SENATE STAFF ANALYSIS AND ECONOMIC IMPACT STATEMENT

(This document is based only on the provisions contained in the legislation as of the latest date listed below.)

BILL: SB 2002

SPONSOR: Senator Cowin

SUBJECT: Schools/Instructional Technology

DATE: April 15, 1999 REVISED: 4/19/99

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	deMarsh-Mathues	O'Farrell	ED	Favorable
2.	Hickam	Hadi	FP	Fav/2 amendments
3.				
4.				
5.				

I. Summary:

This bill requires the Department of Education (DOE) to:

♦ Establish, in consultation with high technology business and industry partners, the technology capability thresholds, which will describe levels of reasonable standards of technological capability to be consecutively achieved in a school for the school to effectively use technology.

♦ Report on the developed technology capability thresholds and on the status of school achievement of the thresholds.

♦ Develop a plan to provide access for students to technology at community, work, school and home sites. This includes safe access to school media centers outside the regular school day and access from the outer perimeter of campus.

The bill requires schools to address implementing instructional technology in either their school improvement plan or a separate plan to the district. The plan must address the technology capability thresholds and safe access to the school media center outside of the school day.

Districts are required to submit district technology plans to the state. However, technology funding from the state to the districts is distributed by FTE, just as it is currently distributed. The Commissioner of Education may use 6 percent of the appropriated funds for administration, to establish a clearinghouse, disseminate information, and provide technical assistance to districts and schools.

Districts distribute funds to the schools based on the school's technology plan; the schools should have achieved the appropriate technology capability threshold for the proposed project and the proposed project should be consistent with the district's technology plan. Additionally, preference is given to schools receiving matching funds or projects in critically low-performing schools in order for that school to achieve the appropriate technology capability threshold.

The bill amends ss. 229.603, 229.8041, and 231.17, F. S., and creates s. 229.604, F. S.

II. Present Situation:

A Report on Distance Learning prepared by the staff of the Senate Higher Education Committee in November, 1996, states that explosive new developments in the telecommunications and computer industries are occurring so rapidly that the education community is hard pressed to keep pace.

Two types of technology affect school districts. The first type is associated with learning in the classroom through the use of personal computers, laptop/notebook computers, interactive multi-media, laser disks, local area networks, long distance learning, CAD, VCRs, and satellite links. The Internet did not exist for popular purposes six years ago and now it is a major information resource for students from elementary school through graduate school. Other innovations like e-mail, teleconferencing, and CD-ROMS are continuously changing to provide new challenges and opportunities for the delivery of instructional services.

The second type of available technology is the use of computers for controlling air handling systems, building communications, security systems, and numerous applications in school and district business offices. Making the most of both types of technology raises issues about the infrastructure, hardware, and software needed to accommodate the services, and the capability, willingness, and extent of educational providers to furnish and pay for the desired services and equipment. School buildings that are more than 30 years old were designed and constructed in the pre-computer age without much forethought regarding the types of technology likely to be used in the future.

Whether retrofitting an existing building through remodeling or renovation or building a new facility, a major part of the challenge is to project what technology will be used several years from now. Technology is developing so rapidly and becoming so widespread that some educators think it could evolve in ways that may not meet the state's needs unless the state takes a major role in shaping it. A policy established now could be inadequate in two years. When purchasing computers for the classroom, schools generally try to plan for approximately a two or three year life span.

Statutory Authority

Technology relating to education is referenced in several locations in the Florida Statutes. In addition to establishing state policy, the functions and responsibilities relating to technology are stated for various entities in the state, including the commissioner, the department, the school districts, and the state board of education. Pertinent statutes include s. 228.041, F.S., regarding the definitions for librarians/media specialists, and special education services; s. 228.0855, F.S., relating to the Florida Model School Consortia; s. 228.086, F.S., authorizing grants for DOE to award to establish regional centers of excellence in technology; ss. 229.053(2)(l), and 229.52, F.S., assigning power to the state board of education to identify future training needs for high technology industry; s. 229.57, F.S., charging the commissioner to develop improved methods of using technology to administer tests; s. 229.601, F.S., defining high technology needs for career education programs; s. 229.603, F.S., establishing instructional technology grant program; and s. 231.613, F.S., relating to in-service training.

In accordance with s.187.201(b)16.j., F.S., a policy in the State Comprehensive Plan is to increase the use of technology in education to make instruction more effective, Additionally, the state policy regarding educational technology is stated in s. 229.8041, F.S. Public schools are to use computers and related technology:

- to make instruction and learning more effective and efficient,
- to make educational programs more relevant to contemporary society, and
- to reduce the paperwork and data collection requirements placed on classroom teachers.

To implement the policy, DOE is authorized and encouraged to assist school districts to make appropriate use of computing. Several technology initiatives which are being implemented are the school year 2000 model, public school technology grants, the Florida Information Resource Network (FIRN), library equipment automation grant program, acquisition of instructional technology, long distance learning satellite transponder, and the Florida Distance Learning Network (FDLN).

Office of Educational Technology of Department of Education
The Office of Educational Technology coordinates statewide technology training, and manages grants and statewide technology centers related to production, training, and use of technology. It provides technical support to school districts with infrastructure needs; assistance to districts for distance learning delivery and programming; and classroom technology integration through initiatives such as district technology planning and review, state contracts for software and hardware acquisition, codevelopment of instructional technology resources, training, technical support for consortiums, telecommunications instructional applications, state planning, and support for assistive/adaptive technology for physically impaired students.

School Year 2000
School Year 2000 is a technology-based model based on design principles derived from research in a variety of fields. The initiative established codevelopment agreements to design and develop electronic systems and software to implement the model. The Office of Educational Technology has the responsibility for management of these contracts.

Educational Technology Grant Program
The Educational Technology Grant Program was authorized in s. 364.514, F.S. School districts are among the entities that are eligible to receive the grant awards. Although funds were not appropriated to FDLN to establish the grant program for 1995-1996, DOE set up a Distance Learning Grant Program in partnership with Tallahassee Community College and sought the assistance of the FDLN in developing the criteria for a Request for Proposal (RFP) for distance learning initiatives. A total of $1.8 million dollars was given in grant awards to the top fifteen grant applications.

The 1996 legislative session appropriated funds for the administrative purposes of the FDLN but did not appropriate funds for the grant program administered by the FDLN for the 1996-1997 fiscal year. The 1996 Legislature strengthened the coordinating role of the FDLN by requiring that entity plans receive approval from the FDLN prior to their receipt of certain 1997 technology appropriations. Each district is required to submit a technology plan based on established components and technology specifications.

Florida Information Resource Network (FIRN)
The Florida Information Resource Network (FIRN) provides Florida's educators with access to the computing resources serving public education. The goals of the network are the implementation of a statewide interactive network and the reduction of the data burden on teachers and other personnel. Universities, community colleges, and school districts are connected to a comprehensive data communications network. FIRN operates in two areas: networking and instructional support. The networking includes the data communications facility electronically linking public education entities. This includes statewide electronic mail free for educators. Instructional support refers to the development of and access to software that provides support for public education administration, instruction and research. DOE is continuing to upgrade FIRN and assist districts in connecting students and teachers to the Internet and the statewide programs delivered through the Internet. The Legislature appropriated $6,316,473 of general revenue to support FIRN in fiscal year 1997-1998, and $6,166,473 in fiscal year 1998-1999. FIRN is a contracted service with funds flowing through DOE.

Library Equipment Automation Grant Program
The library equipment automation grant program assists schools in obtaining necessary CD-ROM equipment for effective use of SUNLINK, the statewide uniform library data base. The SUNLINK Task Force established criteria that schools must meet to receive funds for purchase of a CD-ROM workstation. Fund distribution is based on the order of the schools' acceptance into the project and the completion of their records for inclusion in the SUNLINK database. Schools that met the criteria and were selected to receive funds were awarded $2,000 each. The funds may only be used for purposes related to the CD-ROM workstation configuration and adding SUNLINK to an existing local area network. The Legislature appropriated $1 million of general revenue funds for fiscal year 1997-1998 as well as for 1998-1999.

Acquisition of Instructional Technology
DOE negotiates state contracts for schools to purchase educational software products at substantial discounts. Specific benefits of this project include lower prices for individual schools and small districts with limited purchasing volume and the elimination of internal bid costs for larger districts on the titles included.

Long Distance Learning Satellite Transponder
DOE purchased a satellite transponder (located on TELSTAR) and required encoders with a $12,750,000 appropriation in December 1994. The transponder was used for instruction at all levels of education, as well as in-service training and continuing education classes. There are tentative plans to move control of the transponder exclusively to DOE during this fiscal year. It has been reported that the transponder has been used primarily for commercial use which has generated revenue.

Education Facilities Infrastructure Improvement Act
Part II of Chapter 364, F.S., entitled the *Education Facilities Infrastructure Improvement Act*, was enacted to "establish a coordinated system for cost efficient advanced telecommunications services and distance education" to increase student access to education, maximize the use of advanced telecommunications services and their application to provide affordable distance

education, promote interagency cooperation and partnerships, secure federal and private funds, and coordinate all advanced telecommunications services and distance education resources.

Florida Distance Learning Network (FDLN)
In order to implement the 1995 act in ss. 364.506 - 364.516, F.S., the Legislature created the Florida Distance Learning Network (FDLN) in s. 364.509, F.S., and gave it the authority to coordinate distance learning for all levels of public education, libraries, and teaching and rural hospitals. The FDLN mission is to improve student learning, achievement, and instructional techniques (strategies) through increased access to distance learning in the most cost effective manner.

Two of the tasks of the FDLN are developing a needs assessment report and developing and maintaining a plan for using technology to improve the delivery of and access to education, pursuant to s. 364.510(8) and (9), F.S. The needs assessment and technology plan required of FDLN lay the groundwork for eligible facilities to submit their technology needs requests to the Department of Management Services.

Needs Assessment Report
In September, 1995, the Center for Educational Leadership and Technology (CELT), a non-profit research corporation, was contracted to assist the FDLN board of directors to conduct a legislatively required distance learning needs assessment. The Educational Technology Office of the Department of Education assisted CELT in collecting and assimilating data. The report was presented to the Legislature and Governor on March 1, 1996, as Phase I in an on-going assessment process by FDLN.

The needs assessment report, dated December 22, 1995, revealed that many of the 2,800 public schools and over 80,000 classrooms in Florida's 67 school districts were providing video programming to classrooms through instructional technology fixed service (ITFS), cable TV, fiber, and other systems. However, the report also revealed that many K-12 schools lacked the necessary infrastructure to take advantage of advanced telecommunications services for distance learning programs and that there was a lack of state and local funding for technology resources to be employed in distance learning.

Technical Task Force Report
The FDLN Technical Task Force Report released December 1, 1996, addresses important cost and funding issues associated with initial purchases, upgrades of existing systems, infrastructure requirements, and recurring service and support expenses. One of the summarized issues in this report is that planning must emphasize the educational benefits and not be driven by technology. In other words, the educational goals and missions of the state, district, and school must be recognized. The report recommends that adequate funding be provided to support infrastructure, procurement of equipment and software, repair, maintenance, support and training, personnel, and recurring service charges.

State Funding
To promote and support the effective use of technology in Florida's K-12 schools, the Florida Legislature has provided $55 million in school technology incentive funds to school districts each year for the 1993-94, 1994-95, and 1995-96 school years, $65 million in public school technology

funds in 1996-97, $75 million in fiscal year 1997-1998, and $80 million in fiscal year 1998-1999. Thirty percent of the funds for the first three years were required to be used for training in the use of instructional technology in the classroom. Funds appropriated for 1994-95 provided an average award amount of $24,446 per school; eighty four percent of all schools received grant awards. Seventy-two percent of all equipment purchases were for computers and courseware. Training services were provided by the district and school board trainers, private industry vendors, community colleges, universities and regional consortia. The delivery of training was supported by providing substitute teachers, teacher stipends and purchase of training materials.

Instructional technology appropriations in 1995-96 in the amount of $7,200,000 were allocated as follows: $3,800,000 for School Year 2000; $1,830,000 for staff development activities at the University of South Florida, the University of Central Florida, the Okaloosa COASTAL Center, the Miami Museum of Science, Tallahassee Community College, the Panhandle Area Education Consortium and the North East Florida Education Consortium; $800,000 for codevelopment of multi-media instructional technology products; $300,000 for assistive technology for exceptional students; $300,000 for instructional television acquisition; and $170,000 for administrative activities.

DOE requires a school board approved plan for each school in the district. To facilitate standards for the use of technology and to take advantage of economies of scale, the districts are updating their technology plans. Florida is also eligible for the first federal funds to support school technology.

For 1997-1998, the public school technology appropriation was $79,000,000 to enhance the learning environment for students through the use of technology. The 1998-1999 public school technology appropriation was $80,100,000. The funds are distributed based on the number of students in the district.

The 1997 Legislature provided school districts with flexibility in spending these funds and provided additional funds for other purposes that could be used for technology; categorical funds for public school technology ($79 million), grades K-8 summer school ($83 million), class size reduction ($100 million) and full service schools ($11 million) could be used for any of these four purposes in amounts that school boards determined would best meet the needs of students.

The flexibility holds for the 1998-1999 fiscal year with the exception of the class size reduction funds and full service school funds which were not available for the purpose of technology. Funds to support public school technology are appropriated as aid to local government funds; thus, they go to the school district. However, the Department does spend some of its funds for staff to review and approve the technology plans.

The Legislature appropriated $6,316,473 of general revenue to support FIRN in fiscal year 1997-1998 and $6,166,473 in fiscal year 1998-1999. An additional $1 million is provided for school library technology called SUNLINK. The amount of $500,000 was appropriated as a competitive incentive grant for extended access to school library media centers.

The Legislature also appropriated in both the 1997-1998 and 1998-1999 fiscal years $500,000 for incentives for grants for extended access to school library media centers.

Summary of Recent Progress
With criteria and grants developed by DOE and funds allocated by the Legislature, senior, middle, and junior high developmental research schools science facilities were upgraded and expanded through renovation, remodeling, or expansion of existing facilities or new construction of these facilities.

Grants from DOE have also been used to renovate existing public schools and developmental research schools to accommodate emerging educational technology.

Legislatively allocated funds were used to purchase a satellite transponder for long distance learning for all levels of education. Funds have also been used to convert industrial arts laboratories in high schools, middle schools, and junior high schools to technology education labs through remodeling, renovation, and new construction.

DOE has established joint ventures with private corporations to co-develop instructional products for Florida schools at no cost and to receive royalties on all sales outside Florida.

"The Florida High School"
One of Florida's pilot projects is the Florida High school, a "virtual" high school, a project of DOE and the Orange and Alachua districts. It does not have a conventional building; courses are on-line. According to testimony at the House Education Innovation Committee meeting on September 7, 1997, on-line connections include course work and communications between students and their teachers. Approximately 730 children are enrolled in the Florida High School.

DOE Sponsored NetDay
The NetDay initiative involved school districts, schools, businesses and parents in wiring (retrofitting) schools for technology to establish the needed infrastructure for local area networks, Internet connections, and access to statewide electronic mail. As a result, many schools are now directly wired for access at the classroom level.

Federal Funds
On May 7, 1997, the Federal Communications Commission (FCC) adopted a plan to promote access to the Internet for eligible schools, libraries and rural health care providers. A $2.25 billion fund is available for payouts to help provide telecommunications services and wire schools and libraries for Internet access. Payouts began on January 1, 1998.

Technology and Student Achievement
National research indicates that technology has a positive link to student achievement. Two DOE projects, the *Model Technology School* and *Successful Schools Project*, more specifically tie technology to successful student learning and successful schools. Some conclusions drawn from these programs are:

- Technology is a strong motivator for students;
- Average attendance rates in model technology schools increases;
- Technology improves access to information;
- Student scores on standardized tests increase;

♦ Classroom management improves when technology is used;
♦ Conditions known to affect student learning -- enthusiasm, improved time on task, and collaborative behavior -- are more evident with greater use of computers;
♦ Technology is not a stand alone, but works best when integrated within the total instructional program;
♦ Electronic access to student progress needs to be easily available to staff needing that information; and
♦ Successful schools and teachers use a variety of technology for teaching and learning.

Teacher Certification
Section 231.17(5), F.S., specifies minimum essential competencies that must be included in state board rule for professional certification. Universities are beginning to move toward teaching these competencies in their teacher training programs. The minimum competencies that educators must possess and demonstrate in order to qualify to teach include:

♦ Use appropriate technology in teaching and learning processes.
♦ Use assessment strategies to assist the continuous development of the learner.
♦ Use teaching and learning strategies that include considering each student's culture, learning styles, special needs, and socioeconomic background.
♦ Demonstrate knowledge and understanding of the subject matter that is aligned with the subject knowledge and skills specified in the student performance standards approved by the state board.

Florida's National Ranking
According to a ranking done by *Education Week* magazine, Florida is recognized as 13th in the nation in classroom access to the Internet. The same report indicates that Florida has more computers in classrooms, more teacher training, and a better organized statewide computer network than most states. The number of districts and schools in Florida using computers for classroom instruction has steadily increased from 107,238 computers in Florida public schools in 1989-90 to 326,661 in use in 1995-96. Accordingly, the student to computer ratio has decreased from one computer for every 17 students in 1989-90 to one for every 7 students in 1995-96. This is better than the national ratio which is one for every 10 students. Additionally, Florida ranks seventh in teacher training in technology. Twenty percent of Florida's teachers have had at least nine hours of technology training as compared to the national average of 15 percent.

Remaining Challenges
Some of the challenges which schools continue to face to use technology as an instructional tool include:
♦ New technology is often bought and layered on an "old" school model, primarily because schools' purchases are based on available money.
♦ Older schools often need to be retrofitted to accommodate networking and advanced technologies.
♦ Schools need life-cycle planning for technology acquisition and replacement although they are attempting to phase out or re-deploy dated equipment.
♦ More teacher training is needed to successfully integrate technology into the classroom.
♦ More methods need to be developed to measure the longitudinal effectiveness of technology on student achievement.

III. Effect of Proposed Changes:

Section 1. Amends s. 229.603, F.S., to change the name of the program from Instructional Technology Grant Program to Instructional Technology Program. Requires each school to develop a technology plan to be approved by the board. Establishes the school technology plan requirements to address the achievement of technology capability thresholds, and address safe access to school media centers outside of the regular school day. Requires each district to develop district technology plans as well as approve school technology plans.

School Technology Plans--Requires each school to address proposals for implementing instructional technology in either the school improvement plan or a school technology plan. The plans will be approved by the district school board and must be submitted by May 1, 2000 and each May 1 thereafter. The plans must address the following:

- the achievement of technology capability thresholds established by the Department of Education; and
- safe access to the school media center outside of the regular school day.

District Technology Plans--Requires each school district to submit a district technology plan, based on each individual school plan, to the Department of Education. Each plan will be for a period of at least 3 years and not more than 5 years. The initial plan will be submitted to the Department of Education by November 1, 2000 and a new updated plan will be submitted each November 1 and each interim year thereafter. The district technology plan will include:

- A mission statement including but not limited to how the district will incorporate technology into the educational programs to promote effective use of technology to implement the state academic standards to improve student performance.
- A background component including but not limited to: relevant district, economic, geographic, and demographic factors effecting the implementation of technology and the planning process used to develop the plan, which must include input from community, business and industry.
- A needs assessment including, but not limited to: identification of technology infrastructure, equipment, assistive technology, programming (educational materials, software, and media), replacement, training, and support needs; and short term goals to be achieved within one year and long term goals to be achieved within 3 to 5 years listed in a rank priority order and established according to individual school technology plans and technology capability thresholds.
- A funding plan linked to the technology capability thresholds.
- A technology acquisition plan that addresses, program development, procurement, and achievement of the technology capability thresholds.
- An access plan that addresses, shared use, equitable access including appropriate access to external instructional services and programming providers such as public libraries, charter schools, remote teaching sites, home school connections, and on-line products and services as well as security of such sites.
- A user support plan.
- A staff training plan which includes, but is not limited to, provisions for increasing use of technology in the classroom and media center according to the technology capability thresholds.
- A program evaluation which includes, but is not limited to, a description of how the technology acquired is being integrated into school curriculum and affecting student achievement and progress toward meeting the educational goals of the state academic standards.

Technology Capability Thresholds--Requires the Department of Education to develop technology capability thresholds in consultation with high technology business and industry partners. Requires technology capability thresholds to describe levels of reasonable standards of technological capability to be consecutively achieved in a school for the school to effectively utilize instructional technology and to be designed to ensure that Florida's students have skills that meet the needs of Florida business and industry and shall be updated annually.

Funding--Establishes ninety-four percent of the funding appropriated for public school technology to be prorated and distributed by the Commissioner of Education to the state's school districts according to each district's K-12 FTE. Retains six percent of the funds appropriated for this program which may be used by the commissioner to administer the program, to fund development and codevelopment activities, to establish a clearinghouse to identify, evaluate, and disseminate information regarding developments in the private and public sectors of instructional technology, including both software and hardware, to disseminate information regarding successful state-of-the-art systems, including an annual catalogue of exemplary projects and products and to provide technical assistance to districts in developing and implementing their technology plans and, where necessary, maximize districts cost saving advantages through the use of state central-purchasing resources and to provide technical assistance for needs assessments and grant preparation.

Criteria for funding preference from the district to the schools is based on the issues addressed by the school in either the school improvement plan (SIP) or a school technology plan approved by the school board. To receive funding, a proposed project must be in a school that has achieved the appropriate technology capability thresholds for the proposed project and the proposed project must be consistent with the district's technology plan. Preference will be given to schools that meet one of the following criteria:

- The school has matched the request with other funds and private sector contributions to the maximum extent possible.
- The project is to be implemented in a critically low-performing school in order for that school to achieve the appropriate technology capability threshold.

Reporting

Beginning on January 1, 2000, the Commissioner of Education will make a report to the Legislature within 60 days prior to the beginning of the regular legislative session regarding the Instructional Technology Program. The report will include:

- a summary of the status of the Instructional Technology Program;
- a description of the technology capability thresholds developed by the department;
- the status of school achievement of the thresholds; and
- recommendations to improve the efficiency and promote the utilization of instructional technology.

Section 2. Creates section 229.604, Florida Statutes, which requires the Department of Education to develop a plan to provide access for students to technology to support students' educational progress in the community, at work, at school and at home. Encourages districts to furnish safe access to school media centers outside of the regular school day and to consider the construction of entrances which may be accessed from the outer perimeter of the school campus when planning for new construction or remodeling projects.

Section 3. Amends s. 229.8041, F.S. authorizing the department to conduct evaluations of school and district use of technology to determine if they meet appropriate technology capability thresholds as one of the actions they may use to encourage districts.

Section 4. Amends s 231.17, F.S. regarding Minimum Competencies for Professional Educators adding managing, evaluating, and improving instruction to the minimum competency for using technology in teaching and learning processes.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

V. Economic Impact and Fiscal Note:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

Unknown.

C. Government Sector Impact:

The Department of Education estimates that $ 435,023 will be needed to implement the bill.

The education budget conference committee report includes a $63.4 million appropriation for Public School Technology. With the exception of $1 million earmarked for library automation, public school technology funds are allocated among school districts based on each district's proportion of the state total number of unweighted full-time-equivalent students. Each district's allocation of public school technology funds is a part of its total potential FEFP funds, which means that this allocation influences other FEFP formula calculations, such as the calculation of a hold harmless and the calculation of a compression adjustment. This bill would earmark six percent of the total public school technology appropriation ($3,840,000) for the Commissioner to use for a variety of specified purposes. This amount would, therefore, not be included in the total allocation of technology funds to school districts. This $3.8 million reduction of total potential funding for school districts

would be reflected in the second FEFP calculation for 1999-2000 (July, 1999) and could influence school districts' FEFP entitlements in components other than the technology component.

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Amendments:

#1 by Fiscal Policy:
Deletes language in the bill that would have affected the Florida Education Funding Formula and appropriates $500,000 from General Revenue to the Florida Information Resource Network to enable the Commissioner to implement this bill. (WITH TITLE AMENDMENT)

Fiscal Policy: Conforming