

Technology Integration Lessons from the TLA

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Since its inception in 2000, more than 3000 Texas administrators and sixty percent of Texas school districts have participated in the Technology Leadership Academy, or TLA. Participating superintendents and principals pay a registration fee and receive 4 full days of Technology Leadership training focusing on technology integration, ways technology use can positively influence student achievement, best practices in professional development, total cost of ownership, and other topics. In addition to training, participants receive a notebook computer (Macintosh or Windows-based), electronic curriculum, and online support. The TLA is funded primarily by the Bill & Melinda Gates Foundation, with matching funds provided by The Meadows Foundation, the Sid W. Richardson Foundation, and the Houston Endowment Inc. The Technology Leadership Academy is offered by the Texas Association of School Administrators (TASA) and the Texas Leadership Center, with support from Texas Tech University and the Texas Business and Education Coalition.

During Spring 2003, I had the opportunity to conduct a series of videotaped interviews with former TLA participants, identified by service center representatives and others as exceptional administrators in the area of technology leadership. Our discussions focused primarily on the strategies they employ encouraging teachers to effectively integrate technology use in classroom instruction. We also discussed the impact the Academy had upon personal use of technology as a school administrator, particularly in using tools like EnGauge (www.ncrel.org/engauge) and the Taglit survey (www.taglit.org) for data-based decision making. It was very motivating to spend time with these individuals. Not surprisingly, I found them to not only be proficient users of technology, but also exceptional leaders able to foster an educational culture where successful technology integration is but one byproduct. As Sharon Tate, principal of Memorial Elementary in New Braunfels stated, "When your bottom line is improving opportunities for student learning, using technology tools in new ways to engage students comes naturally." As I continued to see and hear many of the same things about successful technology integration in secondary as well as elementary settings across the state, I knew these shared themes

needed to be shared with others. The goal of this article is to tell part of this story.

Technology Integration is Gradual : Open Lab Time is a Must!

Naive observers sometimes expect technology integration in the classroom to be a spontaneous process, analogous in many ways to starting a fire. Once a computer is placed in a classroom, they expect the teacher and students to immediately "take to it" like a match and gasoline, creating an explosion of expanded opportunities for teaching and learning.

Unfortunately, this is almost never the case. Students are usually eager to use the computer, but teachers are often hesitant and unsure of ways to effectively use it within instruction. We tend to teach the way we were taught, and few of today's classroom teachers had opportunities to learn in a "technology infused" setting. Technology integration is a process, involving not only the physical acquisition of tools like computer hardware and software, but also important changes in the ways educators think about their roles in the classroom and student roles. As technology is used more regularly in the classroom, roles can change. The teacher can become less the "sage on the stage" and more the "guide on the side."

This process of change is natural and fairly consistent. It was well documented during the Apple Classrooms of Tomorrow project, from 1985 through 1998 (www.apple.com/education/k12/leadership/acot/).

Teachers in a well supported environment tend to evolve from personal uses of technology which tend to replicate previous ways of teaching, to more student-centered, innovative uses which may include activities and outcomes impossible without the use of technology. Author and speaker Alan November refers to this as "automation" (doing what we have done previously but using technology) and "information" (doing otherwise impossible things with technology.)

This process involves paradigmatic change. That is a big word, but "paradigm" basically means "a pattern of thinking." For years, educators have thought of computer time as something like PE, art, or music, often a "special" class that students are sent away from the regular classroom to do. The process of technology integration involves changing this way of thinking, at secondary as well as elementary levels. The new paradigm becomes, "technology is not something I send you somewhere else to do, it is something we do every day in the natural course of our classroom activities."

Individuals and organizations often change very slowly, and sometimes with great resistance. In the schools of administrators I interviewed for this project, one of the most critical administrative decisions impacting the prevailing "paradigm" of technology use regards the scheduling of computer labs. In every case where technology integration, led by classroom teachers, was an everyday reality, the campus principal had made "open lab time" available.

Open labs are fundamentally different from scheduled labs in their instructional focus. The scheduled lab concept is based on the idea that a computer teacher can and should provide instruction about technology to students independent of other classroom activities. This concept and model is still viable and needed in many contexts. Indeed a good case can be made for scheduled lab time for students at all grade levels.

An open lab, however, is based on the idea that in order to be relevant and become truly "transparent," technology skills must be embedded alongside other curricular learning objectives being taught in the regular classroom. Open labs are available for classroom teachers to reserve as needed: for one hour one day, for an entire morning, or for their class period each day for an entire week. In the case of a mobile lab, consisting of a cart of laptops able to access the internet wirelessly, checkout is available for a variety of times for use in the regular classroom of the teacher.

Texas districts and campuses reflect tremendous diversity at a variety of levels, but from my observations, there is a great deal of consistency in the evolution of "educational paradigms" regarding technology use. Under the informed guidance of administrators, campuses successfully integrating technology recognize the gradual nature of the integration process. Additionally, open lab scheduling is available for teachers, both for fixed computer labs and (when resources have made it possible) for mobile laptop labs.

Administrators Must Provide the Tools

It is easy to talk the talk of technology integration, but very hard to walk the walk if you don't have any tools. Thanks to technology allocated tax dollars returned to districts by the state, local tax dollars, special technology bond programs in some cases, and grant funds provided by sources like the Telecommunications Infrastructure Fund (www.tifb.state.tx.us), more technology tools are available in Texas classrooms than ever before. Unfortunately, the tools of today can all too quickly become the doorstops of tomorrow, and continual investment and

upgrading of computer hardware, software, and network infrastructure is vital.

Past TLA participants in districts where technology integration is a reality place a clear emphasis on providing technology tools to their teachers. Computers are not only available in the labs on these campuses, but every teacher has at least one computer in their classroom. Some districts offer incentive programs to teachers, who can earn a new laptop computer after completing a schedule of training programs. Many of these programs involve not only workshop attendance ("seat time,") but also performance-based skill demonstrations like the creation of electronic portfolios.

Issues of equity are important in discussions about technology. Use of the limited computer resources in classrooms should not be reserved only for students who finish their regular assignment first, nor should boys be given more opportunities to learn technology skills than girls. Students from affluent families should not be provided with more opportunities for technology literacy development than students from economically disadvantaged families. Statistics and conclusions emerging from research on the "digital divide" deserve the attention of all educators (www.pbs.org/digitaldivide/).

When technology resources are scarce, however, administrators can face difficult decisions regarding equity. Administrators I interviewed had a shared answer for this situation: equip and empower those who have the most interest, enthusiasm, and demonstrated skills with technology integration.

Best Staff Development is In-House

Many years ago after the establishment of public schools in America, someone cleverly thought of a concept now referred to as "staff development" or "professional development." The state legislature mandates a certain number of these days per year, in the idealistic hope that teachers will continue to learn more and become better educators.

The need for continuing professional education and instructional improvement for teachers is not questioned, but the current method of providing "staff development days" may not be the most effective option in the case of technology integration. One shoe rarely fits all in education, although administrators often assume (and hope) that it will.

Administrators I interviewed stated repeatedly that the most effective staff development for technology on their campus did not come from "outside experts." The best training happened when the principal asked a teacher

who was successfully using technology with students to share what they were doing.

Teachers as a group can be extremely difficult, to teach, and are usually even harder to convince of a new idea. Administrators I interviewed know this, and have witnessed the most profound changes regarding technology integration on their campus after teachers were asked to share with their peers what they knew and what worked in their classroom with technology. Not only did this give an opportunity for the teacher using technology to shine in the spotlight (and earn some comp time as an appropriate carrot for their efforts,) it also showed other teachers that "one of us can do this" and that proposed instructional methods are realistic.

School Culture is Vital

In districts and on campuses where technology integration is common and transparent, administrators I interviewed intentionally foster a unique educational culture. The word "culture" is used intentionally here, because it connotes much more than written policies or formal procedures. A culture includes informal as well as formal understandings, it is shaped by perception as well as action, and is a fluid reality open to change as well as growth.

Technology integration is a risky undertaking for teachers as well as administrators. Computers crash. The connection to the internet can often be slow, and sometimes is not available. When it comes to technology use, often teachers feel that students know more than they do. This can be an intimidating, frustrating, and risky process.

Administrators whose teachers model exemplary technology integration recognize the inherently risky nature of technology use in the classroom, and they encourage it. Not all campus administrators have a positive view of the "good classroom noise" which naturally takes place in a room where cooperative learning strategies are effectively employed. Administrators I interviewed do have this positive view, however, and understand that their mentoring of teachers and the peer-mentoring of teachers within their building are essential components within the school educational culture.

Despite the tendency of teachers to favor predominantly lecture based instructional methods, learning remains an inherently social process. John Dewey was correct, noting this repeatedly in his lectures and writings on education in the late 19th and early 20th centuries. Just as students in our classrooms often learn more from each other than they do from the

teacher, teachers often learn more from each other than they do from an administrator. It is not what the principal or superintendent tells them that changes their behavior, it is what they see and personally experience being successful in the classroom that changes teacher behavior. A school culture that encourages this type of shared growth and social learning is one where technology integration can flourish.

Certified Teacher Technologists are Mandatory

Schools board budgets tend to invest heavily in physical technology resources and infrastructure, but very lightly in human infrastructure relating to instructional technology support. School districts provide staff development training days as required by the state, but this is often the extent of the investment in continuing education for personnel. Training tends to be "one shot" rather than sustained, with outside experts brought in to "sell" the latest and greatest educational innovation or trend but then leave, never to be seen again.

Many of the campuses and districts I visited as part of this TLA participant interview project broke this mold when it came to technology training, because they have numerous full time instructional technology staff on their payroll. Called teacher technologists, technology facilitators, or integration specialists, these individuals are classroom teachers, certified by the state and experienced in all aspects of classroom instruction. This is vital, because in districts still subscribing to the "old paradigm" of educational technology thinking, the only technology staff required are the technicians who troubleshoot the equipment and teacher-aides who monitor and run computer labs.

As already described, technology integration is not a process like spontaneous combustion. It is a gradual process, fostered by intentional efforts of administrators as well as teachers. Administrators on campuses where technology integration is successful recognize this fact, as well as the vital role played by mentor teachers given the specific assignment of helping other teachers learn and practice effective instructional methods using technology. In several cases, principals find money in their budgets each year to fund their own teacher-technologists' salary, even when the district does not provide it. In others, the district provides technology and curriculum integration specialists, who share responsibility for helping teachers at several campuses.

The key lesson, repeated over and over by TLA participants, was that teachers cannot learn to integrate technology on their own. Neither can

they learn effective integration methods and change their patterns of thinking about instruction by simply attending workshops. We have teachers who are early adapters of technology, late adapters (who may never use it), and those in between. Districts placing emphasis on technology integration are successful when they dedicate substantial payroll resources for these "teacher technologists," who model, hold-hands and assist as required for teachers "in the middle" of the technology integration population.

Administrative Modeling is Powerful

A critical tenet of the Technology Leadership Academy is that administrators do not have to be "masters" of all types of technology use in order to be effective technology leaders. They do, however, need a working vocabulary of technology terms, concepts and issues, and DO need to visibly model effective technology use for their teachers, parents, students, and other community members.

One of the most outstanding examples of an administrator with command of not only the technology leadership lessons described in this article, but also of personal computer technical skills, is Dr John Kelly, superintendent of schools for Boerne ISD outside San Antonio. Dr Kelly had presentations of "Teacher of the Year" awards for 2002-2003 in his district videotaped, so he was able to edit the video later on his office computer and create clips to use within a PowerPoint presentation. After sharing this presentation with other teachers as well as community members, Dr Kelly commented on the tremendous power of digital video technology to tell a story. He remarked that, "standing in front of that video," so much more was communicated to his audience than he could have ever articulated with words and even still images. Because of his command of technologies and his astute awareness of how different multimedia elements can be woven together in a presentation, Dr Kelly was able to communicate a powerful message to his audience.

This example of modeling the administrative use of technology was highly successful, but other TLA participants shared contrasting stories. Many had experienced some type of problem with a PowerPoint presentation shared with staff. Whether or not their presentation with technology went off without a hitch or had a few hiccups, the lesson they modeled as well as the lesson learned by those around them was the same: they are willing to take the risks associated with technology use and integration because they believe the benefits make the exercise worthwhile. These campus and district leaders talk the talk, and they walk the walk. They provide the

tools, and they foster the development of a culture where others feel both empowered and supported to take risks which seek to improve opportunities for student learning.

Many also ensure that certified teachers are available to mentor other teachers in technology integrated instructional methods. Their vision of appropriate and integrated technology use thereby becomes the vision as well as the reality for teachers and students in their environments. The benefits realized are apparent to all educational stakeholders

2003-2004 is the fourth and final year of the TLA. More information (including registration details) is available on www.tasanet.org/techconf/. Video clips from these interviews are being posted online during Summer 2003 on www.educ.ttu.edu/tla/videos.

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