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The Technology Game: Perspectives and Reflections on School-based Technology Training Specialist Support (Part I)

by Sally Bryan

Editor's note: *In this first article of a two-part series, the author begins to answer the question, "How can a school-based technology training specialist (SBTS, also known as a Technology Resource Teacher) support classroom teachers and specialists as they learn to integrate technology into their classroom curriculum? The second part of Bryan's article will appear in the next issue of the VSTE Journal.*

Playing the Game

Have you ever played a game such as Monopoly in which the favorable or unfavorable card draw determines whether you win or lose the game? Although practice and experience increase your skills, circumstances beyond your control influence the game's outcome. Skill alone can't insure a win. A sequence of poor draws discourages you from playing again. Beneficial draws make you a winner and eager to play the next game. Your resulting energy is high and you can't wait for the next opportunity to try your luck.

The process by which technology is integrated into classroom curriculum throughout Fairfax County (and I suspect in other counties across our country) is being played in a manner similar to a board game. Each day teachers encounter circumstances that either encourage or discourage the integration of technology into lesson plans and curriculum objectives. When teachers draw favorable cards, their integrated plans are implemented, their students find appropriate on-line resources, or create new knowledge and communicate in unique ways. Teachers are encouraged to use technology in future lessons. When those same teachers draw unfavorable cards, they might not be aware of appropriate software available to them, might feel too insecure to implement new programs, their schedules might

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be interrupted, or their computers might freeze. Their momentum is stopped, their projects are delayed or destroyed, and their desire to play *The Technology Game* dissolves.

Not a matter of Chance

The Technology Game is not a game of chance. It is a very serious commitment to the future of our students. There are prerequisites to success:

- Before teachers can use technology consistently in their lesson plans and curriculum objectives, they need assurance of easy assess to working hardware and appropriate software programs.

- Having technology available does not insure appropriate use. The power of school technology can only be realized when teachers are trained and motivated to use the available equipment. Teachers are motivated to use technology, even if it requires a change in teaching strategies, if they are aware of the importance of technology to their students. Modeling by SBTS or Technology Resource Teachers offers opportunities for teachers to see these advantages.

- Teachers are more willing to attend training if they anticipate immediate classroom use of applications. When workshops are planned around teacher requests and curriculum needs, they are well received and are more likely to be used by teachers in subsequent lessons.

- The SBTS or Technology Resource Teachers is in a unique position to help teachers integrate technology into their classroom curriculum. They can design activities that will be responsive to teacher requests. They can be proactive and initiate activities to train and motivate teachers as they struggle to integrate technology. They can encourage teachers to take risks in using technology. Collaboration between two experts, initiated by SBTS is a critical way that we can support teachers.

While *The Technology Game* is being played across Fairfax County and other counties everyday, the future of our students' literacy skills is hanging in the balance. By "literacy" I mean the ability to acquire and express information in a variety of electronic media as well as through the traditional print media. To successfully complete this game, teachers must recognize the importance of technology integration and appreciate new teaching strategies that support the changing literacy needs of students. The final goal of the technology game is to create a learning environment in which student achievement is accelerated through the integration of technology in classroom curriculum. This learning environment must provide the tools of knowledge acquisition and communication for the 21st century and must develop the skills required to utilize these tools. The question is: " Are we winning this game?"

As the full time School-Based Technology Training Specialist (SBTS) at Lemon Road, a small elementary school, my role in this game seems clear. It is my job to clarify the rules of the game, to identify the objectives and to help teachers and

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students realize our goals. It is my job to see that the teachers receive more positive, advancement cards than they do negative, regressive cards as they face the challenges of technology integration. I must be a proactive leader who shares a vision of technology integration and who collaborates with teachers to demonstrate how technology can benefit student learning. The training, support and encouragement that I offer should create teacher expertise and desire for additional technology use. The troubleshooting and technical support that I provide should minimize the setbacks caused by equipment failure. Although I can't prevent all obstacles, I must be a problem solver, a mentor, and a model, who arranges the receipt of as many positive reinforcing cards as possible. My research into *The Technology Game* is an anecdotal record of how I have attempted to identify the rules of the game, to support teachers and to reach our stated goals.

Drawing Favorable Cards

Our game consists of many cards and many opportunities, either taken or missed. Lemon Road has already drawn many favorable cards. First, we have a visionary principal, who created the position of Technology Resource Teacher in 1996, four years before the county decided to fund such a position.

We were able to acquire donated computers, write grants to purchase needed equipment, and find volunteers to create a working lab, network the computers to a server and establish a system in which students could access their work throughout the building. We began reviewing and purchasing appropriate software. In 1998, our school was wired for the Internet and we established our school Intranet to house resources related to curriculum needs. In 2001 as a "model technology" school, we received many new computers to equip a 30-computer lab in addition to having 4 to 6 computers in each classroom. With this equipment came licenses for many software titles. Our business partner, First Virginia Bank, and our PTA donated substantial funds over the years to purchase a color laser printer, scanners, a Smartboard, a portable multimedia center of 30 AlphaSmarts, a digital camera and many valuable software titles to support our curriculum.

Rules of the Game

Before starting this research I didn't have a clear image of our game. I saw many problems, equipment that kept breaking, teachers with no time to plan or implement technology and SBTS duties that kept me busy updating inventory and writing training plans that didn't seem to work. It was not until I began keeping a journal of daily activities that a pattern began to emerge and answers to problems began to surface.

I knew that I needed to present training that focused on curriculum and specifically addressed the SOLs. I planned "SOL Solutions" for after-school training. I presented technology as a tool for addressing curriculum needs. I demonstrated *Mapmaker's Tool Kit, Inspiration,* and *Kidspiration* during after-school training sessions. The sessions were not well attended for various reasons. Teachers complained that lessons were after hours, they had other commitments and there was never enough time. When I presented training on *Outlook,* the Microsoft e-mail

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program, attitudes changed. Teachers wanted to know how to communicate in our new e-mail system. I prepared handouts that introduced teachers to our county Intranet site, answered questions and helped them set up their own folders and distribution lists. I believe that because teachers had an immediate need to know the e-mail system they found a way to attend the training. Other after-hours training had not presented itself with the same urgency. Yet the collaboration that began with this training would continue to grow in other areas.

Modeling the Game Plan

I have always modeled classroom lessons for teachers. While I am modeling the lessons, teachers are observing more than just technology integration. They are observing new strategies for teaching, new opportunities to differentiate services and new ways for students to demonstrate what they know. As teachers watch me, they become familiar with the software, see more potential for its use, and see the enthusiasm that it generates for student learning. As they gradually become more comfortable using the programs, teachers are in a position to create their own activities and take risks, knowing that I am there to support them.

Taking Turns

I find the scheduling of technology for 45 minutes a week whether students need it or not an outrageous concept. Technology should be used only when its application is appropriate. A once-a-week lab time is not well suited to integrating technology into a lesson plan and may not recognize computers as tools to support the curriculum. I have an on-line schedule on the server through which teachers sign up their classes for lab time, or for my time, whenever they want. This accommodates the teacher who plans a lengthy project and wants more than one block of time per week. It allows teachers to select the resources they need and the times that coordinate with the subjects being taught. They may need the lab several times a week for some weeks and then not again for a while. The facilities are available on a first come, first served basis whenever the teachers want them.

Planning Our Strategy

Our two sixth grade teachers were quick to request planning times. In October, we discussed curriculum objectives and I suggested technology projects that might satisfy their needs. During our planning, I mentioned that students need to develop skills of on-line searching for relevant information. Students need to learn how to evaluate and validate the resources they find. Once the resources are selected, students must use information to create and refine their knowledge. It is the interaction of student and information that creates learning. Using textbook resources alone will not equip our students with skills needed in their future. One sixth grade teacher said she had never thought of that. She was just beginning to see reasons for technology integration.

For our next project, we planned the role of each teacher, designed student directions and anticipated the timing. Knowing our expectations, each student would create his or her own *Hyperstudio* project. Students would use our Intranet resources to research and take notes. They would select relevant information and they would create a final product based upon their use of the materials found.

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Students, not teachers, were responsible for learning. Students were proud of their resulting projects and eager to be evaluated using peer rubrics. This was the kind of technology integration that I hoped the whole school would eventually enjoy. Ranging from the visual content of *The Human Body* CD, to diary writing following *The Oregon Trail* cyber experience, to selecting a science project through our school's "Scientific Method of Investigation" website, these classrooms were never without resources and project ideas.

Advancing Along the Board

A third grade teacher was also daring enough to create innovative technology projects. He came to me for instruction and advice, to see what could be done and how best to accomplish his goals. Using the digital camera to import student pictures into *Publisher*, his students presented families with calendars as winter holiday gifts. He told his teammates of the activity so that everyone could present calendars to their families. Next, he designed an *Excel* spreadsheet to record, calculate and communicate student math concept development. He could instantly see which students needed additional help in any particular area and could differentiate services appropriately. Students could update their own test scores and records, and he was able to inform parents of student progress in a timely manner. Then he experimented with *Hyperstudio* and created a lesson in which students would create an interactive dictionary. He was becoming more independent and taking risks, knowing that I would support him. Each project succeeded and created a desire to try another. He is rapidly becoming a technology-savvy teacher.

Three Steps Backward

By January, I expected all teachers to be using technology consistently. Yet, as I walked the halls of our building, I saw too many classroom computers with the screen saver disease, a disease in which only the screen saver is seen throughout the day. I was discouraged by what I interpreted as teacher apathy towards technology and lack of effort to incorporate technology into curriculum objectives. Too often, computers were seen as a reward for finished work or good behavior. It was impossible for me to keep to a schedule because of the constant interruptions or cancellations. Teachers would come to me for help and suggestions, but they wanted instant answers. They wanted materials and directions immediately and, of course, I couldn't always comply. I was offering "SOL Solutions", advising teachers who needed technology certification and planning with some teachers. In spite of my best efforts, many teachers were not using our computers as I thought they should. Having the latest computer systems did not insure appropriate use. What was I doing wrong? How could I encourage more productive computer use?

Understanding the Rules

I posed my questions to the teacher-researcher group to which I belong. They offered valuable suggestions. Try attending team planning meetings and discussing SOL objectives, they said. Go to the teachers and initiate projects and activities. Work with the teachers who show interest and focus on the positive. I followed their advice and soon saw a totally different view of technology use at Lemon Road.

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After our teacher research meeting, I was determined to return to school and initiate a visible viable integration program. I would become more proactive and look for opportunities to include reluctant teachers in integrated technology lessons. I created a questionnaire in which I requested teacher opinions and needs. By listening to their responses, I refocused my efforts.

I asked:

1. What are the most important functions performed by the SBTS in our school?

The most frequent responses were troubleshooting, training on hardware and software, finding and sharing new software, and planning integration activities

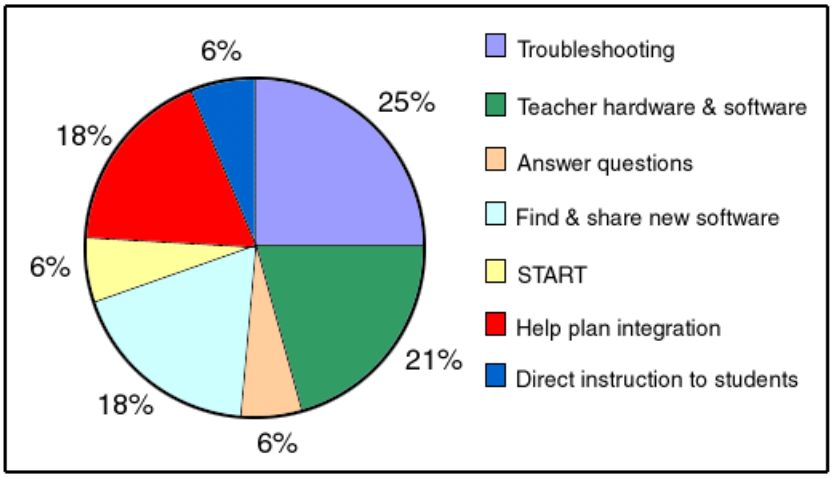

Figure 1: SBTS functions as seen by teachers.

2. What SBTS activities have you found useful?

To my surprise, the top responses were after school training and initiating integrated lab projects and activities. Although I didn't think the training had been well attended, the teachers had appreciated the training offered. The training with immediate use such as the Outlook training was considered most valuable. Teachers had not initiated lab projects but were eager to participate once I offered them. Here was a lesson to be learned. If I initiated the projects, the teachers were happy to follow. It appeared that without my support, teachers lacked the confidence to create integrated technology lessons. Especially after I pointed out all the SOLs being covered with the projects, they were enthusiastically received.

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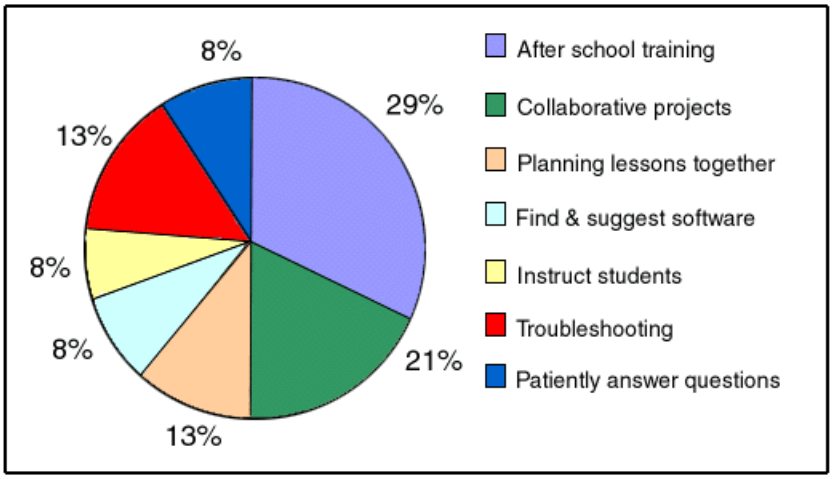

Figure 2: Useful SBTS activities identified by teachers.

3. What factors have encouraged you to use technology in your classroom?

The most frequently stated factor encouraging teachers to participate in technology integration was the belief that students want and need to know how to use technology. The second most often reported factor was knowing that I was willing to help and support teachers as needed. Other teachers mentioned use of technology because of a diversity of student needs, a need to individualize instruction, opportunity to plan at team meetings, and availability of good software. I began to think there was a lot that was right with our program.

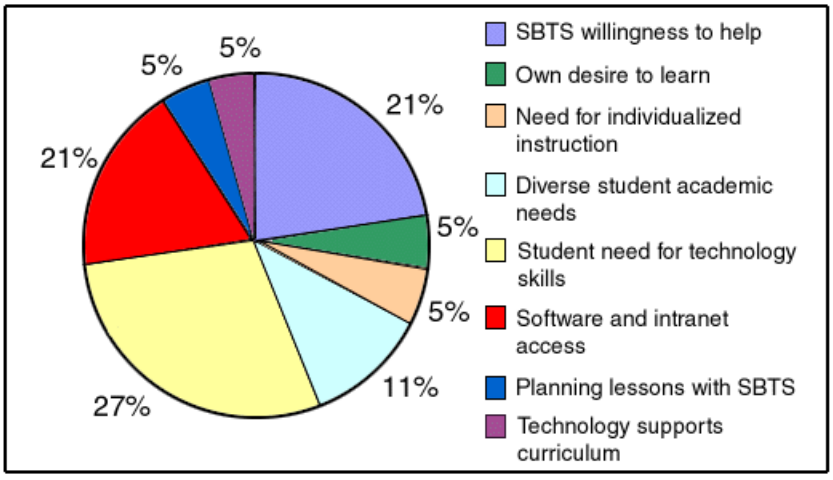

Figure 3: Factors encouraging use of technology.

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4. What are some of the factors that prevent you from integrating technology in your curriculum?

The resounding answer was lack of time; time to plan and execute an integrated lesson, time to become familiar with programs, time to search for appropriate materials. To my surprise, one teacher mentioned our lack of software. This told me that having software in our building was not sufficient. I needed to do more to let teachers know what was available. I began creating "resource sheets" on software to let teachers know what subjects and objectives the software covered and how best to offer it to students.

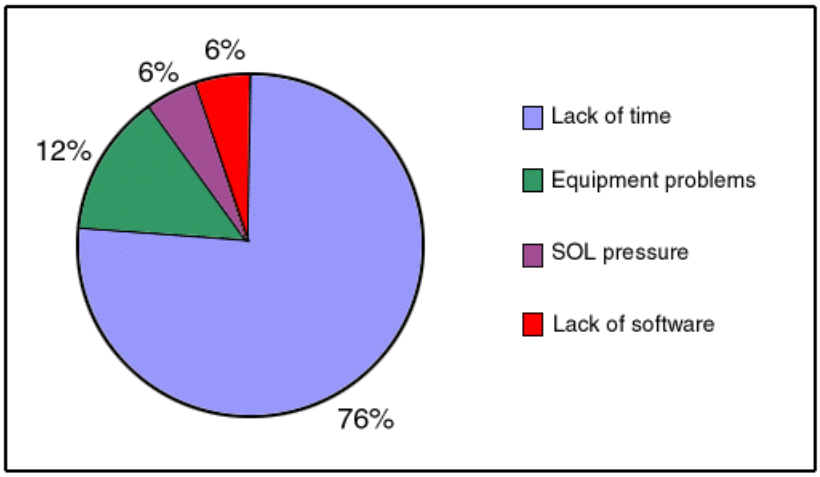

Figure 4: Deterrents to use technology.

5. Do you consider the use of technology important to the classroom? Why? Most teachers stated that students needed to develop multimedia skills. Others stated that technology accommodated learning styles, created increased resources of information and it was fun.

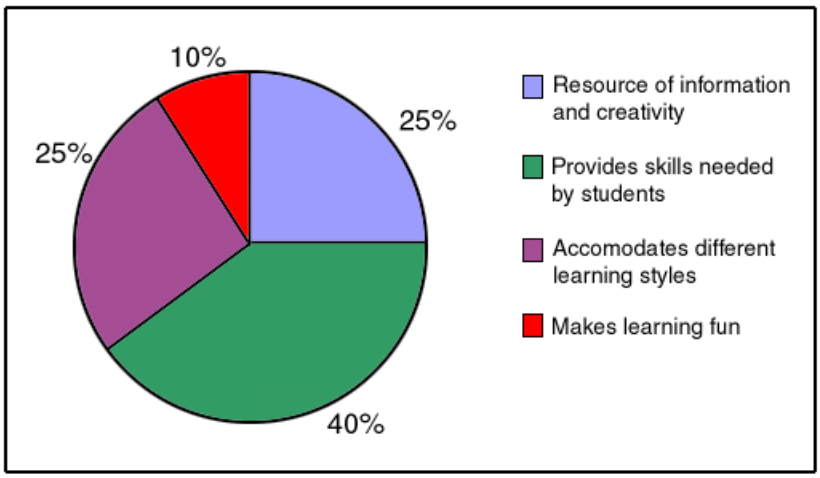

Figure 5: Importance of technology in the classroom.

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6. If I could change one thing about our program, I would....

Teachers wanted more lab time, earlier lab openings, more direct student teaching by SBTS and a weekly schedule in the lab. This suggests to me that teachers want computer use; they just hesitate to plan it by themselves. My focus needs to shift to greater initiation and planning of activities.

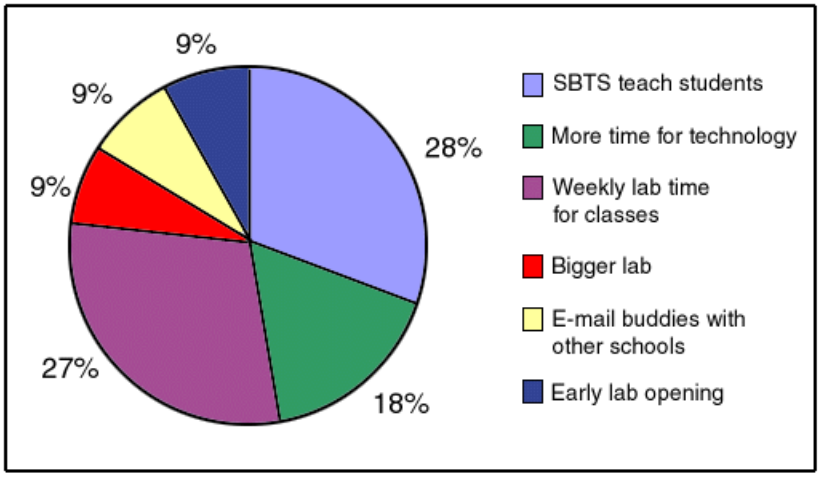

Figure 6: Teacher desired improvements in technology program.

Clarifying the Rules

My request to attend team-planning meetings was enthusiastically received. Discussions began with teachers stating the areas of curriculum to be covered. Then I suggested computer projects that would support the objectives. Teachers would pick the suggestions that they liked and that fit their time frames. We planned so that each contributed their expertise to the developing lesson. To my surprise, teachers were very open to suggestions and willing to collaborate. They supplied nine-week plans and discussed which curriculum objectives were best achieved with technology integration. We were working together to integrate technology into the classroom curriculum. A new collaborative energy was evident. I began to believe that our students could be prepared for the literacy demands of their future. For the first time, I really felt we were winning the technology game.

The continuation of this research will appear in the next VSTE Journal publication. My reflections have allowed me to identify several findings and implications that will guide the future integration of technology in our building. These will be listed in my conclusion.

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