

K-12 School Technology  
Initiative

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# South Carolina K-12 School Technology Progress Report for FY2000

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State Budget and Control Board  
State Department of Education  
South Carolina Educational Television  
South Carolina State Library  
BellSouth  
Lightstar Partners

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# Report Overview

The purpose of this report is to provide an update on the status of the South Carolina K-12 School Technology Initiative and to outline the progress being made in promoting digital learning in South Carolina. Digital learning is the educational approach that integrates technology, connectivity, content and people. When implemented correctly, digital learning fosters productive and engaging learning environments. This in turn both supports and promotes the essential skills students will need in education, life and work in tomorrow's world.<sup>1</sup>

Through funding provided by the Governor and General Assembly for the K-12 School Technology Initiative, South Carolina has been able to address the four areas essential for digital learning: Hardware/Software, Connectivity, Digital Content, and Professional Development. As in other states, schools in South Carolina are now beginning to integrate technology into the classroom. They are passing through one of four stages of technology integration as described in the 1997 School Technology and Readiness Report issued by the CEO Forum on Education and Technology. These stages are

- Planning, investigation and experimentation;
- Initial capital outlay;
- Readjustment; and
- Emergence of new work and organizational models.

Most South Carolina schools are in the "readjustment" phase where educators are becoming increasingly comfortable with technology and its potential. They are now expanding the scope of their activities that utilize technology. "Ultimately, technology becomes an essential tool for students and educators. It allows flexibility to create new forms of collaborative and inquiry-based learning and, at the same time, improves academic performance."<sup>2</sup>

The progress being made by South Carolina in the use of technology in K-12 schools is a result of the combined effort of individual schools and school districts in conjunction with the K-12 School Technology Partnership. With continued funding for the requisite backbone network, hardware, software and professional development, districts can shift their focus from installing technology to establishing a digital learning environment for the benefit of South Carolina's children.

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<sup>1</sup> The Power of Digital Learning: Integrating Digital Content, The CEO Forum on Education and Technology, June 2000, p8.

<sup>2</sup> School Technology and Readiness Report: From Pillars to Progress, The CEO Forum on Education and Technology. October, 1997. p11.

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# Executive Summary

In 1996 a vision was articulated for improving 21<sup>st</sup> century education through the use of technology in American schools. Defining “Four Pillars” as part of his Technology Literacy Challenge, the President called for broadening educational technology objectives to include not only hardware and connectivity, but also digital content and professional development.<sup>3</sup> Today, this vision has been further refined to address the integration of these four pillars into a learning environment known as “digital learning.” With the help of the K-12 School Technology Initiative, South Carolina is fostering the concept of digital learning in schools throughout the state.

Established in 1996 by the General Assembly, the K-12 School Technology Initiative is guided by a unique public/private partnership that includes the State Department of Education (SDE), SC ETV, the State Budget and Control Board, the State Library and the private sector telecommunications providers in the state. This group guides the distribution of funds appropriated by the Governor and General Assembly so that the state’s needs for hardware/software, connectivity, digital content, and professional development are addressed. Listed below are some of the major accomplishments of the Initiative. As these accomplishments illustrate, South Carolina has been very successful in deploying hardware, software, and connectivity to the schools in the state. It is now our challenge to integrate these assets into the learning environment of each school. This can only be accomplished by focusing on professional development and digital content.

## **Network Connectivity**

- South Carolina is one of the leading states in the deployment of technology in classrooms. We were one of the first four states in the country with telecommunications connectivity (statewide network and Internet access) to all K-12 schools and one of the first states in the country with connectivity to all public libraries.

## **Hardware, Software and Infrastructure**

- Many schools have more than 75 computers connected in classrooms to the state network and Internet. More than \$31 million have been distributed to school districts to purchase needed hardware and software to effectively use the conductivity provided. All media centers and more than half the classrooms in the state are wired to use the technology infrastructure. Using self-reported statistics, schools in South Carolina average a “student to computer” ratio of 7:1 which makes South Carolina a “high tech” state.
- Projects using two way video are providing resources to students in rural and less affluent areas of the state. The results of these projects have enabled South Carolina to make efficient and effective decisions about future technologies.

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<sup>3</sup> School Technology and Readiness Report: From Pillars to Progress, The CEO Forum on Education and Technology. October, 1997. P7.

## Professional Development

- Over the last four years many South Carolina educators have participated in professional development opportunities with funding provided by the K-12 Technology Initiative. These include graduate-credit distance education courses, recertification courses, workshops, and technical courses for teachers and school district technicians.
- The State Department of Education's thirteen regional technology specialists, dispersed geographically across the state, provide intensive hands-on instruction on the use of computers, the Internet, ITV and other technologies in the curriculum both from their state-of-the-art technology labs and on-site in local in-school labs. The technology specialists work closely with districts on planning for the effective integration of technology into teaching and learning and on support for use of their local area networks and instructional television resources.
- South Carolina's colleges and universities are partners in providing technology staff development for educators. Three examples of these partnerships include: the University of South Carolina graduate-level course, *Taming the Information Technology Jungle*, for beginning users of technology; the Clemson University initiative that offers six model school sites where student teachers and in-service teachers can learn how to integrate technology into their classrooms everyday; and the Presbyterian College hands-on technology summer workshop for classroom teachers.
- More than \$4 million have been distributed to districts and higher education to provide training for educators in schools. Maximum use of our existing teacher education programs makes training educators in the use of technology cost effective and educationally effective.
- A partnership between SC ETV and SDE supports a statewide Teacher Training Institute to train teachers on the use of technology (video and computer resources) in math and science. Learning Link provides teacher support and access to the Internet from home.

## Digital Content

- The SC ETV 32 channel satellite system is now broadcasting digital content to all schools in the state. A dish and at least three receivers are currently in each school. The satellite system makes more channels available to classrooms and maximizes the outreach of programs like the Governor's School for Science and Mathematics and the Governor's School for the Arts and Humanities. Having additional receivers in each school has made it possible to transition from using the normal television channel for broadcast to using satellite channels. Doing this makes it possible to broadcast the Ready to Learn channel into every home in South Carolina over the public channel to aid in preparing preschool children for first grade.
- Instructional Television Fixed Service (ITFS) expansion has been a major goal of the K-12 School Technology Initiative since its inception. ITFS systems allow a school district to transmit four channels of closed circuit programming to schools within the district from a central transmitter site. Each ITFS system has a small studio used in the production of programming created by the local district based upon local needs. Now each school district in the state has access to an ITFS system.

- This year SC ETV continued to put its vast library of resources into a format that will allow students and teachers to lookup the video resources from their computers. It is called digitization. ETV's NatureScene programs, formerly available only from a video library, are now available at the desktop via the WEB. By simply clicking the mouse, students can start with snakes from all over the country or look up animals in South Carolina. They do not have to fast forward the video tape until they get to the part they want. Future ETV productions will be produced in this form as well as video for broadcasting.
- This year the South Carolina State Library expanded the use of DISCUS – South Carolina's Virtual Library – across the state. This initiative provides all South Carolinians with access to an electronic library of essential information sources. The goal is to ensure equity of access to information regardless of where people live. DISCUS databases can be accessed via computers that are connected to the Internet at participating higher education institutions throughout the state, as well as from computers in all public libraries and K-12 schools.

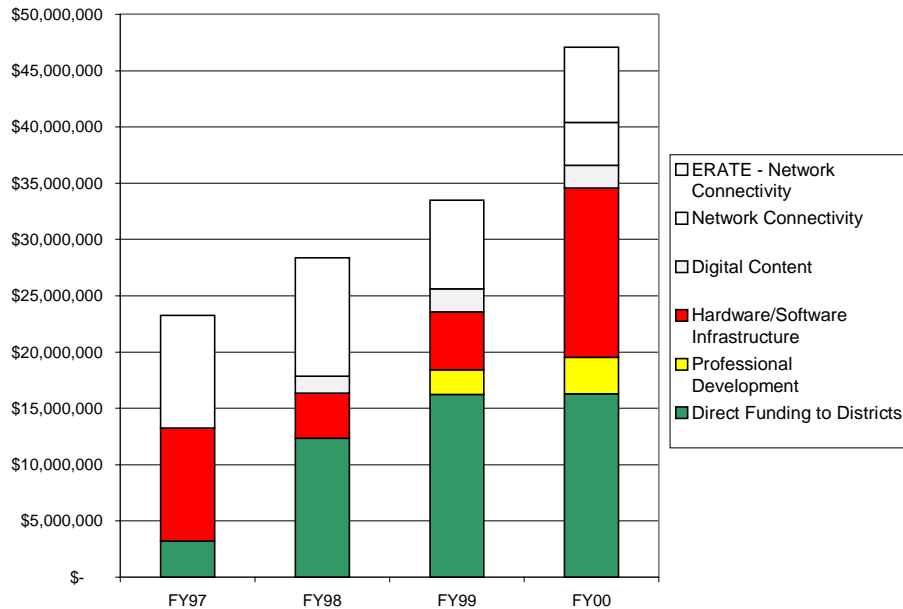
### **Strategy for Deployment**

Through the K-12 Technology Initiative, state leaders have shown their commitment to providing the state's school children the tools and resources necessary to promote enhanced learning opportunities. In moving toward this goal, the K-12 School Technology Coordinating Committee has established three objectives for the distribution of funds. They are:

- Provide Connectivity for Learning;
- Educate Teachers on the Use of Technology; and
- Provide Technology Tools that Support the State's Curriculum Standards.

As illustrated in the funds distribution listed below, initial activity was focused primarily on school connectivity, and hardware/software infrastructure, thus ensuring that all the state's schools have access to technology resources. Concurrently, steps were taken through professional development and training courses to ensure that trained staff is available to maximize the use of this technology investment. To round out the technology initiative, emphasis was given to digital content and curriculum resources for delivery via the World Wide Web. Fortunately, the state has been, and will continue to, utilize the available E-RATE refunds and discounts to maximize the appropriated funds available to the technology initiative.

**Allocation of K12 Technology Funds: Appropriated and ERATE**



*\*Striped areas indicate efforts necessary to bring digital content into the classroom.*

*\*\* These funds represent only those monies appropriated to the K-12 school technology initiative. They do not include funds leveraged by other governmental organizations to promote technology in the classroom.*

## Conclusion

South Carolina has made major strides over the last four years in providing technology resources to its K-12 schools. These efforts have led to defining South Carolina's schools as "high tech" in the areas of hardware and connectivity with major improvements being made in the areas of content and professional development. Using the CEO Forum's definition of "target tech school"<sup>4</sup>, the educational benefits of this effort are;

- Student-centered authentic project-based learning;
- Improved problem solving abilities;
- Universal access to greater information resources available for research and education from Internet and CD-ROM;
- Collaborative learning that allows students to develop teamwork/communication/problem-solving skills; and
- Communications between students/teachers and parents, experts, other students and teachers outside the school is possible.

<sup>4</sup> [School Technology and Readiness Report: Professional Development: A Link to Better Learning](#), The CEO Forum on Education and Technology. February, 1999. p 16.

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# K-12 School Technology Funding

## **TECHNOLOGY FOR PUBLIC EDUCATION** **FY 1996/97**

**APPROPRIATED** - \$20,000,000

<b>I.</b>	<b>\$10,000,000</b>	<b>Network connectivity, Internet Access, Staff Development - Library/Media Software (EIA Funds)</b>
<b>II.</b>	<b>\$ 3,500,000</b>	<b>ITFS/Tape &amp; Delay Center Expansion (7) [Renamed Distance Education Learning Center - DELC] (Instructional TV Fixed System) (Capital Reserve Funds)</b>
<b>III.</b>	<b>\$ 3,500,000</b>	<b>Satellite Dishes and Receivers - Complete to all K-12 (Capital Reserve Funds)</b>
<b>IV.</b>	<b>\$ 3,000,000</b>	<b>Development of Local Video Distribution Systems - Selected Pilot School Districts (Capital Reserve Funds)</b>
	<b>\$20,000,000</b>	Total - New Dollars for Technology - B&C Board
	<b>\$ 3,250,000</b>	School Allocations (Continuing EIA Appropriation)
	<b>\$23,250,000</b>	<b>TOTAL FOR TECHNOLOGY</b>

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# K-12 School Technology Funding

## **TECHNOLOGY FOR PUBLIC EDUCATION** **FY 1997/98**

### **APPROPRIATIONS**

<b>Appropriated-</b> <b>\$25,116,516</b>	As Appropriated to H63, 19.X.K Other State Agencies and Entities (F07)
<b>\$ 3,250,000</b>	As Appropriated to H63, 19.X.C Aid to Subdivisions - EIA Technology
<b>\$28,366,516</b>	<b>Total Appropriations</b>

### **ALLOCATIONS**

<b>I. \$11,000,000</b>	<b>Continuation of Network Connectivity</b> , to SCINET & Internet for 1411 Schools & County Libraries, & Development & Training
<b>II. \$ 3,500,000</b>	<b>Complete the remaining Tape &amp; Delay Centers</b> (Renamed Distance Education Learning Center - DELC)
<b>III. \$ 1,500,000</b>	<b>Digitization</b> of SC ETV Video Resources
<b>IV. \$12,366,516</b>	<b>Total Available for Distribution to Schools:</b>
<b>\$9,116,516</b>	Purchase Personal Computers, File Servers, Software, Routers, and Related Training and Materials for School and District Personnel
<b>\$3,250,000</b>	EIA Technology Funds - Appropriated to SDE
<b>\$28,366,516</b>	<b>TOTAL FOR TECHNOLOGY</b>



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# K-12 School Technology Funding

## **TECHNOLOGY FOR PUBLIC EDUCATION** **FY 1998/99 – Page 1**

### **APPROPRIATIONS**

\$25,116,516	As Appropriated to H63, 19.X.K Other State Agencies and Entities (F07)
\$ 2,600,000	As Appropriated to H63, 19.X.C Aid to Subdivisions - EIA Technology
\$ 650,000	From Other Funds Appropriated to SDE
<b>\$28,366,516</b>	<b>Total Appropriations</b>

### **ALLOCATIONS**

I. \$7,892,516	Continuation of Network Connectivity, to SCINET & Internet for 1411 Schools & County Libraries,
II. \$2,169,715	Professional Development and Training, and Computer Upgrade Project.
III. \$ 554,285	Digitization of SC ETV Video Resources and National Teacher Training Institute
IV. \$1,5000,000	School Library Access to Subscription Services(DISCUS).
V. \$16,250,000	Total Available for Distribution to Schools:
\$13,000,000	Purchase Personal Computers, File Servers, Software, Routers, and Related Training and Materials for School and District Personnel
\$3,250,000	EIA Technology Funds - Appropriated to SDE
<b>\$28,366,516</b>	<b>TOTAL</b>

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# K-12 School Technology Funding

## **TECHNOLOGY FOR PUBLIC EDUCATION** **FY 1998/99 – Page 2**

### **CAPITAL RESERVE FUND APPROPRIATIONS**

\$5,150,000	As Appropriated From Capital Reserve Funds Budget and Control Board – School Technology
<b>\$5,150,000</b>	<b>Total Appropriations</b>

### **CAPITAL RESERVE FUND ALLOCATION**

I. \$1,220,000	Cable/Fiber Installation, Two Way Interactive Video and Assistance to Schools Needing Additional Support.
II. \$3,500,000	Complete Remaining Tape and Delay Centers – DELCS
III. \$ 430,000	Computer Upgrade Project
<b>\$5,150,000</b>	<b>Total Allocation</b>

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# K-12 School Technology Funding

## **TECHNOLOGY FOR PUBLIC EDUCATION** **FY1999/2000**

### **FY00 APPROPRIATIONS**

\$20,638,634	EIA Appropriations As Appropriated to H63, 19.X.K Other State Agencies and Entities (F07)
\$16,500,000	Surplus (non-recurring funds)
\$ 2,600,000	As Appropriated to H63, 19.X.C Aid to Subdivisions - EIA Technology
\$ 650,000	Proviso 1A.56
<b>\$40,388,634</b>	<b>Appropriations</b>

### **ALLOCATION OF FY00 APPROPRIATIONS**

I. \$3,806,025	<b>Continuation of Network Connectivity</b> , to SCINET & Internet for 1411 Schools & County Libraries. (Total allocation for network connectivity is \$10.5 million. \$4,782,519 from ERATE funds received; \$1,911,456 from anticipated ERATE refunds; \$3,806,025 from appropriated funds.)
II. \$5,863,269	<b>NCS: Student Accountability System:</b> Includes funding for statewide software license, training, installation, project management and state required code.
III. \$ 350,000	<b>Training for Student Accountability System:</b> Contract with Midlands Tech to provide initial training for schools on the student accountability system.

IV.	\$2,020,000	<p><b>Professional Development</b>  Technical Courses: \$ 400,000  District Flow Through: \$1,620,000</p>
V.	\$ 134,000	<p><b>South Carolina Connects:</b> Graduate Credit Course for teachers at RTC.</p>
VI.	\$ 100,000	<p><b>Regional Technology Centers</b>  Lab Assistants: \$ 75,000  Software: \$ 25,000</p>
VII.	\$ 60,235	<p><b>ETV/ITV Teacher Institutes:</b> Statewide workshops for teachers featuring ETV/ITV resource use. Partnership between SDE/ETV and Math-Science Hubs.</p>
VIII.	\$ 400,000	<p><b>Network Academies:</b> Expand Network Academies project to 20 high schools</p>
IX.	\$ 117,000	<p><b>Technologies for the Arts</b>  USC Visual Arts: \$ 78,000  Columbia College: \$ 39,000</p>
X.	\$ 950,000	<p><b>Computer Upgrade Projects</b>  Teachers Build CPUs: \$ 850,000  Dept. of Corrections: \$ 100,000</p>
XI.	\$ 200,000	<p><b>Data Warehouse:</b> Continue development of a data warehouse for public schools</p>
XII.	\$ 412,920	<p><b>Teacher Certification System:</b> Update teacher certification system to provide improved response and meet accountability requirements</p>
XIII.	\$ 3,500,000	<p><b>Two-way Video Projects: Evaluation and Expansion:</b> Pursuant to Proviso</p>
XIV.	\$ 1,500,000	<p><b>DISCUS:</b> South Carolina's virtual library</p>
XV.	\$ 2,546,729	<p><b>Elementary ITFS:</b> Funds to begin expansion of ITFS system into all elementary schools. (Currently 75 elementary schools have this service.)</p>

XVI. \$ 500,000	<b>Digitization Project:</b> Continuation of the cataloging and indexing of additional programming from the ETV vault.
XVII. \$ 48,856	<b>Learning Link Expansion:</b> Provides internet access and training for teachers from home.
XVIII. \$ 1,579,600	<b>ITFS Network Services:</b> Provides for maintenance of receivers, towers and antennas. Replace equipment in the original 21 DELCs
XIX. \$16,300,000	<b>Total Available for Distribution to Schools:</b> Provide computers, wiring, software, telcom equipment, Teacher e-mail.
<b>\$40,388,634</b>	<b>TOTAL</b>

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# K-12 School Technology Funding

## **TECHNOLOGY FOR PUBLIC EDUCATION** **FY1999/2000**

### **E-Rate Funds**

**Background:** Funds are currently being received by the Office of Information Resources from the Schools and Libraries Division of the FCC. These funds represent reimbursement for discounts for eligible telecommunications services used in implementing the K-12 School Technology Network from January 1, 1998 – June 30, 1999.

#### **Strategy for use of E-Rate funds:**

Actual cash refunds realized in Phase I and Phase II of E-Rate reimbursement process will be used for the K-12 network. The total cost of providing network connectivity to the schools and libraries in FY00 is \$10.5 million. The remaining cost for connectivity will be funded through state appropriations. (\$4,782,519-ERATE funds received; \$1,911,456-Phase II ERATE refunds; \$3,806,025-appropriated funds.)

<b>Phase I:</b>	\$4,782,519	Cash on Hand at 7/1/99
<b>Phase I Allocation</b>	\$4,782,519	Continuation of OIR Operations and Network Connectivity, to SCINET & Internet for 1411 Schools & County Libraries
<b>Phase II</b>	\$1,911,456	Cash on hand at 9/1/99
<b>Phase II Allocation</b>	\$1,911,456	Continuation of OIR Operations and Network Connectivity, to SCINET & Internet for 1411 Schools & County Libraries
<b>Total Refunds and Discounts:</b>		<b>\$6,694,065</b>
<b>Total Allocations FY00:</b>		<b><u>\$6,694,065</u></b>
<b>Balance</b>		<b>0</b>

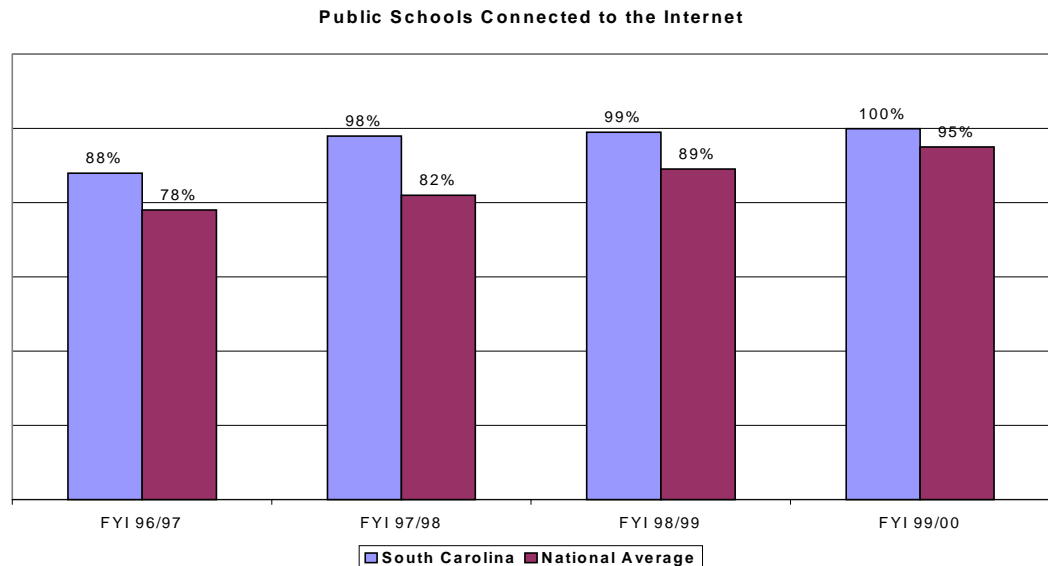
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## Network Connectivity

*The 1999 CEO Forum School Technology and Readiness Report defined its "Target School" as a school with high speed dedicated access to the Internet (e.g. ISDN, T-1, T-3) with a Local Area Network and a ratio of 3-6 students per multimedia computer. A "high tech" school has dial-up and dedicated access and a ratio of 5-13 students per multimedia computer.*

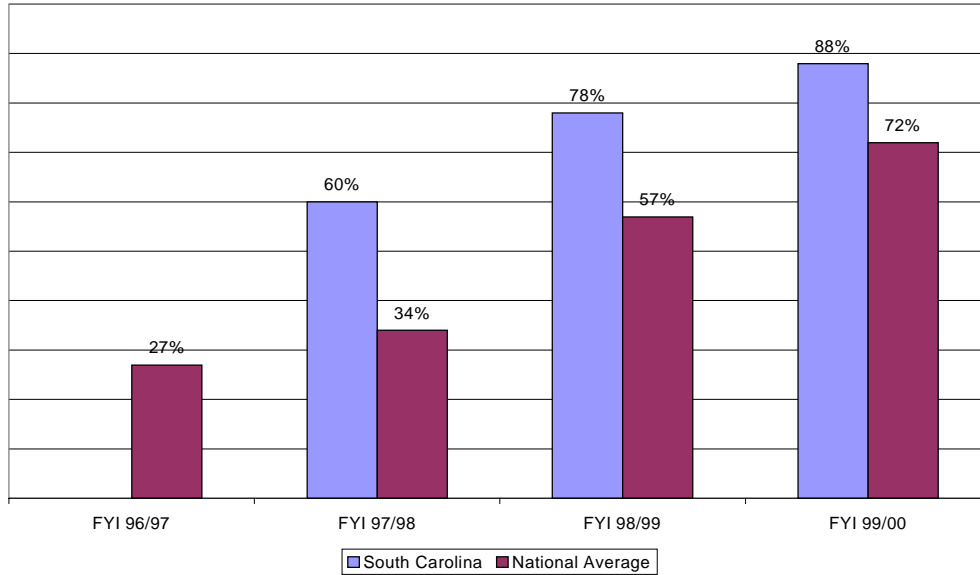
The objective of the Network Connectivity element of the K-12 School Technology Initiative is to provide the state's 1140+ schools, 86 districts and 194 libraries with Wide Area Networks to meet local needs and connect each district and main library to the SCINET (South Carolina's backbone network), which links them to state resources and provides connectivity to the Internet. The Budget and Control Board's Office of Information Resources (OIR), the State Library, the school districts and the county library systems worked with the 26 telephone companies to determine the best connectivity design for each entity. As the 2000/2001 school year begins, all school sites are connected to the Internet and only 2 library sites remain to be connected. These library sites are small and not open sufficient hours to warrant the network connectivity investment. As the necessary local commitment to provide full library service to those communities increases, connectivity will be implemented.

As illustrated below, South Carolina compares favorably to the US average of public schools connected to the Internet.



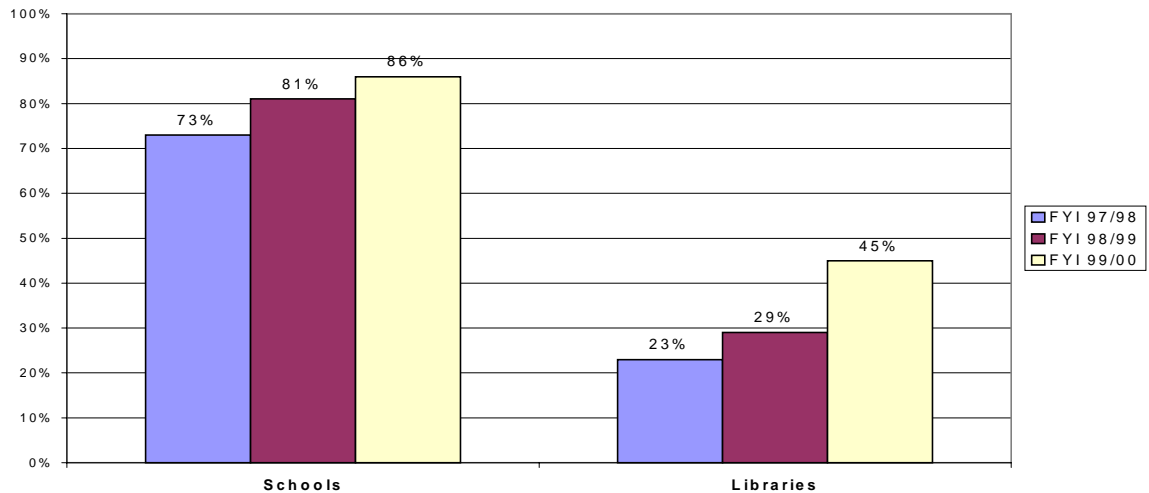
Perhaps more importantly, South Carolina compares favorably to the United States in the number of public classrooms connected to the Internet. This connectivity allows teachers to deliver digital content to their students, thus opening a whole new realm of teaching and research possibilities.

**Public Classrooms Connected to the Internet**



Over the last several years, the state and local school districts have invested funds in computer hardware and other technologies for the classrooms. As a result of this increased investment, much of the connectivity work in the current year was devoted to upgrading low speed circuits delivering inadequate performance to a T-1 level that delivers much faster, more satisfactory performance. Presently, 86% of the schools and 45% of the library sites have a T-1 or greater connectivity. This means that 86% of the schools in South Carolina meet The CEO Forum standard of "high-tech" school for connectivity.

**Schools and Libraries with T-1 or Greater Bandwidth**





The following maps provide a district by district illustration of the progress being made in connecting the K-12 schools and libraries to the Internet. This robust network is the first step in ensuring that our teachers can incorporate digital learning into the classroom.

The maps include:

- K-12 Classrooms Wired by District – Permanent Classrooms
- K-12 Classrooms Wired by District – Portable Classrooms
- Percent of Classrooms Wired by School (5 maps)
- South Carolina Public Libraries Connected

- Hardware, Software and Infrastructure

*“One of the enduring difficulties about technology and education is that a lot of people think about the technology first and the education later” – Dr. Martha Stone Wiske, Education Technology Center, Harvard Graduate School of Education.<sup>5</sup>*

The objective of the hardware, software and infrastructure element of the K-12 School Technology Initiative is to ensure that schools have the appropriate hardware, software and infrastructure necessary for the proper integration of technology into both the classroom and the administrative processes of the schools. As illustrated below, the state has sponsored several programs to make computers available to schools and to assist schools in delivering interactive distance education courses. The state has also supported programs designed to enhance educational and administrative processes.

### **Hardware in the Schools**

To better assess the impact of the K-12 technology project on the classroom environment, the Budget and Control Board Office of Information Resources, in cooperation with the State Department of Education, began an effort to gather data directly from the school districts. An interactive Web Site was developed that allows schools to enter data to be accumulated directly into the site. OIR is then able to organize and analyze the data. The following chart was developed from those data. It should be reiterated that this is self-reported data; a survey is currently being conducted by KPMG Consulting to validate this data and to provide further information on the status of technology in the schools.

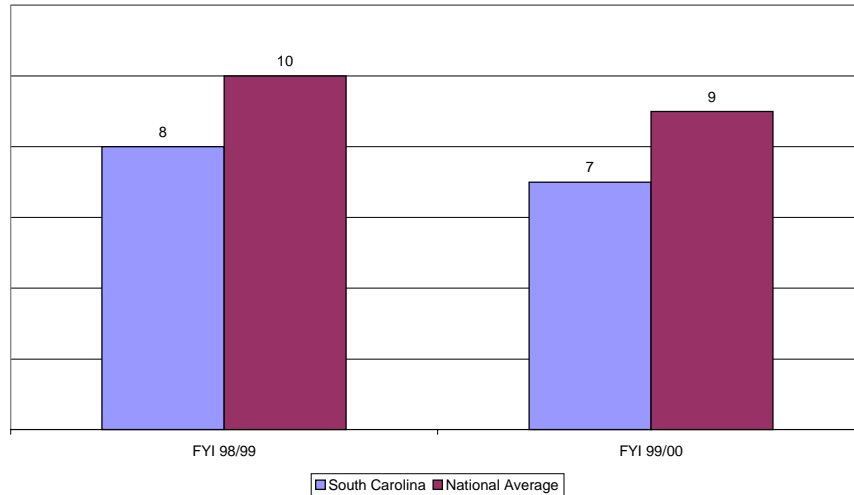
Of the 1143 schools in South Carolina, 1128 have provided information on their use of technology via the Web. This high percentage of reporting schools makes FY99/00 a good year to benchmark future growth and efficiencies in the network. For example, the 1066 schools reported 86,035 Internet capable (multimedia) computers available for student access in the classroom, media center or computer lab. Projecting this inventory to the entire school population of 1143 schools, indicates there are 92,250 internet capable computers available to 655,375 students statewide. This represents a ratio of students to computers of 7:1. This meets the CEO Forum standard for “high-tech” schools.

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<sup>5</sup>

The Power of Digital Learning: Integrating Digital Content, The CEO Forum on Education and Technology, June 2000, p13.

Students to Multimedia Computer



\* NOTE: The lower the student to computer ratio, the better positioned a school is to establish a digital learning environment.

### Computer Upgrade Projects

- **Teachers Build Computers**

The "Teachers Build Computers" project has been funded for several years. However, FY2000 was a transition year for this project. By the second half of the year, due to a significantly lower cost advantage for building computers from parts, the project transitioned from teacher building computer workshops to workshops centered on use and integration which include each attendee receiving a pre-built computer at workshop completion. This project targets schools in greatest need of technical assistance.

There were approximately 261 computers built by teachers during the first six months of the fiscal year (July 1, 1999 through December 31, 1999). The Teachers Build Computers project was discontinued after January 1, 2000 and pre-built computers have been provided since January 1, 2000. There will have been 600 pre-built computers provided to the most needy schools across the state by the end of August 2000. These computers were secured as a result of a RFQ issued by the State Department of Education where the low quote was from Gateway Inc. at \$884 each.

There are typically 10 to 12 teachers per workshop and schools are selected based on a model using data provided by the Budget and Control Board. The selection model uses the number of students on free and reduced lunch in combination with the number of students on Medicaid to identify the most needy schools in the state. These schools are offered workshops by the Regional Technology Specialists where each teacher receives a new computer and the professional development required to use it in the classroom.

- **Donated Computers Project (formerly Dept of Corrections)**

There have been approximately 330 computers upgraded by the inmates at Manning Correctional Institution. These machines are donated by state and federal agencies as well as private companies. The inmates take these old machines (mostly low-end Pentium computers) and upgrade them by adding additional RAM memory, a high-speed CD-ROM drive, sound card and high capacity fixed disk drive. The upgraded computers are then given free of charge to the schools in greatest need of technology. In addition, the inmates provided 100 machines for the Family Learning Center in Allendale County. In this program, parents of students in Allendale schools received 13 weeks of computer literacy coursework and job seeking skills. Each participant will receive an upgraded computer from the Computer Upgrade Project complete with modem for use in their homes.

Number of computers provided through this project: 1191

### **NCS: Student Accountability System (SDE)**

The State Department of Education made significant progress in FY 2000 in moving forward with a long overdue replacement student management system for OSIRIS. An upgrade of school and school district software is essential to an effective and efficient 21<sup>st</sup> Century educational enterprise having a technology infrastructure that provides data for policy and management decisions about educational improvement and accountability on a real-time basis. The Educational Accountability Act of 1998 requires the collecting and reporting of data that will only be achieved through the use of a new system that is critical to meeting our accountability obligations.

To achieve this goal, an agreement was completed between a vendor, NCS, under which the Department purchased a state license for SASlxp, a student management system; ABACUSxp, a program for curriculum management; and Tranquility, special education software. After a pilot test, the first wave of installation began during July 2000 in the remaining schools in the five school districts serving as field test sites. Following field-testing and validation of a conversion process from OSIRIS, implementation and end-user training will begin in these districts.

An application package for software installation will be distributed to all districts in July 2000 for return by August 30, 2000 to ensure proper scheduling for the statewide rollout. The application package will assess willingness and readiness for each district. To determine willingness, districts will be asked to indicate their preference for the phase of the rollout in which they will be scheduled. To determine readiness, districts are to provide extensive assessment information on adequacy of infrastructure, hardware, related system software, staffing, and training.

### **Data Warehouse**

Extensive testing during the course of the year revealed that the initial system - IBM - would not well serve the needs of the agency, the legislature, and others, so the State Department of Education began to explore alternatives. During this time SDE applied for and was named to serve as one of 8 states nationally to develop the federal model for a statewide data warehouse system that will become the basis for all future federal report gathering. SDE is currently reviewing potential options to complete a new solution that will meet local, state, and federal needs.

## **Teacher Certification System**

This project is designed to update the State Department of Education teacher certification system to provide improved response and to meet accountability requirements. Initially, the Teacher Certification database was given a detailed analysis. Staff members, school district personnel, teachers and representatives for other education entities provided detailed feedback regarding proposed changes.

The second quarter provided consensus of all the providers to propose a first phase of the design of the database and order the equipment necessary to build the beginning foundation of the hardware. In the third quarter, the hardware consisting of five servers, hubs, rack mount, modems and network additions were constructed and installed. The operating system software and application software was installed and tested. Meetings were held with various staff members and various stake holders to finalize the design of the certification database, network design and application re-engineering. The relational certification database went into production in March.

In the final quarter, the website for Teacher Certification was activated. Teachers and school district personnel are able to access certification information via the web. The information that feeds the Professional Certified Staff system was tested extensively with the Information Technology and Teacher Certification office staff. A communication system was synchronized so data can be transmitted electronically. As part of the final quarter planning, a toll free number was installed for in-state long distance callers. Meetings with stake holders at the state and district level are in process to identify the present goal and future goals for web enabled access. Virtual private networking is under construction to accommodate dialing into the certification database for home access. The uses of Active Directory and LDAP services are being researched. Research is underway to utilize the integration and common email integration and communication with state agencies for ease of use and accessibility to the state directory email addresses. The certification database is still undergoing modifications and workstations are being upgraded.

## **ITFS Expansion**

ITFS (Instructional Television Fixed Services) expansion has been a major goal of the K-12 Technology Initiative since its inception. Through continual funding and construction, a total of 35 Distance Education Learning Centers (DELIC) now provide ITFS service to all 91 school districts in the state.

School districts are using the DELICs to provide four channels of closed circuit microwave broadcast into their schools. The DELICs are also equipped with a distance learning studio which provides the capability to produce specific direct instruction courses, staff development and other programming which meets local needs. Where financially and technically possible, several school districts have gone together to share a DELIC. The K-12 School Technology Initiative funds provide construction funds and the local school district provides the staffing.

- **ITFS EXPANSION PROJECT - Phase III**

Phase III of the ITFS Expansion included systems serving the following counties:

- Marion-Dillon DELIC
- Orangeburg-Calhoun DELIC
- Western Piedmont Educational Consortium DELIC (formerly Greenwood 50 DELIC - expanded from four to eight channels - and now serves Greenwood, Saluda, Edgefield, McCormick, Abbeville, Newberry, and Laurens counties)

These systems were funded as part of the 1998-99 K-12 Technology Initiative but due to building construction, the need to obtain certain FCC license approvals and tower site authorizations these systems were delayed in becoming operational until the fall of 2000. The delay in Newberry-Laurens portion of the Western Piedmont Educational Consortium DELIC is due to new local zoning restrictions on towers. A search for a suitable alternative site for the transmitter in Newberry County is currently underway.

## **School Satellite Service**

The K-12 School Technology Fund has also allowed SC ETV to complete its digital satellite service to all of the state's public schools. Through the use of these funds, each school in the state now has a satellite dish and a minimum of three digital receivers. Currently, SC ETV is providing 7 channels of service to the K-12 schools, plus some additional one-time-only service on additional channels.

## **Two Way Video Pilot Project**

The Two Way Video Project began in the Summer of 1996 as an element of the K-12 Technology Initiative to provide selected South Carolina schools with connectivity and capacity to use current and rapidly developing telecommunications systems for teaching and learning. The purpose of the project was to place hardware and connectivity in place to allow for two way interactive learning. Greatest consideration was given to those schools that had initial systems in place or had plans developed. Nine projects were funded for a total of \$3,000,000.

The first year was a building year -- installing video systems, connecting the schools and getting faculty ready to teach using distance education. Approximately ten courses were offered. In 1997 supplemental funding was provided to improve the systems and expand the number of schools served. The number of sites grew to 48 with 36 courses offered.

In FY99/00 additional funding was provided for a competitive grant solicitation to promote Interactive Distance Learning in South Carolina. By successfully applying for a state interactive distance learning grant from the K-12 School Partnership, 39 South Carolina school districts will be able to establish electronic classrooms with two-way video and two-way audio technology. Over \$3,000,000 was awarded to districts who will actively integrate interactive distance learning with the teaching and learning process. This new group of SC school districts increases the total number of districts using interactive distance learning to 52 for the fall of 2000. Summaries of these award-winning grants can be found on the distance learning web site <http://www.state.sc.us/sde/educator2dl>.

These successful grant applicants reviewed their schools' needs and designed meaningful curriculum and instruction that will be utilized by their schools. After receiving the grant for the electronic classrooms, the school districts joined a powerful network of superintendents, instructional leaders, information technology directors, distance learning teachers and higher education administrators who are sharing experiences regarding the school districts' effective use of distance learning.

As the K-12 Partnership continues to support two-way interactive distance learning as part of the technology delivery system to improve education in SC, the educational opportunities in our state will increase. It is important that each district analyze its curricular and instructional needs while seeing how interactive distance learning can be integrated into the district's overall technology delivery system. Educators are changing the way South Carolina learns by creating electronic classrooms of the future.

In addition to funding the two-way video projects, the K-12 Partnership has contracted with the University of South Carolina to evaluate the two-way video projects as well as organize meaningful staff development as school districts begin to integrate interactive distance learning as part of their instructional delivery system. The K-12 Partnership has coordinated a response to meet the requirements of Proviso 72.57 of the 1999-2000 Appropriations bill. This report discusses the broader evaluation of the various types of distance learning as part of the statewide telecommunications delivery system.

The following map illustrates the districts utilizing two-way video technology.





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# Professional Development

*“The bottom line is clear: technology applied well, can enhance and reinvigorate education, making schools richer and more exciting interactive communities of learning for students and teachers alike. We must do more, however, than put technology in schools; we must empower teachers to use it effectively.”<sup>6</sup>*

According to the CEO Forum, “Professional Development... remains a key issue to creating digital learning environments. Specifically, professional development that guides teachers on the effective integration of digital content and tools rather than just offering technical know-how proves particularly successful.”<sup>7</sup> Building on this theme, South Carolina has offered a variety of courses over the last several years that focus on both technical know-how as well as integration of digital resources into the curriculum. Listed below are descriptions of those courses offered during fiscal year 2000.

## Technical Courses

A statewide contract was negotiated with a provider that offered hands-on technical courses designed for technicians, technology professionals, and others charged with the task of installing and maintaining networks, equipment, and installing and operating software in schools and districts. Statewide, over 584 technical personnel attended 52 courses. Seventy school districts participated in these course offerings. Most districts took from two to six courses, while the number of courses districts took ranged from one to thirteen. The courses most requested were as follows:

<u>Course</u>	<u>Number of Attendees</u>
Workstation Management with ZEN Works	96
System Administration 5.0	68
Netware 4 to Netware 5 Upgrade	37
GroupWise 5 Administration	36
Intermediate Access 2000	34
Advanced Administration 5.0	33
Securing Internet with Border Manager	24

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<sup>6</sup> School Technology and Readiness Report: Professional Development: A Link to Better Learning, The CEO Forum on Education and Technology. February, 1999. p 6.

<sup>7</sup> The Power of Digital Learning: Integrating Digital Content, The CEO Forum on Education and Technology, June 2000, p13.

### **District Flow Through**

Through funds provided to districts under the Technology Professional Development initiative, school districts provided graduate, certification, and workshop opportunities designed to improve district educators' technology and technology pedagogical skills. Reports, which will provide specific details of the training provided, are due from all districts by July 17.

### **Statewide Technology Conference**

EdTech 99, the state's premier technology conference for educators, technicians, and decision-makers was held on November 3-4, 1999, at the Convention Center in Myrtle Beach, South Carolina. Attended by over 1000 persons and 90 vendors, it is the largest conference dedicated to educational technology in the state and is a major forum for educators and technology professionals to learn about the latest in computing technology. The Office of Information Resources, South Carolina ETV, the University of South Carolina College of Library and Information Science, the State Department of Education, and BellSouth were among the 13 key state agencies, private businesses, and higher education sponsors or partners for the conference.

EdTech 2000 will be held in Charleston on September 26-28. This year EdTech 2000 will be merged with the annual higher education technology and distance education conference, sponsored by Alliance 2020 and the Technical College System. In addition the USC College of Library and Information Science *Information Access* conference will be integrated into EdTech 2000. Attendance is expected to be over 1600 educators and staff with 150 vendors. K-12 attendance is greatly enhanced by the encouragement of school districts to use funding for technology professional development provided through the K12 partnership for EdTech registration fees for their personnel.

### **Graduate Courses (formerly SC Connects)**

Through a contract with Lander University, the graduate course, *I Want to be a Beachcomber: Incorporating Educational Technologies into the Curriculum*, has been offered to South Carolina educators. This course provides K-12 educators with hands-on experiences in using academic standards and creating innovative lessons, incorporating all forms of educational technologies including the Internet. Designed for school library media specialists, administrators, and teachers, this course also addresses national technology standards for educators. Twenty local sites hosted the Beachcomber course in the past year. In addition, a train-the-trainer module was developed and implemented for educators who have successfully completed Beachcomber. Participants are then qualified to work through their school districts to teach the course for graduate and/or recertification credit.

Number of times offered:	22
Number receiving graduate credit:	500

## Regional Technology Centers

The State Department of Education has thirteen technology specialists based in regional technology centers statewide. Their mission is to provide technology-based professional development and assist with technology planning that focuses on integrating technology into the curriculum in support of curriculum frameworks and academic standards.

During 1999-2000, Regional Technology Specialists provided classes and workshops on technology to over 6937 educators. A total of 693 educators gained hands-on experience from graduate and certification courses with a focus on use of the Internet and other technologies in support of the statewide telecommunications initiative.

In collaboration with SC ETV and the 13 State Systemic Initiative Hubs, National Teacher Training Institutes were held at five locations. A total of 617 teachers attended these workshops gaining valuable skills and information on integration of technologies of instructional television, the Internet, and computers into math and science instruction.

The number of educators who were provided technology professional development in 1999-00 is provided below. These are not individual, non-duplicated counts due to the fact that the same educators may have participated in more than one of the courses and workshops provided by a school district or by one of our Centers.

### FY 2000

Regional Technology Center hands-on classes	3904
Lander University graduate course	500
Recertification course credit	50
<i>Beachcomber</i> Train the Trainer workshop	60
Other credit courses	83
School district contracted graduate courses*	1200
School district certification courses*	1200
Workshops	3633
National Teacher Training Institutes	617
Technical courses for district staff*	584
<b>Total</b>	<b>11,831</b>

\* Estimates: Course data to be provided.

### **Network Academies**

Nine technical colleges and 35 secondary schools participated in an industry/high school collaborative training project whereby students received instruction in telecommunications equipment operation and maintenance. This program, sponsored by CISCO, allows local instructors to receive intensive instruction during the summer in CISCO schools to prepare them to teach these highly specialized courses. This project is in the initial stage and offers great promise of producing students with readily marketable job skills for the burgeoning telecommunication industry. Plans are to expand this project to 75 secondary schools for the 2001 school year. K-12 Partnership funds pay for equipping regional and local academy teaching sites with the equipment required for this instruction which includes routers, computers, DSUs/CSUs , hubs and switches.

### **Technology for the Arts Program**

For the past two summers, the Interactive Learning Workshop housed within the College of Liberal Arts and Department of Art at USC and at Columbia College has been sponsoring summer workshops designed to enhance levels of technological literacy among teachers in the arts and humanities. The goal has been to make these teachers computer literate, but also to provide them with expertise in specific applications that can change the way they both teach and assess their students. Teachers in these classes overcame any fears of troubleshooting and maintaining computers by participating in a computer building session after which they received a desktop PC for their classroom use. These classes were conducted for art and dance teachers this year.

Number of:

Classes conducted: 6

Computers provided: 108

### **National Teacher Training Institutes in SC**

Over 1,700 teachers have been trained in integrating video, the Internet and other technologies into their classrooms at one of twelve National Teacher Training Institutes for Math, Science and Technology (NTTI) sponsored in part by EIA funding over the past three years through SC ETV. Specifically, over 700 teachers were trained in the NTTI method in South Carolina during five institutes held from February through May of 2000. One-day institutes were held in each region of the state.

Activities at each of the hubs included Internet hands on training; a resource area; and other technology training in addition to the modeling of video-based lessons. A grant from State Technology funds supplemented the support provided at the national level. This additional support allowed the multiple institutes to each provide meals, briefcases, tee shirts and binders. The binder lessons are also posted on the web site for all South Carolina teachers to use.

Master teacher training for 2001 has been scheduled for October 12-13, 2000 at the SCETV Telecommunications facility in Columbia. All of the groups listed above, plus two new math-science hubs, will be participating in the 2001 Institutes.

## **Training for Student Accountability System**

- **Workshops for Field Test Schools**

Workshops were held for fifteen schools for those field test districts across the state. As each module was implemented and populated with data, NCS personnel provided workshops specifically designed to show users from the test sites how to input data items, configure the various modules, and run reports for basic applications, attendance, grading, and scheduling.

- **NCS Certification Training for SDE Staff**

There are presently a total of seventeen persons, including regional technology specialists, who have completed the training sessions required for certification to support and train end users on the NCS system. Four new regional technology specialists will receive training in FY 2001 to become certified trainers for the SASI Project in South Carolina. Two consultant positions for District Services will eventually need to become certified support personnel for this same project increasing the number of SDE staff who need the training to six. Since several districts have requested the opportunity to send persons from their technical staffs to this training, NCS will offer dates for a session(s) during the fall, 2000, or spring, 2001.

- **Training Classes for End Users in Phase I**

Classes for the field-test sites began May 17 and will continue through September. Each site (district and school) has a specified number of slots per workshop; i.e., attendance, query, grading, etc., for the person whose job responsibility it is to enter and monitor specific data elements for his or her area. As of June 16, there have been 47 classes held with 537 persons in attendance for an average per class of eleven students. We expect 515 persons to complete the Basic Applications classes for Phase I.

Upon receipt of the latest version of SASIxp 4.0 and the accompanying documentation, SDE will provide a CD-ROM disc for each site as installation of the programs is done. In addition, the latest documentation for all SASIxp components, ABACUSxp, InteGrade Pro, and Tranquility will also be available on-line at the South Carolina Department of Education's web site.

Staff members will continue to visit all field test sites for meetings and to monitor classes.

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# Digital Content

*“A crucial component to achieving digital learning will be increasing the integration of digital content to ensure that it is included in the curriculum and available in the classroom. When applied by skilled teachers with clear educational objectives, dynamic digital content allows the increased levels of exploration and inquiry that make digital learning possible.”<sup>8</sup>*

In an educational environment, content is anything used to teach or learn. In a digital learning environment, it may include video on demand, software, CD-ROMs, web sites, e-mail, on-line learning management systems, computer simulations, streamed discussions, data files, databases and audio. As outlined below, South Carolina is making great strides in increasing the amount and quality of digital content available for teachers and students. Highlights include statewide delivery of DISCUS – the State Library’s virtual library, the digitization of SCETV resources, and the unveiling of a new website of resources for teachers and students.

## **Knowitall.org**

In March of 2000, SCETV purchased the domain, Knowitall.org. At this one URL, South Carolina’s K-12 teachers and students will find a growing list of Internet resources. All content created with funding from the School Technology Coordinating Committee is available through this Internet portal. In addition to new content produced at SCETV and content hosted by SCETV for other creators, Knowitall.org is designed to be a gateway to other educational sites, museums and libraries. Knowitall.org will evolve over the FY 00-01 year as new materials become available and feedback from users is incorporated. The site went live August 1.

## **Search ETV**

Over 700 hours of video from SCETV’s archives have been digitized and are available at this site. Over 1000 still images are also on-line. The main search interface was recently revised based on testing and analysis by the University of South Carolina’s College of Library and Information Science. Topics may be found by use of keyword, Dewey Decimal Number or SIRS subject heading. This revised search function now ensures that the user understands the scope of content available in the site and makes locating material much easier.

In order to ensure that users can access as many resources as possible from home, password protection was removed from all sites under Knowitall.org. However, a small percentage of material offered in *SearchETV* is copyright restricted to school usage. In cases where access to those materials is attempted, the server checks the IP address against a database of known school addresses. If verified, access is seamlessly granted. If the user is not at a school, an explanation of the situation is provided. Most of the restricted material is from the CPB/Annenberg Math and Science collection.

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<sup>8</sup> *The Power of Digital Learning: Integrating Digital Content*, The CEO Forum on Education and Technology, June 2000, p8.

SearchETV is also a resource for usable content. Visitors from verified school addresses may download unrestricted assets for use in their own multimedia presentations.

### **Let's Go!**

The pilot project for this series of Web-based virtual field trips was completed in June. These field trips use the QuickTime Virtual Reality plug-in to allow a site's visitor to experience a place using self-navigating, 360-degree panoramas. Historic Brattonsville was chosen for the pilot and can be found at [www.knowitall.org](http://www.knowitall.org). This ongoing series focuses on South Carolina history.

### **NatureScene Interactive**

Funded in part by the Satellite Educational Resources Consortium (SERC), *NatureScene Interactive* repurposes content from SCETV's long-running series, *NatureScene*. Forty virtual field trips are available now at Knowitall.org. When complete, the project will host eighty field trips.

### **New Image Collections**

SCETV undertook a new mission to digitize collections of images at the South Caroliniana Library and the South Carolina State Archives. These collections, such as the History of African-Americans in South Carolina, will be developed into Web-based experiences for students, allowing them to see an entire museum collection interactively. As many museum exhibits are only displayed for short periods of time and require students to travel to them, bringing these collections to the Web will allow access anytime from anywhere.

SCETV is in the process of clearing usage rights to the *History of South Carolina Image Collection* originally published in limited number by the USC press and sold to schools. This out-of-print collection contains 1000 artworks, documents and photographs along with their descriptions. The images were licensed from about forty museums. All are being contacted and permissions secured, generally for nominal fees. Once rights are cleared, image scanning and data entry will take several weeks. The collection will be published at Knowitall.org in October 2000.

### **Installer CD-ROM**

10,000 copies of an installer CD-ROM containing all the tools needed to access sites found at Knowitall.org or elsewhere on the Internet were created for distribution to schools and libraries at the beginning of the new school year. Netscape Navigator, Internet Explorer, Real Player, QuickTime, WinZip and SCETV's Java applet were included so schools would not have to attempt to download applications and plug-ins through their firewalls. All Media Specialists will receive several copies of the CDs. Schools and Libraries will be encouraged to loan the CDs for home use.

### **Awareness Campaign**

SCETV's Multimedia Department created a launch campaign for Knowitall.org. This campaign includes presentations to educators throughout the state at various opportunities such as EdTech, the use of SCETV and South Carolina Educational Radio and various direct emails to teachers and administrators. A speaker has been designated to seek opportunities in the education community to present Knowitall.org to interested groups.

## **Guidance**

SCETV's Multimedia Department has created two new positions, Curriculum Standard Specialists, to ensure that all new content created for Knowitall.org addresses the state's curriculum standards.

## **LEARNING LINK**

Learning Link began as an introductory six month, free Internet access service for teachers within the local calling area of Columbia because SC ETV had on site a multi-port modem system left over from a federally funded project. Over 3,000 teachers, many who otherwise would not have tried using the Internet in their classrooms have done so thanks to the personal customer service contact available to them through Learning Link the past four years.

In cooperation with the MIMS Math-Science Hub, Learning Link has run a pilot service with the curriculum resource contacts at the 15 priority schools in the Midlands area. Each month, these representatives joined an audio-bridge call to discuss new sites of value to their teachers. Both the Learning Link director and the resource contacts shared useful sites they had found. Plans to include all teachers at these sites not currently having personal internet connections were made.

A newsletter continued which listed sites appropriate for the time of year or subjects highlighted for other reasons. Other hints about finding sites or using other web services were given. These were emailed to users. Currently, these brief newsletters are available (and checked and updated regularly) on the web so that teachers other than just our temporary users have access to the information. The Learning Link web site provides educational Internet links in art, computers/technology, history, geography/social science, language, math and science – to name just a few. The Learning Link web page also lists communication links that enable teachers and classes to partner with peers nationally and internationally with other countries and cultures.

Learning Link also continued its introductory Internet access service as client response has been overwhelmingly positive. Rose S. Sheheen, the principal at Blaney Elementary, wrote, "Being the instructional leader of a school, access to the SC ETV link enabled 45 teachers and 850 students to receive vigorous support in this area. At Blaney Elementary, I am able to find resources for teachers; check sites which are being used or planned; and demonstrated that even an 'old fogey' can be excited about learning."

Rolondo Thompson at W. A. Perry Middle School told us that, with Learning Link, she had the opportunity to find lesson plans on core curriculum objectives and could download programs that enhanced her teaching experience. She commented that, "...the Internet service was great..." and suggested we continue to provide free Internet service for teachers that use it.

Dorothy Wertz, a teacher at Lugoff-Elgin High School was involved in a distance education class via SC ETV closed network. The course, "Taming the Technology Jungle" was offered by USC to teachers around the state. Ms. Wertz responded, "Having the Internet service was vital to this course. I used it almost everyday...I continue to use it to find information for my Spanish class...thank you for sharing this service with me."



## DISCUS

DISCUS, South Carolina's Virtual Library, is a South Carolina State Library initiative to provide all South Carolinians with access to an electronic library of essential information sources. The name "DISCUS" was derived from the concept: **D**igital **I**nformation for **S**outh **C**arolina **U**sers. The goal is to ensure equity of access to information regardless of where people live. DISCUS databases can be accessed via computers, which are connected to the Internet at participating institutions throughout the state.

The South Carolina State Library used a federal library grant to fund the pilot phase of DISCUS, which began in January 1998. Initial participants included South Carolina's public libraries, higher education institutions and three school districts. With state appropriations for FY99 of \$1.5 million, access has been expanded to the state's remaining schools.

DISCUS currently has databases that focus on general news information, business and management topics and company information, health issues, scholarly materials and topics of general interest. On behalf of the state's libraries, the State Library negotiated a license agreement with Information Access Company for access to these databases, which include thousands of full-text articles from magazines, reference books and other sources, as well as indexing to articles from over 4,000 periodicals. Additional databases that meet the needs of all DISCUS constituents were added in FY99.

South Carolina's Virtual Library continued to expand its reach to South Carolinians in 1999/2000. Database usage grew by 20% over the previous year, with the databases being accessed over 1.2 million times to retrieve over 3.4 million articles and other documents. Two new databases were added in January 2000 through subscription renewal negotiations with the provider of the project's Info Trac periodical databases. These GaleNet databases: DISCovering Most-Studied Authors and What Do I Read Next? Support the study of literature and provide fiction and non-fiction reading advice for learners of all ages.

New search interfaces were made available for the InfoTrac periodical databases during the year. These changes increase the search capabilities for advanced users and offer a more graphical, user-friendly interface for young users. School, college and public librarians gave the DISCUS databases positive evaluations on a database satisfaction survey conducted during spring 2000. Based on those evaluations, the Database Assessment Committee recommended renewal of all databases for calendar year 2001.

Home access to DISCUS resources received a significant boost this year with implementation of a password-driven system for accessing the InfoTrac databases and the new GaleNet databases from home or office Internet accounts. This gave schools and libraries that lack their own systems of remote user authentication an interim method of making resources available to their off-site users 24 hours a day. Over 200,000 articles were retrieved using this new feature; this comprises nearly 8% of total usage.

The DISCUS Technology Assessment Committee made initial recommendations regarding long-term plans for providing off-site access to all current and future DISCUS databases. The committee proposed methods that enable institutions to provide off-site access to DISCUS resources as well as other subscription resources that they purchase with their own funds. In support of the committee's recommendations, the South Carolina State Library awarded federal Library Services & Technology Act grants to ten public library systems to obtain remote user authentication software and pilot this access method. This software is currently being installed and tested at these sites.

Training librarians on effective use of the databases built on previous years' efforts, with a major push to train K-12 and public librarians on use of the SIRS topical databases and the Grolier encyclopedia databases. Over 170 sessions were conducted by the database providers or State Library staff reaching a total attendance of about 1900 librarians, curriculum resource coordinators and other key staff. These training efforts were supplemented by training conducted or hosted by the State Department of Education's Regional Technology Centers, as well as by a number of college libraries, school districts and public libraries for both librarians and users.

DISCUS promotion and awareness efforts increased during the year. K-12 teachers and the general public were targeted through conference presentations, exhibits and DISCUS bookmark distribution. A DISCUS web page template was distributed to help schools and public libraries promote DISCUS and direct their users to these resources more effectively. Public service announcements have been scripted and scheduled for SCETV shooting and production during summer 2000. A DISCUS brochure is also in preparation. Librarian communication was further enhanced through creation of an electronic discussion list – DISCUS-L.

The DISCUS Advisory Council provided ongoing advice to the State Library on the implementation and future direction of DISCUS. The Database Assessment Committee conducted the database satisfaction survey and advised the State Library regarding database renewal. All DISCUS committees include representatives from school, college and public libraries.

Further development of long-term solutions for providing off-site access to DISCUS databases is the main priority for the coming year. Planning for the addition of DISCUS resources is already underway, as is further development of DISCUS awareness, promotion and training activities. The South Carolina State Library will continue to rely on its partnerships with the library and educational community to enhance DISCUS as a lifelong learning resource for all South Carolinians.

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## Universal Service Funds

**Background:** Funds are currently being received by the Office of Information Resources from the Schools and Libraries Division of the FCC. These funds represent reimbursement for discounts for eligible telecommunications services and Internet services used in implementing the K-12 School Technology Network.

**Phase I Distributions:** Phase I distributions for the period January 1, 1998 – June 30, 1999 have been received and are being used to offset connectivity costs for the K-12 network during FY00. Total budget for network connectivity in FY00 is \$10.5 million with \$3,806,025 coming from appropriated funds and \$6,694,075 anticipated from Phase I ERATE refunds. However, only \$6,378,990 was received, leaving a budget shortfall of \$315,085. It is anticipated that enough funds are on hand to carry the program through September 2000 when FY01 funds will be made available.

**Phase II Distributions:** Phase II reimbursements for the period July 1, 1999 to June 30, 2000 are anticipated around September 30, 2000. It is estimated that these refunds will amount to \$6,116,323. These funds will be made available to schools to connect classrooms that are not currently connected as well as to purchase computers for classrooms that are wired and without computers. Focus will be given to those schools with excess number of portable classrooms that are not connected. Funds will be distributed based on needs determined through an application process.

**Phase III Discounts:** Phase III reimbursements will cover the period July 1, 2000 to Jun 30, 2001. The total expected reimbursement is \$7,116,900. \$1,965,155 will be used to offset the connectivity costs. However, it is prudent not to further reduce the amount of appropriated funds budgeted for connectivity in FY01 until discounts are actually realized.

<b>Phase I</b>	\$6,378,990	Reimbursements received.
<b>Phase I Allocation</b>	\$6,378,990	Continuation of OIR Operations and Network Connectivity (\$10.5 million budgeted)
<b>Phase II</b>	\$6,116,323	Anticipated refunds for the period July 1, 1999 to June 30, 2000. Anticipated distribution complete on 9/30/00
<b>Phase II Allocation</b>	\$6,116,323	Connectivity and Access for Schools (Including portable classrooms). To be distributed after September, 2000.
<b>Phase III</b>	\$7,116,900	Discounts anticipated for FY01. SLD expects the recurring cost to be discounted on the invoice by the vendor starting July 1, 2000.
<b>Phase III Allocation</b>	\$7,116,900	\$1,965,155 of the anticipated discounts available in Phase III will be used to offset the \$12 million needed for network connectivity.
<b>Total Refunds and Discounts</b>	<b>\$16,416,399</b>	