

Title: **Providing Learner-Centered Educational Technology Professional Development**

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Abstract

The evolution of emerging technologies initiates a diversity of teaching and learning environments that were not previously possible. Technology is an agent of change. With the acceleration of technology comes not only the increased access and quadrupling of information but also the challenge to consider what skills, concepts and information students will need to be successful participants in our society. Technology challenges us to think critically about the nature of learning and to investigate its potential for radically altering the learning environment.

In recent years we have seen many advances in the identification of teaching standards both in content and in technology. New and innovative ways are being sought to enable K-12 educators to make the transition to accommodate the standards and to apply the use of technology for professional productivity as well as to benefit students in their classrooms. In a recent book, *The Social Life of Information*, authors Brown, Collins and Duguid (2000) characterize learning as demand driven, a social act and as identity information. The popular notion of “just in time learning” is similar to that of demand-driven learning as both concepts portray learning as response to peoples’ needs in context. In this paper we address how an educational partnership applies this thinking to a regionalized professional development program in which educators, currently facing issues and challenges of technology, are able to collectively make sense of their situation through appropriate help. We capitalize on the characteristics of adult learners to provide suggestions for applying a learner-centered approach to the design of professional development in educational technology.

Background

The California Commission for Teaching Credentials recently identified specific technology competencies for teacher candidates at two levels of development, including a basic and a professional level. This has triggered the need to establish supportive programs taking into consideration not only how technology affects educators’ and learners’ knowledge, attitudes, and practices but also how it alters the organizational structure of their work environment.

Increases in elementary school enrollment along with class-size reduction and teacher retirements have amplified the demand for teachers. The chronic shortage of teachers in California is especially acute in urban districts. Many first year and beginning teachers have had minimal experience applying technology to teaching and learning. The support and mentoring that a

comprehensive educational technology professional development program offers can tip the balance between success and failure, remaining in the classroom teaching or leaving. Even established teachers need support and encouragement for learning new skills that will keep them up to date with changing technology requirements.

In response to the growing need to prepare teachers to use technology effectively, state funds were advanced in early 2000 to create opportunities for professional development. Educators representing the University, County, District and local school sites in North San Diego County partnered to create ILAST: Improving Learning for All Students Through Technology. Since then, the project has expanded to the greater San Diego city and county area and has provided 120 hours of professional development to over 1700 K-12 teachers and administrators.

Synopsis of Model for Educational Technology Professional Development

The need for change in professional development practices has been documented by researchers and educators (Sparks & Hirsh, 1997). ILAST: Improving Learning for All Students through Technology is a site-based educational technology professional development program that advances our understandings of successful ways to engage adult learners and create the opportunity for change to occur. In the development of this program, consideration was given to the role computers take in changing the work of teachers. Cuban (1986) stated that

...teachers will alter classroom behavior selectively to the degree that certain technologies help them solve problems they define as important and avoid eroding their classroom authority. They will either resist or be indifferent to changes that they see as irrelevant to their practice, that increase their burdens, without adding benefit to their student' learning or that weaken their control in the classroom. (pp. 70-71)

- A. **Themes:** Designed collaboratively by its stakeholders, ILAST meets the immediate need to support professional growth in educational technology for K-12 educators through a vital multi-disciplinary partnership. Partners include California State University San Marcos, the San Diego County Office of Education, North County Professional Development Federation, CTAP Online and over 23 school districts in San Diego and Riverside Counties. The guiding themes of this partnership reflect critical reflection, experiential learning, collaboration, empowerment, and culturally framed goals. By empowerment we mean the shared decision-making and the collective intelligence that occurs through group dynamics. Through critical reflection we are able to extend our thinking beyond computers in a technical and procedural context to how they mediate and change our systems of knowledge, our ways of interpreting and how they change the ecology of the educational environment.
- B. **Engagement:** Unlike short-term professional development workshops and campus-based courses, participation in ILAST combines 40 hours of face-to-face instruction at **Regional Institutes** with an additional 80 hours of support and instruction at teachers' and administrators' own sites. Partnering with educators, agencies, and school districts throughout the county assures ready access and availability of a diversity of professional resources. Each participants chooses the pace and distribution of the activities and timeline which can take up to one year. Many finish their 120-hour commitment in as little as three months. Time is reported monthly to instructors and staff and encouragement offered on a regular basis.

- C. **Self-Directed Learning:** Much thought has been given to the structural framework of ILAST. Because of what we know about adult learners, we provide multiple choices and activities from which to choose. ILAST supports **self-directed learning**. An integral part of each Institute is the opportunity for each participant to develop a Professional Growth Action Plan that commits the learner to the how, when, and where learning will occur. Choices within the program include Saturday and after school workshops, team collaboration at site and in classrooms, online coursework, classroom visitations, participation in multi-point videoconferences, communicating online and interaction in person with peers, mentors, experts and ILAST leaders. Through methods of self-directed learning, participants gain confidence and competence in setting goals, self -assessing progress towards achievement of goals and in their use and understandings of educational technology.
- D. **Leadership:** experienced educational leaders from the greater San Diego, Riverside, Los Angeles and San Bernardino area coordinate ILAST. The team has expert knowledge of state standards as well as the national technology standards for students, teachers and administrators. These national technology standards form the basis of a customized curriculum for professional development that promotes the infusion of technology throughout course content. The leadership team meets regularly to preview, discuss and select relevant technology materials and WWW sites determine appropriate and efficient use of related media to access and evaluate information, analyze and solve problems. Ongoing assessment by the leadership team has led to successful modifications throughout the project.
- E. **Innovative materials:** To help ILAST participants become fluent, critical and confident users of technology and to help them develop the technology skills necessary to succeed in applying their learning to their classroom, an ILAST web site and Participant Resource Book have been created. The ILAST web site (<http://www.CSUSM.edu/ilast>) provides access to curriculum, professional development activities, educational resources, instructors, schedule of events, listing of videoconferences and related resources. The ILAST Participant Resource Book provides not only resources for the professional development institute, but also a portfolio for collecting and documenting professional growth throughout the project.

Essential Elements of Learner-Centered Professional Development in Educational Technology

Voice

When invited to participate voluntarily in professional development, one contributing factor to teacher motivation is how teachers perceive technology. Some have argued that technology is diminishing the importance of the teacher. Teachers may feel threatened with the prospect of giving up their traditional role as knowledge expert. How threatening it can be to have students suddenly appear to “know” more than the instructor. And how challenging indeed, to find oneself engaged in an uninvited debate of what is considered “important knowledge”. We encourage educators to voice and confront these and other concerns as they initiate their program with ILAST. Our research with professional development has shown that teachers want to know first how the technology will help them and then how it will help their students.

Learning is Demand-Driven and Situated

A site-based educational technology professional development program firmly grounds both the novice and experienced teacher in the mechanics of learning how to apply technology, what works and what doesn't. Learning is demand-driven and dependent on engagement in practice. The

learning environment contains meaningful personalized content for the learner with tasks and projects embedded in a context of daily activity. The learner customizes and prioritizes on a personalized need-to-know basis. The pervasiveness of incorporating standards-based lessons with computer-based technology has educational implications. Since quality teaching is the most important predictor of a child's educational success, helping teachers succeed in the application of technology benefits the teacher, students, and the school community.

Scaffolding

The use of technology within professional development programs enables increased synchronous and asynchronous communications. These opportunities expand social and communicative dimensions and allow augmented mediated discourse. Collaboration and reflection are natural outcomes. Technology based learning environments are embedded with tools that facilitate engagement in tasks. Using applications such as *Inspiration* to develop concept maps helps make learning visible. Other mind-tools for collecting and organizing data and for working out problems emphasize the potential for depth of knowledge construction.

Self-Directed and Lifelong Learning

A learner-centered professional development program builds on the skills and interests of its participants. Pathways for continued growth and learning are created by embedding tools within the learning environment that assure continuous growth and interaction beyond the confines of the program. Partnerships are especially productive ways to assure continued access to expanded resources and to promote diversity of community expertise.

Concluding Thoughts

In our research and reflections on professional development in educational technology, we wanted to identify what factors contributed to longevity and participants' successful completion of the 120 hours requirement. We knew many of the reasons why some dropped and were not able to complete the required timeframe. Samples included illness, pregnancy, access, transfers and moves. But what contributed to other participants' successful completion? Based on our observations, conversations, and a survey that was distributed to participants, we found that participants finished the program because they felt it would help them address the needs of their students. When asked to rate the factors that contributed to their completion of the ILAST training, the four reasons ranked highest by participant were: a) Personal desire to learn more about technology, b) Believed my students would benefit if I completed the training, c) Technology appeared relevant to my teaching needs and d) The quality of the ILAST program.

The two qualities that characterized the most successful professional development experiences discussed by participants are discussed below.

First, participants who completed the program developed or modified curricula using online resources to supplement activities and learning in the classroom. The learning was site-based and was centered in the classroom. Their learnings had clear educational value with explicit links to content standards as well as technology standards. The Internet provided additional context and data to local planning.

Second, these participants selected from activities that were relevant to their needs as growing professionals. They were able to add complexity gradually as their technology comfort level and skills increased. Teachers were best able to orchestrate their own progress, draw from new sources of information, and apply new approaches to teaching and learning at their own rate.

The effective design of a professional development program in educational technology must take into consideration the skillful judgment of the teacher who plays a critical role in choreographing content standards with students' understanding and use of technology. In much the same way, the educator constructs an understanding of the potential of technology in his or her own lives.

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