

**An Evaluation of the Digital Divide Program (Broward County Public Schools) at
Lauderdale Manors Elementary School, Arthur Robert Ashe Jr. Middle School, Henry D.
Perry Middle School, Stranahan High School, and Head Start**

Adela Beckerman, A.C.S.W., Ph.D
Florida Education and Research Laboratory

Leonard Fontana, Ph.D
Florida Education and Research Laboratory

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Section 1.

Preface and Acknowledgements

The Digital Divide Program initiated by the School Board of Broward County was designed to foster computer literacy among students and their families. The program developed as a result of the awareness among Board members and staff in the Broward County Public Schools of the inequalities in computer and Internet access and use among socioeconomic groups in the County. After several years of implementing the Digital Divide Program, the School Board at its November 2007 retreat requested that an external evaluation be conducted of the program. The School Board was interested in gaining a better understanding of the costs and benefits of the program, and of the opportunities for partnerships in the community to continue the Digital Divide Program.

This report is a description and evaluation of the Digital Divide Program at Lauderdale Manors Elementary School, Arthur Robert Ashe Jr. Middle School, Henry D. Perry Middle School, Stranahan High School, and the Head Start program. The authors wish to express our appreciation to the members of the Broward County Public Schools who took the time to talk with us and provide valuable information and guidance about the Digital Divide Program. These include Mary Baker, Director, Quality and Customer Service/Education Technology Services of Broward County Public Schools; and Nina Randall, Executive Director and Merrie Meyers-Kershaw, Director of Community Involvement of Partners in Education, Inc., Broward County Public Schools' school-business partnership program. The authors also wish to express our appreciation to the following school site staff involved with the Digital Divide Program for taking the time for interviews and sharing valuable information about the program:

- *Lauderdale Manors Elementary School:* Current Principal Heather Hedman-Devaugh, former Principal Dr. Deedara Hicks, Technology Specialist Mona Griffith, and Community Liaison Dawn Yates.

- *Arthur Robert Ashe Jr. Middle School:* Current Principal Andrew Luciani, former Principal Dr. Wright-Hicks, Television Production Teacher Sabrina Tobias-Cary, Curriculum/Micro-Technology Specialist Aliya Coach, Technology Specialist, Sheryl Noland; and Community Liaison/Instructional Technology Coach Christopher Gates.

- *Henry D. Perry Middle School:* Principal Steve Frazier, Assistant Principal Glenn Dansky, and Micro-Technology Specialist Renardo Nash.

- *Stranahan High School:* Principal Deborah Owens, Assistant Principal Alice Thurston, and Sara Donaldson, FCAT Reading Teacher.

- *Head Start:* Head Start Coordinator Shukree Cha-Jua and Head Start staff members Beata Darai, Disabilities Specialist; D. Tisha Weathers, Systems Analysts; Gwen Townsel, Clerk Specialist IV/TLC [Technical Liaison Clerk]; Tanisha McFarlane, Head Start/Early Head Start Specialist/Program Specialist; Cynthia Woodland, Teacher Specialist; and three Parent Educators: Gloria Waller, Katy Scalise, Veronica Everett.

We especially appreciate the students and their families who participated in the evaluation of Broward County Public Schools' Digital Divide Program, and who took the time out from their busy work and family responsibilities to meet with us to talk about their family's experiences with the computers they received from the Broward County Public Schools.

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Section 2.

Introduction

In recent decades American society has witnessed the increasing linkage between educational achievement, economic advancement, community participation, and access to home computers. Enthusiasts of the growth in the use of computers and the Internet have pointed to the potential benefits of the new technology, suggesting that it will enable people to improve their human capital and expand their social networks and employment opportunities. Access to a computer and Internet outside of school has been found to reinforce learning, and emphasizes the importance of technology (Morgan and VanLengen, 2005). However, rather than democratizing education, the new technology has been found to be widening the gap between the “haves” and the “have nots,” as those with the least resources are least likely to afford technology in the home. While socioeconomic differences between groups may have played a role in initially creating what is often referred to as the “digital divide,” the divide itself is widening the social divisions in communities, and even creating new ones (Latimer, 2001). As a result, much attention has been paid to the significant inequalities in home computer and Internet access and use across socioeconomic groups. While there have been increases in computer and Internet usage among low-income groups, inequality in the level of home usage of this technology persists, reflective of a family’s income and level of education.

Families experiencing the “digital divide” are often from the same groups that are disproportionately represented among students exhibiting underachievement and school failure -- minority children often living in poor urban and rural neighborhoods. Research indicates that the household media environment is significantly associated with student performance on standardized tests (Borzekowski and Robinson, 2005). Recent research found that having a bedroom television set was significantly and negatively associated with student test scores, while home computer access and use were positively associated with test scores. A recent national study of home computer ownership found that poor youth were only one-third as likely to own a home computer as were non-poor youth, but were equally likely to use the home computer for academic purposes (Eamon, 2004)

Most studies regarding computers and the Internet emphasize inequalities in access and use of these technologies. We can probably expect that the numbers of residents of low-income communities who buy computers will slowly rise as equipment prices drop. However, with

increasing diffusion of the rapidly changing technology, some researchers have started to examine a “second-level” digital divide, the differences among various segments of the population in their ability to use the medium to their maximum benefit. If users give up looking for information online because of frustration and confusion, then having access to a computer and the Internet does not mean the digital divide has been solved since a divide exists in their capacity for effective use of the new technology (Hargittai, 2001). Some have made an analogy with education, indicating that it is not enough to give everyone a book; we also have to teach people how to read if they are make maximum use of the book. Similarly to focus solely on ownership of a computer ignores the significant socioeconomic inequities that exist in the skills and knowledge base necessary for maximum use of computers and the Internet (Hacker & Steiner, 2002).

Section 3. Research Objectives and Methodology

Following the directive of the School Board, this report is intended to address the following general areas of inquiry identified by the School Board:

- An analysis of the benefits to parents/guardians and students in the Digital Divide Program.
- An assessment of the challenges facing the program.
- An assessment of the costs of the program.
- An assessment of the opportunities for partnership in the community.

Four important research questions were developed by the external evaluators from these general areas of inquiry. They are:

1. *What are the patterns of home technology use among parents/guardians and student participants in the Digital Divide Program?*
 - What software (e.g. word processing, PowerPoint, educational programs e-mail, etc) do parents/guardians and students utilize on their home computer?
 - Does language proficiency of the student and family members impact their usage of home computers?
 - Do parents/guardians and students engage in activities together on their home computers? Do students assist parents/guardians with home computer usage? Do parents assist students with home computer usage?
 - Are home computers linked to the Internet? Is Internet service affordable to the families? What online sites do parents/guardians and students regularly access at home? Are parents/guardians and students familiar with safety issues with Internet access?

2. *What issues and challenges have developed for school officials in implementing the Digital Divide Program?*
 - What challenges/issues have developed in acquiring computers for the program?
 - What challenges/issues have developed in refurbishing computers for the program?
 - What challenges/issues have developed regarding the maintenance and repairs of the computers that have been distributed through the program?

- What challenges/issues have developed in training parents/guardians and students for home computer usage?
3. *What have been the “costs” associated with implementing the Digital Divide Program?*
- How much staff time is expended in activities related to the program?
 - What costs have been incurred for the refurbishing and maintenance/repair of the home computers?
 - What opportunities exist for partnership with other private and public entities to share in the costs of the Digital Divide Program?
4. *In what ways has the corporate partner model differed from the model employed by the schools involved in the program?*
- What have been the strengths and challenges of the corporate partnership with Dell?
 - Have there been differences in the outcomes of the corporate model in terms of parents/guardian and student usage of their home computer and Internet usage?

Research Methodology

The research employed a mixed-method, quantitative and qualitative research design. This research design enables the external evaluators to develop an in-depth understanding of the impact of the Digital Divide Program on students, parents/guardians, staff, and the Broward School District, as well as the challenges and opportunities that exist if the Digital Divide Program were to continue.

Sample selection

In order to address the research questions within the time and financial constraints present, a sample of the Digital Divide sites was selected. The sample consisted of five sites involved in the Digital Divide Program, specifically Lauderdale Manors Elementary School, Arthur Robert Ashe Jr. Middle School, Henry D. Perry Middle School, Stranahan High School and the Head Start program.

The sample of sites selected for review in this evaluation met several criteria. Since the experiences with the Digital Divide Program are expected to vary by grade level, the five sites include elementary, middle, and high schools, as well as the Head Start program. The five sites

also include the two schools with the most extensive experience in terms of longevity with the Digital Divide Program. Lauderdale Manors Elementary School and Arthur Robert Ashe Jr. Middle School were involved as pilot sites for the Digital Divide Program in the first year of the program, 2005-2006. The two middle schools in the sample and the Head Start program serve different geographical areas of the Broward County Public Schools District.

In addition, the sites included in the evaluation distributed large numbers of home computers to parents/guardians and students. Head Start began its participation in 2006-2007 and provided more home computers than its counterpart Florida First Start. At the high school level, Stranahan High School, one of four high schools involved in the Digital Divide Program, distributed more than twice as many computers than any other high school in the program.

The sites in the sample included schools that have experience working with a corporate sponsor. Henry D. Perry Middle School began a two-year partnership with Dell TechKnow in 2005-2006. Arthur Robert Ashe Jr. Middle School began its involvement with Dell TechKnow in 2006-2007, following a year of participating in the Digital Divide Program without a corporate partner.

Data Collection

Interviews were conducted with school Principals (Appendix A) and District office staff. The District staff interviewed were Mary Baker, Director, Quality and Customer Service/Education Technology Services of Broward County Public Schools, and Nina Randall and Merrie Meyers-Kershaw, Executive Director and Director of Community Involvement of Broward County Public Schools Partners in Education, Inc.

Historical and archival materials were provided to the external evaluators by Mary Baker, school site staff and Head Start staff, providing background information about the development of the Digital Divide Program, the development of program policies, and the number of refurbished computers distributed by the District and through the Dell TechKnow program.

Focus groups were conducted with school staff at the four school sites and Head Start (Appendix B). Staff members were also asked to complete questionnaires. (Appendix C). These questionnaires asked for information about the accomplishments of the Digital Divide Program and the amount of time that was dedicated to Digital Divide Program activities. Focus group questions asked staff to expand on this information and describe the reasons for participation in

the program, the criteria used in selecting students and families eligible to receive computers, information about the training provided to students and family members, and to discuss challenges faced during implementation of the program. Some staff members who were unable to attend focus group sessions were interviewed by the external evaluators. They were asked the same types of questions posed to focus group participants.

Focus groups with parents/guardians (Appendix D) and focus groups with students (Appendix F) began with the completion of questionnaires designed to obtain data about home computer usage such as about the frequency and type of usage by members of the household (Appendix E and Appendix G). Questionnaires were also distributed to parents/guardians who were unable to attend focus group sessions at their local schools and collected by school personnel. Structured focus groups with parents/guardians and with students asked participants to expand on the information shared in the questionnaires and asked questions about their experiences with the training offered to them and with the computers they had received. Focus groups with students typically occurred around lunch time. Focus groups with parents/guardians also occurred around lunch time, or in the early evening. Pizza and other refreshments were provided by the external evaluators during focus group sessions to students and parents/guardians in attendance, as well as to any family members who accompanied these parents/guardians.

The differing nature of each site called for a different combination of data collection methods.

- At the elementary and middle school level, school staff, students and parents/guardians were primary sources of information.
- At the high school level, school staff and students participated in the research study. Parents/guardians were not asked to participate. Students were questioned about the use of the home computers distributed to them, and served as informants about the use of these computers by parents/guardians and other family members.
- At the Head Start level, parents/guardians and staff were asked to participate in the research study. Parents/guardians were questioned about their use of home computers provided through the Digital Divide Program, and served as informants of their children's use of the home computers. Students were thus not asked to participate in focus groups.

The external evaluators relied on the local school and program staff to identify and invite the students and families involved in the Digital Divide Program to the focus group sessions which were conducted by the external evaluators. These staff made the arrangements for the time and

location for focus groups, and assumed responsibility for contacting and inviting students and parents/guardians to the school site to participate in the research effort. Since many parents/guardians work during the day, evening meetings were scheduled to accommodate those who could not attend focus group sessions during daytime hours. The focus groups for students and parents/guardians in the schools were conducted at each local school in the sample. The focus groups for parents/guardians in Head Start were conducted at a community center.

As Chart 1 indicates, data for this study were collected from a total of 29 parents/guardians, 63 students, 25 school and program personnel, and three District office staff.

Chart 1. Number of Study Participants

School/Program	Parents/Guardians	Students	School Staff
	<i>n</i>	<i>n</i>	<i>n</i>
Lauderdale Manors Elementary School	11	13	4
Arthur Robert Ashe Jr. Middle School	2	24	6
Henry D. Perry Middle School	5	19	3
Stranahan High School	NA	9	3
Head Start	11	NA	7
Partners in Education Inc	0	0	2
Quality and Customer Service/ Educational Technology Services	0	0	1
Total	29	65	26

NA: not appropriate

Section 4.

Inception and First Three Years of the Digital Divide Program

The archival materials and materials shared with the external evaluators by District staff indicated that the School Board of Broward County in January 18, 2005, amended “School Board Policy #5306. School and District Technology Usage”¹ in recognition of the importance of programs that seek to address the digital divide. This amendment states that,

“The broadest possible access to the School Board of Broward County’s web based educational resources will be promoted, while providing safeguards to ensure that security is maintained. Toward this desirable outcome, the School Board of Broward County, Florida will support programs designed to bridge the digital divide.”

At the urging of Dr. Robert Parks and others on the School Board, as well as parent groups in Broward County, the District staff was asked to find a way to implement this policy by considering how the District’s “surplus computers” could be used to address the needs of students who did not have access to a computer in their homes. The District owned many computers whose warranties had expired that were routinely replaced by new computers. District staff initially estimated that approximately 600 computers became “surplus” annually, and could be refurbished for a new program, the Digital Divide Program. In order to use these computers as part of an effort to reduce inequities in home usage of computer in the County, School Board Policy #5306 was amended to permit the distribution of these surplus computers through the new Digital Divide Program.

The overall goal of the Digital Divide Program is to “Eliminate the gap between people and communities who can make effective use of information technology and those who cannot.” The program has three purposes which are: (1) “to increase the number of “first time” home computer

¹Policy 5306, originally passed in August 8, 1996 states,

The School Board of Broward County, Florida adheres to the belief that technology should play a vital role in meeting the needs of the broad range of abilities, disabilities, cultural backgrounds and ethnic populations represented in district schools. To assure that technology shall play a predominant role, this policy provides guidance for appropriate technology utilization and integration into the curriculum, as well as infusion into school/district administration and management.

families with SBBC [School Board of Broward County] students,” (2)” to support and extend student programs.” and (3) “to increase SBBC [School Board of Broward County] parent participation and access to online resources.”

Since the intent of the new Digital Divide Program was not to have a “computer give-away program,” a process was developed by Mary Baker, Director, Quality and Customer Service/Education Technology Services and other persons responsible for capital assets that insured that the Digital Divide Program’s educational objectives would be met by distributing the surplus computers to families of students who did not possess a computer in their home. In 2005-2006, two schools were selected to pilot the new Digital Divide Program -- Lauderdale Manors Elementary School and Arthur Robert Ashe Jr. Middle School. Instructional Technology developed parent training materials. Since the design of the program called for local school leadership to have primary responsibility for developing school criteria for distribution, the District staff worked with the Principals of these two schools in piloting the distribution of computers through the new Digital Divide Program. These two schools were selected as pilot sites since they both had received School Performance Grades of F. The Digital Divide Program was developing as part of a larger effort to focus resources on school improvement.

The task of refurbishing computers and delivering and setting up these refurbished computers is assumed by a three-person technical program staff of the Digital Divide Program housed at the Rock Island Professional Development Center. These technical program staff handle Digital Divide refurbishing in addition to their primary responsibilities of providing repairs to technical equipment.

After 2005-2006, the first year of the pilot Digital Divide program, the Board approved a series of procedures governing the program called the “Digital Divide Program: Process and Protocol” and the “Digital Divide Program: School Participation Process.” These Digital Divide Program guidelines outline the program’s priorities and the criteria for selecting schools that would be given recycled computers. The policies discuss the process that must be followed in applying for participation in the program, and the need for applicants to specify the process they would use for selecting students and family participants. The procedures indicate that Area Superintendents would be expected to prioritize schools within their community that would receive emphasis in the program. The procedures also make clear that parent training is required prior to distribution of computers to families.

The principals in each interested school complete the application that indicates they are seeking participation in the program. Each principal typically puts together a team to develop and plan their participation in the program. In the application process, each school must demonstrate alignment with the criteria for participation, as well as alignment with the school and District's educational goals

The Digital Divide Program procedures also require that a form developed by District staff, the "Equipment Release Form" (Form 4190), be signed by all recipients. This form was developed to facilitate the maintenance of records of the distribution of the districts' refurbished computers, which had been purchased with public funds. This form indicates the serial number of the computer that is being distributed and the name of the school or program distributing the computer indicated on the form. This form also "transfers ownership to the recipient and releases the Board from any product liability." Families that receive computers are thus required to sign this "hold harmless" document which indicates the District is not responsible for maintenance or replacement of the computers distributed to them. This responsibility is to be assumed by each family receiving a computer.

Subsequently, the Digital Divide Program also initiated efforts to expand the number of families in the County with home computers through working with several district-wide programs such as Head Start. Head Start began discussions with the program in an effort to meet the criteria necessary to apply for participation during the 2005-2006 school year.

Interviews with school staff and with District office staff have also indicated that in most cases the computers refurbished and distributed by the district were loaded with an operating system, Microsoft Office, Apple Works, and educational tutorial programs such as "Reader Rabbit," "Mighty Math," and "Bailey's Book House." The computers have CD-Rom drives.

Dell TechKnow

A goal of the Digital Divide program was to increase the number of "school families who have technology in the home for the purpose of extending the learning environment ... by "recycling surplus classroom computers to eligible families, and by partnering with corporate programs." (The School Board of Broward County, Florida. Executive Summary: Digital Divide Program).

Parallel to the introduction of the Digital Divide Program was the initiative of the Dell Foundation to contribute computers and educational curricula to the Broward County Public Schools. Top-level school board officials met with Dell staff to explore ways in which the Dell Foundation could be part of the Digital Divide Program in the Broward County Public Schools. Dell's philanthropic goals sought "...innovative and effective programs that provide fundamental prerequisites to equip youth to learn and excel in a world driven by the digital economy" (*Values in Action*). The Dell philanthropic model for distribution of computers was focused on middle schools, and included the educational objective of students learning how to assemble and repair the computers that were given to them.

In September 2005, the School Board approved a two-year agreement with Dell for a program called "Dell TechKnow." This program called for over 300 low-income students in six middle schools to receive refurbished Dell computers with operating systems and software, as well as one year of free Internet from American Online, Inc. (AOL) to take home. In October 2007, the School Board approved a second contract for the Dell TechKnow program for Arthur Ashe Middle School for continuation of the program through the 2007-2008 school year.

The Dell TechKnow began operating in the District during the 2005-2006 school year. The Dell TechKnow program mandated 40 hours of instruction with a prescribed curriculum developed by Dell for middle school youth. Dell TechKnow involved the delivery of computers to participating schools. Computer components were delivered on trays. Selected students were required, in tandem with participating in the Dell training program, to assemble computers which would then be taken home. An ample number of computer components were delivered to allow for replacements of any malfunctioning parts of the computers students assembled. Thus, when a computer was assembled but did not function properly, students could replace faulty parts and components.

The costs of the Dell TechKnow program were assumed by Dell and the District. Dell was responsible for providing computers and the District was responsible for the cost of providing the 40 hours of technology instruction to middle school students after school, and the time staff spent on program coordination and preparing reports pertaining to the program and its activities. The District provided matching support for the Dell grant by providing the instructional staff for the 40 hours of after-school instruction for students involved in the Dell curriculum. The District was able to identify matching funds for the after-school instructional staff from an on-going grant

received by the Department of Advanced Academics of the Broward County Public Schools that is intended to prepare middle school students in high poverty areas with higher level instruction that would lead to their taking advanced courses in high school.

While parents/guardians were not the focus of the Dell after-school instruction, there was the expectation that the students would share what they learned through the Dell curriculum with their family members. One expectation of the Dell TechKnow program was the development of a series of competencies among participating youth, in tandem with enhanced self-esteem, which would translate into subsequent academic achievement.

Computer Distribution and Training

Since its inception in 2005 more than 50 elementary schools, middle schools, and high schools and programs in the District such as Head Start have received recycled computers from the Digital Divide Program. “Surplus” computers were refurbished by the District and distributed to families of students attending District schools and programs. The District adopted an informal “rule-of-thumb” that no more than \$20 would be spent in refurbishing a computer for the Digital Divide Program.

As indicated earlier, the Dell Foundation grant provided a packaged 40 hour curriculum for middle school students. The objectives of the training for the students were to enable them to assemble and disassemble a computer. The training program also provided instruction in computer troubleshooting and software management. Only students who successfully completed the training were eligible to receive a computer through the Dell TechKnow program.

Chart 2 describes the number of surplus Broward County Public Schools’ computers distributed to date each year of the Digital Divide Program. As indicated, during the first year of the program (2005-2006), 278 computers were distributed by the District to Broward public schools, and in turn to families and students. In the second year (2006-2007), 539 computers were distributed through the program. In the third year (2007-2008), 617 computers were distributed. Thus, over the three years of the program, the District distributed 1,434 surplus computers to schools and programs involved in the Digital Divide Program.

Chart 2. Number of District-Refurbished Computers Distributed by Area and School Year*

School/program/function	Area	Computers distributed
<i>2005-2006</i>		
<i>Lauderdale Manors Elementary School**</i>	South Central	<i>127</i>
<i>Arthur Ashe Middle School**</i>	South Central	<i>125</i>
Time 4 Kids		11
Special Needs		2
Staff Training		3
<i>Subtotal</i>		<i>278</i>
<i>2006-2007</i>		
<i>Arthur Ashe Middle School**</i>	South Central	<i>25</i>
<i>Lauderdale Manors Elementary School**</i>	South Central	<i>26</i>
<i>Stranahan High School**</i>	<i>South Central</i>	<i>48</i>
<i>Head Start**</i>	<i>District</i>	<i>43</i>
Coral Springs Elementary School	North	31
Dania Elementary School	South	52
North Fork Elementary School	South Central	15
Sunland Park Elementary School	South Central	50
Village Elementary School	North Central	109
Westwood Heights Elementary School	South Central	10
Thurgood Marshall Elementary School	South Central	12
Margate Middle School	North	57
McArthur High School	South	1
Broward Virtual School	District	1
Cypress Run Alternative Center	North	2
Exceptional Student	District	10
Florida First Start	District	33
Curriculum	District	5
Seagull School-Hospital		2
Special Needs		7
<i>Subtotal</i>		<i>539</i>
<i>2007-2008</i>		

Lauderdale Manors Elementary School**	South Central	30
Stranahan High School**	South Central	50
Head Start**	District	80
North Side Elementary School	South Central	25
Park Ridge Elementary School	North	20
Rock Island Elementary School	South	40
Hollywood Park Elementary School	South	49
Apollo Middle School	South	51
Margate Middle School	North	40
Silver Lakes Middle School	North	36
Boyd Anderson High School	North Central	20
Deerfield Beach High School	North	52
Fort Lauderdale High School	South Central	30
Core Curriculum	District	1
Florida First Start	District	14
Take Stock In Children	District	7
All My Children Academy II – QRIS		4
All My Children Academy IV- QRIS		4
Broward Children’s Center- QRIS		4
Creative Minds- QRIS		4
Davie Christian Academy- QRIS		4
Hudlett Day School- QRIS		4
Ima Hunter Wesley Fl- QRIS		4
Kiddie Kollege Of Hollywood- QRIS		3
N.E. Focal Point- QRIS		1
New Mirawood School & Child Care Center- QRIS		3
Pembroke Park Montessori School- QRIS		5
Prophecy Child Care Center – QRIS		4
Special Needs		11
St Luke Early Learning- QRIS		4
Susie C. Holley Cradle- QRIS		4
Tots Town- QRIS		5

Trinity Elementary Childhood- QRIS		4
<i>Subtotal</i>		617
<i>Total</i>		1,434

*Data were provided by the Office of Quality and Customer Service/Educational Technology Services.

**Schools and programs included in evaluation study sample.

QRIS computers were distributed for the purpose of improving the quality of education at community provider sites that have partnered with Broward County Public School for the Quality Rating and Improvement System project. The school has students that are boundaried to attend a Superintendent school in Broward County. The utilization of these computers is intended to assist in continuous improvement of student achievement through the use of technology as outlined in the vision of the Digital Divide Program.

As indicated in Chart 3, Dell TechKnow provided 460 computers to middle schools in Broward County. The terms of the Dell Foundation grant stipulated that computers would only be provided to middle schools.

Chart 3. Number of Dell TechKnow Computers*

School	Number of computers
<i>2005-2006 and 2006-2007</i>	
<i>Perry Middle**</i>	80
Rickards Middle	62
New River Middle	67
Lauderhill Middle	46
Lauderdale Lakes Middle	59
Sunrise Middle	61
<i>2007-2008</i>	
<i>Arthur Ashe Middle**</i>	85
<i>Total</i>	460

*Data were provided by the office of Quality and Customer Service/Education Technology Services

**Schools and programs included in evaluation study sample.

The parents/guardians who are provided free computers for home usage are expected to participate in training about the use of the computer and the software that was loaded on the computer. Initially, during the pilot year of the program at Lauderdale Manors Elementary School, the parents/guardians who were selected by their local schools to receive a free computer for home usage were required to attend a training session at the Rock Island Professional Development Center. Staff was available to conduct the training sessions for the parents/guardians, and Education Technology Services (ETS) staff were on hand “to handle the paperwork and tech support. If a computer went down, ETS staff was on hand to swap it out with a spare. Staff was on hand to handle the paperwork, ensuring that all serial numbers were recorded accurately, and that parents signed all forms before leaving with their Digital Divide computer.” (personal communication, Mary Baker, July 8, 2008). Thus ETS staff was able to record the serial numbers for the computers that were distributed and collect the paperwork the District required of parents/guardians in order to transfer ownership of the computers. It was envisioned that this would be the model for training of parents and transferring ownership of computers to parents.

As described by Mary Baker,

“... one of the purposes of the pilot program was to identify the issues with building a Digital Divide program that could scale to the size of Broward County Public Schools. We established forms and procedures for accountability in the pilot year, and then encountered new issues in the second year when we had multiple schools participating. We redesigned databases for program accountability, and worked through new procedures with our refurbishing team as scenarios arose. By the third year, we felt that we had worked through most of the issues, and now have a procedure to record and track down to which computer is distributed to which family on a particular date/location.” (personal communication, July 8, 2008).

After the first year, the setting for the training sessions was changed. Principals who became involved in the Digital Divide Program requested that training sessions be held at their local schools rather than at the Rock Island Professional Development Center. This meant that the Digital Divide Program became, in effect, decentralized, with the Education Technology Services staff having less oversight in the distribution of computers than it had with the pilot program at Lauderdale Manors Elementary School, and less oversight of the process of collecting signed “equipment release forms” with original signatures as backup for the database entries. The

distribution of computers to parents and the paper trail that recorded the movement of computers from the district to the family became the responsibility of the local school officials.

As described by Mary Baker,

“Previously, when we were at the site during the training, we were guaranteed to get a signed form for each computer distributed that day. When we encountered the scenario where training was held at the school site, we could not rely on receiving back a signed form for each computer.” (personal communication, July 8, 2008).

The training provided to the families that were to receive the district-refurbished computers offered an orientation to the structure and use of computers, operating systems, keyboarding, and the software loaded on these computers. The training also included how to do routine computer tasks and maintenance such as deleting files, creating files, and disk cleanup. The training provided an overview of word processing, PowerPoint, Excel and other features of Microsoft Office and/or Apple Works. Also covered were the basics of how to write a resume and letter, and prepare income taxes. A basic introduction to the use of the Internet was provided, noting how Internet access could be purchased and the resources available on the Internet. The use of the Internet to find job openings and completing job applications was also reviewed. An overview of safety issues was included such as avoiding computer viruses and the use of chat rooms and other online locations.

Interviews with District staff suggests that in future years computers available through the District’s surplus inventory will likely involve a significant number of laptop computers rather than desktop computers. According to District officials, the District will be purchasing laptops for teachers which would mean that approximately 17,000 laptops will be going off warranty and should be available for the program in coming years.

Opportunities for Corporate Sponsorship

An interview was conducted with Nina Randall, Executive Director and Merrie Meyers-Kershaw, Director of Community Involvement of Partners in Education, Inc., Broward County Public Schools’ school-business partnership program. Partners in Education, Inc. is a collaboration of the School Board of Broward County and the Junior League of Greater Ft. Lauderdale and the Greater Fort Lauderdale Chamber of Commerce.

The role and function of Parents in Education was discussed as well as the wealth of resources available on the Partners in Education website (<http://www.browardpartners.com/>) for institutions interested in developing corporate-school partnerships. Examples of different partnerships operating in Broward County were described.

Several areas of concern were raised about the need to structure and develop protocols for school-corporate partnerships that recognize the cost of any computer distribution and computer-related initiatives. Both of the staff interviewed indicated that there had been numerous instances of corporations donating computers that were, in effect, “worthless.” The amount of time that is needed to determine which computers are functional and the cost involved in storing, repairing and refurbishing these computers, and distributing these computers can be considerable. They noted that one must be cautious that corporations are not donating non-viable computers to schools as a “tax write off.”

Any school or other program seeking donations of computers or other computer-related resources from corporations must make sure to have a policy and clear guidelines in place which insure that the computers being given are viable to avoid the delivery of “truckloads of worthless computers.” Staff worried about private groups “...dumping unwanted computers to gain a tax ride-off,” leading to countless hours of District staff time “mining” donated equipment for worthwhile computers.

There are numerous models that exist of computer donation programs, with some more expensive than others. Some models rely on a large number of volunteers who screen computers that have been donated and/or volunteers with the time and knowledge needed to harvest computer parts. Others models pay to outsource the task of screening donated computers, repairing and refurbishing donated computers, and distributing these computers. During the interview it was suggested that a rigorous examination of the different models might be conducted by surveying the persons in the Technology Leadership Network of the National School Board Association/ the Council on Urban Boards of Education (CUBE) (<http://www.nsba.org/>) or members of the Council of Great City Schools (<http://www.cgcs.org/>).

The Partners in Education program staff interviewed suggested that the District explore with the Broward County Library ways to collaborate and involve them in the Digital Divide Program. The Broward County Library currently offers computer literacy courses in computer applications,

the World Wide Web, PowerPoint, and e-mail. Classes are offered in English, Spanish, and Creole, and cost \$10 per class. They also suggested that neighborhood schools involved in the Digital Divide Program may wish to encourage parents and students to register for computer classes that have been collaboratively developed with the local library. The software holdings of the local County Library might also be enriched with specific educational software such as educational games, textbook CDs, and FCAT tutorials that students and their families can use on their newly acquired home computers. Staff also suggested that the District explore the question of the public library accessing software for which the District has a site license. Staff also raised the question of the allocation of time a person can use a library computer. Discussions about extending the amount of time persons in the library are able to use the computers might be considered. Currently, staff noted, libraries may limit computer use to 20 or 30 minutes, which might be insufficient for homework assignments and other such activities.

Section 5.

Lauderdale Manors Elementary School

Lauderdale Manors Elementary School served as one of the settings for the pilot of the Digital Divide Program in 2005-2006, and has been involved with the program for three years (2005-2006, 2006-2007 and 2007-2008).

According to the District's Office of Quality and Customer Service/Educational Technology Services, a total of 183 computers were made available to local families with students attending Lauderdale Manors Elementary School through the Digital Divide Program. As indicated above in Chart 2, during the first year of the program (2005-2006), 127 district-refurbished computers were distributed to students and their families. During the second year (2006-2007), 26 district-refurbished computers were distributed to students and their families. During the third year (2007-2008), the school received 30 district-refurbished computers. (Chart 3).

The school's current and previous Principals were interviewed as well as two staff members, the Community Liaison and the Technology Specialist. Two parents/guardians met with the external evaluators for a focus group and completed questionnaires. Nine other parents/guardians, who were unable to attend the meeting, completed questionnaires. In addition, 13 students participated in focus groups and completed questionnaires.

Principals and Staff Impressions of the Program

Two Principals -- the Principal at the inception of the Digital Divide Program, Dr. Deedara Hicks, and the current Principal, Heather Hedman-Devaugh, who began oversight of the program in 2006-2007 -- were interviewed for this evaluation study. Both were asked to discuss why Lauderdale Manors Elementary School has been interested in participating in the Digital Divide Program, and about the expected outcomes of their school's participation. Also interviewed and completing a questionnaire were two staff from the school who were actively involved in the Digital Divide Program since its first year -- the Community Liaison and the Technology Specialist.

The responses provided by the two Principals and the school staff indicated that the school's involvement in the Digital Divide Program had been motivated by several factors. Primarily their interest in the program had been motivated by a desire to "...level the playing field for students."

Their informal estimates were that more than 30% to 50% of the students in the school did not have a computer at home.

Distribution of computers to students and their families was also viewed by respondents, as a strategy to promote "...parental involvement in their children's education" and encourage students "to do well on the FCAT." One of the Principals interviewed indicated an interest in the data that was being collected by this study, since the school has had little intimate knowledge of the usage of the distributed computers by students and family members in the home. There was a desire to know, "what effect would the computer have on the family."

The two Principals, the Community Liaison, and the Technology Specialist were asked to describe the types of computers distributed to families, and the software that were provided. They indicated that at the beginning of the program, during its first year, 2005-2006, only desktops were available for distribution. During the second year of the program, 2006-2007, only laptops were available. In the program's third year, 2007-2008 both laptops and desktops were available.

Participants were asked to address the question, "How did your school determine which families would receive the Digital Divide Program computers?" All agreed that they were required to identify students who did not have a computer at home. Initially a three-step process was utilized. The initial step in identifying the families that would receive a computer for their home relied primarily on classroom teachers to identify students who did not have a computer at home by informally asking students about the technology available in their homes. Subsequently, parents/guardians who were perceived to be involved in their child's education were also identified. Households where there was a clear "potential to actually use the computer at home" were identified. In addition, indicators of parental involvement were considered. Indicators such as participation in the PTA or regular attendance at parent-teacher conferences. Finally, evidence of a commitment to attend computer training had to be provided by parents/guardians interested in receiving a computer. Parents/guardians who met all the criteria but were unable to attend training were not considered for receiving a computer through the Digital Divide Program.

During the second and third years of the Digital Divide Program, the criteria for receiving a computer were expanded to include "...the top 10 or 20 [students] who made greatest progress on the FCAT; the students who showed signs of 'academic improvement' as measured by performance at a Level 4-5 on the FCAT. During the third year of the program, one further

criterion was used. The 25 students who received the highest scores on the FCAT were given a special bonus by being eligible to receive a laptop, instead of a desktop computer.

When asked about the training provided to family members, both Principals and the staff interviewed indicated the importance they assigned to the training session that parents/guardians were required to attend. Most of the trainers were teachers. The training provided was offered on Saturdays. During the first year a continental breakfast was provided. During the first two years of the program the training was conducted at Rock Island. There was reportedly excellent attendance by family members, with School Board members attending as well.

The Principals and staff indicated that in the first year of the program there had been five training sessions, each lasting three to four hours. Family members of all ages, “from age 19 to 90,” attended these training sessions. The training program was tailored to acknowledge the varying levels of computer literacy of participants. Some of the older family members, for example, had “trouble manipulating the mouse.”

After the first year of the program, the training consisted of two four-hour sessions. The two sessions involved a basic introduction to the computer hardware and software, the parts of the computer, how to turn on the computer, how to use the keyboard, how to use application software such as Apple Works, Microsoft Word and PowerPoint, how to create files and navigate the screen as well as prepare letters and create folders. During the third year, the staff introduced a new idea of having joint parent and student training with Creole and Spanish translators available for parents/guardians. A manual for parents/guardians was developed with an overview of what was covered during the training sessions.

Respondents noted that parents/guardians were encouraged to follow up on the training sessions provided by participating in the school’s “Tech Nights,” which were available to all family members of students in the school. Parents/guardians were encouraged to attend “Tech Nights” to learn more about computer technology. Portions of the “Tech Night” programs targeted the needs of parents/guardians who had received computers for their homes. During one year, about “60-70% [of the family members] came back for subsequent training” during “Tech Night.”

It was clear during the interviews with the Principals and staff at Lauderdale Manors Elementary School that there was a high level of commitment to the Digital Divide Program. The Digital

Digital Divide Program was part of the school's SIP (School Improvement Plan). As a Title I school, the Digital Divide Program was an integral part of the parent involvement activities needed to improve school performance.

The Principals and staff interviewed were very invested in making sure that the parents/guardians were able to use the computers that were given to them. One Principal indicated that parents/guardians were directed to the Technology Specialist as a contact if they had any problems after their training session when they took their computer home. One staff member indicated that they "would let the parents bring in the computer to school for trouble-shooting." Another staff member reported that she went to one parent's home to help her troubleshoot problems with using the computer.

The Principals and staff interviewed described a number of problems that were present during the first year of the program. The first group of desktop computers distributed to families was not configured properly. Families who wanted Internet access reported that, "there were problems of Internet connection with the desktops. They were not wireless." The laptops that were subsequently distributed were ready for an Internet connection.

Several problems were identified by the Principals and staff regarding use of the distributed computers. Most of the families could not afford a connection to the Internet, or did not have enough information to know how to connect to the Internet. Also, many were not able to purchase a printer to use with their computer. Those who did have a printer relied initially on a donation of printer paper by the Chamber of Commerce. Subsequently they needed to purchase the cartridges and paper on their own, which they were not able to do within the family's budget. Many of the families could not afford a printer, printer paper, or printer cartridges on their family budget. The school gave the students jump drives so they could bring work completed on their home computer to school and print their work on the school's printers. Those students who had received a laptop would sometimes bring their laptop to school to print the work they had saved on the hard drive. Staff, however, discouraged this practice because of safety/security issues surrounding carrying a laptop to and from school.

The Principals and staff were asked about the "costs" associated with the Digital Divide Program. There was a consensus that the amount of staff time dedicated to the Digital Divide Program was not significant. During the first year, one Principal noted, the "costs" consisted of the time spent

by staff who conducted the training workshop for the families receiving computers for which "...the school paid for half and Instructional Technology paid the other half." In subsequent years, one interviewee reported that tasks related to selecting families eligible to receive a computer, preparing for training sessions, conducting the training session, and the distribution of computers accounted for an average of "...2-3 hours" per week, "maybe not that much." Another interviewee thought it might be about "...45 hours per year, 15 hours per person per year" for each of the three persons involved in the program. Most agreed that it was difficult to assign a cost to program-related tasks since the tasks associated with the program "were done anyway." Both Principals agreed that the staff time spent on the Digital Divide Program "...was integrated into what we were doing anyway with parents and students on a daily basis."

The Principals and staff were asked if classroom instruction had changed with the distribution of computers to students. All agreed that since many of the students at the school still did not have a computer at home it would have been "unfair" to require use of a computer for homework. One Principal said, "Most of the assignments are pencil and paper." At the same time, the other Principal indicated that for those students who do have computers at home, "...the computers are an additional asset for students. Students do technology projects in the classroom which they can now practice at home."

Part of the interviews conducted centered on utilization of the computer at home. The Principals and staff were asked, "Who uses the computer and for what purpose?" It was the staff and Principals' impression that these computers were used mostly by children. These were children in the family that received the computers or relatives who did not have access to a computer in their home who came over to the house.

The goal of educating families to become knowledgeable and comfortable with home-based computers, and to encourage children and the adults in their families to spend time using the computer together, was indicated by those interviewed. There was evidence that parents/guardians used the home computers distributed to them. As noted by one staff member, for example, parents/guardians would mention during phone or face-to-face encounters that they would use the computer "to type a letter," or they would say, "I can do PowerPoint." If they had Internet access, parents/guardians would mention that they had "...applied for jobs on-line, renewed their drivers license on-line." As one Principal noted, "Poverty takes a lot longer for people to get things done. Computers cut the time."

Families were also learning to incorporate computers and software into their life style. One Principal, for example, reported that patterns of gift-giving were changed in some families. According to one Principal, parents and grandparents, indicating the benefits they saw in having a Digital Divide computer at home, told her that they bought software or a second computer for family members, “instead of Nintendo, Play Station at Christmas.”

Parents/Guardians’ and Students’ Experiences with the Digital Divide Program

Parents

Eleven parents/guardians completed the questionnaire which was distributed and collected by the external evaluators and school staff. Two of these parents/guardians met with the external evaluators for a focus group. Nine of these parents/guardians were unable to attend the meeting.

Questionnaire. The questionnaire asked parents/guardians to indicate whether they had Internet access and how many hours in a typical week they used their Digital Divide Program computer. Four of the eleven (36%) respondents reported that they did not have Internet access at the time that they were given the district-refurbished computer, but had since obtained and are paying for Internet access. Seven of the eleven (64%) respondents reported that they did not have Internet access at the time they received the computer, and did not currently have Internet access.

As indicated in Chart 4, parents/guardians reported using the home computers between 1 and 5 hours per week (27%) and between 6 and 10 hours each week (45%). Three parents/guardians (27%) reported that they did not use the computer.

Chart 4. Time Spent by Parents/Guardians on Computer, Lauderdale Manors Elementary School (n=11)

	<i>n (%)</i>
0 hours a week	3 (27%)
1-5 hours a week	3 (27%)
6-10 hours a week	5 (45%)

The eleven parents/guardians responded to questions posed about the different ways in which they use the Digital Divide computer. They were asked to check off the activities in which they engaged from a list provided on the questionnaire. As indicated in Chart 5, most

parents/guardians indicated they “play educational and fun games with my children” (81%), noting that they “do Reader Rabbit” (73%), “do Mighty Math” (73%), and “play fun games with my children” (73%). parents/guardians also indicated that they used the computer to “do homework with my children” (45%), “prepare PowerPoint presentations with my child” (45%), “do FCAT tutorials with my children” (18%).

None of the parents/guardians who completed the questionnaire reported that there was anyone in their “household unable to use the computer because they do not understand the language that the computer software is loaded with.”

Chart 5. Parent/Guardian Use of Computers, Lauderdale Manors Elementary School

(n=11)

	<i>n (%)</i>
to play fun games with my children.	8 (73%)
to do homework with my children.	5 (45%)
to look for jobs	0 (0%)
to play educational or learning games with my children.	9 (81%)
to do Reader Rabbit.	8 (73%)
to do Mighty Math.	8 (73%)
to prepare for income tax	0 (0%)
to prepare PowerPoint presentations with my child.	5 (45%)
to do FCAT tutorials with my children.	2 (18%)

Focus group meeting. Two parents/guardians met with the external evaluators for a focus group. These two women were asked to discuss their experiences with the Digital Divide Program. One of the women had received the computer during the spring of 2006; the other woman had received the computer during the spring of 2008. One of these parents/guardians had Internet access at home. Neither had a printer at home. Both had received desktop computers.

These two women reported that they had children and grandchildren in each of the grades at Lauderdale Manors Elementary School, as well as in Head Start. Both offered examples of their use of their District-distributed computer.

One of these parents/guardians had Internet access and discussed the methods she uses to make sure her children are not using chat rooms. They described the school-sponsored training that they were required to attend prior to receiving a computer as having been beneficial, noting that it had been, "... fun because you're learning," "...something new," "...not too fast or too slow," and "...worth going to."

They described the skills learned during the training session such as how to create and save files, and how to use PowerPoint, as well as ethical and computer safety issues. Both talked about how their children or other relatives had helped them continue to learn how to use the computer after they completed the school-sponsored training program.

Both women described helping their children and grandchildren with homework and their use of the computer for personal tasks such as finding housing and employment opportunities. One of the mothers was enrolled in a technical school nursing program and used the computer for homework, as well as shopping on eBay and listening to music. The other mother talked about how much she and her children enjoyed playing "Bailey's Book House."

Both mothers described how they interacted with their children when using the computer. One stated that the "kids are teaching me. They say, 'mommy, just do this'." The other said that she often asks her children to "see what they're learning." She noted that sometimes their children show them assignments that they were expected to type on a computer. She also noted that her children were "giving up TV time" to play on the computer which is "good because they're learning." One of the mothers described the fact that since she had several children and other relatives interested in using the computer, she required that they take turns using the computers. She also described creating collective activities out of the computer games by offering treats to children who get correct answers on games. This mother also reported that she has an ESE child and indicated that she was given software by the school appropriate for her child. She noted that the focus of this software was on learning how to read. She reported seeing her son make considerable progress.

Students

Thirteen students participated in two focus groups and completed questionnaires. Six of these students participated in one focus group and seven participated in a second focus group. Two of

the 13 participants were in the 2nd grade (15%), six were in 4th grade (46%), and five were in the 5th grade (38%).

Questionnaire. The questionnaire asked students to estimate how many hours in a week they use the Digital Divide Program computer they received. The responses, as noted in Chart 6, indicate that about one third (31%) of the students report using their computers between 1 and 5 hours each week, 38% used the computer 6 to 10 hours each week, 8% used the computer 11 to 15 hours per week, and 15% used the computer 21 or more hours. One student reported not using the computer.

Chart 6. Time Spent by Students on Computer, Lauderdale Manors Elementary School

(n=13)

	<i>n (%)</i>
0 hours a week	1 (8%)
1-5 hours a week	4 (31%)
6-10 hours a week	5 (38%)
11-15 hours a week	1 (8%)
21 or more hours or more a week	2 (15%)

The students were asked to indicate the ways in which they use the computers they had received from the District by checking off the appropriate items from a list provided on the questionnaire. As indicated in Chart 7, the majority of students used the computer to play educational and other types of learning games (54%). Most reported playing “Reader Rabbit” (62%) and “Mighty Math” (62%). Thirty eight percent used the computer to do homework and 38% prepare PowerPoint presentations.

Chart 7. Student Use of Computers, Lauderdale Manors Elementary School (n=13)

	<i>n (%)</i>
Games	6 (46%)
Homework	5 (38%)
Educational or learning games	7 (54%)
Play Reader Rabbit	8 (62%)
Play Mighty Math	8 (62%)
Prepare PowerPoint presentations	5 (38%)
FCAT tutorials	0 (0%)

When asked what other things they use the computer for, several noted they use it for “MySpace,” “helping my baby cousin learn and charging my MP3 player,” “I use it to play games with my sister,” and “playing school with my sisters and brother.”

Focus group meetings. Students were asked to discuss how they used the computer they received from the school. The students described varied ways in which they use the computer, noting, for example,

“I write poems and save it on the computer.”

“I made a slide show with PowerPoint for my grandmas’ birthday.”

“I write stuff, but can’t print it.”

“I use the computer to play games for fun.”

“to access MySpace”

“for typing”

Only one student indicated having Internet access at home.

The students were asked about family members’ use of the District-distributed computers, and in what ways their families might have benefited from having this resource in their home. The students described using their home computer in interaction with their parents/guardians and other family members. Their discussion included the following comments,

“My little sister [a three-year old] uses it all day. She doesn’t let anyone use it.”

“I teach my Daddy how to use the computer.”

“My mother plays the games I taught her.”

“My cousin who lives with me uses it.”

The final question posed to the students was, “What problems have you or your family had with the computer?” They indicated the following:

“The computer was not working for two days ... frozen. Then it stopped freezing.”

“We have no Internet connection.”

“The games are too babyish.”

“I need more memory and the Internet.”

“I have no printer and paper.”

“Give us laptop instead of desktop computers.”

Section 6.

Arthur Robert Ashe Jr. Middle School

Arthur Robert Ashe Jr. Middle School has been involved with the Digital Divide Program since the program's pilot year, 2005-2006. During the first and second years of participation in the Digital Divide Program (2005-2006 and 2006-2007), the school received district-refurbished computers. During the third year of involvement (2007-2008), the school was part of the District's Dell TechKnow grant.

According to the Office of Quality and Customer Service/Educational Technology Services, the school received 125 district-refurbished during the first year of their involvement in the Digital Divide Program, and 25 district-refurbished during the second year. (Chart 2). In 2007-2008, the school was sent 85 desktop computers from the Dell TechKnow program. (Chart 3).

The school's current and previous Principals were interviewed, as well as four staff members: the Television Production Teacher; the Curriculum/Micro-Technology Specialist, the Technology Specialist, and the Community Liaison/Instructional Technology Coach. Twenty four students participated in focus groups and completed questionnaires. None of the parents/guardians who had received a computer attended the scheduled focus group. The 24 students who attended the focus group meetings were asked to bring a copy of the parent/guardian questionnaire home for completion and return it to the school. Two questionnaires were completed and returned to the school by these students.

Principal and Staff Impressions of the Program

Two principals were interviewed for this research report. One principal, Dr. Wright-Hicks served as the school's Principal during 2005-2006, the Digital Divide Program's pilot year. Andrew Luciani served as the school's Principal during the second (2006-2007) and third year (2007-2008) of the school's involvement in the program.

Four staff members participated in the evaluation: the Television Production Teacher; the Curriculum/Micro-Technology Specialist, the Technology Specialist, and the Community Liaison/Instructional Technology Coach. Each completed a staff questionnaire in which they indicated that they had been involved in the Digital Divide Program for one year, 2007-2008, when Dell TechKnow was operating at the school.

Purpose of participation in Digital Divide Program and program outcomes

The two Principals and staff were asked to discuss why their school has been participating in the Digital Divide Program and about the expected outcomes of their participation. They estimated that 75% of the students at the school did not have a computer in their home prior to their involvement in the program. (An estimate of how many families with a computer at home have an Internet connection was not available.).

The overriding purpose of becoming involved in the Digital Divide Program was to address the digital divide present in the County, to develop computer literacy skills among students and their families, and expose them to the resources available through the Internet. As stated by several persons, the purpose of becoming involved in the Digital Divide program was,

“... to close gap between haves and have nots.”

“We are a low SES school. Kids did not have access to technology at home.”

“...to bring the world to my students. There is no better way to do it. Our kids never get out of the area. Their world is the government housing project. They can visit other places via virtual tours.”

“We knew our feeder school [Lauderdale Manors Elementary School] had the Digital Divide Program and we wanted to collaborate with them.”

Other stated outcomes were reflective of the goals articulated by Dell for the Dell TechKnow program and the structure of Dell TechKnow:

“The computers, especially for female students, would get kids interested in technology. The computers could close the gap. Girls lose interest in math and science by the middle school. It is a way to get girls interested in math and science.”

“There is a newfound appreciation for the hardware and the software”

“Students have understanding, an interpretation of how a computer works, its components, the vocabulary, trouble shooting skills during use of TechKnow knowledge in class and at home”

The staff believed that the students who completed the Dell TechKnow training were at a level of “an on-site Tech person,” since “they know how to disassemble and assemble the computer.” Staff indicated they believed the students could be “an A+ certified technician, of the caliber of recognized by Microsoft certification, if they had a few more months of education.”

The students who participated in Dell TechKnow also attained a heightened status within the school community. An outcome of students' participation in Dell TechKnow was, as one staff member noted, "that the kids who completed the class are looked at by other students as the rock stars, not nerds or geeks."

The need for parent participation as expressed by student-parent engagement and interaction between parents and the school was highlighted in other responses pertaining to the purpose of the school's involvement:

"... to provide opportunities for kids to teach the parents ... to offer social opportunities for students to relate to parents. "

"...to promote parent involvement. Parent involvement has been a goal. This is one vehicle to attract parents to get involved in school."

"... to increase parent participation. Parents have not had exposure to computers. Some know about computers from work but many don't work, or have jobs where technology is not involved."

Another outcome of the Digital Divide Program was, as noted by one Principal, "...positive public relations for Ashe Middle School." Parents/guardians appreciated receiving refurbished computers and the positive publicity afforded the school had encouraged partnership with corporations and corporate contributions. For example, after reading an article in the Miami Herald about the Digital Divide Program, a local architectural firm contacted the Principal indicating that they wanted to develop a 10-week internship program for 10 students. As described by the Principal,

"These students were transported to the firm's office along with two teachers and were able to work alongside their professional staff in the application of technology. They are provided with lunch in the corporate dining room. They see staff as role models. The students are learning about architectural/engineering technology, and are expected to come out with a full product in office design."

The school has received numerous commendations for the Dell TechKnow program. During 2007-2008, the school, the Broward School District and Dell, Inc. received a tribute from the Florida House of Representatives, a Proclamation from Broward County and a letter of congratulations from Governor Charlie Crist was received acknowledging the Fall 2007 graduating class of Dell TechKnow students.

The Principals and staff were asked to discuss if the school's participation in the Digital Divide Program had any impact on classroom instruction. One staff member thought that,

“Teachers are more willing to make the homework being done using technology as an option. For more homework assignments, students can or cannot use technology, depending if they have access to a home computer. Students without home computers can use the school's media center which is open late or the local library.”

“...an awareness among faculty of student's level of interest in technology”

“Students can be more creative... learn how to make a video folder”

“One student made a video scrapbook for Mother's Day.”

When asked about the use of computers by family members, the Principals and staff noted that parents/guardians have told them, during informal discussions, that “since the kids brought home the computer, they are learning from the kids” and that they “sit down and use it with kids.” One grandparent described using the computer to email her sister and said,

“He's [her grandson, a Dell TechKnow student] a good boy. He sat with me and taught me how to do it. If you would see the time and patience he has with me... We set up an email Yahoo account.”

Staff reported that parents/guardians have not had “this kind of exposure” to computer technology and applications. The school offers “Tech Nights” encouraging all family members to learn about computers. During the Digital Divide Program orientation parents/guardians have been able to learn keyboarding, about Internet resources and safety, and about FCAT Explorer and “Virtual Counselor” which enable parents/guardians to access their child's grades and FCAT scores online. Other parents/guardians were more knowledgeable about the computer and the Internet, and would call “... to ask us how to pay their FPL [Florida Power and Light] bill on-line... and other websites”

Selection of students and families for receipt of computers

The Principals and staff were asked to describe how they determined which families would receive the Digital Divide Program's computers. The responses provided indicated that initially the criteria for receiving one of the District's refurbished computers was that the family did not have a home computer and that there was evidence of parent participation, either by attendance at parent advisory organization meetings or parent-teacher meetings, or a parent's commitment to attend two computer training sessions.

During the third year of participation in the Digital Divide Program, when the Dell TechKnow program was introduced, the criteria broadened, in part, reflecting the expectations of Dell. Students requesting a computer had to have a minimum grade of C+, a good school attendance record, and evidence of good school behavior. Students were required to sign a Student Contract indicating they were voluntarily agreeing to strive to continue this level of performance. Efforts also were made to distribute computers equitably, with at least half of all computers distributed to female students. Attention also was given to distributing computers to students across grade levels. Parents/guardians, accompanied by their student who attends Arthur Ashe Middle School, are also expected to attend an orientation session prior to receiving the home computer.

Training and Resources

Training sessions during the pilot year, 2005-2006, provided a six-hour “mini-camp” which included an orientation to the components of a computer and the uses of the computer and software, as well as troubleshooting. A training manual, developed by the program was utilized. One concern that had to be addressed was the wide disparity in computer literacy and skills among parents/guardians. As stated by one staff person, in some cases,

“We had to teach them how to turn on the computer. It was difficult to get them involved if they had not finished high school. They came and we had to make them feel comfortable with a computer.”

During the pilot year, staff realized that students were “tech-savvy,” and invited them to the training sessions as well. During this year, the families involved received one free subscription to the American Online, Inc. (AOL) Internet service, paid for by Dell. Internet use was a core component of the training. During the first year, the school was also able to provide the youth involved in the program with free jump drives.

The Principals and staff were asked to discuss the components of the training that was provided as part of the Digital Divide Program. The training was initially based on the expectation that both the student and members of their family would attend the training offered. An assumption was made that the students receiving computers for their homes had a basic knowledge of computer technology through their classroom instructional activities and could assist their parents/guardians with the computers they received. This meant that instruction in the workshops could proceed at a faster pace and cover advanced topics.

The school staff developed a handbook for parents/guardians which offered information about the use of the Internet and Internet resources. This included how to access “Virtual Counselor,” find FCAT scores, and their students’ grades and attendance. The Dell TechKnow curriculum “...was tailored to fit our kids...so that they won’t be bored...need to be creative to keep them interested...” Aside from technology, “...instruction also covered ethics, cyber-bullying, how to detect it, not be a victim...” Students who successfully completed the class were given a financial reward.

Costs

The Principals and staff were asked to discuss the cost of the Digital Divide program in terms of staff time and other resources. The staff involved in the Dell TechKnow program felt that each person involved in these programs contributed a maximum of 8% to 10% of their time to the programs. Part of this time is the 40 hours of instruction for students, the orientation for parents/guardians, and the infrequent troubleshooting of computers.

The Principal and staff, however, emphasized the fact that much of what they do for these programs is central to the school’s mission because they positively “impact learning.” They noted,

“We are not officially obligated to do it. This is part of our mission, to do what’s best for kids and families. We are trying to provide best service to parents and kids.”

During the years prior to the introduction of the Dell TechKnow program at Ashe Middle School, less time was spent on the Digital Divide Program. The training provided was conducted on two Saturdays. The other responsibilities of staff involved in the program was identifying the students eligible to receive computers, coordination of the training, and oversight of the distribution of computers and preparation of reports.

Staff reported that little time is given to ongoing maintenance or repairs since family members know this is their obligation and, more importantly, because the youth receiving computers have developed much of the expertise needed for maintenance and repairs of the computers they received.

Parents/Guardians' and Students' Experiences with the Digital Divide Program

Parents

Questionnaire. Two parents/guardians completed a questionnaire. One was the parent of a 6th grade student and the other was the parent of an 8th grade student. Both parents/guardians received their computers during the 2007-2008 school year when computers were distributed through Dell TechKnow. Both indicated that they had Internet access which they or a relative paid for, and that prior to receiving a computer from the program neither had Internet access at home.

In response to the question asking how much time the respondent spends in a typical week on the Dell TechKnow computer, one parent/guardian reported spending 4 hours a week on the computer, while the other parent/guardian reported spending 6 hours per week.

Both parents/guardians indicated that they use the computer at home “to play fun games with my children” and “to look for jobs.” One parent also used the computer “to do homework with my children” and “to prepare for income tax.” The other parent used the computer “to do Reader Rabbit,” “to prepare PowerPoint presentations with my child,” and “to do FCAT tutorials with my children.”

When asked, “Is there anyone, besides you and your children who attend this school, who uses the computer,” one parent/guardian responded in the affirmative. In response to a question asking if anyone in their household is “unable to use the computer because they do not understand the language the computer software is loaded with,” both parents/guardians indicated that this was not the case. Both also reported that they had not “purchased or been given as a gift any other computer since you were given the Digital Divide computer.”

Students

There were 24 students who participated in a focus group and answered the student questionnaire. Nine (38%) of these students were in the 6th grade, 12 (50%) were in the 7th grade, and 3 (13%) were in the 8th grade. Twenty three of these students had participated in the Dell TechKnow program and had received their Dell Computer in the Fall 2007. The other student had received a district-refurbished computer during the 2005-2006 school year.

Questionnaire. Students were asked to estimate how many hours in a week they use the Digital Divide computer. Almost half (46%) of the students used the computers for 1 to 5 hours. Another 4% used the computer for 6 to 10 hours per week, 8% for 11 to 15 hours, and 33% for 20 or more hours per week. (Chart 8).

**Chart 8. Time Spent by Students on Computer, Arthur Robert Ashe Jr. Middle School
(n=24)**

	<i>n (%)</i>
1-5 hours a week	11 (46%)
6-10 hours a week	1 (4%)
11-15 hours a week	2 (8%)
20 or more hours a week	8 (33%)
Unable to estimate	2 (8%)

The questionnaire asked students to check off the activities for which they used the Digital Divide computer from a list provided on the form. Most of the students reported that they use the computers for homework (96%) and for games (88%). Sixty three percent reported using the computer to play educational or learning games, and 67% prepared PowerPoint presentations. Almost half (46%) of the students used the computer for FCAT tutorials. A few students used the computer for “Reader Rabbit” (13%) and “Mighty Math” (17%). (Chart 9).

Chart 9. Student Use of Computers, Arthur Robert Ashe Jr. Middle School (n=24)

	<i>n (%)</i>
Games	21 (88%)
Homework	23 (96%)
Educational or learning games	15 (63%)
Play Reader Rabbit	3 (13%)
Play Mighty Math	4 (17%)
Prepare PowerPoint presentations	16 (67%)
FCAT tutorials	11 (46%)

When asked the open-ended question, “What other things do you use the computer for?” two students reported using the computer to “prepare for income tax” and “look for jobs.” Three students used the computer for “music” or “music videos.” Another four students noted that they

use the computer to check their email and five used it for MySpace, as reflected in one student's response, "... Yahoo to check my e-mail and MySpace to talk with my far away friends...and more which I can't remember." Other responses provided were as follows:

"I help my mom with whatever she needs such as housing, shopping, etc."

"... projects, my mom use, important business and just for fun"

"... creating/downloading videos, searching for animation software, and other software to better my computer"

"I look up people."

"... reports and Microsoft Word"

"... research, projects, chatting, traveling, job hunting, bills, shopping"

"... to keep notes and do projects and to play at times and listen to music but mostly work based before games and play"

"... to search for new things"

Focus group meetings. Two focus group sessions were conducted with students, each consisting of 12 students. Three of the students reported that they were not using their computer. One noted that their computer was "not hooked up yet;" another that it was "not booting right;" and another that it had "lots of pop up stuff." Sixteen of the students indicated that they had Internet access for their home computer.

The students were asked to describe in what ways they and members of their family used the computers they had received from the Digital Divide Program, and if they had found the program to be beneficial. All of the students were positive about receiving the computers and about the training they had received. They noted that they used the computer for homework, school projects, and reports; storing pictures; playing games; email; preparing slide show presentations; "putting my notes on the computer so I don't lose them," and accessing MySpace.

The 23 students who had completed the Dell TechKnow training indicated that they learned a lot about computers including how to do maintenance tasks and repairs. Students, for example, described what they did when their computers were not working,

"When the computer breaks down I use the Dell TechKnow manual and what I remember from the class."

"I had to change my memory."

"I came in and got a new drive."

“Mom went to Radio Shack {for virus protection}.”

“Part of the course talks about a virus detector online.”

The students reported that that family members used the computer and that they spent time teaching family members how to use the computer. One student, for example, described helping, “... my mom with certain programs: how to use Word, about error messages, how to set up accounts.” Another student noted, “my mom does work at home.” Other students stated,

“I did the taxes, food stamps and looking for a job for my mom.”

“My sister uses MySpace.”

“My family plays games.”

“My sister uses it for homework.”

“My mom looks for housing.”

“My sister looks for a job... for work.”

“Mom looks for airline tickets.”

All of the students indicated that they were pleased with the opportunity to participate in the Digital Divide Program. They noted that the training “class was hard” but that they “were taught how to use the computer” and learned “a lot about what is inside the computer.” They noted that the class was large which was troubling to some students. Other students noted, however, that having a large class meant you “made new friends.”

The students felt that the Dell TechKnow program was an asset for their school in a broader way as well. One student stated that the Dell program, “...changes people’s mind about the students being bad.”

The students were asked to share suggestions about ways in which the Digital Divide Program might be improved. The recommendations offered were to have “more teachers, provide free Internet, and distribute free jump drives.

Section 7.

Henry D. Perry Middle School

During 2005-2006 and 2006-2007 Henry D. Perry Middle School was involved in the Digital Divide Program with corporate sponsorship provided by the Dell TechKnow program. During 2007-2008, the school did not receive computers either through Dell TechKnow or District-distributed computers.

According to the Office of Quality and Customer Service/Educational Technology Services, the school received 80 desktop computers through the Dell TechKnow program during its two years of involvement in the corporate program. (Chart 3). Sixty of the computers were distributed to students upon their graduation from the computer training program. Twenty of the computers were either used for spare parts, or distributed to other students and families. As reported by Mary Baker,

"The Dell TechKnow program always sends extra computers to the school so that the instructor has a model and there are spares on hand in case a computer goes bad. Dell does not want the extras returned, so they advise the school to dispose of the extras in any manner consistent with school practices." (personal communication, July 8, 2008).

Interviews were conducted with the school Principal, Assistant Principal, and Micro-Technology Specialist. Nineteen students who had received Dell TechKnow computers participated in a focus group and completed questionnaires. None of the parents/guardians who had received a computer attended the focus groups that had been scheduled for the early afternoon and evening at the school. The 19 students who attended the focus group were asked to give a copy of the questionnaire to their parent/guardian and return it to the school for collection by the school's Micro-Technology Specialist. Five parent/guardian questionnaires were completed and returned to the school by these students.

Principal and Staff Impressions of the Program

Interviews were conducted at Henry D. Perry Middle School with Steve Frazier, the school Principal; Glenn Dansky, the Assistant Principal; and Renardo Nash, the Micro-Technology Specialist, all of whom had been involved in the Digital Divide Program at the school. The Micro-Technology Specialist also completed a questionnaire.

The Principal and staff described the Dell TechKnow program. They reported that the computers distributed were loaded with Microsoft Office but not with any educational games. During the first year of the Dell TechKnow program, 2005-2006, families were provided with 100 hours of free American Online, Inc. (AOL) Internet service. A private contributor also donated printers for the families that were involved in the Digital Divide Program. During the second year of the program, 2006-2007, the school decided to provide jump drives to the participating families.

The Principal and staff were asked to discuss why their middle school elected to participate in the Dell TechKnow program, and the expected outcomes of the school's participation. In response, they noted the need to address the "digital divide" in the County, and the fact that students and their families are deprived of access to the diverse sources of knowledge and information that are provided through the Internet. They stated that,

"We are a needy community. Families don't have computers... limited access to knowledge. Teachers said they can't give assignments because not all the kids have access to a computer."

They also noted that the Dell TechKnow program had "improved community relations and left a very positive impact on families who were active in the community." The program was highlighted in the school newsletter.

The Principal and staff also highlighted other outcomes of the program. They noted that students learned "about computer hardware, software and how to troubleshoot the computers" and about the career path they could pursue with their acquired knowledge and skills. They felt that participating students' self esteem was also enhanced as they had acquired this knowledge and skill base, and that students felt "pride with taking home a computer that they learned how to use for school work at home."

The staff, however, felt that,

"Unfortunately the 80 computers are a drop in the bucket. Students still need to use the Media Center for computer-related assignments. Teachers have projects where they use the computer and the Internet but the students cannot do it at home."

The Principal and staff were asked how they chose the students and their families who would receive the home computer. They indicated that the criteria were, "a free/reduced lunch student,

well-behaved, a minimum of a C average, and living in a home without a computer.” Students also had to complete the after school Dell TechKnow course which was team-taught by the school’s Micro-Technology Specialist and another staff member, Carole Patterson. Both the Principal and the staff agreed that there was no “resentment” on the part of the students who were not selected to receive a computer since they were told “...to try again next year.”

The Dell TechKnow class was taught using the Dell curriculum. The class consisted of two-hour sessions on Tuesdays and Thursdays. During this class, “...students learned how to assemble and disassemble the hardware of the computer, and demonstrate what they learned from the computer class.” The curriculum also covered other topics such as computer security and bullying on the Internet. A video was also prepared by students highlighting the program. Upon completion of the course, a formal graduation ceremony was held in which parents/guardians were invited to see their child receive a formal certificate of completion of the Dell TechKnow curriculum. While these parents/guardians had not participated in the Dell TechKnow program training, they were required to sign a release form that identified their responsibility for the maintenance and security of the computer they were being given to take home.

When asked how many staff hours had been spent, on average, per month in activities related to the Dell TechKnow program, the Micro-Technology Specialist, who had responsibility for coordination of the program and instruction of the Dell TechKnow training curriculum, reported that he spent about 10 hours per month on activities related to the program.

The issue of maintenance and repair of the home computers was raised with the Principal and staff. They felt it was “...a small issue.” Parents/guardians would occasionally call regarding problems with the computers and they would be referred to District staff. The Principal and staff indicated that these problems were small in scale and easy to remedy because “they never heard complaints about what (subsequently) happened.”

The Principal and staff were asked if they were aware of how the computers were used by the students and members of their families at home. In response, they said that students who had Internet access were encouraged to use FCAT Explorer at home and that students were rewarded with “bucks,” a form of school money/currency after demonstrating that they had completed a certain number of FCAT assignments at home.

The Principal and staff were asked about their impressions of the Dell corporate partnership. The noted that while "...the occasional machines were not working" and had to be replaced, they would have no reservations if they had an opportunity to work with a corporate partner again. They noted that they were pleased with the partnership with Dell but did not pursue involvement with Dell TechKnow in 2007-2008 because they had been told that only one or two schools could participate. They had received a memo that Dell TechKnow funding had stopped, and they were not aware that they could apply for district-distributed computers through the Digital Divide Program.

The Principal and staff were asked what changes, if any, they would suggest for the program. All were very pleased with the program and noted that they were interested in continuing to participate in corporate sponsored or other computer distribution programs. They were concerned about funding for the payment of training course instructors and they stressed the need to provide students with jump drives. The need for jump drives was especially important if desktop computers were going to be distributed because many of the families in their community could not afford a printer, printer paper, or printer cartridges.

Parents/Guardians' and Students' Experiences with the Program

Parents

Questionnaire. Five parents/guardians completed questionnaires regarding the Dell TechKnow program. Two of these respondents received a computer in 2006-2007 and three had received computers in 2005-2006. All of the respondents had children in the 7th grade; two also had children in the 8th grade.

The questionnaire asked parents/guardians to indicate whether they had Internet access and how many hours in a typical week they used their Digital Divide Program computer. One of the five (20%) respondents reported never having Internet access. Four of the five (80%) respondents reported that they did not have Internet at the time that they were given the district-refurbished computer but have since obtained access. They indicated that they, or another relative (i.e., aunt, older daughter) were paying for Internet access.

When asked about the amount of time that they spent on the computer, 40% of the respondents indicated that they use the computer 1 to 5 hours. Another respondent (20%) reported spending a

larger amount of time on the computer -- about 28 hours per week. Two respondents (40%) did not use the computer. (Chart 10).

Chart 10. Time Spent by Parents/Guardians on Computer, Henry D. Perry Middle School (n=5)

	<i>n (%)</i>
0 hours a week	2 (40%)
1-5 hours a week	2 (40%)
21 or more hours a week	1 (20%)

While two of the parents/guardians reported not using the computer, most indicated that they use the computer “to play fun games with my children” (60%), “to do homework with my children” (60%), or “to play educational or learning games with my children” (60%). (Chart 11).

Chart 11. Parent/Guardian Use of Computers, Henry D. Perry Middle School (n=5)

	<i>n (%)</i>
to play fun games with my children.	3 (60%)
to do homework with my children.	3 (60%)
to look for jobs	1 (20%)
to play educational or learning games with my children.	3 (60%)
to do Reader Rabbit.	0 (0%)
to do Mighty Math.	1 (20%)
to prepare for income tax	1 (20%)
to prepare PowerPoint presentations with my child.	2 (40%)
to do FCAT tutorials with my children.	1 (20%)

When asked if anyone besides the parent and the child who received the Digital Divide Program computer uses the computer at home, three parents/guardians indicated that other children who do not attend Perry Middle School, and other relatives, use the computer.

None of the parents/guardians said that there was someone in their household who was “unable to use the computer because they do not understand the language the computer software is loaded with.” Three of the respondents indicated that they had purchased or been given as a gift another computer since receiving a computer from the school

Students

Nineteen students completed a questionnaire and participated in a focus group. Fourteen of these students were 7th graders; five were 8th graders. Only nine of these students indicated that they had Internet access at home.

Questionnaire. Students varied in the amount of time they used their computers each week. Twenty six percent reported using the computers between 1 and 5 hours. Another 5% used their computers between 5 and 10 hours. Other students used the computer between 11 and 15 hours (37%) or at least 21 hours (32%). (Chart 12).

Chart 12. Time Spent by Students on Computer, Henry D. Perry Middle School (n=19)

	<i>n (%)</i>
1-5 hours a week	5 (26%)
6-10 hours a week	1 (5%)
11-15 hours a week	7 (37%)
21 or more hours a week	6 (32%)

The questionnaire asked students to select from a list of activities those which they conducted on the computer they had received from the school. All respondents reported using the computer for games (100%), and most indicated they played educational or learning games on the computer (68%). Almost all used the computer to do homework (89%) and prepare PowerPoint presentations (79%). Some students did FCAT tutorials (32%). (Note: Only nine students had Internet access.)

Chart 13. Student Use of Computer, Henry D. Perry Middle School (n=19)

	<i>n (%)</i>
Games	19 (100%)
Homework	17 (89%)
Educational or learning games	13 (68%)
Play Reader Rabbit	1 (5%)
Play Might Math	1 (5%)
Prepare PowerPoint presentations	15 (79%)
FCAT tutorials	6 (32%)

Students were asked to indicate “what other things do you use the computer for?” They identified the following:

“... checking my grades”

“... check my e-mails”

“... to listen to music”

“... Flickr, MySpace, YouTube”

“... e-mail, IM, to read certain things”

“... MySpace, Goggle for research, Yahoo for my e-mail”

“... YouTube, e-mails”

“... MySpace, YouTube, music, pictures, e-mail”

“... for school projects”

“... a lot of other things, gathering information”

“...gathering information”

“... to write an essay on”

“... games, YouTube, MySpace, music, pictures, e-mail”

“... downloading music”

“... watch movies, cartoons”

“... Internet, Microsoft and more”

Focus group meeting. Students reported using the computer for varied purposes such as doing homework, preparing PowerPoint presentations for school, and working on school projects in areas such as World History. Nine of the 19 students in the focus group indicated that they had Internet access which they said they use to check their email, to access MySpace, and to play games the web. The students noted that the school gave them jump drives which they found helpful.

Seven of the students indicated that members of their families also use the computers that were provided by the school. One student reported that their mother accesses email with the computer. Another student reported their grandmother uses the computer for email as well. Three students noted that younger brothers use the computer for tasks such as playing games and accessing YouTube and other Internet sites. Two reported that cousins use their computer to access MySpace and YouTube.

When asked to provide suggestions of ways in which the Digital Divide Program might be improved, students suggested that laptops, instead of desktops be provided, that the school continue to provide jump drives, that CD burners be included with the computers, as well as more memory and more software.

Section 8.

Stranahan High School

Stranahan High School has been involved in the Digital Divide Program for two school years: 2006-2007 and 2007-2008.

According to the Office of Quality and Customer Service/Educational Technology Services. (Chart 2) during the 2006-2007 school year the school received 48 surplus District computers. During 2007-2008 school year the school received 50 surplus District computers. These 98 computers were loaded with Microsoft Office and a CD with a textbook students used in class and textbook supplementary materials. A CD with FCAT preparation materials was developed and distributed. Students in the program were also given a jump drive by the school. In addition, American Online, Inc. (AOL) gave the participating families 30 days of free Internet service.

The school's Principal, the Assistant Principal, and the FCAT Reading Teacher, all of whom were actively involved in the Digital Divide Program at the high school, were interviewed. In addition, nine students participated in focus groups and completed a questionnaire.

Students served as informants of the extent to which family members used the home computers. The design of the Digital Divide Program focuses its training activities at the high school level on participating students with the expectation that these students would educate their parents/guardians and other family members about how to use the computers and would encourage its use by family members. Thus, parents/guardians were not invited to participate in focus groups or complete questionnaires.

Principal and Staff Impressions of the Program

The Principal since the inception of the Digital Divide Program at Stranahan High School, Deborah Owens, was interviewed for this report. Also interviewed were the Assistant Principal Alice Thurston, and Sara Donaldson, the FCAT Reading Teacher.

When asked why the school had decided to participate in the Digital Divide Program, the Principal and staff reported that the program offered an opportunity to address the digital divide in the community. Most of the students attending Stranahan High School are low income with as

many as 60% to 65% receiving free or reduced lunch, and their families do not have computers at home.

The Principal and staff felt that there were numerous positive outcomes of the school's participation in the Digital Divide Program. These included the following:

“Students were able to close the gap between what they learn to do in school, and what can be accomplished at home technologically.”

“Students have become more technologically prepared to work in the real world.”

“Students showed great academic improvement over the duration of the program.”

“Students feel rewarded (a boost to their self-esteem) for hard work and perseverance.”

The Principal and staff also indicated that the school implemented the program “to focus on FCAT. Now they could do it at home instead of rushing through it in class.” The computers distributed included FCAT Test Preparation software and thus, “...now students could participate.” The Digital Divide Program also “...helped the school meet the grant requirements for their 21st century grant.”

The Principal and staff discussed other outcomes of the school's involvement in the Digital Divide Program. They felt that as a result of the Digital Divide Program, “...the students could do a lot of what they used to come to the Media Center to do, this time at home...” They said it was their experiences that the students now “...could take their time and do a better job.”

The Principal and staff indicated that they have been insistent that students “earn” the computers available for distribution through the Digital Divide Program. The criteria the school used in selecting program participants included that the students' family not have a computer at home, the socioeconomic status of the family, the student's participation and behavior in school activities, and parents/guardians attendance at a computer training session. After school teachers are asked to select students who are conscientious about participating in after school FCAT prep classes and other after school activities. This includes ESOL students.

The Principal and school staff did not think there was any resentment generated among students who did not receive a computer since, “...it was very clear who the deserving students were. They were very disciplined students. Everybody knew them.”

The Principal and staff described an extensive incentive program initiated at the school acknowledging the accomplishments of students in terms of improvement on the FCAT, attainment of significant FCAT scores, and performance on the BAT (Benchmark Assessment Test). Prizes were offered which included computers for home use. In addition, the computers were used as incentives to National Honor Society students who could earn a laptop if they served as tutors and other noteworthy activities. These students were encouraged to take good care of the laptop given to them so they could take it to college with them.

The Principal and staff indicated that a 'family night' was established for Digital Divide Program parents/guardians and students to come to the school for computer instruction. Instructional activities were provided by the school's computer technology person and involved an hour of basic instruction on computer hardware and shortcuts for utilization. The class demonstrated what parents/guardians could do at home with their computer. The instruction included an overview of the keyboard and computer parts, how to access and use "Pinnacle," "Virtual Counselor," and FCAT Central online which provides students' grades and FCAT information. There was little formal training about the computer hardware since it was assumed that "...students are savvy...and we do that on-site" with the high school students. The expectation was that parents/guardians would use the computer as well as the high school students involved, and that "...students would educate the parents about the computer."

The Principal and staff were not sure whether and how their students' parents/guardians used the computer given to them for home use. They, however, did indicate that since so many parents/guardians have two or more jobs, "...what wowed them [parents/guardians] was what they could find out about their student's performance instead of running around from office to office to get the information. They had a connection between school and home."

The staff was asked how much time school personnel spent on the Digital Divide Program. One indicated that she spends one hour, on average, per month on the Program; another staff member noted that she spend 12 hours, on average, per month.

The staff reported that only a few of the parents/guardians who had received computers had contacted the school with concerns about repair needs. The staff was able to easily diagnose the problem and suggest ways to remedy it.

The Principal and staff were asked what changes, if any, they would suggest for the Digital Divide Program. All were very pleased with the program. They did think, however, that it would be helpful for the families and students if the computers distributed were loaded with “four times as much” memory since some students said it takes a very long time to open files and complete tasks on the computers. In addition, they thought the computer distributed should be loaded with more programs including Adobe Publishing. They also indicated that the next wave of computers distributed should be equipped for wireless Internet connections, and that funds should be available to provide each student with a jump drive. Another suggestion was that students be given carrying cases.

Students’ Experiences with the Program

Questionnaire. Six of the nine students (66%) completing the questionnaire were in the 10th grade. Another two were in the 11th grade (22%) and one was in the 12th grade (11%). All nine students received their computers from the District during the 2006-2007 school year.

The questionnaire asked how many hours a week these students used the computer they received through Digital Divide Program. As indicated in Chart 14, about one half (56%) of the students indicated that they are on the computer between 1 and 5 hours a week. Another 11% reported using the computer 6 to 10 hours, and 11% used the computer between 11 and 15 hours each week. The remaining students spent 21 or more hours on the computer (22%).

Chart 14. Time Spent by Students on Computer, Stranahan High School (n=9)

	<i>n (%)</i>
1-5 hours a week	5 (56%)
6-10 hours a week	1 (11%)
11-15 hours a week	1 (11%)
21 or more hours a week	2 (22%)

All (100%) of the students said they use the computer for ‘homework.’ Students also used the computer to “prepare Power Point presentations” (44%) and for “FCAT tutorials” (44%). Forty four percent reported playing games. One student (11%) reported playing “educational or learning games,” one student (11%) played “Reader Rabbit,” and one student (11%) played “Might Math.” (Chart 15).

Chart 15. Student Use of Computer, Stranahan High School (n=9)

	<i>n (%)</i>
Games	4 (44%)
Homework	9 (100%)
Educational or learning games	1 (11%)
Play Reader Rabbit	1 (11%)
Play Might Math	1 (11%)
Prepare PowerPoint presentations	4 (44%)
FCAT tutorials	4 (44%)

When asked what other things they used the computer for, they reported the following:

“...do some research, talk to my friends on line, and taking test”

“...web site server, exchange information via the Internet”

“I use the computer to check out something that I need.”

“I also use the computer to surf the Internet and to do essays.”

“...projects and special FCAT practice”

“...projects and homework”

Focus group. Nine students met with the external evaluators. Five students participated in one focus group. Three participated in another focus group. One student who was late in arriving was interviewed individually. All of these students completed a questionnaire form.

Four of the nine students reported they had an Internet connection to their home computer. Five also reported that they had a printer connected to their home computer. Several students reported that their computers were not working properly because they had viruses. One took her computer to Radio Shack and purchased a virus detection program. Most of the students reported that they were adept with using the jump drive they had been given and the software provided to them on CDs.

The students discussed the different uses they have found for their computer. They noted that they use it for FCAT practice, using “both the CD the school gave me and on-line,” as well as for homework and school projects, and the math and reading games (“Reading Rabbit” and “Mighty Math”) the computer came with. They also use it to check their grades online and for email.

Several indicated that other persons in their household or other family members use their computer. Several students noted that younger siblings, older siblings, and cousins use the computer. They noted that the math game was popular in their household (“Mighty Math”). One student stated, “All my family uses it.”

Some of the students reported that they did not get jump drives but were able to email assignments to themselves, go to the library, access the file in their email and print it. Others reported that they had purchased jump drives.

The students were asked if they had any suggestions of ways in which the Digital Divide Program might be improved if the school were to continue participating in the program. Students noted that the computers distributed had limited memory, and more memory was needed. One student reported that “it takes 15 to 20 minutes to start up.” Another reported that they “could not use FCAT tutorial because the computer is so slow. One student reported that he was able to add memory to his home computer. Students also asked that more educational games be loaded on computers. They said that the games provided were not age appropriate for high school students.

Section 9.

Head Start

The Head Start program in Broward County has been involved with the Digital Divide Program for two years, 2006-2007 and 2007-2008.

According to the Office of Quality and Customer Service/Educational Technology Services, the Head Start program received 43 district-refurbished computers in 2006-2007 and 80 district-refurbished computers in 2007-2008 for distribution to families served by the program. (Chart 2).

The computers distributed to Head Start families were loaded with Microsoft Office, Apple Works, and pre-school educational games that focused on language development and mathematics (i.e., “Carnival Countdown,” “Bailey’s Book House,” and “Millie’s Math House”). The computers and the software on the computers provided to Head Start families are similar to those used in the Head Start classrooms.

The Head Start Coordinator was interviewed by the external evaluators. Eight Head Start staff (a Disabilities Specialist, a Clerk Specialist IV/TLC, a Systems Analysts, a Head Start/Early Head Start Specialist/Program Specialist, a Teacher Specialist, and three Parent Educators) participated in a focus group meeting or individual interview, and completed staff questionnaires. In addition, 11 parents/guardians participated in two focus groups organized by the Head Start Coordinator and staff, and completed parent/guardian questionnaires.

Coordinator and Staff Impressions of the Program

The Head Start Coordinator, Shukree Cha-Jua, and eight of the Head Start staff participated in the evaluation of the program. Eight staff members (Head Start Coordinator Shukree Cha-Jua and Head Start staff members Beata Darai, Disabilities Specialist; D. Tischa Weathers, Systems Analysts; Gwen Townsel, Clerk Specialist IV/TLC [Technical Liaison Clerk]; Tanisha McFarlane, Head Start/Early Head Start Specialist/Program Specialist; Cynthia Woodland, Teacher Specialist; and three Parent Educators: Gloria Waller, Katy Scalise, Veronica Everett) participated in this study.

The Coordinator and staff were asked to identify Head Start’s motivation for becoming involved in the Digital Divide Program, and the most important outcomes of the program for Head Start.

They reported that more “than 50% of the Head Start homes do not have computers” and that the program has helped Head Start make “progress in bridging the gap by giving needy families a computer.” They also noted that, the Digital Divide Program complements the mission and goals of Head Start. The program provides children and their parents/guardians with technology skills, and concurrently promotes self-sufficiency and the empowerment of both audiences.

Aside from an appreciation that “parents receive a free computer and software that they could use for home use with their children,” other accomplishments noted by staff members were that parents received basic training in computer skills which “hopefully will instill continued computer learning” and might help parents secure employment that involves some knowledge of computers.

The Coordinator and staff were asked about the extent to which family members use the computers that they receive. Observations made during home visits by Head Start staff indicated that the children were playing the educational games loaded on the computers and that family members were using the computers for multiple purposes. According to one staff member, “...parents say they have a hard time getting on the computer” because the children would always monopolize it. The staff indicated that only about half of the families had an Internet connection at home. Those that did have an Internet connection, however, would often share with other parents’ information on various Internet providers. One Parent Educator noted that while some parents pay for Internet access, “most are happy to just have a computer. At this level they are just happy to put a CD in for kids and play with kids.” Another Parent Educator reported that

“Our parents are very appreciative. They don’t own one [a computer]. They can’t afford it. There is a single mother. She has two kids who just came over from Jamaica. This is a great help.”

One staff member noted that another outcome of the Digital Divide Program was “increased parental involvement in our classrooms, our Policy Council, Parent committees, and Parent Cluster.” Other accomplishments highlighted were that the computer training offered through the program enabled parents/guardians to help their children on the computer since “the classroom technology “...was the same computer and software” the families now had in their homes. Children are able to teach their parents about what they learned in Head Start, and by using the software provided, are able to enhance their reading and math skills. Staff also reported that when there are older children in the home, they use the computer and Internet. Parent

Educators reported that children help their parents when their parents have limited English literacy. They reported that,

“One Spanish speaking woman with a little girl, said, ‘Listen I’m learning more English from my daughter than I learned before. She’s teaching me. She’s turning 5. If I do it wrong, she tells me.’”

“Kids get excited about turning the computer on. They’re familiar with it. They say, ‘No mom; this is how you do it.’ The kid talks in English to her mother.”

The Coordinator and staff indicated that Head Start’s Policy Council played a key role in implementing the Digital Divide Program. They were the group that made significant suggestions about how to select the families that would receive the district-refurbished computers. They suggested that in order to receive a computer a parent/guardian must attend computer training offered by Head Start, as well as “...volunteer 6 hours per month while their child was in Head Start.” These parents/guardians would be expected to sign a document indicating their “intent” to attend cluster/policy meetings, and to share with others information about their involvement in the Head Start program.

The computer training offered to Head Start parents/guardians was a coordinated effort between parents/guardians and staff. The computer training was offered with Creole and Spanish translators. Typically, child care was provided.

The Head Start staff provided each parent/guardian with a manual covering what was learned in the class. Once again, the Policy Council played a role in identifying what needed to be taught during the computer training sessions, especially for parents/guardians with little or no prior computer skills.

Each training session was on Saturdays and was attended by 4 to 6 staff. The size of each session was limited to 30 persons. More than one person from each family could attend the session. Persons who could not attend Saturday classes for religious reasons were provided with individual training sessions. Attendance was kept to verify that each parent/guardian attended the class, and the computers were distributed at the completion of the computer class.

Most of the families did not have any mechanical problems with the computer they received. If they did, the computer was exchanged with another refurbished computer from the Digital Divide

Programs' inventory. The staff indicated that they did provide on-going assistance to parents/guardians for the computer they received either through telephone calls or informal discussions at the Head Start centers.

The Head Start Coordinator and staff were asked about the "costs" of the Digital Divide Program for Head Start. They noted that one of the costs was the salaries that had to be paid to staff who provided the computer training for the parents/guardians on Saturdays. Head Start paid for these salaries out of the "Parental Activity Fund" that is part of the Head Start budget. These funds do not come from the District, and are designed to promote parental involvement.

Another "cost" of the program was time spent during the week on the program. Staff estimated that the six staff present each spent on average 30 hours during the course of a school year on the Digital Divide Program. This time was dedicated to contacting parents/guardians to explain the program and provide assistance with completing the application, and to invite parents/guardians to training sessions. The Coordinator and staff felt, however, that these tasks are part of "...facilitating parental involvement in their children's education," which is an ongoing important and integral part of their professional responsibilities.

The Head Start Coordinator and staff were asked about the "challenges" facing the Digital Divide Program at Head Start. Most felt that the diversity in parents' knowledge of computers and software was the major challenge. As one staff member indicated, "parents come in at different levels." They felt that for some, "the training is too complicated; for others it is too easy. Should we offer training at different levels? Should we follow up and see how they are using it?" One response to this diversity in computer skills was to separate parents/guardians during training sessions based on their skill level. Staff suggested that the application that parents/guardians complete in order to receive a computer through the Digital Divide program should include questions regarding skill level such as, "Have you ever held a mouse?"

Some staff members were concerned about the limited amount of training provided to parents/guardians. Instruction on using the computer as well as using Microsoft Word presented a problem for a workshop that was just held on one day. As one person indicated, "[Microsoft] Word alone is one-day training!" The parents' ability to assist their children at home after a training session was limited since, preschoolers, unlike children in older grades, have had limited

instruction on how to use Microsoft Word. The Head Start children were, however, able to use the educational software.

The staff felt that Head Start's effort at promoting computer literacy is limited. They felt that Head Start "provides the tools, opens the door for them, but they need to follow up. The libraries have free classes on Word." Head Start staff during home visits have found that some parents/guardians' interest in using computers and the Internet has been piqued. "Some parents now have a library card, know the courses given at the library, and use the Internet at the library."

Parents/Guardians' Experiences with the Digital Divide Program

There were eleven parents/guardians who met with the external evaluators to discuss their experiences with the Digital Divide Program. Two focus groups, organized by the Head Start Coordinator and staff, were conducted two evenings at the Samuel Delevoe Park Community Center. Five parents/guardians participated in a focus group one evening; six parents/guardians participated the second evening.

Questionnaire. Eleven parents/guardians completed the questionnaire. Ten respondents reported that they did not have Internet access at home at the time that they were given the district-refurbished computer and did not currently have Internet access at home. One parent/guardian reported that while she did not have Internet access at the time she received the computer, she had since obtained access, for which she pays.

The questionnaire asked parents/guardians how many hours in "a typical week" they were using the computer given to them by Head Start. As indicated in Chart 16, about one third (36%) of the respondents use the computer between 1 and 5 hours per week. Another 27% use the computer more often, indicating between 6 and 10 hours per week. One parent/guardian (9%) reported using the computer 11 to 15 hours per week and another parent/guardian (9%) used the computer 21 or more hours.

Two parents/ guardian indicated that they do not use the computer. One reported that her computer was not working because a CD was stuck in the drive. (This woman was planning to call the Parent Educator with whom she is familiar to see if she could help her fix this problem on phone.) The other parent/guardian reported that she was not interested in using her computer

because she did not have Internet access. In the past, she had Internet access and used the computer when she was attending school. She would take online classes.

Chart 16. Time Spent by Parents/Guardians on Computer in a Week, Head Start (n=11)

	<i>n (%)</i>
0 hours	2 (18%)
1-5 hours	4 (36%)
6-10 hours	3 (27%)
11-15 hours	1 (9%)
21 or more hours	1 (9%)

The respondents were asked, on the questionnaire, “What do you use the computer for?” As indicated in Chart 17, most of the parents/guardians reported using the Digital Divide Program “to play fun games with my children” (82%), “to do homework with my children” (64%), or “to play educational or learning games with my children” (91%). The computer was also used to look for jobs (9%), prepare income tax (9%), or prepare PowerPoint presentations (9%). Eighty two percent of the parents/guardians said they “do Reader Rabbit,” and 73% said they “do Mighty Math.” One (9%) parent/guardian said that they do “PowerPoint presentations with my children,” one (9%) parent/guardian said they did their income tax on the computer, and one (9%) used the computer to look for a job.

Chart 17. Parent/Guardian Use of Computers, Head Start (n=11)

	<i>n (%)</i>
to play fun games with my children.	9 (82%)
to do homework with my children.	7 (64%)
to look for jobs	1 (9%)
to play educational or learning games with my children.	10 (91%)
to do Reader Rabbit.	9 (82%)
to do Mighty Math.	8 (73%)
to prepare for income tax	1 (9%)
to prepare PowerPoint presentations with my child.	1 (9%)

While three of the parents/guardians who completed the questionnaire reported that there were languages other than English spoke in their homes (i.e., Creole and Arabic), none indicated that

there was anyone in their “household unable to use the computer because they do not understand the language that the computer software is loaded with.”

Focus groups. Parents/guardians reported that their involvement with the Digital Divide Program had built their confidence about using computers and computer software. Some of the parents/guardians indicated that they acquired educational software from the public library or from their friends and relatives. One parent/guardian said she received a computer game as a Christmas present from her sister-in-law. In addition, three of the respondents indicated that they had purchased or been given as a gift another computer since receiving a computer from the school.

The participants described how their children were teaching them how to use the computer and were demonstrating their computer literacy. When asked if anyone besides the parent/guardian and the child who received the Digital Divide Program computer uses the computer at home, four parents/guardians indicated that older siblings, cousins, and other relatives use the computer. For example, one older daughter was using the computer for job searches.

One woman described in detail how her computer was used at home. She reported that there was great demand among her children and other relatives to use her home computer. She had to “keep rotating them every 30 minutes” so every child would have a change. Often her Head Start child would argue with the other children saying “it’s mine” and the mother would correct the child, saying “you have to share.” This mother felt that “... This is a good thing.” She felt that her Head Start child “learned how to learn, how to spell, how to go from one program to another. It’s very educational.”

Other mothers noted,

“I see improvement like in the counting; like the math. He couldn’t master them before.”

“My child is getting good. He knows how to turn it on and off.”

“There are computers in the classroom but there are so many kids. They get little time.”

When asked for suggestions of ways in which the Digital Divide Program might be improved, parents/guardians suggested that there be more Spanish translators at training sessions. At times there are many parents/guardians present who are primarily Spanish speakers. If there is only one or two Spanish speaking instructors they are very busy. Another suggestion was that there be a

phone number one can call to troubleshoot computer-related problems such as a stuck CD that she cannot remove

Section 10. Summary and Conclusions

This evaluation report is based on interviews, focus groups and questionnaires from 26 Broward County Public Schools employees, 29 parents/guardians and 65 students involved in selected schools and Head Start that participated in the Digital Divide Program of the Broward County Public Schools. The report also contains information on the total number of schools and the computers that were distributed since the program began in 2005. Based on this database, this section of the report summarizes the findings and conclusions reached after careful analysis of the data.

Question #1: What are the patterns of home technology use among parents/guardians and student participants in the Digital Divide Program?

- a) What software (e.g. word processing, PowerPoint, educational programs e-mail, etc) do parents/guardians and students utilize on their home computer?*
- b) Does language proficiency of the student and family members impact their usage of home computers?*
- c) Do parents/guardians and students engage in activities together on their home computers? Do students assist parents/guardians with home computer usage? Do parents assist students with home computer usage?*
- d) Are home computers linked to the Internet? Is Internet service affordable to the families? What online sites do parents/guardians and students regularly access at home? Are parents/guardians and students familiar with safety issues with Internet access?*

Study Findings:

- Students use the home computer in a number of ways---some educational (e.g. homework and educational games) and some recreational (e.g. e-mail, YouTube, MySpace). Almost all students indicated that they use the Microsoft Office or Apple Works. In a number of cases other family members, both older and younger, were also using the software for educational purposes. The data indicated that at times older family members would be using the reading and mathematics software (Reader Rabbit, Mighty Math) for their own education, even though the software was designed for younger grades. Programs such as Microsoft Word and PowerPoint were also being used by family members. Many of the students, especially those

whose families were able to afford an Internet connection and the purchase of a printer, were able to use the home computer for school-related assignments.

- Language proficiency issues were not noted by students or parents/guardians. None of the respondents indicated that anyone in their households was “unable to use the computer because they do not understand the language the computer software is loaded with.”
- Students who were given a home desktop computer and who could not afford a home printer faced problems in home usage. In many cases, school officials recognized the problem of students only being able to save their work products on the computer’s hard drive and provided the students with a jump drive so they could print the work they completed in the school’s Media Center. For students who were provided a laptop home computer but could not afford a home printer, bringing the computer to school to print work saved on the hard drive presented security issues, and the weight and size of the laptop often precluded their being able to bring it to the school’s Media Center.
- The significant educational usage of the home computer by students and family members is likely related to the criteria developed by each school and the Head Start program for selecting participants for the Digital Divide Program. Schools and the Head Start program when awarding home computers considered the students’ educational motivation and achievements, and/or when possible, the involvement of parents/guardians in their child’s education as reflected in participation in school meetings with teachers and Policy Council. The criteria seem to have yielded students and parents/guardians who were most likely to take educational advantage of the home computer being provided through the Digital Divide Program.
- The school-based computer training provided to parents/guardians in the Digital Divide Program improved the likelihood of the parents/guardians using the home computer. Furthermore, schools that provided continuing education opportunities, such as “Tech Night,” facilitated the parent/guardian’s use of the home computer since school officials noted that Digital Divide parents/guardians would often be in attendance.
- The data collected through this study indicates extensive inter-generational use of the home computer received by families through the Digital Divide Program. Not only does the data

indicate that the students, their siblings and their parents/guardians use the computer at home, but frequently extended family members, such as cousins, nieces, and nephews attending the Broward County Public Schools also utilize the home computer.

- The data indicates considerable inter-generational instruction. Students across ages are able to assist parents/guardians and other relatives with use of the computer software and Internet resources, or demonstrate use of computer software.
- A serious problem of lack of home Internet access among Digital Divide families was reported by staff, families, and students. Given that the maximum educational potential of a home computer is significantly attached to Internet access, this problem limited the utilization of the home computer provided through the Digital Divide Program. Staff suggested that the focus of future corporate partnerships should be on Internet access.
- Some students, especially in high school, complained about insufficient memory on their home computer for many tasks—Internet access, loading programs, downloading documents, etc. They reported this limited their use of the home computer and required them to find another computer to use.

Question #2: What issues and challenges have developed for school officials in implementing the Digital Divide Program?

- a) *What challenges/issues have developed in acquiring computers for the program?*
- b) *What challenges/issues have developed in refurbishing computers for the program?*
- c) *What challenges/issues have developed regarding the maintenance and repairs of the computers that have been distributed through the program?*
- d) *What challenges/issues have developed in training parents/guardians and students for home computer usage?*

Study Findings:

- While in no way reflecting on current or past corporate partnerships such as with Dell, staff were concerned that future corporate partnerships should insure that the donation of computers be of maximum benefit to the Broward County Public Schools. This would

involve the development of a minimum level of quality assurance that insures that the donated computers are viable or have viable components.

- Staff suggested that the District explore with the Broward County Library ways to collaborate and involve them in the Digital Divide Program. The Broward County Library currently offers computer literacy courses in computer applications, the World Wide Web, PowerPoint, E-mail, etc. The classes are offered in English, Spanish, and Creole, and cost \$10 per class. Neighborhood schools involved in the Digital Divide Program may wish to outsource the computer training offered to program participants, or at least encourage them to register for further computer classes that have been collaboratively developed with the local library. The software holdings of the local County Library might also be enriched with specific educational software that students and their families can use on their newly acquired home computers (e.g. educational games, textbook CDs, FCAT tutorials, etc). Staff also suggested that the District explore the question of the public library accessing software for which the District has a site license.

- The transfer of responsibility from Education Technology Services to the local schools for the distribution of computers to families presents a problem in terms of maintaining an accurate and up-to-date paper trail that records which computer was distributed to which parent. Education Technology Services does maintain a file of signed “equipment release forms” with original signatures to ensure accountability for the program. However, in at least one instance we were aware, the Education Technology Services’ office had not received back “equipment release form” months after the computers had been distributed to families. As the size of the Digital Divide Program increases with more schools and families involved, there may become a time when tracking the disposition of the refurbished computers becomes problematic. It probably is appropriate that new accounting procedures be examined to reflect the size and scope of the Digital Divide Program.

- The limited amount of memory provided in the refurbished computers posed challenges for students and their families.

- Suggestions were made about increasing the number of bilingual English-Spanish speaking instructors or instructor assistants during parent/guardian training sessions.

Question #3. What have been the “costs” associated with implementing the Digital Divide Program?

- a) How much staff time is expended in activities related to the program?***
- b) What costs have been incurred for the refurbishing and maintenance/repair of the home computers?***
- c) What opportunities exist for partnership with other private and public entities to share in the costs of the Digital Divide Program?***

Study Findings:

- A total of 1,434 district-refurbished computers and have been distributed through the District’s Digital Divide’s surplus/refurbishing program. In addition, a total of 460 computers were distributed to seven school sites through Dell TechKnow.
- All school personnel who were interviewed expressed a strong commitment to the Digital Divide Program. They considered the cost to be minimal, especially when compared to the benefits of the program for students and their families. All staff felt that the time involved remains small given that there are clear policies and systems in place. If adhered to, the amount of time that staff expends for the program is seen as being minimal.
- Students, families, and staff were all very enthusiastic about the program and its benefits.
- Most of the families who received a home computer did not experience significant maintenance problems with their computer. This was due to the quality of the “refurbishing” (diagnostic and repair work) that was performed on the computers before their delivery to the Digital Divide Program’s participants. School officials indicated that a “rule of thumb” was that only about \$20 was to be spent in repair costs—computer parts-- to fix a surplus computer before it was delivered to the families. Concerns about maintenance or repairs of refurbished computers provided through Dell TechKnow were addressed by Dell TechKnow policy of shipping extra computers for spare parts.
- In some instances, there were hardware problems with the home computers that families received during the training session, or shortly after the computers were taken home. School officials were either able to replace or make adjustments to these computers with other refurbished computers, or with computer parts from the Digital Divide inventory. The

students involved in the Dell TechKnow program were able to make adjustments to computers that were problematic themselves, using the Dell TechKnow inventory of computer parts.

- Some financial costs were incurred by the local schools for the Digital Divide Program because of the instruction that was provided to parents/guardians and students prior to their taking possession of the home computers. Local school officials were able to fund these instructional activities in tandem with the ad-hoc assistance of the Office of Quality and Customer Service/Education Technology Services. In the case of the extensive Dell TechKnow instructional program targeted to students alone, other existing grant money was able to be utilized to fund instructional costs generated by the Dell program.

Question 4. In what ways has the corporate partner model differed from the model employed by the schools involved in the program?

- a) *What have been the strengths and challenges of the corporate partnership with Dell?*
- b) *Have there been differences in the outcomes of the corporate model in terms of parents/guardian and student usage of their home computer and Internet usage?*

Study Findings:

- The Dell TechKnow program was universally applauded by staff, families, and students. Staff reported that the students who received training using the Dell TechKnow curriculum achieved a high level of mastery of computer hardware/software and computer maintenance/repair beyond that which is usually expected of middle-school students.
- The students who received training in the Dell TechKnow program reported increases in self-esteem due to how other students viewed their computer proficiency. Staff reported they were viewed as “rock stars,” rather than as might be expected, as “nerds or geeks.”
- It was assumed that most of the students who were not part of the Dell TechKnow program were competent to use their computers based on the training that all Broward County Public School students receive in technology, in addition to the Digital Divide training provided. However, a number of students reported they were not able to use their computers for periods of time, e.g. hours or days, because the computer “froze” and they did not know how to deal with computer problems. Students would also report their home computer would take an

inordinate amount of time (i.e. 20 minutes) to start up, and were not aware of how to remedy the problem. It appears that for a few of the students and their families that received surplus/refurbished home computers from the District their utilization of the home computer was limited by their lack of computer “trouble shooting” skills.

- Staff at all the schools reported a very positive public relations impact from the Digital Divide Program. Newspaper articles in the local press about the program were well received by the community. Donations that were made to the program in terms of printers, paper, Internet access, and a middle school internship program, reportedly were the result of the positive image of the Broward County Public Schools generated by the Digital Divide Program.

- Some of the staff interviewed suggested that the contacts and resources available through Partners in Education Inc, a collaboration of the School Board of Broward County and the Junior League of Greater Fort Lauderdale and the Greater Fort Lauderdale Chamber of Commerce could be utilized to develop corporate partnerships. Future corporate partnerships should focus not only on the acquisition of usable computers, but access to the Internet and jump drives, especially for students without home printers.

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About the Authors

Dr. Adela Beckerman received her M.S.W. and Ph.D. from the State University of New York. She is currently Associate Professor of Social Work and Director of the Social Work Major at Florida Memorial University. Previously she was Program Professor of Research and Evaluation in the Ed.D. Program in Child and Youth Studies at Nova Southeastern University. She has been on the faculty of Clinton Community College, the University of Vermont, and Florida International University. She has also been a social worker with a drug treatment program and a preschool for children with multiple challenges, a health planner with a Comprehensive Health Planning Agency, and an educator in correctional facilities and on military bases.

Dr. Beckerman has conducted numerous research and evaluation studies in Florida including evaluations of magnet programs and family technology programs for the School Board of Broward County, and magnet programs and tutoring programs for foster children in Miami Dade County Public Schools. Other studies conducted have addressed the service needs of different populations living with HIV/AIDS in Broward County (recently incarcerated persons, homeless persons, men who are having sex with men (MSM), and Hispanic men and women). Other research studies evaluated the benefits of substance abuse services, the impact of welfare reform, the needs of young chronic offenders, and foster care case management of children whose parents are imprisoned. Dr. Beckerman has served on a number of task forces and committees designed to guide education and child welfare policy in South Florida. She has published extensively in the areas of social work education, corrections, cultural diversity, and child welfare policy.

Dr. Leonard Fontana received his Ph.D. from the State University of New York. He has been on the faculty of San Diego State University and the State University of New York. He is currently Senior Professor of Social and Behavioral Sciences at Broward Community College. Dr. Fontana was on the research staff of the National Urban League and the Center for Urban Education, both in New York.

Dr. Fontana has conducted evaluations of community-based service agencies in South Florida, and has directed a number of college-based professional development and environmental education initiatives for K-12 teachers. He has also served on the boards of several non-profit human service agencies. Dr. Fontana has published extensively in the areas of higher education, health care policy, and social welfare policy.

Appendices

Research Instruments

Appendix A. Interview Questions for Principals

Interview with Principal

Introduction

We are conducting this interview with you today as part of an evaluation of the DDP. The purpose of our interview is to better understand, from the principal's perspective, this school's experiences with the DDP, the strengths and benefits of the program, and the challenges this program presented during its implementation.

Questions

- 1) About how long have you been involved with the DDP at this school?
- 2) What has been your role in the DDP at this school?
- 3) When did your school first become involved in the DDP?
- 4) Why did your school decide to participate in the DDP?
 - a) What have been the goals and objectives of the DDP at this school?
 - b) What unique opportunities were provided to students through the DDP?
 - c) What unique opportunities were provided to parents/guardians and other family members through the DDP?
- 5) When were the DDP home computers distributed to families at your school?
- 6) How did your school determine which families would receive the DDP home computers?
- 7) Were there any challenges or issues that developed during the distribution of the DDP computers to the families in your school?
 - a) If so, how were these addressed?
- 8) Have the computers distributed through the DDP needed repairs and/or maintenance?
 - a) If so, how has this been accomplished?
 - b) What costs were incurred?
 - c) What, if any, challenges and issues were raised regarding the maintenance and/or repairs of the DDP home computers?
- 9) How much staff time is currently expended at this school, on average each month, for activities related to the DDP?
 - a) How much staff time was involved, on average each month, when the program first started?
- 10) Are the DDP computers currently being used by the students who received them at home?
 - a) If so, for what purpose?

- b) Are you aware of any problems or difficulties that impede students' use of their DDP computers (e.g., transitioning back and forth from using the home computer/software to those used at school)?
- 11) Are other family members using the DDP home computers? If so, do you know which families members are using the computers, and for what purpose?
- a) Are you aware of any problems or difficulties that parents/guardians are having with using the DDP home computers (e.g. language proficiency)?
- 12) Have teachers changed their approach to instruction, homework and other assignments as a result of the DDP? If so, in what ways?
- 13) We would like to ask a few questions about corporate partnerships. You experienced one year without a corporate partner followed by a year with a corporate partner. Please describe how these two different models operated in your school.
- a) What were the strengths of the corporate partnership?
- b) What were the challenges of the corporate partnership?
- c) Were there differences in the outcomes of the DDP during the year when you did not have a corporate partner and the year when you did in terms of:
- i) Student or parent/guardian/family usage of the DDP computer and the Internet?
- 14) What opportunities do you see for partnership with other private and public entities to share the costs of a DDP?
- 15) We have two final questions we would like to ask you:
- a) What do you see have been the benefits, and obstacles of having the DDP to your school, and the students and families involved?
- b) If you were going to start a DDP, from scratch, what might you do differently? What lessons have you learned from your school's experiences with the DDP?

Appendix B. Staff Questionnaire

STAFF SURVEY

- 1) What is your title/position? _____
- 2) Which school years (e.g., 2005-2006, 2006-2007, and 2007-2008) were you involved in the Digital Divide Program? _____
- 3) What role(s) have you played in the Digital Divide Program?

- 4) What are the *three* most important things that were accomplished in this school because of the Digital Divide Program?
 - a) _____

 - b) _____

 - c) _____

- 5) On average, *each month*, how many hours are you currently involved in activities related to the Digital Divide Program? _____
- 6) On average, *each month*, how many hours were involved in activities related to the Digital Divide Program when the program first started? _____
- 7) Have you changed your approach to instruction, homework, or other assignments as a result of the Digital Divide Program? ___ Yes ___ No
 - If so, in what ways? _____

Thank you very much...

Appendix C. Focus Group Questions for Staff

Focus Group with Staff

Introduction

We are conducting this focus group as part of an evaluation of the Digital Divide Program (DDP). The purpose of our discussion today will be to obtain a better understanding of your school's experiences with the DDP as well as the strengths and benefits of the program, and the challenges this program presented during implementation.

Questions

1. What was the reason your school decided to participate in the DDP?
 - c) What were the expected outcomes?
2. How did your school select the families that would receive the DDP computers?
 - a. Were there any challenges or issues regarding the distribution of computers to families?
3. Since the beginning of the DDP has the school provided any special assistance or training to help the parents/guardians in the program in terms of learning :
 - a. How to use a computer (e.g., keyboarding)?
 - b. How to do routine computer tasks and maintenance such as deleting files, crating files, disk cleanup, etc.
 - c. Word processing, PowerPoint, Excel, or other features of Microsoft Office or Apple Works?
 - d. How to use software programs provided by the School District or this school?
 - What software programs were provided by the District? What software programs were provided by this school?
 - e. How to log onto the Internet and find resources online?
 - f. How to find a job, write a resume or cover letter, complete job applications online, etc.
 - g. How to prepare income taxes, writing letters, making lists, etc.
 - h. Were there any other areas in which assistance or training was provided?
 - What, if any, challenges and issues developed in providing this assistance?

4. Since the beginning of the Program has the school provided any special assistance or training to help students whose families received the computer in terms of:
 - a. How to do routine computer tasks and maintenance such as deleting files, crating files, disk cleanup, etc.
 - b. How to use different programs (e.g., Word processing, PowerPoint, Excel, or other features of Microsoft Office or Apple Works?)
 - c. How to use software programs provided by the School District or this school?
 - d. How to log onto the Internet and find resources online?
 - e. How to do homework and school assignments using the computer?
 - f. Career planning and/or career search programs (e.g., how to write a resume or cover letter)?
 - g. Were there any other areas in which assistance or training was provided?
- What, if any, challenges and issues developed in providing this assistance?
5. Have the computers distributed through the DDP needed repairs and/or maintenance?
 - a. If so, how has this been accomplished?
 - b. What costs have been incurred?
 - c. What, if any, challenges/issues were raised regarding the maintenance and/or repairs of these computers?
6. Please share with us your impression of whether the DDP computers are being used by students and families. Are the students using the DDP computers at home?
 - a. If so, for what purpose?
 - b. Are you aware of any problems or difficulties that students have with using the DDP computers (e.g., transitioning back and forth from using the home computer to the computers at school)?
 - c. Are other family members using the DDP computers at home? If so, which family members and for what purpose?
 - d. Are you aware of any problems or difficulties that parents/guardians are having with using the DDP computers (e.g. language proficiency)?
7. We would like to ask a few questions about corporate partnerships. You experienced one year without a corporate partner followed by a year with a corporate partner. Please describe how these two different models operated in your school.
 - a. What were the strengths of the corporate partnership?
 - b. What were the challenges of the corporate partnership?

- c. Were there differences in the outcomes of the DDP during the year when you did not have a corporate partner and the year when you did in terms of student or parent/guardian/family usage of the DDP computer and the Internet?
8. What opportunities do you see for partnership with other private and public entities to share the costs of a DDP?
9. We have one more question we would like to ask you: If you were going to start a DDP, from scratch, what might you do differently? What lessons have you learned from your school's experiences with the DDP?

Appendix D. Parents/Guardians Questionnaire

Survey for Parents/Guardians

1. How many children do you have attending this school? _____
2. What grades are they in? _____
3. How long have you had the computer given to you by [name of school/program] in your home? _____
4. Was the computer given to you by [name of school/program] the first computer you ever had in your home? __ Yes __ No
5. Do you have Internet access on the computer given to you by [name of school/program] now? __ Yes __ No
 - If yes, who pays for it? _____
6. Did you ever have Internet access on the [name of school/program] computer before?
 - __ Yes __ No
 - If yes, who paid for it? _____
7. If you had Internet access on the computer before but do not have access now, please tell me why not?

8. About how many hours in a typical week do YOU use the computer given to you by [name of school/program]?

9. Please check what YOU use the computer given to you by [name of school/program] for:
 - to play fun games with my children
 - to do homework with my children
 - to look for jobs
 - to play educational or learning games with my children
 - to do Reader Rabbit
 - to do Mighty Math
 - to prepare for income tax
 - to prepare PowerPoint presentations with my child
 - to do FCAT tutorials with my children
10. Is there anyone else, besides you and your children who attend this school, who uses the computer? __ Yes __ No

11. Please put a check mark next to all of the languages that are spoken in your home?

Spanish Creole Portuguese

✓ Please write down the names of any other languages spoken in your home? _____

12. Is anyone in your household unable to use the computer because they do not understand the language the computer software is loaded with?

Yes No

13. Have you purchased or been given as a gift any other computers since you were given the computer by [name of school/program]?

Yes No

Thank you very much...

Appendix E. Focus Group Questions for Parents/Guardians

Focus Group with Parents/Guardians

Introduction

We are conducting this focus group as part of an evaluation of the Digital Divide Program (DDP). The purpose of our discussion today will be to obtain a better understanding of your school's experiences with the DDP as well as the strengths and benefits of the program, and the challenges this program presented during its implementation.

Questions

1. Did the school provide you with any special assistance or training about how to use the computer?
 - a) If so, what did it cover?
 - b) Was it helpful?
2. Did you receive assistance/training in how to use the internet? If so, what did it cover? Was it helpful?
3. Could I please see a show of hands of how many of you still have the DDP computer?
4. Could I please see a show of hands of how many of you are using the DDP computer?
 - Those who said "no": Please tell me why you are not using the DDP computer.
 - Those who said "yes": Please tell me what you use the computer for.
5. Could I please see a show of hands of how many of you have Internet access now.
 - Those who said "yes": Please tell me what you use the Internet for.
 - Those who said "no": Can I see a show of hands of how many had Internet access in the past?
 - Those who said "yes": Please tell me what you used the Internet for at that time.
6. Could I please see a show of hands of how many of your computers were ever broken and needed repairs or maintenance work done.
 - Those who said "yes": Please tell me if you were able to get this taken care of, and how you accomplished this.
7. We have two final questions to ask:
 - What is your overall opinion of the DDP?
 - If the school were going to continue the DDP, how do you think it could be improved?

Appendix F. Questionnaire for Middle School and High School Students

Survey for Students

1. What grade are you in? _____

2. How long have you had the Digital Divide Program computer in your home?

3. Was the Digital Divide computer the first computer you ever had in your home?
__ Yes __ No

4. About how many hours in a week do you use the Digital Divide Program computer?

5. Check off all of the following ways in which you use the Digital Divide Program computer:
 - Games
 - Homework
 - Educational or learning games
 - Play Reader Rabbit
 - Play Mighty Math
 - Prepare PowerPoint presentations
 - FCAT tutorials

6. What other things do you use the computer for? _____

Thank you very much...

Appendix G. Focus Group Questions for Middle School and High School Students

Focus Group with Students

Introduction

We are having this meeting today as part of an evaluation of the Digital Divide Program (DDP). We want to talk to you to learn about the computer you and your family received from the school for use at home.

Questions

1. Do you still have the DDP computer at home? (Show of hands.)
 - If no: Please tell me what happened to the computer.
2. Are you using the DDP computer at home? (Show of hands.)
 - If no: Please tell me why you are not using the DDP computer.
 - If yes: Please tell me what you use the computer for?
3. Do you have Internet access at home with the DDP computer now? (Show of hands.)
 - If yes: Please tell me what you use the Internet for.
 - If no: Did you have Internet access in the past?
 - If yes: What did you use the Internet for?
4. Has your DDP home computer ever been broken, needed repair or maintenance work? (Show of hands.)
 - If yes: Were you able to get this taken care of? If so, how was this accomplished?
5. Do you help your parents, guardians or other family members when they use the computer?
 - If yes: What do you help them do?
6. Do you and your parents, guardians, or other family members play computer games and/or do homework or other school assignments together, using the computer?
 - If yes: Please tell us what you do together.
7. We have two more questions to ask:
 - Do you think it was a good idea for the school to give you and your family a computer to have at home?
 - If yes: What was good about it?
 - If no: What was bad about it? What problems have you or your family had with the computer?

Thank you.