale applications with reasonable response times to the educational community.

The highest priority item under the maintenance and support initiatives is “establish formal organizational roles and responsibilities” for the Delaware Education Network. This involves determining what organization, and who within the organization, is responsible for each “piece of the puzzle” and ensuring the operational and support commitments to that organization. The organizations involved in the Delaware Education Network are the Department of Education, the Department of Technology and Information, the Delaware Center for Educational Technology, and the districts/schools. Although there are different organizations responsible for certain areas of the infrastructure and statewide applications, all organizations must work cohesively to maintain the integrity of the network.

The Delaware Center for Educational Technology is responsible for maintaining and supporting all components (electronics and wiring) installed during the wiring project. The DTI help desk will serve as the first point of contact for support. From the help desk, calls will be logged and issues related to electronics (switches and hubs) and wiring in the schools will be routed to DCET. DCET personnel will evaluate the situation and respond with DCET personnel with spare parts or request a “time and material” service call from an outside vendor. This is in lieu of a service contract with an outside vendor. Through the help desk log, DCET will be able to analyze the extent of the support need for switches, hubs, and wiring installed in the schools. If the need warrants the service, a maintenance contract will be explored.

Staff time of the Consultant: Technical Support, and two Consultant: Technology Technicians, in conjunction with spare parts, technical support contracts, time and material contracts, and enterprise network management tools provide for the maintenance and support of the wire and electronics that was installed during the wiring project.

Recommendations

- ❑ *Continue to work with the DTI Help Desk to provide maintenance and support of the electronics and wiring installed by DCET. DCET receives an annual appropriation (\$100,000) from the General Assembly for spare parts (replenish/repair), technical support contracts, time and material contracts, enterprise network management hardware/software, and update wiring blueprints.*
- ❑ *Continue to implement long-term maintenance and support strategies identified in the Long-term Maintenance and Support of the Statewide Education Telecommunications Network report.*

Windows 2000 Implementation, Migration, and Administration

Improvement (Strategic Initiative #7)

Continue to implement improvement and expansion of the infrastructure to meet the needs of the educational community.

Support Infrastructure (Strategic Initiative #16)

Establish formal organizational roles and responsibilities for a variety of support personnel, both technical and curricular, at the school, district, and state levels.

The DCET has taken the lead role in supporting education's Windows 2000 domain. After considerable discussions and consultations with DTI, Microsoft and Windows 2000 consultants, it was determined the DCET was best suited to meet the districts' needs with regard to the implementation and administration of Windows 2000 in the Delaware Education Network.

Recommendations

- ❑ *Continue to work with the districts and DTI to provide technical expertise, consulting, and training in the implementation of Windows 2000.*

Professional Development with Respect to Technology

Process (Strategic Initiative: #1)

Establish a structure and process to develop, manage, and assess staff development for technology.

Access (Strategic Initiative #2)

Provide access to ongoing professional development opportunities for instructional staff in the utilization of technology.

Integration (Strategic Initiative #3)

Identify the substance and sequence of technology skills and concepts and augment content standards to include specific technology applications into instructional curriculum.

Production (Strategic Initiative #4)

Provide technologies and training to improve operational productivity.

The goal of the Delaware Center for Educational Technology professional development effort is to identify and recommend a core set of technology skills for educators, enhance the districts' ability to deliver training, and enable all districts to develop and draw on a common pool of resources related to professional development for technology.

The Delaware Center for Educational Technology provides two major professional development opportunities for teachers: the Delaware Instructional Technology Conference in the spring and the Delaware Technology Academy during the summer.

Recommendation

- ❑ *With respect to technology, the DCET will provide consulting services on professional development and planning and conduct staff development workshops for districts and organizations on an as needed basis.*
- ❑ *The DCET will continue to work with DOE, DSEA, DASA, universities, and colleges to ensure professional development meets teacher accountability requirements.*

Delaware Instructional Technology Conference

Access (Strategic Initiative #2)

Provide access to ongoing professional development opportunities for instructional staff in the utilization of technology.

The Delaware Center for Educational Technology sponsors the annual *Delaware Instructional Technology Conference*. The conference provides an opportunity for Delaware educators to share their knowledge, listen to nationally recognized speakers, and explore new and existing technologies.

Recommendation

- ❑ *Continue to sponsor, organize, and administer the Delaware Instructional Technology Conference.*

Delaware Technology Academy

Access (Strategic Initiative #2)

Provide access to ongoing professional development opportunities for instructional staff in the utilization of technology.

The Delaware Center for Educational Technology sponsors the *Delaware Technology Academy*, a professional development program conducted during the summer. The Academy provides an opportunity for Delaware educators to receive professional development to learn how to integrate technology into the curriculum utilizing the latest technology trends in education.

Recommendation

- ❑ *Continue to sponsor, organize, and administer the Delaware Technology Academy.*

Traveling Integration Labs

Production (Strategic Initiative #4)

Provide technologies and training to improve operational productivity.

The DCET's Traveling Integration Labs provide teachers an easy way to try integrating instructional technology into their teaching by providing computers and/or digital cameras for the classroom. The DCET has a lab of 8 Apple iBook computers, a lab of 16 PC laptop computers, and a lab of 8 digital cameras. The lab is delivered to the school and stays for up to two weeks. The DCET provides personalized professional development in the creation of lesson plans and activities, books with instructional ideas and strategies, and will work with the teacher in instructing the students in the use of the computers and cameras.

Recommendation

- ❑ *Continue to sponsor, organize, and support the Traveling Integration Lab.*

Marco Polo Professional Development

Production (Strategic Initiative #4)

Provide technologies and training to improve operational productivity.

The Marco Polo: Internet Content for the Classroom program is a partnership between the MarcoPolo Educational Foundation and seven renowned educational organizations. They provide free, high-quality Internet content to K-12 teachers. Originally, MarcoPolo was established by the WorldCom Foundation. Due to misgivings with WorldCom, the WorldCom Foundation agreed to move the program to the Marco Polo Educational Foundation (established summer 2002) and disassociate WorldCom and the WorldCom Foundation from the program.

Services related to MarcoPolo have slowed due to funding issues with the move to the MarcoPolo Educational Foundation. The Foundation hopes to continue to provide train-the-trainer training to educators who in turn return to their schools and districts and introduce the MarcoPolo Web sites to other teachers. The DCET and TECH CORPS Delaware received a \$25,000 grant that contributed to the salary of the TECH CORPS Delaware Director to coordinate the train-the-trainer sessions. The grant ends October 31, 2002, and we are uncertain as to whether this grant will continue under the new Foundation.

Recommendation

- ❑ *Continue to monitor the situation and disseminate information about the Marco Polo Educational Foundation.*
- ❑ *Continue to provide training opportunities and encourage teachers to use the Marco Polo: Internet Content for the Classroom program.*

Annual School Technology Survey

Technology Survey (Strategic Initiative #25)

Conduct an annual technology survey of every school and determine what exists as a foundation for future planning.

One of the keys to planning and developing sound strategies for future expansion and maintenance and support is to understand your current state. As part of the Technology Block Grant, the DOE is required to report on expenditure of funds and will include information on what technology is in the school that needs to be supported.

In the future, information on technology in the schools should be included in the School Profiles.

Recommendations

- ❑ *Conduct an annual technology survey of every school.*

Collaboration with Department of Technology and Information

Improvement (Strategic Initiative #7)

Continue to implement improvement and expansion of the infrastructure to meet the needs of the educational community.

Support Infrastructure (Strategic Initiative #16)

Establish formal organizational roles and responsibilities for a variety of support personnel, both technical and curricular, at the school, district, and state levels.

Help Desk (Strategic Initiative #17)

Develop and staff a centralized help desk to provide support for wide scale applications with reasonable response times to the educational community.

The Delaware Center for Educational Technology (DCET) works closely with the Department of Technology and Information and has agreements to provide services to education, such as, dial-in access, Web-hosting, e-mail for faculty and staff, and Web content filtering.

Recommendation

- Continue to work closely with the Department of Technology and Information to provide telecommunication services to the educational community.*

Dial-in Access for Educators

Dial-in Access (Strategic Initiative #11)

Develop recommendations for dial-in and/or remote access to Delaware technology resources for educators.

The Delaware Center for Educational Technology (DCET) receives an annual appropriation from the General Assembly to subsidize OISNet dial-in accounts for educators. Individual accounts are available at \$25 per year with DCET subsidizing the remaining \$58.40. The accounts are available on a first come, first served basis.

Recommendation

- Promote the dial-in service, create additional accounts, and renew existing accounts.*

Web-Hosting

Web Services (Strategic Initiative #8)

Develop and continually enhance the DENWeb World Wide Web site and provide for a World Wide Web presence for every school and district.

The Delaware Center for Educational Technology (DCET) has an agreement with the Department of Technology and Information to provide a Web site for every public school and district in the state at www.k12.de.us. Schools and districts maintain the Web site, if they choose to use the site.

Recommendation

- Continue to provide Web sites for every public school and district in the state.*
- Continue to maintain and enhance the DCET Web site.*

E-mail for Faculty and Staff

Electronic Mail (Strategic Initiative #10)

Implement a statewide education e-mail system that can efficiently handle access and directory services for 10,000 teachers and administrators and be scalable to possibly serve 110,000 students.

The Department of Technology and Information provides an e-mail system to each district for faculty and staff e-mail accounts. The system allows for a domain name associated with the district, such as, capital.k12.de.us. Each district has an e-mail administrator responsible for maintaining the district's e-mail accounts.

Recommendation

- ❑ *Continue to provide e-mail services to the districts.*

Internet, Copyright, and Filtering Policies

Internet, Copyright, and Filtering Policies (Strategic Initiative #23)

Define a standard statewide acceptable use policy and procedures to ensure that all educators and students agree to this policy. Such a policy must include Internet use, ethics, copyright and filtering, at a minimum.

The Department of Technology and Information has a standard acceptable use policy, but most districts have an acceptable use policy that in most cases is more restrictive than the DTI acceptable use policy. The DTI filters World-Wide Web content using SmartFilter in accordance with the Children's Internet Protection Act.

Recommendation

- ❑ *Continue to filter Internet content and ensure that all districts and schools are abiding by.*

Procurement Agreements

Purchasing Policy (Strategic Initiative #24)

Establish a focal point within DCET, working closely with DOE and the Division of Administrative Services, for the preparation of technology related RFPs, vendor negotiations, and site licenses for software.

Even though State purchasing contracts are in place, education traditionally can receive better pricing than state government. The Delaware Center for Educational Technology is the lead agency for the Microsoft Select Education agreement, and the Center has also worked out agreements with Dell Computer, Compaq Computer, and 3Com to give our school districts favorable pricing.

The DCET has worked with the Division of Support Services in the Partner\$ in Procurement initiative in an attempt to drive state and education prices down. After numerous discussions and analysis of past purchases, the DCET has been very successful in providing excellent education pricing.

Recommendations

- ❑ *Continue to pursue purchasing contracts in the interest of education.*

Communication

Communication (Strategic Initiative #6)

Create communication channels to promote collaboration among educators on instructional and operational issues and best practices in technology utilization.

The Delaware Center for Educational Technology is committed to keeping lines of communications open with the districts and schools, and providing services that meet the needs of the districts.

Recommendations

- ❑ *The DCET will continue an open line of discussion with the districts concerning technical issues and support the monthly meetings of TechMACC, the organizational body of the district technology coordinators.*
- ❑ *The DCET will continue an open line of discussion with the districts concerning professional development and conduct the monthly meetings of INTEGRATE, a statewide, instructional technology group with representatives from each district, DOE, DCET, DSEA, and other related organizations.*
- ❑ *The DCET will support ITUG-DE (Instructional Technology Users Group – Delaware), an organization dedicated to bringing and using technology in the classroom. The DCET will host monthly meetings and maintain an informational e-mail list.*
- ❑ *The DCET will continue open lines of communications with the DOE, and DCET will participate in DOE Administrative Council meetings and Curriculum Cadre meetings.*

Integrated Pupil Accounting and Curriculum Management

IPAC (Strategic Initiative #15)

Support the Department of Education's Integrated Pupil Accounting and Curriculum (IPAC) Management initiative.

A charge of the DCET is to provide technical assistance to the DOE for matters related to the statewide pupil accounting system and the implementation of curriculum management systems.

Recommendations

- ❑ *Continue to provide technical assistance to the DOE in connection with the pupil accounting system and support the DOE in the efforts related to curriculum management.*
-