Digital Education Teacher Academy: A project to support Technology integration goals

Background: Over the past five years, the SBBC has invested considerable resources in providing a baseline network infrastructure, hardware and software for educational purposes. A similar systemic approach is needed in the area of teacher professional development to reach the goal of using technology to effectively impact student achievement. This is the more difficult of the two tasks because it requires the coordination of many different operating units and schools across the district, it requires a change in culture and it requires real change in terms of daily classroom practice.

Frameworks: SBBC is guided by several frameworks to assist in the implementation of a plan for integrating technology. These include:

1. The District Strategic Plan
2. The International Society for Technology in Education (ISTE) National **Teacher** Technology Standards
3. The International Society for Technology in Education (ISTE) National **Student** Technology Standards
4. The district Professional Development Plan for Technology that is Section 8 of the 5 year District Information Technology Plan (www.broward.k12.fl.us/ITP).

Vision Statement for Teacher Technology Professional Development: *All SBBC teachers meet standards for integrating technology into teaching and learning as demonstrated by attainment of district instructional technology certification. Teachers have on-going professional services aligned to technology standards that support certification attainment. These professional services include a pedagogical overview of instructional technology, hands-on, experiential activities and mentoring/coaching. These services are available through a variety of delivery methods to accommodate individual learning styles of the teachers and to reach all of the district's teachers. University partners and SBBC share the same goal and curriculum content to address the common needs of pre-service and in-service teachers.*

Scenario:

Ms. Gomez arrives early for a parent conference and she thinks to herself, "I never would have thought I could do this—a whole semester's evaluation of a student in just a few minutes. "After 17 years of high school teaching , she did not think anything could change the way she ran her classroom. Technology was for the "new teachers" to play with and not for seasoned, experienced teachers such as herself. When the district adopted the technology teacher certification requirement, she at first resented being "forced" to learn technology. Now, she doesn't know how she taught without it. Not only is the management of grades and paperwork easier and more accurate, but her science students are

achieving at high levels. With the use of scientific probeware, access to Internet-based science curriculum and a rich digital toolbox of resources, students, both at home and at school, are hooked into those "higher order thinking skills" that we only used to read about in educational textbooks.   Ms. Gomez reflects "my parent conferences used to be about discipline problems with students. Now, I am helping Jamal's parents select the best college for him. What is more amazing is that Jamal's parents have tracked his progress on the Internet since he entered my class. Who would have thought!!!!!! All I know, I'm never going back to the 'old' way."

How does the Digital Education Academy fit into this vision and scenario?

The vision can be accomplished if the appropriate building blocks are there to support the integration process. One of the first steps is to clarify what teachers need to know and define a way to get there. The National Standards have determined the skills needed ("what teachers and students need to know"). What remains is the way for Broward teachers to get there. The Digital Education Academy provides a vehicle to establish a research based, student achievement oriented professional development program as a beginning step in reaching the vision. It is one project within a District-Wide professional development plan for technology integration.

(See Attached Graphic Representation of how the Digital Education Academy fits into the Technology Professional Development Plan)

Digital Education Academy Project Overview:

Goal: To develop a replicable program that provides professional development in technology integration to teachers that is research based and student achievement oriented.

This pilot project is intended to establish research parameters for a longitudinal study of the impact of technology on student achievement.   The pilot will launch with a summer academy for Broward teachers in partnership with SBBC and Florida Atlantic University, and it will include partnerships with technology vendors.

The Digital Education Academy will impact 150 Broward teachers. Teachers will attend a fast-track graduate level class at FAU, where they will explore strategies integrating technology into the curriculum.   FAU and SBBC will develop the course content. Teachers will attend a fast-track graduate level course and receive 3 graduate credits from FAU. The objective is to develop a public-private research model consistent with the purposes and goals of section 2401 of the *No Child Left Behind Act of 2001*, **that can be replicated and expanded**.

The project is also aligned with the Sterling Process, particularly the following conceptual cycle of process management:

Plan	→	Do	→	Study	→	Act
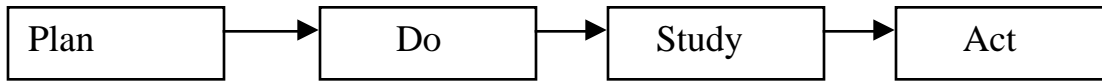
Plan – Develop a plan to meet target goal
Do – Implement the plan
Study – Evaluate the effectiveness of the plan
Act – Revise the plan based on research findings

Selection of Pilot Participants:

• Curriculum Specialists in the content areas: science, language arts, reading, mathematics. (10 participants)
• Four (4) teachers per innovation zone (100 teachers)
• Demonstration Teachers (Align with HRD program) (40 teachers)

Criteria for pilot participants:
      • Willingness to participate in a research initiative
      • Competence in basic computer skills including using the Internet, using a word processor and using a presentation tool.

Project Coordinators:

• Education Technology Services
      Mary Baker, Manager, Emerging Technologies
• Curriculum and Instruction/Student Support
      Jeanine Gendron, Director, Customer Staff Development Services
• Florida Atlantic University
      Richard Knee, Associate Dean, Continuing Education
      Katherine O'Rourke, SBBC Liaison
• Teaching and Leadership Center
      Marge Sasse, Joint Appointment, SBBC/FAU

Roles of Participants:

• SBBC will loan equipment, such as wireless carts, digital cameras and handheld computers to FAU for the summer program.
• FAU and SBBC will develop the course curriculum.
• FAU faculty will deliver the courses with SBBC teaching adjuncts.
• The research and evaluation component of the project will be the joint responsibility of SBBC. and its university consortium partners.
• FAU will develop an online course from the curriculum and which would be available to SBBC.
• ETS will contribute teacher tuition funds .
• ETS (Emerging Technology unit) will contribute funding for outside evaluation and research.

Expected Outcomes:

In the short –term, at least **150 Broward teachers** will be immersed in activities that enhance education through technology and earn 3 graduate credit hours toward re-certification and/or advanced degrees. SBBC and FAU expect to develop a model that can be replicated by all of SBBC's university partners and that meets the purposes and goals of section 2401 "Part D – Enhancing Education through Technology" of the *No Child Left Behind Act of 2001.*

Some of the teachers will continue to participate in a research study that follows up on the impact of technology on student achievement. This study will continue through the 2002-03 school year and will result in a published report that will be disseminated, that is jointly authored by an SBBC university consortium partner and SBBC. ETS / Emerging Technology will sponsor the research with departmental funds.

In the near-term, ETS hopes to develop a process to include a research component into all pilot projects undertaken by the school district. The outside research component will engage university research staff and include reporting and dissemination.

In the long-term, SBBC and FAU look to establish a research agenda that will "measure the impact of technology on student achievement" that will engage the Broward County Education Consortium and SBBC.

Summer Staff Development Schedule:

The following sessions are planned and have been initiated following HRD guidelines. Information on these sessions will be distributed following standard Human Resource Department procedures. In addition, the Teaching and Leadership Center will distribute information on the program.

> BET #10049377   BE#10049876
> Class 1 – June 24 through June 28, 2002
>
> BET #10049377   BE#10049877
> Class 2 – July 8 through July 12, 2002
>
> BET #10049377   BE# 10049878
> Class 3 – July 15, 2002 through July 19, 2002
>
> BET #10049377   BE# 10049929
> Class 4 – July 22 through July 26, 2002
>
> 5 days in a class   3 college credits   FAU/Davie Campus

Curriculum Overview

All sessions will begin with a theoretical discourse on the educational pedagogy related to instructional technology. Participants will then be immersed in hands-on, experiential activities. Participants will use technology to improve student achievement in reading, math and science, learn strategies for integrating technology that can be incorporated into daily practice; and learn how to use new technologies such as Internet-based curriculum, digital tools, handheld computers and scientific probeware. The program will be aligned with content (Sunshine State) standards and technology (National Education Technology) standards. Participants will be divided into elementary and secondary groups based on current teaching assignment.

Instructional Technology Connections

• Internet-based curriculum in reading, math and science. Participants will receive a one-year subscription of the curriculum to use in their classrooms. Curriculum is approved by the Curriculum Department and aligned to Sunshine State Standards.

• Scientific Probeware/Handheld Computers. Participants will use probes that can measure temperature and pH and plot data through the use of handheld computers.

• Digital Tools. Participants will use multimedia tools to develop content that can be used in the classroom.

• Knowledge Box. Participants will have access to a curriculum planning tool that can be used in elementary and middle school science programs.

• Wireless Cart of Laptop computers. This cart will allow each participants ot use mobile technology throughout the course.

Evaluation Plan:

There will be two phases in the evaluation process:
• evaluation of the training (immediately following the course)
• evaluation of teacher classroom impact (follow-up research of the way the teachers are able to implement the new strategies in the classroom).

This two-part process will provide data that will be used to refine the model and determine "what works" for SBBC teachers. We will use outside evaluators in this process through the Broward County Education Consortium, our university partners. We are currently working with the research subcommittee of the consortium to establish a process to engage university professors to evaluate all technology pilot projects. The research and evaluation will be coordinated with the district's Research and Evaluation department so that all SBBC research and reporting standards are observed.

The following essential research questions will be posed through the Digital Education Academy project.

1. Does the training received by the project participants carry through to daily classroom practice?
2. Has teacher behavior changed as a result of the training and follow-up?
3. Is the follow-up an appropriate strategy to assist teachers in achieving technology integration in classroom?
4. What barriers (if any) does the classroom teacher encounter as they implement the training received?
5. Is the incentive of providing tuition an effective incentive for teachers to complete training?

Other essential questions may emerge as the project progresses. A project report will be presented to Senior Management in May of 2003 while an interim report available in October of 2002.

Budget

From Public School Technology Funds :
      $85,200   Teacher tuition fees
      $30,000   Follow-up Research for SBBC Technology pilot projects
      (please note approximately $10,000 of this amount will be allocated to collect data on the Summer Academy through the 2002-2003 school year – this research will provide data that can be used to seek grant funding for program replication)

From Technology Vendors:
      Appropriate software, hardware, or digital content

ETS is purchasing electronic resources that will be used with the teachers in the academy, as well as with other SBBC teachers throughout the year.

Return on Investment (ROI)

There will be several waves of impact from the summer academy.
- 150 teachers will be engaged in extensive staff development on Integrating technology into the curriculum
- During the 2002-2003 school year, the students of these teachers will be impacted by using the online reading, math, or science resources that were introduced in the summer academy   150 teachers x 100 students = 15,000 students.
- During the 2002-2003 school year, a second tier of teachers will take the online version of the digital academy. Potential impact, 200 teachers x 100 students = 20,000 students.
- During the 2003-2004 school year, the model will be ready to be replicated by all Broward Consortium Members and by the SBBC. Major impact will occur during this school year.

Rationale:

Why are we proposing this project?

It has become apparent to leadership on both the school board and district level that training in technology integration is essential to utilize fully our technology investment to improve student achievement. Data also shows that teachers need to develop skills in integrating technology into the curriculum. National Education Technology Standards have been developed to provide a framework for skill development leading to seamless integration of technology into the curriculum. These standards are currently being adopted by the DOE and are part of the new 5-year technology professional development plan adopted by SBBC.

At this stage, there is not a standard core curriculum that is aligned to the National Education Technology Standards for Teachers. A curriculum needs to be developed. However, how would we know if the curriculum is robust and meets the needs of SBBC? The answer is to produce a product as part of a pilot, evaluate its effectiveness, improve on the product as per the evaluative feedback and then present it as a model that can be replicated by universities or incorporated into SBBC staff development. In addition, grant funds could be sought to further this effort.

The university partnership is important to be able to dialogue across the boundaries. This is essentially what is being called nationally the K-20 initiative that looks to combine the expertise from the educational community to help achieve goals. Universities also need to be in a continuous dialogue with SBBC regarding what pre-service teachers need to know about technology integration when they come to teach in this district. The outcome would be a clear understanding of what expectations SBBC needs and what universities can offer.

Since this pilot would be a research study, it is our intention to start with only one university. Since FAU produces about 75% of our teachers, it seemed logical to start there. However, the research component would be open to other universities.

The pilot would be important so that we would have the data to be in a position to apply for future funding initiatives.

Tuition was used as an incentive because it was more cost effective than paying stipends. More importantly, it would provide the encouragement to raise professionalism by encouraging teaching professionals to attain advanced degrees. However, it is noted that part of the pilot evaluation would be to test the tuition incentive and see if it was an effective motivator.

Technology Professional Development Plan
Seven paths to Integration

Capacity Building	Curriculum and Assessment	Professional Development	Mentoring/ Coaching	Instructional Technology Pilots	Partnerships w/universities and grants	School Improvement Planning

Digital Education Teacher Academy

A replicable program that provides professional development in technology integration to teachers that is research-based and student achievement oriented.

Supports all seven paths to integration

Phase I: Summer 2002

Phase II: 2002-2003 School Year.

Phase III: 2003-2004 School Year

- Develop staff development model
- Determine curricular content
- Pilot the model with 150 Broward County Teachers
- Evaluate the training model and teacher incentives
- Develop online course based on model

- Follow-up research with pilot teachers
- Collect and analyze data
- Refine model
- Offer online course
- Offer revised model (Jan 2003)
- Communicate results

- Assess the online course in previous year
- Replicate model and expand within Broward Consortium
- Replicate model within Broward County
- Develop Innovation Zone roll-out plan