Technology in Education
Virginia Society for VSTE
www.vste.org

Project TILDA: Teaching, Integrating, and Learning in a Digital Age

by Judith M. Davis, M.A., Anne L. Pierce, Ph.D., Arun Verman, Ph.D., & Christina Pinkston Betts, Ph.D.

Project TILDA: Teaching, Integrating, and Learning in a Digital Age is a professional development program for middle school teachers that incorporates data-driven decision making and technology integration to improve student achievement in reading, writing, science, and mathematics. Funded by a State Council for Higher Education of Virginia (SCHEV), No Child Left Behind, Title II, Part A grant, this program is based on a dynamic, flexible model for curriculum planning and technology integration that can be adapted to a variety of learning environments and levels—traditional, blended, or distance courses for K-16 learners.

Several national studies (U. S. Department of Commerce, 1999; Corporation for Public Broadcasting, 2003) have found that the mere presence of computers in schools does not raise student achievement in and of itself, but that such technology, when coupled with high-quality professional development activities, can significantly impact student performance, especially for minority and low-income students. That research is reflected in the National Education Technology Plan (U. S. Department of Education, 2004), which notes that "What is remarkable is what students can do with the technology, curricula and good instruction," but also cautions that the success of classroom technology integration is dependent upon high quality professional development for teachers (p. 29).

Project TILDA addresses this need for high quality professional development through a program of week-long teaching institutes and monthly academic year follow-up workshops designed to improve student Standards of Learning (SOL) performance in reading, writing, mathematics, and science by training teachers to use both traditional and technology-enhanced pedagogies more effectively to meet specific curricular objectives. The project team structures these activities in close collaboration with administrators and subject area heads at the two participating middle schools using the schools' disaggregated SOL data to concentrate training on specific SOL objectives. Since both schools have good technology resources, including laptop teams for many of their students and teachers, a key goal of the project is to complement the school district's current technology training by having subject specialists model best practices for using instructional technology to meet specific curricular goals.

Project TILDA, continued

Project TILDA's training model is based on a highly successful program, the Instructional Technology Assistance Project (ITAP), conducted by the Southern Education Foundation from 2000-2004 through a grant from the Andrew W. Mellon Foundation (Southern Education Foundation, 2000). That program trained faculty members from over 20 historically black colleges and universities to integrate technology and student-centered learning activities across the curriculum. The cornerstone of ITAP was a curriculum-planning model, *Teaching Well Using Technology* (2000), developed by Dr. Barbara Walvoord and her colleagues (Walvoord, Laughner, & Barry, 1999). Informed by Chickering and Gamson's (1987) "Seven principles for good practice in undergraduate education," this program walks teachers through seven steps that yield student-centered, outcomes-based course models.

Teaching Well Using Technology: The Seven Steps [1]

Step 1: Ask, "What do I want my students to learn?"

Step 2: Identify the best teaching approaches for the learning you want.

Step 3: Plan major assignments and exams that will both teach and test the learning you want.

Step 4: Consider times and spaces for learning.

Step 5: Remember what technologies can and cannot do.

Step 6: Sequence the learning and choose the technology.

Step 7: Implement, evaluate, and think creatively.

(Walvoord et al., 1999)

Once participants complete this initial planning process, they are then exposed to both traditional and high-tech teaching tools and learning activities, including discipline-specific software. The Project TILDA team revised the ITAP model to incorporate more rigorous, data-driven decision making and to adapt the basic training model to a middle school setting.

Throughout the teaching institute weeks, participants meet as a group for morning sessions built around common topics such as (a) data-driven decision making; (b) outcomes-based curricular planning; (c) student-centered, hands-on pedagogies; (d) instructional technology integration techniques; and (e) formative and summative evaluation. For the afternoon sessions, participants break into core subject groups to focus on specific learning activities and pedagogical approaches appropriate to the participants' individual subject areas. All of the training materials are built in a Blackboard course shell to allow the faculty trainers to model best practices for technology-enhanced teaching and to allow the teacher participants to experience the Blackboard environment from the perspective of their students. In addition, all participants are given a "teaching tool kit" that includes all of the print and electronic resources used during the week. The following is a sample agenda for these week-long

Project TILDA, continued

teaching institutes:

Sample teaching institute schedule

Day	Activities
Monday	Introduction of participants Data-driven decision making "7 Steps" to better teaching and learning Evaluation and team assessments
Tuesday	Instructional uses of course management software Outcomes-based curricular design Evaluation and team assessments
Wednesday	Instructional uses of MS Office and research techniques Using Inspiration software across the curriculum Core subject interactive pedagogy Evaluation and team assessments
Thursday	Outcomes-based assessment design Hot Potatoes software Core subject assessment design Evaluation and team assessments
Friday	Team time to complete projects Participant project presentations Final evaluation and team assessments

Each session requires the teachers to complete hands-on activities using the teaching strategies and software introduced in the session. The core-subject pedagogy sessions, for example, might involve teachers in using graphing calculators to demonstrate mathematical principles, building crossword puzzles with Hot Potatoes to reinforce knowledge of science terminology, or constructing a web of critical reading activities using Inspiration. As much as possible, all learning activities are presented with traditional and "technology enhanced" options to allow teachers to adapt them to their individual teaching environments and resources.

During the teaching institute, each teacher designs a unit of coordinated learning activities that are intended to meet specific SOL objectives. During the "7 Steps" session, the teachers identify problematic learning objectives in their disciplines, for example, SOLs related to critical reading, writing, and research skills. As the week unfolds, they apply the learning activity models and software options presented to create activities to help their students meet those objectives. At the end of the week, the teachers present their finished projects in a "show and tell" demonstration for all of the participants. Projects from a recent teaching institute included a PowerPoint-based exploration of the African slave trade that guided students through various Internet

Project TILDA, continued

videos and research sites, as well as write-to-learn activities using Inspiration. Another project used Inspiration to create an interactive web quest—complete with links to the Metropolitan Museum of Art's Egyptian collection—to enhance critical reading and writing skills for the book, *From the Mixed Up Files of Mrs. Basil E. Frankweiler.*

The week-long teaching institutes are complemented by monthly follow-up sessions held during the academic year to extend and reinforce the techniques introduced in the institutes and to provide ongoing idea-sharing and mentoring among the participants. These monthly sessions are organized by core discipline, with each session focusing on teaching techniques and/or software solutions for specific problems or objectives related to that discipline. In addition, the teachers use these forums to share their own evaluations, or "lessons learned," as they implement new techniques in the classroom. This focus on continuous evaluation is one of the most important aspects of the project.

Step 7 encourages teachers to "implement, evaluate, and think creatively" (Walvoord et al., 1999). As noted in the studies cited above, too often teachers implement new technologies without sufficient attention to identifying the outcomes they hope to achieve and, just as importantly, evaluating their success in achieving those outcomes. Therefore, this project models strategies for ongoing evaluation of the various learning activities presented and encourages teachers to use similar quantitative and qualitative measures to assess their own technology integration efforts. After every individual workshop session, for example, the teachers complete evaluations using the survey feature built into the Blackboard assessment manager. In addition, they complete project reflections using Blackboard's discussion board and evaluate and critique each other's final project presentations.

As this project approaches the end of its first year of implementation in July, Project TILDA appears to be a resounding success. Evaluations show high levels of satisfaction from the participating teachers, and the continuous demand from other teachers to enroll in the project attests to the effectiveness of the trained cadre of teachers the program has produced thus far. Since one of the goals of the project is to train teachers to mentor and train their colleagues, the growth of the project due to participants' modeling new teaching techniques in their buildings indicates that the participants do, in fact, influence the teaching of others in their buildings. Although final conclusions will not be possible until after summative evaluation of the project is completed in June, all indications are that Project TILDA is improving the quality of teaching, learning, and technology integration for the participating teachers and their students.

References

Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin, 39*(7), 3-7.

Project TILDA, continued

Corporation for Public Broadcasting. (2003). *Connected to the future*. Retrieved on June 21, 2005 at: http://www.cpb.org/pdfs/ed/resources/connected/03_connect_report.pdf.

Southern Education Foundation. (1999). *The Instructional Technology Assistance Project*. Unpublished training materials.

U. S. Department of Commerce. (1999). *Falling through the net: Defining the digital divide*. Retrieved on June 21, 2005 at: http://www.ntia.doc.gov/ntiahome/digitaldivide/.

U. S. Department of Education. (2004). *Toward a new Golden Age in American education: How the Internet, the law, and today's students are revolutionizing expectations*. Retrieved on June 21, 2005 at: http://www.NationalEdTechPlan.org.

Walvoord, B. F., Laughner, T. C., & Barry, K. (1999). *Teaching well using technology*. Unpublished training materials. John Kaneb Center for Teaching and Learning, University of Notre Dame.

About the Authors

Judith M. Davis, an assistant professor of English and the director of the University Writing Program and Writing Technology Laboratory at Hampton University, is the principal investigator and program manager for Project TILDA. She was a teacher-leader for Hampton University's Instructional Technology Assistance Project, an initiative funded by the Southern Education Foundation that trained over 100 faculty members in outcomes-based curricular planning and technology integration. In addition, she has conducted dozens of professional development workshops and presentations on curriculum development, composition pedagogy, and technology integration at local, state, and national conferences, K-12 schools, and institutions of higher education. She may be reached at judith.davis@hamptonu.edu.

Dr. Anne L. Pierce is an assistant professor of education at Hampton University and a co-principal investigator for Project TILDA. Dr. Pierce has produced many professional development presentations for local and national organizations. Her expertise in both science pedagogy and technology training has enabled her elementary and middle school preservice teachers to integrate science topics into their interdisciplinary pedagogical training. Their understanding of how data drives curriculum reform is critical to their classroom success. She may be reached at anne.pierce@hamptonu.edu.

Dr. Arun Verma, an Endowed University Professor of Mathematics and Educational Technology Specialist at Hampton University's Center for Teaching Excellence, is a co-principal investigator for Project TILDA. Dr. Verma recently set up three EMIST (Effective Mathemat-

Project TILDA, continued

ics Instruction using Symbolic-Computational Technology) computer laboratories at three colleges through the Minority Science and Engineering Improvement Program of the U.S. Department of Education. In addition, he has trained 24 advanced placement calculus teachers from nine school divisions and 20 middle school teachers from Hampton City Schools through SCHEV grants related to integrating technology in mathematics instruction. He may be reached at arun.verma@hamptonu.edu.

Dr. Christina Pinkston Betts, an assistant professor of English, is a co-investigator for Project TILDA. She has worked closely with teachers in various school districts to devise methods of instruction to increase students' learning and retention. As co-investigator of a U.S. Housing and Urban Development grant, she serves as project coordinator of the Urban Fusion II Educational Tutorial Project, "Learning That Lasts: Reinventing the ABCs of Reading and Writing," at C. Vernon Spratley Middle School. She may be reached at christina.pinkston-betts@hamptonu.edu.