

## Technology Facilitator Services: Coupling Technology and High Quality Professional Development to Produce Student Achievement Gains and Improve Teacher Effectiveness

### WHITE PAPER

*Technology Facilitator services have proven successful in producing student achievement gains and improving teacher effectiveness in the K – 12 environment. Coupling this high quality professional development mechanism with available technology resources results in an effective strategy for meeting district, state, and national goals for highly qualified teachers and better student performance. This paper provides strategies for ensuring the appropriate and optimal use of resources in the teaching and learning process.*

### What is a Technology Facilitator?

A Technology Facilitator, also sometimes known as a Technology Integration Specialist, or Technology Coach, has the primary responsibility to facilitate the integration of technology into the curriculum. This facilitation is provided to teachers in the classroom, thereby supplying support during the instructional process. The main focus of this support consists of modeling the effective use of technology for instruction and learning, serving as a coach or mentor to classroom teachers as they learn the appropriate uses of technology in the curriculum, and assisting teachers to locate and use technology resources in their lesson planning. During this process, the classroom teacher is learning to use the power of technology to improve teaching and learning.

#### No Child Left Behind:

[www.ed.gov/nclb/landing.jhtml](http://www.ed.gov/nclb/landing.jhtml)

#### Enhancing Education through Technology Program:

[www.ed.gov/programs/edtech/index.html](http://www.ed.gov/programs/edtech/index.html)

#### MDE Technology Facilitator Role:

[www.mde.k12.ms.us/oet/e2t2d/pdfs/RFPY4.doc](http://www.mde.k12.ms.us/oet/e2t2d/pdfs/RFPY4.doc)

Technology Facilitators gained focus as change agents with the implementation of the No Child Left Behind Act of 2001. Part of that Act, the Enhancing Education Through Technology (E2T2) program has as its primary goal to improve student academic achievement through the use of technology in elementary and secondary schools. The program also seeks to: (1) ensure that every student is technologically literate by the end of the eighth grade; and (2) establish research-based instructional methods through the effective integration of technology, professional development for teachers, and curriculum development.

The Mississippi Department of Education further defines the role of the Technology Facilitator to include the following:

- Facilitate teachers in the use of technology in the classroom curriculum and environment, facilitating no more than twelve (12) teachers
- Facilitate teaching staff to become competent and confident in the district's technology proficiency standards
- Model and assist teachers in using various technologies effectively with students to enhance the learning process

**State Technology Plan:**

[www.mde.k12.ms.us/olpd/stateplan/index.html](http://www.mde.k12.ms.us/olpd/stateplan/index.html)

**Technology Standards**

Students:

[www.mde.k12.ms.us/ACAD/ID/Curriculum/BusTech/2004\\_Business\\_Technology\\_Framework.pdf](http://www.mde.k12.ms.us/ACAD/ID/Curriculum/BusTech/2004_Business_Technology_Framework.pdf)

Teachers:

[teacherexchange.mde.k12.ms.us/new/Announcements/performance%20indicators.htm](http://teacherexchange.mde.k12.ms.us/new/Announcements/performance%20indicators.htm)

Administrators:

[teacherexchange.mde.k12.ms.us/new/Announcements/mississippi\\_technology\\_standards\\_administrators.htm](http://teacherexchange.mde.k12.ms.us/new/Announcements/mississippi_technology_standards_administrators.htm)

- Provide sustained, embedded professional development to teachers while they are working in the classroom
- Guide teachers in the creation of high quality, technology-rich lesson plans and be actively involved in their classroom delivery
- Provide on-going support, feedback and follow-up for teachers as they move through a continuum of activities
- Coordinate meetings where teachers are given opportunities to share innovative ideas, lesson plans and successes with their peers, fostering a spirit of collegiality and collaboration
- Encourage the creation of innovative classroom strategies using technology that enables teachers to transform the classroom environment from the traditional teacher-centered lecture format to an atmosphere of student-centered discovery

**Why is a Technology Facilitator Needed?**

The services of a Technology Facilitator are designed to assist school districts as they strive to meet the goals outlined in the state technology plan:

- All students will meet or exceed the state standards for student literacy in technology by 2008.
- All teachers will be qualified to use technology for instruction by meeting the Mississippi Technology Standards for Teachers by 2008.
- All administrators will be qualified to use technology appropriately to improve their efficiency, effectiveness, and productivity.
- All schools will fully integrate technology into curriculum and instruction by December 31, 2006.

Clearly, these goals reflect the need for our educators and students to be technologically literate in order to compete in a global society. To accomplish this, our teachers must effectively integrate technology into the curriculum; our administrators must be the leaders and supporters of those efforts; and our students must achieve greater levels of performance through the use of technology as a tool. Data collected since the 2003 – 2004 school year illuminates the progress schools have made toward these goals utilizing the services of Technology Facilitators.

**Results from Synergetics' Technology Facilitators**

In 2003, Synergetics began a program to provide Technology Facilitator services to school districts in Mississippi. This program was in response to Local Education Agencies' need to achieve the goals outlined above while overcoming obstacles and issues at the local level. District officials recognized the need for professional development to help their teachers become more technology proficient and provide strategies for integrating technology into the curriculum. However, many districts had few, if any, professional development days in their school calendar and struggled to find a way to provide needed training without disrupting instructional time. Teachers needed to be in the classroom during the school day and asking teachers to attend training after school hours or on Saturdays was not working. Additionally, administrators needed a plan for monitoring their district's progress toward meeting these technology goals.

Synergetics had the resources and expertise to respond to this need expressed by so many school districts. With a strong background in educational technology as well as data-driven decision making, this team was able to put a strategic plan in place that focused on needs assessment, customer service, data collection, and accountability for measurable results.

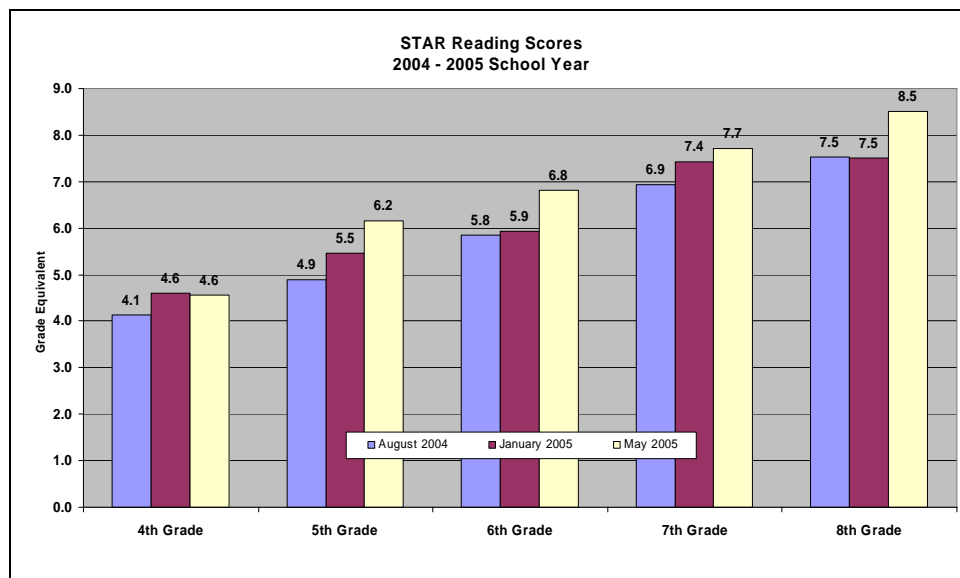
The program began with part-time Technology Facilitators in four school districts, expanding to six full-time Technology Facilitators for the 2004 – 2005 school year. These six districts received services every day of the school year. Typically, the Technology Facilitators provided support to teachers and students four days per week, with one day per week set aside for planning and collection and analysis of data. Some of these districts focused the work of the Technology Facilitator at one school while others had multiple schools receiving services. The number of teachers being assisted at each district also varied from as few as 10 to as many as 21 teachers. The scope of the work included teacher technology skills, and student achievement in Reading, Math and Language in grades four through eight.

**How Did This Impact Student Achievement?**

The Technology Facilitators supervised the implementation of curriculum-based software programs for Reading and Math. The implementation plans included installation and setup of the software, initial training on basic use of the software, and one-on-one support for the teachers in the classroom to ensure a smooth transition from basic knowledge of the software to practical application for student learning. Using the diagnostic reports in these software programs, student progress was monitored over the course of the year through data collection at three points – baseline, midpoint, and year-end.

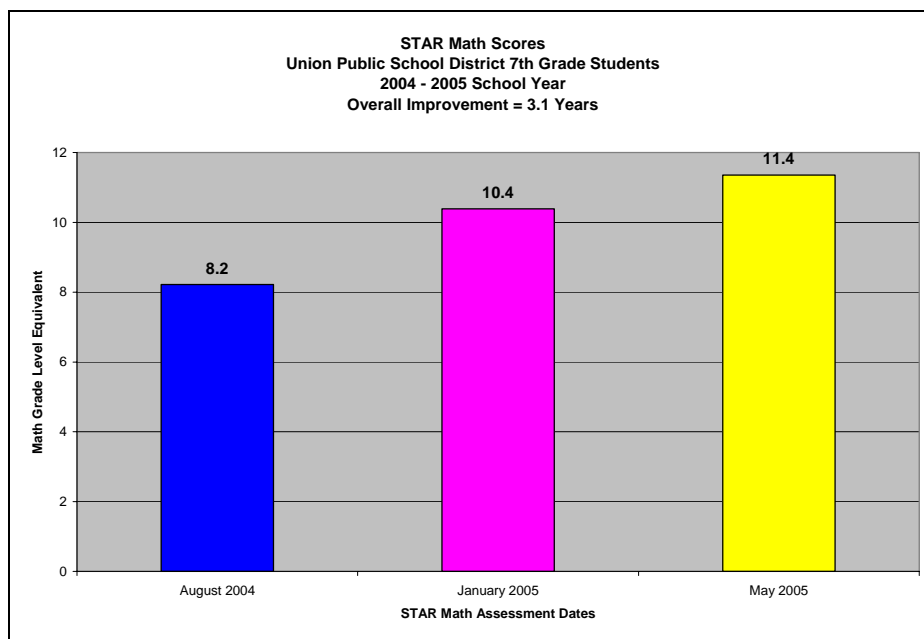
An example of the growth in reading demonstrated by students in Union Public School District is illustrated in Figure 1. This district implemented the STAR Reading software as an assessment tool for student progress in reading. Fourth through eighth grade students demonstrated an average growth per grade level ranging from 5 months to 1 year 3 months in reading over the course of the year.

**Figure 1:**



Also in Union Public School District, the Technology Facilitator assisted teachers with the implementation of the STAR Math and Accelerated Math programs. The Technology Facilitator provided training in group sessions and then followed up with individual, on-going assistance in the classroom. The STAR Math assessment was conducted in August, prior to students using the Accelerated Math program. At this time, the seventh grade students scored an average of grade equivalent 8.2. The STAR Math assessment was conducted again at midpoint, where these same students scored the equivalent of grade 10.4. At the end of the school year in May, these students scored the equivalent of grade 11.4, **representing an overall growth of 3.1 years during the course of one school year** (Figure 2). The method of providing continuing support during the implementation of this program is greatly responsible for the astounding results.

**Figure 2:**



During the course of the 2004 – 2005 school year, the Technology Facilitators in three of these districts also assisted teachers in focusing on the improvement of students’ language skills. Students performing below grade level in language were identified using report card grades. The Technology Facilitators then assisted the teachers in providing intervening strategies for these students, including the use of curriculum software, assessment software, interactive activities using available technology resources, web resources for language development, and research projects combining language and technology. Language grades were tracked each grading period, yielding the following results:

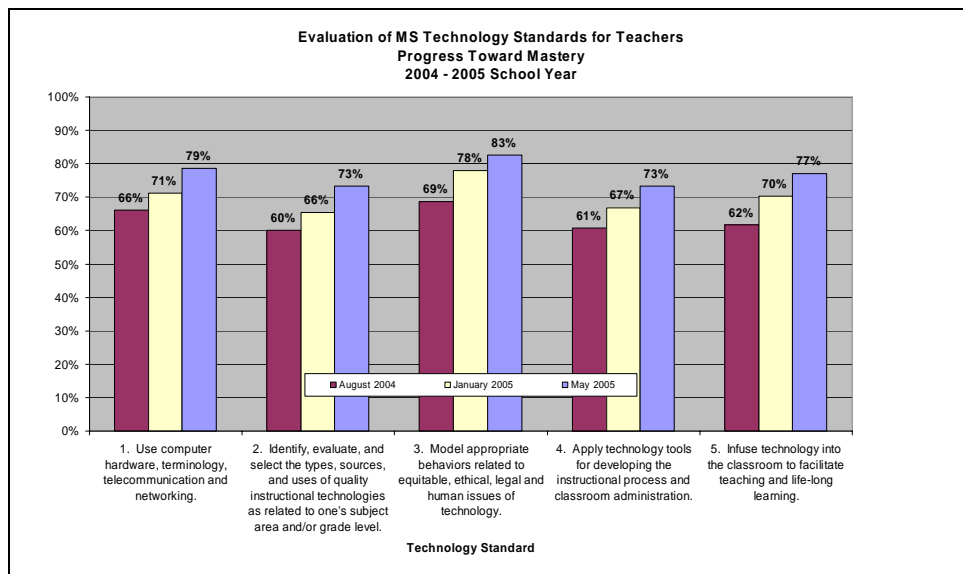
- In Kemper County School District, the Technology Facilitator worked with seventh and eighth grades to help improve students’ language skills. The report card grades were examined each nine weeks to determine the effect. Over the course of the year, an average of 45% of students improved their language grade each nine weeks.
- In Sunflower County School District, the Technology Facilitator worked with fourth through eighth grades in language. At the first nine weeks, the students who were failing language were identified. The progress of these students was tracked over time. By the end of the school year, 33% of these students improved their language grade to passing.

- In Covington County School District, the Technology Facilitator provided support to fourth through eighth grades in language. Students who were failing language were identified at the end of the first nine weeks period. By the end of the school year, 15% of these students had improved their language grade to a C or above.

**How Did This Impact Teacher Effectiveness?**

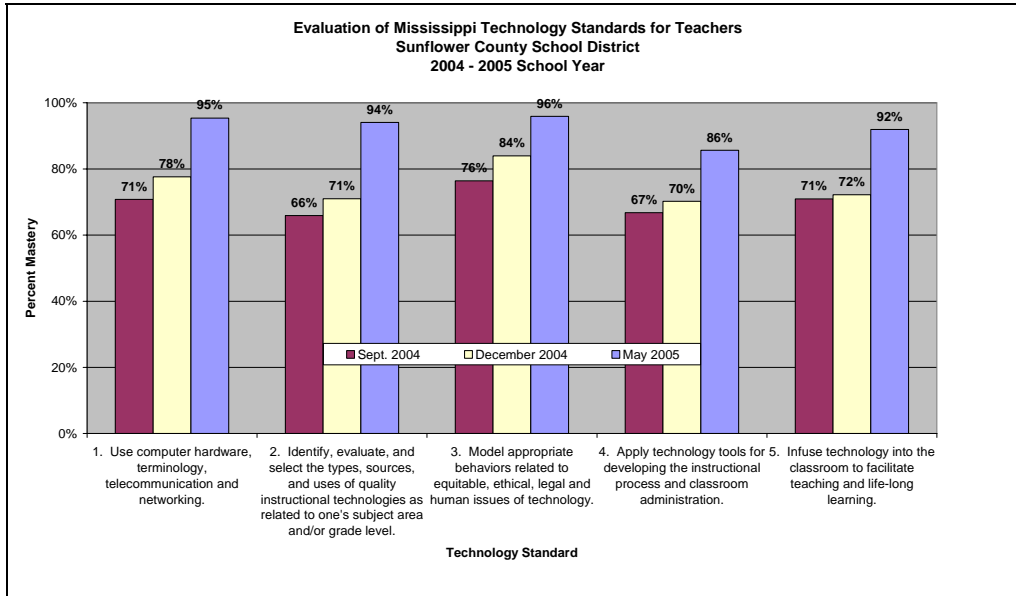
With the full time services of a Technology Facilitator, teachers in all six of these school districts showed improvement in their technology proficiency levels as well as an increase in the use of technology in the curriculum. Progress towards mastering the Mississippi Technology Standards for Teachers was measured three times during the school year with the use of a self-evaluation instrument. When this data from all six districts is combined, these teachers showed a baseline of 63% mastery of the standards. By the end of the school year, the mastery level had increased to 77% (Figure 3).

**Figure 3:**



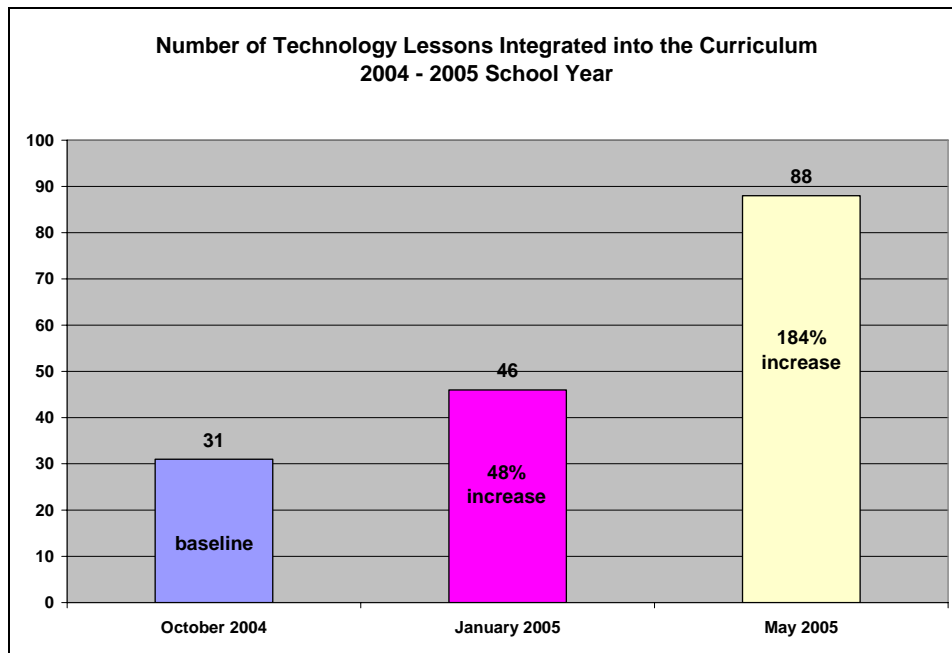
The results for one school district during this same time period demonstrate the even more dramatic improvement that can result from Technology Facilitator services in the classroom. In Sunflower County School District, teachers scored an average of 70% on the Mississippi Technology Standards for Teachers at the beginning of the year. At the end of the school year, the overall average was 93%, representing a significant increase in the teachers' technology proficiency and confidence in using technology in the classroom (Figure 4). Jean Millen, Sunflower County School District's Technology Coordinator states *"Our teachers showed so much improvement on their technology skills. They just needed someone to help them through the first hurdles of using technology in the classroom. Having someone there to help them through the rough times and show them how to do it made the difference. Our Technology Facilitator was wonderful! I wish I had more of them!"*

Figure 4:



The Technology Facilitators also collected data on the frequency of technology use and integration of technology into the curriculum. This was conducted through classroom observations, coaching sessions, review of lesson plans, and equipment usage logs. Kemper County School District demonstrated 70% of target teachers integrating technology into the curriculum on at least a weekly basis. At Covington County School District, 100% of target teachers were using technology daily by the end of the project year. Figure 5 illustrates the dramatic results at a Leflore County School District – **an increase of 184% in the frequency of technology integration in lessons over the course of the year.**

Figure 5:



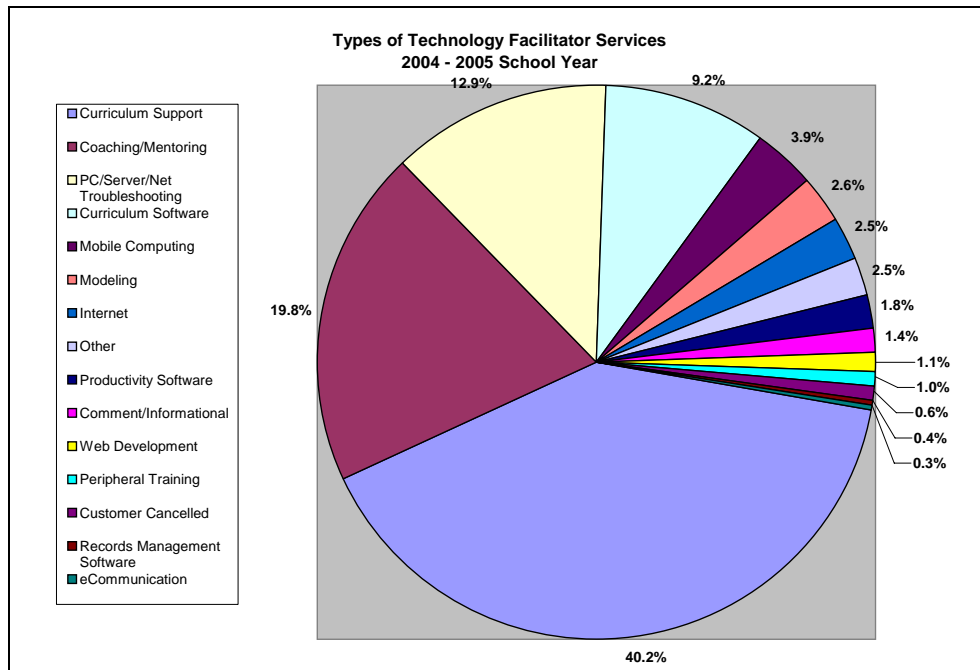
### What Did Technology Facilitators Do?

Synergetics' Service Management software records how Technology Facilitators actually spend their time. Each day, the Technology Facilitators use this software to record the work they do that day and categorize it according to the type of support or service they provide. This accountability measure ensures that the Technology Facilitators are focusing on the goals of the work to be completed at the school district. The following list highlights the major categories of service provided by the six full-time Technology Facilitators during the 2004 – 2005 school year and the amount of time spent on each category:

- 40% providing curriculum support to classroom teachers
- 22% modeling / mentoring / coaching for effective integration of technology
- 16% assisting with software and technologies (productivity software, records management software, mobile technology, peripherals)
- 13% performing basic troubleshooting to decrease down time of technology resources
- 9% assisting with curriculum software

Figure 6 provides a full breakdown of the services provided.

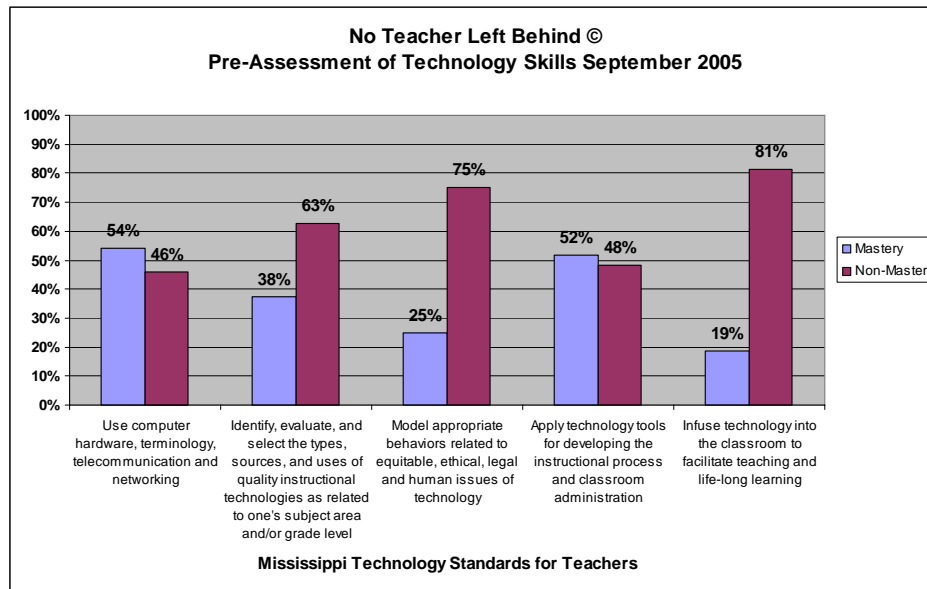
**Figure 6:**



The third year of program implementation includes five full-time Technology Facilitators and four part-time Technology Facilitators providing services to a total of eight school districts. Each district has clearly defined the target group of teachers and students, as well as the area of greatest need. Following the MDE recommendation, the group size of target teachers is held to no more than twelve teachers. Services are being provided to the schools demonstrating a significant need for assistance as indicated by student achievement and yearly progress. The scope of work now focuses on teacher technology skills, student technology skills, and student academic achievement.

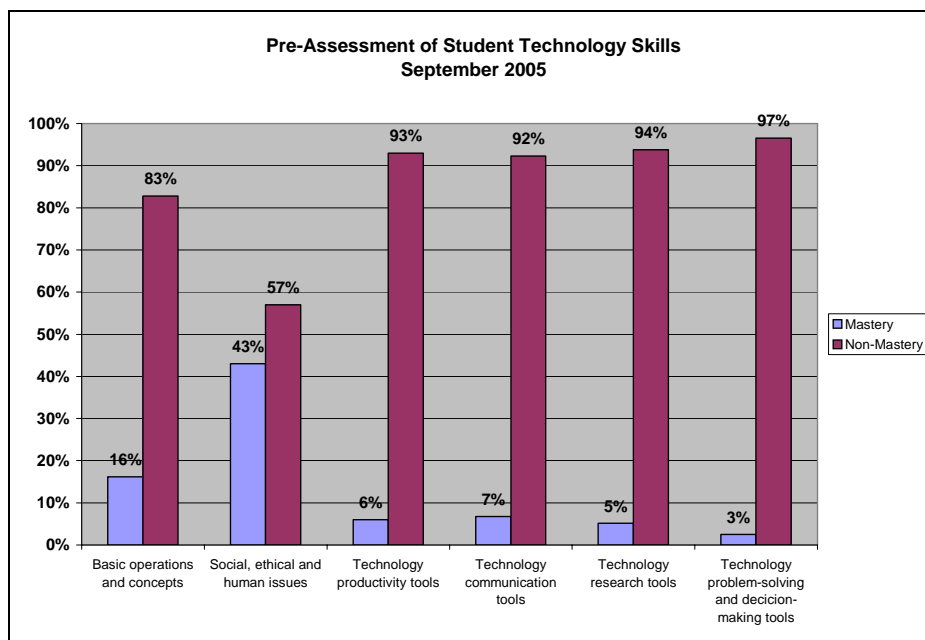
Assessment of technology skills and progress towards mastering the state technology standards is now conducted through performance based assessments. The instrument administered to teachers is the No Teacher Left Behind® Assessment. This instrument requires teachers to perform specific skills during a timed assessment. All skills correlate to the Mississippi Technology Standards for Teachers. The baseline data collected at the beginning of the school year provides an individualized training plan for each teacher. These are the skills the Technology Facilitator will work to improve with the target teachers. This assessment is given three times during the year to continually monitor the progress teachers are making toward mastering the Mississippi Technology Standards for Teachers. A sample of results for the pre-assessment from Leflore County School District is presented in Figure 7.

**Figure 7:**



Data on students' progress towards mastering the Mississippi Technology Standards for Students is also collected through a performance based assessment. During this assessment, students must perform tasks such as creating a word processing document, locating information on the Internet, and identifying hardware components in order to demonstrate mastery of skills. This data is used to identify areas of weakness on which the Technology Facilitator will focus. The Technology Facilitator works with the classroom teacher to provide technology-infused lessons to the students that will improve technology skills while increasing academic achievement. Post-assessment data will show growth students have made over the course of the school year. A sample of results of pre-assessment data from a target school in Covington County School District is presented in Figure 8.

Figure 8:



The Technology Facilitators continue to collect student achievement data at each of these school districts. The needs of each district vary, and thereby determine the type of data collected. Collection methods include curriculum software diagnostic reports, report card grades, performance assessments, progress monitoring software, and other requirements determined by the district. Continual progress monitoring and data analysis will provide measurable results for district reporting. These results will be published in subsequent papers upon completion of data analysis.

### What Distinguishes Synergetics' Technology Facilitators?

The success of this program, as demonstrated by student achievement gains and improved teacher effectiveness, is due to several key elements. First are the **qualifications** or skill set of Synergetics' Technology Facilitators. Synergetics defines five areas of expertise a Technology Facilitator needs in order to be successful:

- Teaching experience – classroom experience essential for establishing a trusting relationship with other classroom teachers
- Training experience – knowledge of how to train adults in varying situations
- Technology expertise – a solid understanding of a wide array of technology resources including hardware, software, and methodologies
- Communication skills – effective communication with all stakeholders in the district
- Troubleshooting skills – basic skills to prevent down time of technology resources

Secondly, Technology Facilitators must receive **continuous training**. Regular, ongoing training ensures that Technology Facilitators will be kept abreast of new technologies and methodologies. As districts implement new technologies or encounter new challenges, training is provided to meet those needs and challenges. These Technology Facilitators have the distinct advantage of accessing the resources and knowledge base of the entire company of information system specialists.

Thirdly, Technology Facilitators emphasize the **collection of data** to analyze the effectiveness of the program of services being provided. Data is collected on teacher and student technology skills, student achievement, use of technology, as well as other measures required and requested by the district. The program of services is **data-based and results-driven**.

Fourthly, the Technology Facilitators are a supervised, organized team working together for a common goal. Regular meetings together encourage idea sharing, problem solving and strategizing. **Activities and data are monitored** to assess level of progress, to determine effectiveness and to make changes as needed. Technology Facilitators are held accountable for the outcomes expected at each of their districts.

### Recommendations

Based on the results of this program spanning three school years, the following recommendations are made regarding the use of Technology Facilitator services as a professional development mechanism in the K – 12 environment.

1. A full-time Technology Facilitator yields the greatest impact on student achievement gains and teacher effectiveness.
2. A part-time Technology Facilitator is effective in starting a program of professional development with a small group of teachers, or for continuing a program already in place at the district.
3. The group of targeted teachers that a Technology Facilitator works with should be no more than twelve for maximum effect.
4. The scope of work of the Technology Facilitator should be narrowed down to the area of greatest need, for instance seventh grade math at the district's middle school.

### Funding

All school districts struggle with funding issues. The services of a Technology Facilitator are professional development services and, as such, qualify for funding under a variety of programs. E2T2 funds, both Competitive and Formula, carry a 25% requirement of expenditure for professional development. Title funds, such as Title I, II and VI, carry a similar requirement as well. All of these fund sources can be used for Technology Facilitator services. Pooling funds for Curriculum, Technology and Professional Development at the district level can be a successful strategy as well. The Synergetics Funding Department is dedicated to helping school districts identify funding sources to accomplish their technology goals.

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#### About the Author

Amy Woodward has been an Educational Technologist with Synergetics Diversified Computer Services since February 2003. Her previous experience includes 22 years with Okaloosa County School District in Florida as a Teacher, Technology Specialist and District Instructional Technologist. She has a Bachelor of Arts in Elementary Education from the University of West Florida; a Master of Arts in Elementary Education from the University of West Florida; and a Specialist in Education in Educational Administration from Florida State University. Amy's current position focuses on helping teachers in Mississippi learn to effectively integrate technology into the curriculum.

#### About Synergetics Diversified Computer Services

Synergetics is an information services company based in Starkville, MS. In addition to professional development for K-12 education, Synergetics' offers a full menu of technology services ranging from network design, installation, and maintenance; structured cabling; hardware and software sales, service, and training; Internet/Intranet development; and web development. Its services are available to educational, government, and commercial clients throughout the state. Synergetics is headquartered in Starkville and has offices in Jackson and Cleveland, MS.

For more information on Synergetics visit [www.SynergeticsDCS.com](http://www.SynergeticsDCS.com).

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