

Technology in Motion

The University of Montevallo's Regional Research and Education Inservice Center

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INTRODUCTION

Surrounded by computers and other portable devices such as video games and smart phones, adolescents in today's society spend more time surfing the Web, building Web sites, communicating through instant messaging, wikis, e-mails, and writing blogs than they do watching television. Administrators and teachers must continue to reach this generation of students and employ them with twenty-first century skills. In order to do so, teachers need to be adequately trained to facilitate courses with technologi-

cally advanced students. Improvement of teaching is not simple, but it remains a demanding task. "If instruction is to improve, something related to instruction must change. The instructional process or content must change, the faculty member's knowledge, skills, or attitudes must change, or the organizational environment must change" (Abedor & Sachs, 1978). The research literature on educational technology has identified a number of important contextual factors that influence how technology is implemented in educational settings. The Education Development Center discovered teacher participation in quality professional development, teachers' access to technology, and pedagogical beliefs influence teachers' use of technology and their instructional practices (Martin & Shulman, 2006). For the purpose of this article, technology professional development for educators in a K-12 learning environment is examined at the University of Montevallo's Regional Research and Education Inservice Center. The University of Montevallo is Alabama's Public Liberal Arts University.



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PROFESSIONAL DEVELOPMENT

Professional development is designed to prepare and support educators to help all learners achieve high standards of learning. The mission and principles of professional development are summarized by the following list of characteristics (Goals, 2000).

Table 1. Ten Exemplary Characteristics of Professional Development

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1. It focuses on teachers as central to student learning, yet it includes all other members of the school staff.
 2. It focuses on individual, community, and organizational improvement.
 3. It respects and nurtures the intellectual and leadership capabilities of teachers, principals, and other individuals in the school community.
 4. It reflects high quality research and practices in teaching, learning, and leadership.
 5. It enables teachers to become more proficient in subject content, teaching strategies, uses of technologies, and other essential elements of teaching to high standards.
 6. It promotes continuous inquiry and development embedded in the daily life of schools.
 7. It is planned collaboratively by those who will participate in and guide that development.
 8. It requires substantial time and additional resources.
 9. It is driven by a logical long-term plan.
 10. It is ultimately evaluated on the basis of its impact on teacher effectiveness and student learning; and these assessments guide subsequent professional development efforts.
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The University of Montevallo's Regional Research and Education Inservice Center expands on these exemplary professional development characteristics by meeting the needs of practicing teachers and administrators. Through numerous workshops and training sessions provided by the Inservice Center, practicing professionals acquire content knowledge, skills, and techniques that enable them to move from novice to expert. The sessions meet National Staff Development Standards through programs that are rigorous, data-driven, research-based, intensive, and ongoing. Established by the Alabama legislature in 1984-1985, the University of Montevallo's Regional Research and Education Inservice Center is one of 11 centers providing professional development to K-12 educators in designated public school systems. The Inservice Center implements and facilitates statewide initiatives such as National Board Certification Training, Alabama Leadership Academy, Alabama Science in Motion, Alabama Technology in Motion, Alabama Math, Science and Technology Initiative, as well as Alabama Reading Initiative. In this article, Technology in Motion is examined.

TECHNOLOGY IN MOTION

The Alabama State Board of Education identified eight critical need areas in which the University of Montevallo's Regional Research and Education Inservice Center could provide professional development. One of the eight areas needing improvement was technology. In order to address this need, Alabama State Superintendent of Education Dr. J. B. Morton worked to create Technology in Motion (TIM), which became Alabama's initiative for free technology professional development for educators. Technology In Motion provides:

job embedded professional development for teachers to promote the use of technology in teaching and learning. The program offers services, materials and training that support teachers' professional growth in effective teaching practices, the creation of technology rich learning environments and project based learning. (<http://www.montevallo.edu/ic/tim.shtm>)

Alabama's technology initiative presents materials, services, and training that sustain teachers' professional development in effective teaching practices as well as to create a foundation for technology-rich

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learning environments and project-based learning. In 2000, when the program began, the purpose was to convey basic computer instruction to K-12 classroom teachers. The training philosophy of TIM is that teachers and students learn by accomplishing real-world tasks. Therefore, the hands-on, job-embedded classroom activities are practical and relevant.

Initially, TIM specialists traveled throughout the state with an instructional manual and 40 Macintosh iBooks to facilitate workshops. In recent years, the iBooks have been replaced by PC laptops, and TIM specialists now incorporate handheld devices and digital cameras into their instruction. The PC laptops have an advantage of wireless connection to the Internet and CD burners. Through face-to-face courses, online courses, e-learning, and professional learning groups, TIM supports the teacher technology standards created by the Alabama Board of Educa-

tion in 2004. The standards were designed for professional personnel in the areas of technology integration, use, and technology instructional leadership, and were implemented statewide in August 2006 (Alabama Department of Education, 2004).

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TECHNOLOGY IN MOTION WORKSHOPS

Professional development offered through TIM improves teaching and learning while enhancing Alabama's workforce skills. At the University of Montevallo's Regional Research and Education Inservice Center, Janet Taylor, the instructional technologist, provides job-embedded professional development opportunities for educators to encourage the use of technology in learning environments. Taylor collaboratively plans workshops with school or district personnel to support the local school plan, and/or the local school district plan in

Table 2. Teacher Technology Standards

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1. Identify and evaluate technology resources and technical assistance, (i.e., those available on-line and on-site within a school and district setting).
 2. Assess advantages and limitations of current and emerging technologies, and on-line/software content to facilitate teaching and student learning.
 3. Develop and implement a classroom management plan to ensure equitable and effective student access to available technology resources.
 4. Model safe, responsible, legal and ethical use of technology and implement school and district acceptable use policies including fair-use and copyright guidelines and Internet user protection policies.
 5. Design, implement, and assess learner-centered lessons and units that use appropriate and effective practices in teaching and learning with technology.
 6. Use technology tools (including, but not limited to, spreadsheets, webpage development, digital video, the Internet, and e-mail) for instruction, student assessment, management, reporting purposes, and communication with parents/guardians of students.
 7. Facilitate students' individual and collaborative use of technologies (including but not limited to, spreadsheets, Webpage development, digital video, the Internet, and e-mail) to locate, collect, create, produce, communicate, and present information.
 8. Design, manage, and facilitate learning experiences incorporating technologies that are responsive to diversity of learners, learning styles and special needs of all students (e.g., assistive technologies for students with special needs).
 9. Evaluate students' technology proficiency and students' technology-based products within curricular areas.
 10. Use technology to enhance professional growth (e.g., through accessing Web-based information, on-line collaboration with other educators and experts, and on-line professional courses).
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addition to presenting programs at national conferences such as Florida Educational Technology Conference. In 2007-2008 Taylor taught programs on the following topics: Delightfully Digital, Photo Story 3 for Windows XP, Windows Movie Maker 2, i-Safe, Kidspiration, Inspiration, Webpage Do's and Don'ts, PowerPoint I, II, and III, Alabama Virtual Library and Alabama Learning Exchange. This article focuses on Microsoft Windows Movie Maker 2 and Intel Teach to the Future.

WINDOWS MOVIE MAKER 2

Microsoft Windows Movie Maker 2 is a free video-editing tool included with Windows XP. The program can be easily downloaded and is well-supported online with detailed tutorials and newsgroups for novice individuals learning how to polish home videos. Tutorials offered online address the following "how-to" topics: transitions, special effects, titles, credits, music, and narration. During Taylor's workshop educators spend between 2 and 3 days on learning to navigate Windows Movie Maker 2 software. Initially, the session began as a 2½- or 3-hour workshop, but quickly transitioned into a longer time segment as participants' interest grew. Activities during the workshop include guided instruction on the content of Windows Movie Maker 2, free time for exploration, one-to-one instruction, and finally a video creation. Videos created by participants may include existing video footage and/or still pictures. In addition, participants learn how to add titles and transitions to their videos.

In the summer of 2006, two elementary school teachers from Hall Kent Elementary School in Birmingham, Alabama participated in a similar Movie Maker workshop. Jerome Isley (personal communication, March 28, 2007) enjoyed learning how to create movies with audio, music, and video arrangements. His time during the workshop was well-spent and motivating.

Upon returning to school in the fall of 2006, Isley incorporated Windows Movie Maker and Photo Story into a unit of study on haiku poems. Students in his class studied haiku poems, wrote their own version of a haiku poem, and created a skit to further explain their creations. Isley compiled students' work in Movie Maker to produce a short video. In turn, the video was submitted and shown at Homewood City School's Technology Expo and Showcase held on February 27, 2007. Isley described Taylor's workshop as "A great workshop for someone who inspires to share their students' learning," (personal communication, March 28, 2007).

Dee Hellmers, another second grade teacher at Hall Kent Elementary School, confirmed Taylor's love for instructional technology by stating, "She feels strongly about the use of technology and its ability to excite students and teachers alike," (personal communication, March 29, 2007). As a veteran teacher, Hellmers continues to search for innovative ways to keep teaching invigorating for her as well as stimulating for second grade students. Taylor's workshop on Movie Maker and Photo-story fit that bill for Hellmers. She utilized these programs to teach geography. Hellmers explained her students loved watching the video segment, while she found it a great way to introduce additional travels and travelers. "Kids are drawn to technology like magnets," stated Hellmers (personal communication, March 29, 2007). After attending the technology workshop, she suggested countless teachers will be drawn to technology in the same way that their students will be. Hellmers concluded, "Teachers will be persuaded to reflect upon how they can integrate technology more in their own classrooms."

The stories of Isley and Hellmers reveal how technology is not a substitute for teachers and educators. Instead, technology when implemented effectively can improve the value of teaching and learning.

INTEL TEACH TO THE FUTURE

Intel Teach to the Future is a global endeavor to assist veteran teachers and preservice teachers integrate technology into instruction and enhance student learning. Participating educators in the program receive extensive training and valuable resources to promote effective technology use in the classroom. Teachers interact with one another and learn how, when, and where to incorporate technology tools and resources into the curricula with a focus on developing students' higher-order thinking skills. In addition, participants are coached on how best to create assessment tools and align lessons with educational learning goals and national standards. The program utilizes the Internet, Web page design, as well as student projects. Taylor, also a Senior Trainer for the Intel Teach to the Future program, stated teachers enjoy taking existing lessons and finding ways to incorporate technology so that students walk away from the lessons with a focus on new technologies (personal communication, March 27, 2007).

Since its creation in 2000, Intel Teach to the Future has trained over 3 million educators in 35 countries. On January 25, 2006, Intel Corporation Chairman Craig Barrett announced plans to train an additional 10 million teachers in developing nations over the next 5 years in the use of technology to enhance teaching and learning (http://www.intel.com/pressroom/archive/releases/20060125edu_a.htm). The Intel Teach Program is a proven, worldwide professional development program that helps educators augment twenty-first century learning through the effective use of technology. V. McHale, a master teacher from Teaneck Public Schools in New Jersey stated,

I have seen a major change in teachers who have completed the training. They design higher-level thinking and challenge students to work at a higher level of

effort. Their students complete projects that not only demonstrate mastery of information, but also demonstrate analysis, synthesis, and evaluation of that information. (<http://www.intel.com/education/teach/index.htm>)

Intel Teach Program Essentials Course is designed to instruct classroom teachers on how to promote student-centered learning and effectively integrate the use of technology into their existing curriculum to increase student achievement. The course consists of 40 hours of hands-on instruction delivered in 10 modules. The modules include the following topics:

- Module One: Getting Started
- Module Two: Locating Resources for Unit Portfolios
- Module Three: Creating Student Multimedia Presentations
- Module Four: Creating Student Publications
- Module Five: Creating Student Support Materials
- Module Six: Creating Student Web Sites
- Module Seven: Creating Teacher Support Materials
- Module Eight: Developing Plans for Implementation
- Module Nine: Putting Unit Portfolios Together
- Module Ten: Showcasing Unit Portfolios

The Education Development Center conducted the 2006 Instructional Practices and Classroom Use of Technology Survey with over 1,000 teachers, some of who participated in Intel Teach to the Future and some of whom did not, to investigate whether three of the key research-based factors—participation in quality professional development (specifically Intel Teach Essentials), teachers' access to technology, and their pedagogical beliefs— influenced teachers' use of technology and their instructional practices. Results from the survey indicated that Intel Teach to the Future Essentials participants in general

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(94.4%) and master teachers (97%) used technology in their practices more than nonparticipants (86.1%). In addition, Intel Teach to the Future Essentials participants in general (95.4%) and master teachers in particular (98.4%) used technology with their students more than nonparticipants did (90.7%) (Martin & Shulman, 2006).

CONCLUSION

What is one challenge Alabama educators in a K-12 learning environment face with incorporating technology into their classrooms? How can schools speed up the rate of diffusion of an innovation such as technology? Taylor affirmed administrators and teachers face two essential problems when adopting new innovations relating to technology: inspired teachers and time/money. First, it is essential that teachers are inspired to use a variety of technology tools. This prerequisite of inspiration is confirmed by Abedor and Sachs (1978) when they stated individuals must achieve a certain level of individual readiness before instructional innovation can be successful. Factors affecting individual levels of readiness may include attitudes (which are positive toward self, teaching, and change), values (which places importance on teaching and student learning), beliefs (that instructional improvement is possible and worthwhile), skills (in organizing and delivering information), and knowledge (of subject matter, innovations, and teaching methods, as well as strategies). When teachers acknowledge these factors, then individual readiness will be obtained; in turn motivating teachers to integrate technology. The second problem described by Taylor is time and money. Teachers need adequate amount of time out of the classroom to communicate with other professionals and learn how to effectively integrate technology. When time and communication channels are provided by administrators the rate of diffusion with technology will increase (Rogers, 1995). In

addition to time and inspiration, administrators must provide funding for necessary equipment and other hardware devices. If teachers maintain individual readiness, the schools in which they work must also possess organizational readiness in order for the innovation of technology is accepted. Organizational readiness can be defined as a combination of characteristics that influence the acceptance or tolerance of an innovation in the school. Characteristics leading to organizational readiness are structure (which allows open and free communication and group problem solving), rewards (for teaching or related activities), norms (that support innovation), resources (to support innovation), and policies (that permit trial of innovations) (Abedor & Sachs, 1978). Taylor also noted that

You can have all the time and money in the world to instruct teachers on how to use technology in their classrooms, but if those teachers are not inspired to do so, then they most likely will not implement technology into the curriculum. (personal communication, March 27, 2007)

The improvement of teaching with technology is not an easy task. It requires a long-term commitment personnel and money. The University of Montevallo's Regional Research and Education Inservice Center, as well as TIM, play a significant role in helping Alabama educators improve teaching, in addition to speeding up the rate of diffusion of technology integration by providing free professional development to teachers in a K-12 learning environment. The programs offered by TIM enable educators to become and remain proficient in the use of technology so they can better facilitate learning. Through the numerous workshops and training sessions provided by the Inservice Center, practicing professionals acquire content knowledge, skills, and techniques to help them address the needs of adolescents in today's society.

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