



Digital Divide Council

Digital Divide Council Annual Report

March 1, 2008

Table of Contents

Overview	1
Digital Divide Council	3
Purpose	3
Goals and Objectives	3
Current Members	4
Meetings	5
Legislation	6
Digital Equity	10
Role of Technology	11
Technology in the Classroom	11
Technology with At-Risk Students	12
Summary	13
Technology Resource Survey	14
Technology Awareness	14
Technology Training	15
Parent and Community Access to Computers at Schools	15
Student Access to Computers at Home	16
District Policy for Donated Computers	16
Florida Department of Education Technology Programs	17
Florida Innovates	17

Company

Florida Continuous Improvement Model	18
William Cecil Golden Leadership Development Program	19
Digital Divide Programs	21
21st Century Community Learning Centers	21
District Programs	22
Non-profit and Business Programs	24
Next Steps	27
Bibliography	28

Overview

*"Technology builds a bridge between our individual potentials and our ability to act on and influence our world." —
Norton & Wilburg*

The federal No Child Left Behind (NCLB) Act of 2001 mandates the integration of technology into the curriculum of public schools in the United States. This landmark legislation provides federal dollars through Title II Part D, Enhancing Education Through Technology (EETT), with the stipulation that both state and local educational agencies develop a comprehensive plan for the integration of educational technology into instruction and curricula to improve teaching and student achievement. The deadline placed on educators is that technology will be fully integrated into the curricula and instruction of the schools by December 31, 2006 [U.S. Department of Education (USDOE), 2002].

Technology is a key component of the NCLB Act and is mandated not only in Title II Part D, but throughout the legislation. For example, in Title II Part A, the Teacher and Principal Training and Recruiting Fund, it is the responsibility of the state educational agency to ensure that all teachers are trained in the use of technology and computer-related applications. The focus of this training should be the effective integration of technology in the classroom to improve teaching and learning in all curricula and academic subject areas. The ultimate goal is that teachers will have subject matter knowledge and teaching skills that include technology literacy.

In addition to receiving training in the effective integration of technology, teachers and administrators are to be trained in the utilization of technology as a tool to enhance their ability to collect, manage, and analyze data. When technology is utilized in this capacity, it provides teachers with the opportunity to improve teaching, decision-making, school improvement efforts, and accountability. With technology training, administrators can develop those instructional leadership skills necessary to help students meet academic achievement standards.

Further requirements in the NCLB legislation include: the training of parents to develop literacy and technology skills; procuring and implementing instructional materials, including educational technology, such as software and other digital curricula; enabling access of school library media centers to advanced technology; promoting strong teaching skills for mathematics and science teachers to integrate technology-based teaching methods into the curriculum; developing and using educational technology to improve learning, assessments, and accountability to meet the needs of limited English proficient children; effective use of technology, such as computer instruction, language laboratories, or distance learning, to promote foreign language study; the design, development, construction, acquisition, maintenance, and operation of state or multi-state educational technology resource centers; the creation and expansion of community

technology centers that will provide disadvantaged residents of economically distressed urban and rural communities with access to information technology and related training; and programs that train teachers to utilize technology to improve teaching and that train special needs teachers.

As we move into the 21st century, it is time to re-examine the role of technology in Florida's schools and put forth a plan to improve students' rates of learning with the use of technology. It is a waste of time and money to continue to use technology to reinforce our traditional mindsets of the teacher and student relationship. If we continue to use technology in the manner of what has always been done in education, then we will continue to receive the same results that we have always gotten (Jukes, 2005). Technology has the potential to empower students to increase their achievement in the classroom by reforming the instructional process of the teachers. Rather than being the "sage on the stage," the teacher will become the facilitator for students' learning.

It is the role of the Digital Divide Council to examine the current use of technology in the schools with low socioeconomic students; the local, state and national programs that are available for after-school initiatives; and to develop a comprehensive plan that is a roadmap for the future. This plan will incorporate all of the stakeholders from the K-20 educational system, including teachers, administrators, districts, universities, community colleges, businesses, and parents. This roadmap will prepare Florida's students to develop those skills necessary for the new economy.

This annual report provides an overview of the Digital Divide Council, background on digital equity in the schools, data on technology in the schools, exemplary after school programs, statewide technology programs, and next steps for the council.

Digital Divide Council

Purpose

The Digital Divide Council is established in section 445.049, Florida Statutes, to:

- Ensure citizens have reasonable opportunities for frequent access to the use of information technology and to obtain the education and training necessary to acquire knowledge and skills that are:
 - critical to becoming competitively qualified for high-skill, high-wage employment;
 - required to be a productive member of a growing instructional technology society; and
 - necessary for the state's economy to in turn prosper by citizens reaching their full employment and income earning potential.
- Bridge the digital divide between members of society that have the economic resources and access to technology (“haves”) and those that lack the necessary technological resources, access, and training (“have-nots”).

Goals and Objectives

The Digital Divide Council will encourage the development of innovative programs across the state of Florida with the following goals and objectives:

- The efficient and productive use of existing facilities, equipment, personnel, programs, and funds available from federal, state, and local government agencies and from any private person or entity.
- Utilization of innovative concepts that employ new technologies in educating and training.
- Development of viable partnerships between public agencies and private persons and entities.
- Recruiting, enrolling, retaining, and graduating as many at-risk family members as feasible.
- Reducing the number of underachieving and failing students in the state's public school systems who are members of at-risk families.
- Reducing the number of underemployed and unemployed members of at-risk families through educational initiatives.
- Using technology to facilitate achievement of the Sunshine State Standards by all children enrolled in the state's K-12 school system who are members of at-risk families.
- Training teachers to efficiently and effectively use information technology to plan, teach, and administer instruction for low socioeconomic students.
- Using technology to enable members of at-risk families who are no longer enrolled in K-12 schools to obtain the education needed to achieve successful completion of General Education Development (GED) test preparation.
- Bridging the digital divide in developing a competitive workforce to meet the employment needs of state-based information technology businesses.

Current Members

Name	Representation	Citation
Dale Brill	Director, Office of Tourism, Trade, and Economic Development in the Executive Office of the Governor	Section 445.049(2)(b), F.S.
Monesia Brown	Director, Agency for Workforce Innovation	Section 445.049(2)(d), F.S.
Jim Albert	Chairman, itflorida.com	Section 445.049(2)(e), F.S.
Eric J. Smith	Commissioner of Education	Section 445.049(2)(f), F.S.
Chris Hart	President, Workforce Florida, Inc.	Section 445.049(2)(c), F.S.
Bruce Slager	A representative from the information technology industry in this state appointed by the Governor, (Chief Information Officer, Executive Office of the Governor)	Section 445.049(2)(a), F.S.
Nathan Burrell	A representative from the information technology industry in this state appointed by the Speaker of the House of Representatives (Founder and President, The Minority E-Commerce Association)	Section 445.049(2)(g), F.S.
Lyn Stanfield	A representative from the information technology industry in this state appointed by the President of the Senate (Florida Director of Strategic Initiatives, Apple, Inc.)	Section 445.049(2)(h), F.S.
Representative Kurt Kelly, Chairman	One Republican member of the House of Representatives, who shall be an ex officio, nonvoting member, appointed by the Speaker	Section 445.049(2)(i), F.S.
Representative Dorothy Bendross-Mindingall	One Democrat member of the House of Representatives, who shall be an ex officio, nonvoting member, appointed by the Speaker	Section 445.049(2)(i), F.S.
Senator Stephen Wise	One Republican member of the Senate who shall be an ex officio, nonvoting member, appointed by the President	Section 445.049(2)(j), F.S.
Senator Frederica Wilson, Vice-Chairman	One Democrat member of the Senate who shall be an ex officio, nonvoting member, appointed by the President	Section 445.049(2)(j), F.S.

Meetings

December 14, 2007

Goals of the meeting:

- Introduce Council members;
- Discuss purpose and objectives of the Digital Divide Council; and
- Elect Chairman and Vice-Chairman.

January 25, 2008

Goals of the meeting:

- Approve the Digital Divide Council by-laws;
- Engage in conversation with hardware and software vendors on current innovative programs available for at-risk families;
- Work with district technology leaders on current programs being offered for at-risk families and students;
- Examine the statewide data on technology access for low socioeconomic schools; and
- Collaborate with national experts and researchers in the area of technology access for at-risk families and students.

March 6, 2008

Goals of the meeting:

- Discuss annual report; and
- Move forward with report recommendations.

Legislation

445.049 Digital Divide Council.--

(1) LEGISLATIVE FINDINGS AND INTENT.--The Legislature finds as follows:

(a) Frequent access to use of information technology and possession of the knowledge and skills required to use information technology productively is becoming increasingly more important to being competitively qualified for high-skill, high-wage employment.

(b) The availability of reasonable opportunities to have frequent access to use of information technology and to obtain the education and training necessary to acquire the knowledge and skills required to use information technology productively is critical to becoming competitively qualified for high-skill, high-wage employment.

(c) Families that are living near or below the poverty level are without adequate economic resources to have reasonable opportunities to obtain frequent access to use of information technology or the education and training necessary to acquire the knowledge and skills required to become competitively qualified for high-skill, high-wage employment.

(d) The absence of such economic resources divides such families from those who have adequate economic resources to have such opportunities, places such families at risk of never realizing their employment and income earning potential, and prevents the state's economy from prospering to the extent possible if such families realized their employment and income earning potential.

(e) The divide between the members of such at-risk families and those who have adequate economic resources to have reasonable opportunities to obtain access to frequent use of information technology and the education and training necessary to acquire the knowledge and skills required to become competitively qualified for high-skill, high-wage employment could be reduced, and the economy of the state could be enhanced, by designing and implementing programs that provide such opportunities to members of such at-risk families.

It is the intent of the Legislature to provide the authority and resources reasonably necessary to facilitate design and implementation of such programs.

(2) DIGITAL DIVIDE COUNCIL.--The Digital Divide Council is created in the Department of Education. The council shall consist of:

- (a) A representative from the information technology industry in this state appointed by the Governor.
- (b) The director of the Office of Tourism, Trade, and Economic Development in the Executive Office of the Governor.
- (c) The president of Workforce Florida, Inc.
- (d) The director of the Agency for Workforce Innovation.
- (e) The chair of itflorida.com, Inc.
- (f) The Commissioner of Education.
- (g) A representative of the information technology industry in this state appointed by the Speaker of the House of Representatives.
- (h) A representative of the information technology industry in this state appointed by the President of the Senate.
- (i) Two members of the House of Representatives, who shall be ex officio, nonvoting members of the council, appointed by the Speaker of the House of Representatives, one of whom shall be a member of the Republican Caucus and the other of whom shall be a member of the Democratic Caucus.
- (j) Two members of the Senate, who shall be ex officio, nonvoting members of the council, appointed by the President of the Senate, one of whom shall be a member of the Republican Caucus and the other of whom shall be a member of the Democratic Caucus.

(3) TERMS OF APPOINTED MEMBERS OF COUNCIL; VACANCIES; COMPENSATION OF MEMBERS.--The appointed members of the council shall serve an initial term of 1 year commencing July 1, 2007, and ending June 30, 2008, and successor appointees shall serve a term of 2 years, the first of which shall commence July 1, 2008, and end June 30, 2010. Successive 2-year terms shall commence and end on the same schedule in subsequent years. Any vacancy in the membership of the council resulting from resignation, incapacity, or death shall be filled within 30 days after the date the vacancy is effective. The appointed members of the council shall serve without compensation, but such appointees and the other members of the council shall be entitled to receive per diem and reimbursement for travel expenses as provided in s. 112.061. Payment of such per diem and reimbursement of such travel expenses may be made from appropriations authorized to be used for such purposes.

(4) COUNCIL MEETINGS; ELECTION OF OFFICERS.--The council shall conduct its initial meeting by August 1, 2007, and shall meet thereafter at least once every 90 days. In its initial meeting, the members of the council shall elect a member to serve as chair and another to serve as vice chair, each for a term of 1 year from the date of the election. Any vacancy in the offices of chair and vice chair resulting from resignation, incapacity, or death shall be filled by similar election within 30 days after the date the vacancy is effective.

(5) ADMINISTRATIVE AND TECHNICAL SUPPORT; PAYMENT OF SUPPORT COSTS.--The Department of Education shall provide such administrative and technical support to the council as is reasonably necessary

for the council to effectively and timely carry out its duties and responsibilities. All direct and indirect costs of providing such support and performing the other duties assigned to the Department of Education related to design and implementation of the programs authorized by this section may be paid from appropriations authorized to be used for such purposes.

(6) POWERS AND DUTIES OF COUNCIL.--The council, through the Department of Education, is authorized and empowered to facilitate the design and implementation of programs that are aimed at achieving the objectives and goals stated in this section. The Department of Education shall present and demonstrate to the council the design characteristics and functional elements of each program proposed to be implemented to achieve the objectives and goals stated in this section and each such program shall be reviewed and approved by the council before being implemented.

(7) PROGRAM OBJECTIVES AND GOALS.--The programs authorized by this section shall have the following objectives and goals:

(a) Maximizing efficient and productive use of existing facilities, equipment, personnel, programs, and funds available from federal, state, and local government agencies and from any private person or entity.

(b) Using innovative concepts employing newly developed technologies in educating and training those who are enrolled in the programs authorized by this section.

(c) Developing viable partnerships between public agencies and private persons and entities based on mutual commitment to responsible and dedicated participation in designing and implementing the programs authorized by this section.

(d) Recruiting, enrolling, retaining, and graduating as many at-risk family members as feasible to ensure that they have reasonable opportunities to obtain access to frequent use of information technology and the education and training necessary to competitively qualify them for high-skill, high-wage employment.

(e) Reducing the number of underachieving and failing students in the state's public school systems who are members of at-risk families.

(f) Reducing the number of underemployed and unemployed members of at-risk families through educational initiatives.

(g) Using information technology to facilitate achievement of the Sunshine State Standards by all children enrolled in the state's K-12 school system who are members of at-risk families.

(h) Training teachers in the state's K-12 school system to efficiently and effectively use information technology to plan, teach, and administer all courses of instruction required and available by election of children enrolled in the system.

(i) Using information technology to enable members of at-risk families who are no longer enrolled in K-12 schools to obtain the education needed to achieve successful completion of general education development test preparation to earn a high school diploma, an applied technology diploma, a career certificate, an associate of arts degree, or a baccalaureate degree.

(j) Bridge the digital divide in developing a competitive workforce to meet the employment needs of state-based information technology businesses and establish this state as having the most information technology ready workforce in the western hemisphere.

(8) MONITORING, REVIEWING, AND EVALUATING PROGRAM PERFORMANCES; REPORTING RESULTS.--The council, through the Department of Education, shall continually monitor, review, and evaluate the progress of performances realized from implementation of the programs authorized by this section. The Department of Education shall prepare and submit a report to the council at least 10 days before each of its meetings subsequent to its initial meeting and each such report shall, at a minimum, identify and describe the functional elements of each program being implemented and identify and describe the facilities, equipment, personnel, programs, and funds used to design and implement the program. For each such program, the report shall also identify by name, address, age, and sex the school-age children, and their older siblings and parents, who are enrolled in the program; state the educational level achieved by each enrollee as of the date he or she enrolled in the program; state the attendance and achievement level recorded for each enrollee in the program; evaluate the progress each enrollee is making toward successful completion of the program; and identify by name, address, age, and sex each enrollee who successfully completes the program. For each such program that is designed to prepare enrollees for high-skill, high-wage employment, the report shall identify each enrollee who successfully completes the program; describe each such employment position for which each enrollee has applied; identify by name, address, and nature of business each employer based in this state to whom each such application for employment has been addressed; state the results each enrollee obtained from making each such application; and describe the nature of any employment obtained and terms of compensation being earned from such employment by each enrollee as a result of making such applications.

(9) ANNUAL REPORT.--By March 1, 2008, the council, through the Department of Education, shall report to the Executive Office of the Governor, the Speaker of the House of Representatives, and the President of the Senate the results of the council's monitoring, reviewing, and evaluating such programs since their inception and the council's recommendations as to whether such programs should be continued and expanded to achieve the objectives and goals stated in this section.

Digital Equity

In a speech to the Commonwealth Club of California, former United States Secretary of Education, Rod Paige, remarked on the “soft bigotry of low expectations” for low socioeconomic students. He stated that educators must “let go of the myths and perceptions about who can learn and who can’t” to ensure that all students, despite their level of poverty, can reach high academic standards [U.S. Department of Education (USDOE), March 12, 2003, p. 2]. The passage of the federal No Child Left Behind (NCLB) Act of 2001 reinforced the belief that all children can learn through the achievement of high academic standards (USDOE, 2002). This movement in the field of education emphasizes the use of rigorous curriculum for all students with the expectation of a shift in the type of curriculum being offered to students of poverty in low socioeconomic schools (Borman, 2003).

Research is revealing a pedagogical gap between schools in low and high socioeconomic status (SES) neighborhoods. Student expectations for achieving have been found to be lower in low SES schools because less curriculum material has been covered (Biddle & Berliner, 2002). In low SES schools, curriculum has been implemented that aims at the “basic” elements of the content to be learned on the assumption that no more can be managed and that mastery of the basics is the important accomplishment (Knapp, 1995). A “pedagogy of poverty” has emerged in which students are given lower level of instruction in order for the teacher to maintain control in the classroom (Haberman, 1991).

An analysis of Title I schools conducted for the U. S. Department of Education found that students performed better in reading when teachers spent less time on basic instruction, followed by students filling out worksheets and more time in exploration activities, such as problem solving (USDOE, 2001). Educational researchers concur inequities exist in the curriculum offered to low income students, in that cognitively rich tasks that require critical thinking are often missing (Darling-Hammond, 1997; Haycock, 2001; Wenglinsky, 2005). A curriculum must be developed for low socioeconomic schools that helps students to draw upon their strengths, skills, and prior knowledge in the learning environment (Marlowe & Page, 1999).

Newmann (1996) developed a curriculum called authentic pedagogy that requires students to construct meaning or knowledge, engage in disciplined inquiry, and work on products that have value beyond school. Students are given challenging academic lessons that involve the development of higher-order cognitive skills rather than merely responding to lower-order skills found in the pedagogy of poverty (Newmann, Wehlage, & Lamborn, 1992). Research has shown positive outcomes when this curriculum approach has been implemented in the classroom (Avery, 1999; Newmann, 1996).

Role of Technology

A technology enriched learning environment has the potential to deepen classroom instruction to make it more meaningful and assist in the development of higher-order thinking skills (Niemic & Walberg, 1992). This type of environment involves a teacher and students' seamless access to technology in the classroom. When technology is used in this manner, it empowers students to develop thinking skills that allow them to help themselves (Kelley & Ringstaff, 2002; Mann, 1999). Students in a technology-rich classroom tend to become more engaged and more active learners because of the greater emphasis on inquiry and less on drill and practice (Bozeman & Baumbach, 1995; Sandholtz, Ringstaff, & Dwyer, 1997).

Since 1990, the United States has invested over forty billion dollars to provide technology for K-12 classrooms. These federal dollars have come in various forms, such as E-Rate funding, Technology Literacy Challenge Funds (TLCF), and Preparing Tomorrow's Teachers to Use Technology (PT3). Each source of funding had a specific purpose for the use of technology (McMillan-Culp, Honey, & Mandinach, 2003). For example, E-Rate supplies funding to schools with the expectation that every student will have access to the Internet. The goal of the TLCF program was to provide computers in the classroom, and funding has been provided through PT3 to train pre-service teachers on the use of technology in the classroom (Dickard, 2003).

NCLB mandates the effective integration of technology into the curriculum of public schools for all students in the United States. This landmark legislation provides federal dollars through Title II Part D, Enhancing Education Through Technology (EETT) with the stipulation that both state and local educational agencies develop a comprehensive plan for the integrated use of educational technology into instruction and curricula to improve teaching and student achievement. The deadline placed on educators was "that technology will be fully integrated into the curricula and instruction of the schools by December 31, 2006" (USDOE, 2002, p.1676).

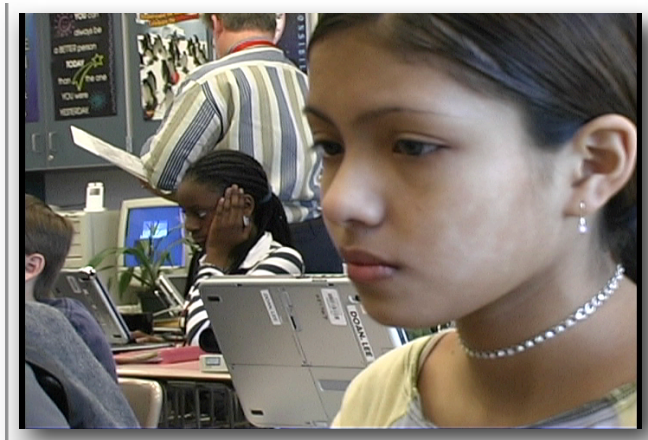


Technology in the Classroom

A consistent definition for the integration of technology in the curriculum has yet to be adopted. Even the term "technology" can have varied interpretations. For example, administrators, teachers and policymakers often make the assumption that technology refers simply to a computer. However, Kelley and Ringstaff (2002) define technology as a variety of digital devices, from computers to digital cameras to software. For the purpose of this report, the term "technology" will include computers, application software, and digital devices, such as digital cameras, digital microscopes, and digital video cameras.

The integration of technology in the classroom is a process that involves change in an educational system and occurs over a period of time [National Center for Education Statistics (NCES), 2002]. The attainment of this goal entails a reform in the teachers' method for the delivery of instruction with students. The National School Boards Association stated that the integration of technology is as much about change as it is about technology because educators must reform their teaching to integrate technology (Tiene & Luft, 2002). Researchers have concluded, "The magic lay not exclusively in the technology, but in the interweaving of a systematic program of education reform with the judicious use of technology-based resources" (Chang, Henriquez, Honey, Light, Moeller, & Ross, 1998, p. 43).

This process of change takes time, as a culture must be developed in the classroom that embraces technology as a "natural" part of the everyday work routine (NCES, 2003). According to Sandholtz, Ringstaff, and Dwyer (1997), there is an evolution of thought and practice that occurs with teachers during the process of change that teachers undergo with the integration of technology. At each stage of the process, the teacher adopts and implements technology in the curriculum (Dooley, 1999; Hall & Hord, 2001; Painter, 2001; Sandholtz, Ringstaff, & Dwyer, 1997). The integration of technology in the educational system is a time-consuming process in which teachers must change their beliefs about teaching and learning.



Regrettably, the pedagogical divide is also reflected in the use of technology. Low SES schools frequently use technology for drill and practice, while high SES schools use technology for higher-order thinking skills (Becker & Ravitz, 1998; Becker, Ravitz, & Wong, 1999; Wenglinsky, 2005). For example, students in low SES schools most commonly use technology for lower-order tasks, such as drill, practice, and test taking, whereas students in affluent, high SES schools have more opportunity to create websites and multimedia presentations (Reid, 2001).

Wenglinsky (1998) found that students of poverty use computers for "drill-n-skill" purposes. Likewise, when Herbert Kohl examined the use of computers with inner city students, he found a "covert" racism in the limits to the types of activities being done with students of poverty (Reid, 2001).

Recent studies suggest that research should move beyond a focus on the technology to an interest in designing an environment that fosters the disposition for critical thinking (Kelley & Ringstaff, 2002; Wenglinsky, 2005). The restructuring of the classroom should include the use of technology to provide active learning, authentic tasks, challenging work, problem solving, and higher-order thinking skills.

Technology with At-Risk Students

In the Condition of Education (NCES, 2002), researchers stated that poverty has the potential to be a serious threat to students' access to quality learning opportunities and their success in school. According to the 2000 Census, 15% of all children lived in households where the annual income in the previous year was

below poverty level. Students with low SES can be found throughout the United States; the state of Florida has an average with 18% of students living at or below the poverty level (Kidscount Snapshot, 2004).

Some studies reveal that although millions of dollars has been appropriated for technology in high poverty, Title I schools, it is not being utilized effectively (Waxman & Huang, 1996; Wenglinsky, 1998; Waxman, Padron, & Arnold, 2001). Wenglinsky (1998) examined the relationship between educational technology and student achievement in mathematics. Data were gathered from the 1996 National Assessment of Educational Progress in mathematics consisting of national samples of 6,227 fourth graders and 7,146 eighth graders. Data included the frequency of use for mathematics in schools, access to computers at home and in school, professional development of mathematics teachers in computer use, and the kinds of instructional use of computers in the schools.

Summary

Research has demonstrated that students of poverty are more likely than other students to attend schools with limited access to technology and receive only traditional instruction consisting of lecture and drill-and-practice activities. Much of the research involving students of poverty mirrors the “soft bigotry of low expectations” (USDOE, 2002) and has therefore focused on learning from technology rather than learning with technology. A clear gap exists in the research on use of technology as a tool for learning with students of poverty.

The school must take on the role of creating a culture in which all students from various ethnicities and SES backgrounds can understand the vital role education plays in their lives and futures (Bowman, 1994; Marlowe & Page, 1999). A social environment must be created in which all students feel a part of the learning so they can take responsibility for their lives. The students must be educated to reach beyond their current poverty and given intellectual and social skills to succeed more fully in life (Renchler, 2000). This goal will be achieved when the school principal and instructional staff set high expectations that are attainable for all students.

Schools provide the opportunity to increase students’ academic achievement and allow them to reach their potential when students are viewed as at-promise rather than as at-risk (Slavin, 1998). A learning environment at the school must be created that allows students to become more independent learners as they assume responsibility for their learning. In order for schools to be successful in student learning, a pattern of attitudes, beliefs and behaviors by the principal, teachers, and support staff needs to be developed for high expectations and commitment to bring about student achievement (Good & Brophy, 1996). In addition, schools with low SES students must have access to the same levels of hardware and software tools as high SES schools.

Technology Resource Survey

In response to Enhancing Education Through Technology (EETT) in NCLB the Bureau of Instruction and Innovation in the Florida Department of Education significantly revised its annual technology survey to provide more meaningful information about technology integration and capacity in Florida schools. In 2002, a set of benchmarks was created to provide schools with a tool referred to as the School Technology and Readiness Chart for use in goal setting and technology planning.

Survey revisions were based upon these benchmarks, and the survey was moved to a web-based delivery. Appropriate survey enhancements and adjustments were incorporated following completion of the pilot and the fall 2003 administration. Information provided by the survey is used to monitor goal achievement associated with the EETT program, and to inform those interested in how technology is impacting instruction within Florida schools.

The implementation of the survey is an interactive process that involves a variety of individuals, from the district level technology personnel to the school-based technology specialist and principal. The district receives the password for the survey system and has the responsibility of sharing it with the individual schools. It is then the role of individuals at the school level to gather and input all of the data necessary for completing the survey. During this process, the district and schools are in constant communication to verify the accuracy of the data.

Results presented here are from the Spring 2007 administration of the Florida Innovates Survey, formerly known as the System for Technology Accountability and Rigor (STAR). This analysis includes only elementary, middle, high, and combination (e.g., schools that contain more than one level such as 6th grade to 12th grade) schools ($N= 2700$). The response rate for the survey was 97%.

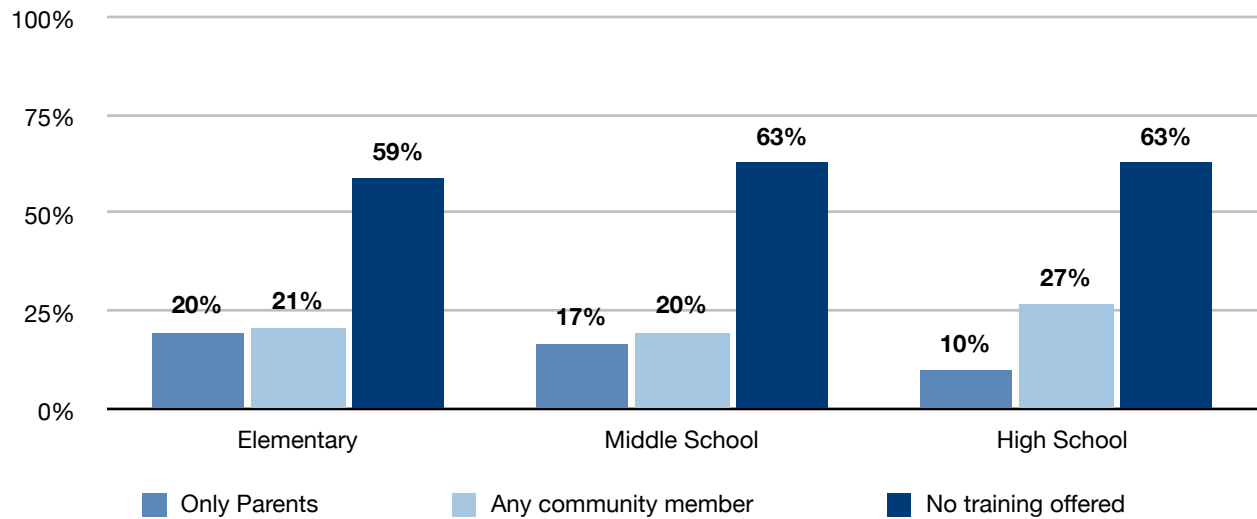
Technology Awareness

Schools use technology in many different ways to communicate with and involve community members. Schools indicated that the following tools were utilized to share information with the local community:

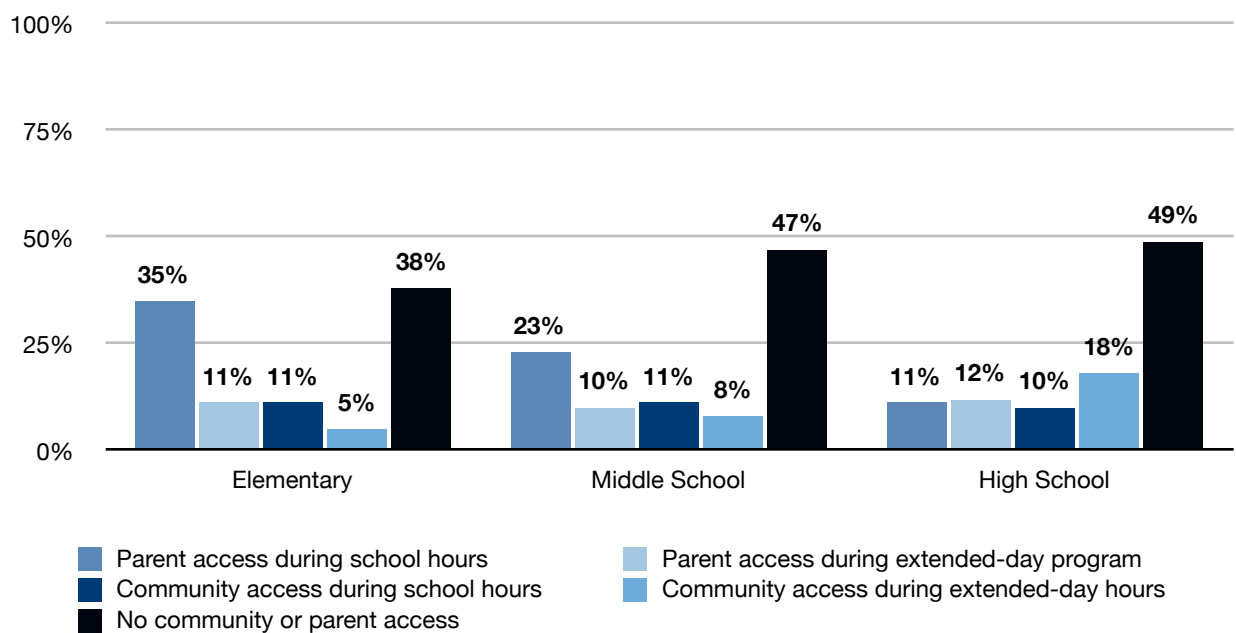
- Print media (97%)
- School website (94%)
- Email (83%)
- Classroom websites (63%)
- Voice bulletins/voice mail (49%)

- Telephone activity hotline (31%)
- PTO/PTA website (22%)
- Television broadcasting (17%)
- Telephone homework hotline (15%)
- Radio broadcasting (11%)

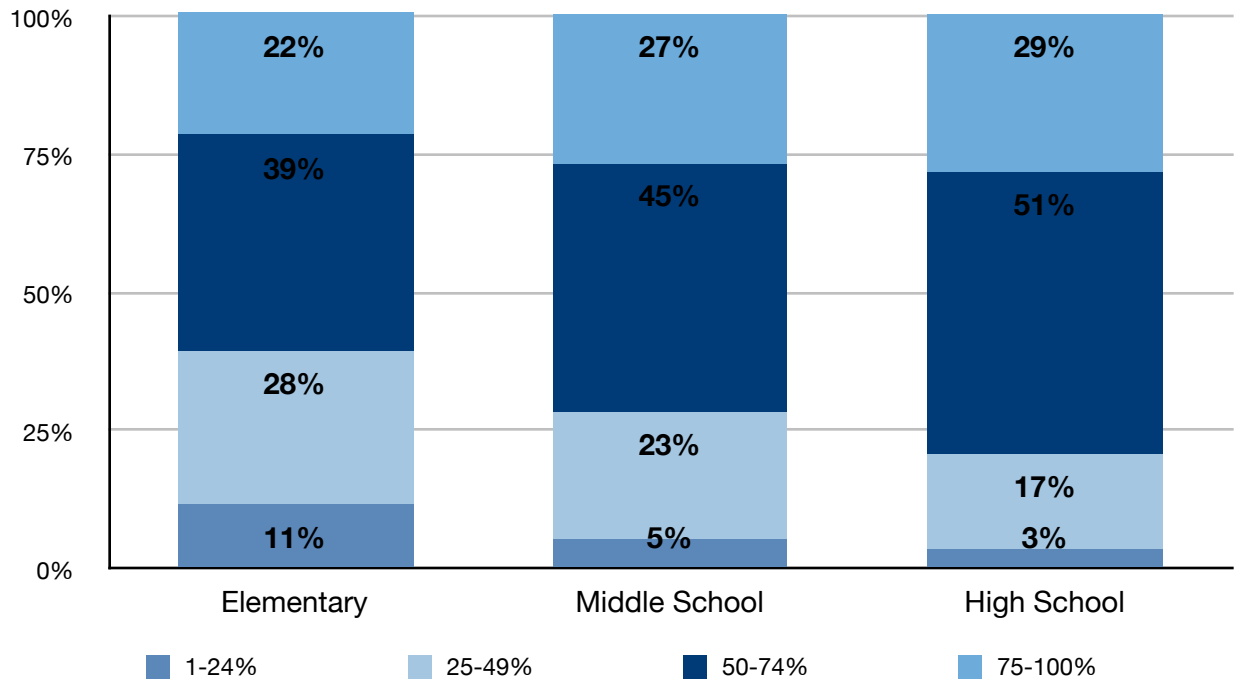
Technology Training



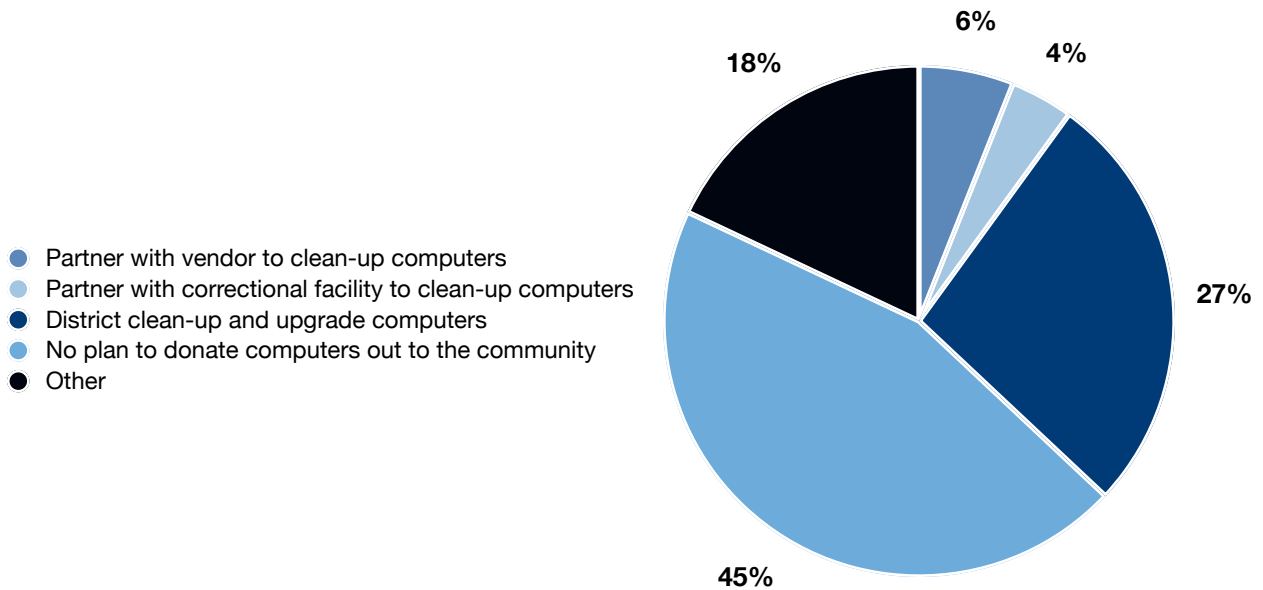
Parent and Community Access to Computers at Schools



Student Access to Computers at Home



District Policy for Donated Computers



Florida Department of Education Technology Programs

Florida Innovates

Florida Innovates is a roadmap for assessing technology use in schools based on state and national objectives. The roadmap identifies needs and coordinates resources to meet those needs. Florida Innovates is a suite of evaluative tools developed to assist schools in gauging their progress toward meeting technology-related achievement goals set forth in the NCLB Act of 2001. Specifically, the assessment system assists districts to identify areas for improvement and what works related to technology integration in individual schools and classrooms. With vast sums of money being spent on technology in schools, there is a great need for increased accountability. When properly integrated, technology use should improve student achievement in core academic areas.

Technology Resources Surveys

Surveys were completed by districts and schools across the state regarding their technology access and use. The results from the surveys are reported online, providing valuable data on implementation of both district and state technology plans and for federal reporting of EETT. Visit www.flinnovates.org/survey for more information.

Enhancing Education Through Technology

The Enhancing Education Through Technology (EETT) Program is a formula-based grant from the U. S. Department of Education with the primary goal of improving student academic achievement through the use of technology in schools. Funding for the program is determined on the basis of the state educational agency's proportionate share of funding under Part A of Title I. States may retain up to five percent of their allocations for state-level activities, and must distribute one-half of the remainder by formula to eligible local educational agencies (LEAs) and the other half competitively to eligible local entities.

The EETT Grant Program is designed to support achievement of the following broad Federal program goals:

- To improve student academic achievement through the use of technology in elementary and secondary schools.

- To assist every student in crossing the digital divide by ensuring that every student is technologically literate by the time the student finishes the eighth grade, regardless of the student's race, ethnicity, gender, family income, geographic location, or disability.
- To encourage the effective integration of technology resources and systems with teacher training and curriculum development to establish research-based instructional methods that can be widely implemented as best practices by state and local educational agencies.

Educational Technology Clearinghouse

- The Educational Technology Clearinghouse (ETC) is a directory to the best educational resources on the Web for Florida teachers.
- With an emphasis on technology integration, the ETC catalogues instructional resources by subject area and grade level.
- This site also functions as a depository collecting media assets that will eventually be incorporated into the Florida Learning Exchange.
- Currently, the ETC boasts a large collection of best practice videos and educational clipart.
- The Educational Technology Clearinghouse receives over 6,000,000 hits per month and may be found on the Web. Visit <http://etc.usf.edu> for more information.

Florida Continuous Improvement Model

Florida's Continuous Improvement Model is a continuous process in which data analysis determines classroom instruction. High student achievement with the Sunshine State Standards is the teaching focus of the Florida Continuous Improvement Model (FCIM).

- *Comprehensive School Reform provided \$86 million to 293 schools in 38 districts for school reform utilizing technology based programs for the FCIM model.
- Over \$16 million in grants were provided to 24 districts to enhance school choice and develop parent resource centers.

FCAT Explorer

FCAT Explorer is a set of free, Web-based practice programs. The content is built from the Sunshine State Standards that are tested on the FCAT. Kids can practice by themselves because the programs give them corrective feedback and learning guidance. Current curriculum offerings include:

- Reading
 - Galactic Library
 - Reading Odyssey
 - Reading Island
 - Reading Boardwalk
 - Reading Timeline
- Math
 - Math Station
 - Math Navigator

- Math Timeline
- Science
 - Science Station
 - Science Voyager

Florida Achieves/FOCUS

FOCUS offers online mini assessments for reading and math skills. Each mini assessment provides a set of valid, FCAT-like questions, plus a set of five parallel items for re-testing. Here you will find mini assessments for all math benchmarks and reading foci for grades 3–10.

William Cecil Golden Leadership Development Program

Florida's Principal Leadership Standards require high-performing instructional leaders that possess and utilize the competencies and skills necessary to successfully lead the improvement of student achievement in our public schools. The Standard for Technology Leadership requires high-performing leaders to plan effectively, use critical thinking and problem solving techniques, and collect and analyze data for continuous school improvement.

The William Cecil Golden School Leadership Development Program was established by the 2006 Florida Legislature to provide a high-quality, competency-based, customized, comprehensive, and coordinated statewide professional development system for current and emerging school leaders. The program supports Florida's Principal Leadership Standards, the standards of the National Staff Development Council, the Florida Professional Development Protocol Standards, and NCLB requirements for high-quality professional development.

The Department of Education coordinates the program through multiple delivery systems including interactive technology-based instruction. A suite of online leadership development tools is provided to assist current and emerging school leaders in determining their needs and tracking their progress in achieving competency in the standards. On line and face-to-face training is provided through the Learning Library along with additional resources to assist the 7,000+ registered users in advancing their skills as school leaders.

State approved university educational leadership programs and district principal certification programs incorporate appropriate elements of the William Cecil Golden School Leadership Development program to ensure a statewide foundation for leadership development.

Critical components of this program include:

- Training in Instructional Leadership (tools for effective classroom visits, literacy leadership, using data to drive instruction, etc.)
- Training in Effective Business Practices (training related to high priority education issues, strategies for personnel recruitment and retention, Florida's Continuous Improvement Model, technology, etc.)
- Parent, Community, and Business Outreach Training (parental outreach strategies, leveraging business and community partnerships, communication strategies, etc.)

- Ongoing Mentoring and Coaching (provided by a network of highly qualified, retired school leaders trained to use their knowledge and experience to support the effective implementation of the WCG Program)
- Online Resources and Support of all stages of school leadership development for Florida's school leaders.

Visit www.floridaschoolleaders.org for more information.

Digital Divide Programs

21st Century Community Learning Centers

The focus of the 21st Century Community Learning Centers (CCLC) program, reauthorized under Title IV Part B, of NCLB is to provide expanded academic enrichment opportunities for children attending low performing schools. Tutorial services and academic enrichment activities are designed to help students meet local and state academic standards in subjects such as reading and math. In addition 21st CCLC programs provide youth development activities, drug and violence prevention programs, technology education programs, art, music and recreation programs, counseling, and character education to enhance the academic component of the program.

- In 2006-07, Florida's 21st CCLC sub-grantees provided services to students in 42 Florida counties at 314 individual sites.
- Within the 314 sites, a total of 66,131 low-income students participated in 21st CCLC services, with 57,691 students participating during the school year and 20,823 students participating during the summer.
- Of the 66,131 students served in the program statewide, on average:
 - 14.1% are Limited English Proficient;
 - 62.1% are Free and Reduced Lunch;
 - 10.7% are Special Needs students.
- Florida's 21st CCLC programs report significantly higher dedication to providing participating students with education in technology, with 76% of Florida's 21st CCLC sites (237 centers) providing technology education for an average of 3.5 hours per week during the school year and 4.7 hours per week during the summer.
- Nearly 60% of Florida's 21st CCLC programs assign a "high priority" to technology education activities, making it the third highest ranked priority after reading and math.
 - Reading: 99.4% high priority; and
 - Math: 80.5% high priority.
- For 2007-08, Florida received \$48,863,242 for this program. For 2008-09, the amount is \$47,168,992.

District Programs

Broward County Schools

One project in Broward involves a Dell computer program call TECH KNOW in which middle and high school students repair and upgrade older computers (donated from companies in partnership with Dell) as part of a vocational course. Students are then able to take the upgraded computers home. This is a continuing program because of the high level of student interest. In addition, the district provides out-of-warranty computers that are repurposed and distributed to families from low socioeconomic schools. Parents must participate in training on the computers with their children. At the end of the training, parents are allowed to take home the computer. Software has been donated from various vendors, both applications and curriculum, through partnership agreements. Families then receive a fully loaded computer with Internet access capabilities for home use. In terms of accessing the Internet, families must provide their own internet service provider (ISP) There is also the ONE BROWARD initiative working toward establishing a "digital city" with the vision of Internet services to low-income families.

Escambia County Schools

There are a number of programs which Escambia County offers for students and parents to address the digital divide issue. At a district level, the Supplemental Education Services office contracts with an online tutoring company to provide after-school tutoring. In a pilot program with Pearson SuccessMaker, the district sponsors four "schools in need of improvement" (SINI) for pilot program to provide access to the software at home. Technical support and home visits are provided to set up families' computers. The district hires students from West Florida Technical High School to provide supplemental technical support in Title I schools and programs. Also, the two Family Resource Centers in the district provides families with computers and internet access for use during and after-school hours and sponsor workshops for parents teaching digital photography and publishing. Finally, the district targets low performing schools to have computers and internet set up for parents to use for the development of workforce skills.

Indian River County Schools

Indian River County has recently undertaken a major initiative to train every teacher and equip all classrooms in the district with a standard configuration of current technology. As more teachers are trained and more classrooms and libraries are outfitted with current technologies, they expect to have additional opportunities to open facilities to students and parents who do not have access to technology at home. One of the goals of this initiative is to ensure that schools across the district have equal access to the latest technologies. All new schools, recently built to accommodate population growth, have installed current technology systems. This initiative will ensure that all students in the district, not just those who attend new schools, will benefit from the use of technology.

Lafayette County Schools

Lafayette County has a check-out program for migrant and/or homeless families which allows families to take some small V-Tech machines home. This same program supplies flash drive keys so their students can save

work done at the public library. At-risk students are invited to attend the After-School Program funded through the 21st Century Community Learning Centers grant and the federal Safe Schools/Healthy Students grant. This program includes a technology component where students learn new skills and/or use an online credit retrieval program. In addition, parents are offered the opportunity to use school computers during the after-school program.

Lee County Schools

Students in families that qualify for free and reduced lunch programs may apply to receive computers through the district's Digital Divide program. As computers are refurbished and become available for distribution, families, selected through a lottery system, will be able to take the computers home. Computers are furnished with a standard package and supplied through community donations and district surplus computers. Students in the Dunbar High School Technology Magnet Program will be responsible for refurbishing the computers as part of their Computing Technology Industry Association (CompTIA) work. Miscellaneous expenses are funded through donation and/or grant sources only.

Leon County Schools

Sixth-grade students at Nims Middle School, an F school in Leon County, each received a new desktop computer equipped with internet access in their homes. Dell donated 100 computers and provided a discount for an additional 100 computers. Florida A&M University is paying for 50 of the computers, and Comcast is providing free Internet access. Other benefits include help-desk support and free software that will allow teachers to track each student's progress. The school district and the city will monitor progress over the next three years. If all goes well, more students will receive computers in the district. The students can use the internet for schoolwork and more, along with their family members. The project also provides technical support and training for parents and families.

Miami-Dade County Schools

The *Dell TechKnow* is a collaborative program offered by Dell computers that allows Miami-Dade County students to learn basic computer hardware assembly and troubleshooting skills in a forty-hour, after-school/Saturday school hands-on course. After completing the forty-hour after-school curriculum, the student earns the refurbished Dell desktop computer they worked on during the training, complete with operating system and software to take home. More than 1800 students have taken home a *Dell TechKnow* computer since the program began in the fall of 2004.

Citibank FamilyTech (CFT) through *The Education Fund* opens the world of computer technology to low-income public school students and their families. To date approximately 8,200 refurbished Internet-ready computers have been given to parents and students, who are also trained in their use. Additionally, teachers are instructed to incorporate computer technology into the classroom curricula.

The City of Miami entered into an Education Compact with Miami-Dade County Public Schools. As part of the Compact, the Elevate Miami Project allows more than 2200 sixth grade students to participate in the Rites of Passage Curriculum which integrates technology and life experiences. Through the program, students will learn how to set long term goals and broaden their understanding of the world and the

resources available to them through technology. If students meet the expectations of the program, they will earn a computer.

Monroe County Schools

Monroe County utilizes Imagination Station after school in the media center in Title I schools and in the after-school program. At the Neighborhood Resource Center, the district donated 15 computers for the after-school tutoring program the Bahama Village kids, and gave the Center access to the school system programs. Each individual school has after-school programs such as computer technology and video production programs. In addition, the district has an A+ and Cisco Engineering program at Coral Shores High School in which students prepare old workstations for distribution to students in need and community organizations such as the Neighborhood Resource Centers.

Osceola County Schools

Several school sites host technology training nights for parents, including instructional software information, internet safety, and assistance accessing teacher webpages and the district portal for student grades.

Sarasota County Schools

Through a partnership between the Education Foundation of Sarasota County, Inc. and the Sarasota County School Board, the TeXcellence program serves the neediest students by providing computers and training to students and their families. Each student who participates in the program receives a computer fully equipped with a monitor, keyboard, mouse, speakers, pre-installed educational software and a 1 GB flash-drive. In order to receive the computer, the student and a parent, guardian, or adult family member must attend a two-hour training session. At the training, the students learn with their families how to connect their computer to the Internet and how to use the pre-installed educational software. After the training, families are provided with technical assistance. Visit www.texcellence.org for more information.

Non-profit and Business Programs

5000 Role Models of Excellence

Founded by then Miami-Dade County School Board Member, Dr. Frederica S. Wilson, now member of the Florida Senate District-33, the 5000 Role Models of Excellence Project was initiated by the Miami-Dade County School Board in March 1993, due to the realization that there is an ongoing crisis in the lives of many young males. The project's mission is to intervene in the lives of at-risk boys, in order to provide them with alternatives that will lead them away from a life of crime and violence.

The program serves 6,792 students in 89 schools, which includes 23 elementary, 33 middle and 33 senior high Miami-Dade County Public School students. The expansion program in Pinellas County serves 450 students in 20 middle and senior high schools. The majority of students enter the program in middle school and continue activities throughout their high school and post-secondary education years.

Children who are ages 9-19 are referred by school principals, counselors, teachers and/or parents. Over 95% of the students who begin the program and graduate have no further negative contact with violations of

student conduct codes or the law. School personnel and parents are amazed at the transformation that takes place. The students and adult mentors wear a distinctive uniform consisting of black pants, a white dress shirt, and a 5000 Role Models of Excellence signature necktie. All items are earned through benchmark accomplishments related to discipline and academics.

When students enter the program, they are guaranteed a chance to attend college or advance through a potpourri of post-secondary opportunities geared toward the next level of education. Eligible students are employed in the private sector throughout high school. Mentors from the program assist students in this process. Funds for scholarships are raised annually at the 5000 Role Models of Excellence Project Dr. Martin Luther King, Jr. Unity Scholarship Breakfast. Many young men have been recipients of these scholarships since the program's inception in 1993.

Funding for personnel comes from Miami-Dade County Public Schools Dropout Prevention budget. The remainder of the funding is derived from corporations and private sources.

The goal is to expand the efforts of the 5000 Role Models of Excellence Project throughout the state of Florida and eventually make it available nationwide. As a state program, its efforts would be riveting as juvenile crimes decrease one day at a time. Visit <http://5000rolemodels.dadeschools.net/> for more information.

Magic Johnson Foundation Community Empowerment Centers

The Magic Johnson Foundation Technology Initiative is a program about collaboration between communities and corporations. The foundation is built on the belief that all children can not only succeed but also excel when given the opportunity. The Magic Johnson Foundation does not believe that a child should be denied access to a prosperous future in a digital economy because of a lack of government funding.

In 2001, the Magic Johnson Foundation launched a digital divide program in Los Angeles and has since opened 21 centers in 17 urban markets. In collaboration with the South Carolina Department of Commerce, an additional four centers were opened in 2006 to positively impact 200,000 South Carolinians by expanding the program into rural markets.

Magic Johnson Community Empowerment Centers are comprehensive one-stop resource centers where community residents are provided with the educational tools and resources to empower themselves and their families as well as strengthen the communities in which they reside. Participants in the technology program are also provided access to life skills development.

The foundation has taken a holistic approach to creating sustainable partnerships by leveraging the effectiveness of the grant recipients with local corporate, state and federal agencies that have a shared vision of self empowerment for better community. Each organization is a qualifying 501(c)(3) with a minimum of five years of operation in successfully providing education via technology with a grass roots following in distressed communities. Once selected, it is imperative that all community residents receive access to all educational content free of fees.

Community residents receive free access to all services and programs offered at the facility. To date the program has received national visibility and provided free educational direct access and training to over 32,000 youths and young adults in obtaining industry standard computer skills. The Magic Johnson Foundation is committed to the educational and financial empowerment of urban communities. Visit www.magicjohnson.org/programs/tc/cec_index.php for more information.

Computers for Youth

To improve children's learning environment at home, all of Computers for Youth's (CFY) programs are designed to accomplish one of three goals:

- Enhance the educational resources available in children's homes:
 - CFY's computer-based home learning centers are designed by software experts and tested by students and education executives from around the country.
- Improve parent-child interaction around learning at home:
 - CFY's workshops improve parents' confidence in helping their children learn. The home learning centers supplement parents who themselves may have little education (the software provides the "knowledge of probability" while the parent provides the motivation). CFY turns "family time" into "learning time."
- Help teachers connect classroom learning with the home:
 - CFY's program works with principals to set school-wide goals and trains teachers to create powerful links to at-home learning.

Computers for Youth serves more than 2,300 families per year. They have replicated their program in 28 schools in New York City, Philadelphia, and Atlanta. The impact of the home learning centers was increased by building relationships with top educational software companies, including Riverdeep/Houghton Mifflin Learning Technology and Scholastic. Computers for Youth provides training workshops for parents and delivers professional development for teachers.

Next Steps

As Florida continues to lead the nation in reform through innovative programs in the classroom, it is time to move forward and lead with programs beyond the classroom. It is the role of the Digital Divide Council to provide guidance on innovative programs that will ensure student success in the classroom and the workforce. Over the next year, the Digital Divide Council will work on the following goals:

- examine the use of school facilities, equipment, personnel, programs, and funds available from federal, state and local government agencies;
- evaluate innovative programs that employ new technologies in education and training;
- develop partnerships with public and private entities;
- examine the use of technology to facilitate achievement of the Sunshine State Standards by students' who are members of at risk families; and
- bridge the digital divide in developing a competitive workforce to meet the employment needs of state-based information technology businesses.

The Council is in the planning stages of partnering with the business and industry sector to pilot programs that will provide equipment, academic enrichment, and mentor engagement to students in Florida's low-performing schools.

Bibliography

- Alaimo, K., Olson, C. M., & Frongillo, E. A., Jr., (2001). Food insufficiency, family income, and health in US preschool and school-aged children, *American Journal of Public Health*, 91(5), 781-786.
- Avery, P. G. (1999). Authentic instruction and assessment. *Social Education*, 65(6), 368-373.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 54 (1), 1-26.
- Bausel, C. V., & Klemick, E. (May 2007). Tracking U.S. trends, *Technology counts 2007: A digital decade*. [Online] Available at: <http://www.edweek.org/ew/toc/2007/03/29/index.html>
- Becker, H., & Ravitz, J. (1998). The equity threat of promising innovations: Pioneering internet-connected schools. *Journal of Educational Computing Research*, 18(4).
- Becker, H. J., Ravitz, J. L., & Wong, Y. T. (1999, November). *Teacher and teacher directed student use of computers and software*. Teaching, Learning, and Computing: 1998 National Survey Report #3.
- Benson, A. (1995). *Review and analysis of Vygotsky's Thought and language*. Article from website for UHCL. <http://129.7.160.115/inst5931/Vygotsky.html>
- Biddle, B. J., & Berliner, D. C. (2002). Unequal school funding in the United States. *Educational Leadership*, 59(8), 48.
- Borman, G.D. (2003). How can Title I improve achievement? *Educational Leadership*, 60, 4, 49-53.
- Bowman, B. (1994). The challenge of diversity. *Phi Delta Kappan*, 76 , 234-38.
- Bozeman W. C., & Baumbach, D. J. (1995). *Educational technology: Best practices from America's schools*. New York: Eye on Education, Inc. pp.174-176.
- Brophy, J. (1998). *Motivating students to learn*. New York: McGraw-Hill
- Chang, H., Henriquez, A., Honey, M., Light, D., Moeller, B., & Ross, N. (1998). *The Union City story: Education reform and technology – Students' performance on standardized tests*. Technical report. EDC/Center for Children and Technology.
- Darling-Hammond, L. (1997) *The right to learn: A blueprint for creating schools that work*. Jossey-Bass: San Francisco.

- Dickard, N. (2003) *The sustainability challenge: taking ed tech to the next level*. Benton Foundation. Retrieved from: http://www.benton.org/publibrary/sustainability/sus_challenge.html
- Dooley, K. E. (1999) Towards a holistic model for the diffusion of educational technologies: An integrative review of educational innovative studies. *Educational Technology & Society*, 1999; 2(4):1236-4522.
- Good, T.L., & Brophy, J.E. (1996). *Looking in classrooms*. (7th ed.) New York: Longman.
- Haberman, M. (1991). Pedagogy of poverty versus good teaching. *Phi Delta Kappan*, 73, 290-294.
- Hall, G. E., & Hord, S. M. (2001). *Implementing change: Patterns, principles, and potholes*. Boston: Ally & Bacon.
- Haycock, K. (2001). Closing the achievement gap. *Educational Leadership* (March), 6-11.
- Huang, S. Y. L., & Waxman, H. C. (1996). Classroom observations of middle school students' technology use in mathematics. *School Science and Mathematics*, 96 (10),28-34.
- Kelley, L., & Ringstaff, C. (2002). *The learning return on our educational technology investment: A review of findings from research*. San Francisco: WestEd. Available: http://www.WestEd.org/online_pubs/learning_return.pdf.
- Leroy, C. & Symes, B. (2001). Teachers' perspectives on the family backgrounds of children at risk. *McGill Journal of Education*, 36, 1 45-60. Wilson Web July 9, 2001.
- Mann, D. (1999). *Documenting the effects of instructional technology: A fly-over of policy questions* (Secretary's Conference on Educational Technology). Retrieved from <http://www.ed.gov/Technology/TechConf/1999/whitepapers/paper6.html>
- Marlowe, B. & Page, M. (1999). Making the most of the classroom mosaic: A constructivist perspective. *Multicultural Education*, 6, (4),19-21.
- McMillan-Culp, K., Honey, M., & Mandinach, E. (2003). *A retrospective on twenty years of education technology policy*. Washington, DC, U.S. Department of Education, Office of Educational Technology. Retrieved from <http://www.nationaledtechplan.org/participate/20years.pdf>.
- Miller, D. E. (1993). The literature project: Using literature to improve the self-concept of at-risk adolescent females. *Journal of Reading*, 36 (6), 442-448.
- National Center for Education Statistics. (2002). *The condition of education 2002*. NCES 2002-025. Washington, DC: U.S. Department of Education.
- National Center for Education Statistics. (2003). *The condition of education 2003*. NCES 2003-067. Washington, DC: U.S. Department of Education.
- Newmann, F.M. (1996). *Authentic achievement: Restructuring schools for intellectual quality*. San Francisco, CA: Jossey-Bass

- Newmann, F. M., Wehlage, G.G., & Lamborn, S.D. (1992). The significance and sources of student engagement, *Student engagement and achievement in American secondary schools*, edited by F.M. Newmann, pp. 11–30. New York: Teachers College Press.
- Niemiec, R. P., & Walberg, H. J. (1992). The effects of computers on learning. *International Journal of Educational Research* 17, 99-108.
- Payne, R. K. (2001). *A framework for understanding poverty* (Revised Ed). RFT Publishing Co: Baytown, TX.
- Painter, S. R. (2001). Issues in the observation and evaluation of technology integration in K-12 classrooms. *Journal of Computing in Teacher Education*, 17(4), 21-25.
- Reid, K. S. (2001). Technology counts 2001: Racial disparities. *Education Week*, XX(35), 16-17.
- Renchler, R. (2000). Grade span. *Research Roundup*, 16(3), 1-4.
- Sandholtz, J., Ringstaff, C., & Dwyer, D. (1997). *Teaching with technology: Creating student-centered classrooms*. New York: Teachers College Press.
- Slavin, R. (1998). Can education reduce social inequity? *Educational Leadership*, 55, 6-10.
- Strahan, D. (2003). General patterns and particular pictures: Lessons learned from reports from "beating the odds" schools. *Journal of Curriculum and Supervision*, 18, 296-305.
- Tiene, D., & Luft, P. (2002). The technology-rich classroom. *American School Board Journal*, 189(8), 37-39.
- U.S. Department of Education. (January 2001). *High standards for all students: A report from the National Assessment of Title I on progress and challenges since the 1994 reauthorization*. Prepared for the Planning and Evaluation Service, Office of the Under Secretary, U.S. Department of Education.
- U.S. Department of Education. (2002). *No Child Left Behind Act*. Washington, D.C.: U.S. Government Printing Office.
- U.S. Department of Education (2003, March 12). Press Release of remarks made by Secretary Rod Paige to Commonwealth Club of California, Palo Alto, CA. Retrieved from <http://www.ed.gov/PressRelease/03-2003/03122003.html>
- Waxman, H. C., & Huang, S. L. (1996). Classroom instruction differences by level of technology use in middle school mathematics. *Journal of Educational Computing Research*, 14(2), 157-169.
- Waxman, H. C., Padron, Y.N. & Arnold, K. M. (2001). Effective instructional practices for students placed at risk of academic failure. In G.D.Borman, S.C.Stringfield & R.E.Slavin (Eds.), *Title 1: Compensatory education at the crossroads* (pp.137 – 170). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Wenglinsky, H. (1998). *Does it compute? The relationship between educational technology and student achievement in mathematics*. Princeton, NJ: Educational Testing Service. Retrieved from <ftp://ftp.ets.org/pub/res/technolog.pdf>.

Wenglinsky, H. (2005) *Using Technology Wisely: The Keys to Success in Schools*. Teachers College Press, New York.