

# An Effective Model for Professional Development in Using Technology to Learn

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*Abstract* The Virtual Learning Technology Community (VLTC) is a collaborative technology professional development model that supports k-12 students, k-12 teachers, university faculty, university preservice teachers, and instructional technology staff developers at local service agencies. The *mission* of the VLTC is to establish and support a community of regional institutions actively engaged in using existing and emerging technologies to support learning by all members. The *vision* of the VLTC is to provide assistance to additional PK-12 schools seeking support for improving the use of technology to help students develop competence in [a] finding and evaluating information and ideas, [b] using available learning tools, and [c] communicating effectively. The VLTC has impacted 400 teachers in 27 schools, 6,000 students, and 20 preservice interns. The long-term impact of the model is enhanced by dissemination activities, archiving and sharing successful strategies and institutionalizing essential support structures.

## Introduction

Over the next ten years, more than two million new teachers will need to be hired and trained to use technology. Yet, most institutions of higher education do not adequately prepare teachers to use technology. Teacher education institutions, state education agencies, and school districts are further challenged to meet the technology staff development needs of experienced teachers. Thus, new models of support in which educators at all levels (university teacher educators, k-12 teachers, preservice teachers and k-12 students) learn together must be developed to make use of scattered expertise and limited resources.

The Virtual Learning Technology Community (VLTC) is a three-year project, which began in November of 1997 funded by the University of Wisconsin System. The VLTC model creates a virtual community where teacher educators, k-12 teachers, preservice teachers and k-12 students communicate, share, and learn together through a variety of activities, thus improving technological literacy and skills of all participants. The community develops new and spin-off projects that expand the impact on learners (e.g., k-12 teachers, k-12 students, university students and university faculty instructors for student teachers and graduate students in the k-12 schools). The VLTC supports communication, collaborative learning and sharing, and efforts to generate new resources. To date, the VLTC has reached over 260 teachers and approximately six thousand students across 30 schools.

## Description of VLTC Goals and Activities

Phase I VLTC activities focused on establishing the model, working on communication strategies and identifying teacher needs. Personnel were identified, roles and responsibilities were defined, and assessment strategies and tools were developed. The VLTC web site was established as a resource base and communications tool (<http://www.uwec.edu/Academic/CI/vltc/vltc.htm>). The coordinator identified schools where staff development could be conducted, recruited teachers to participate and lead activities, and identified classrooms where teachers were already beginning to integrate technology into instruction. Concurrently, teacher educators began recruiting interns and developed technology support packages (laptop, software and communications tools, video conferencing tools, and scanners) to ensure access to some advanced tools.

Phase **II** emphasized building links between the VLTC and Regional institutions. Interns were placed at three different schools sites to (a) supply some technical expertise, (b) work with teachers to explore new tools (e.g., video conferencing) and develop new strategies for using technology, and (c) provide release time for the teachers to attend and lead staff development. VLTC teachers began attending and teaching workshops, revising curriculum, and identifying advanced staff development needs. UWEC and UW Stout responded with a series of graduate offerings including ITV Instructor Training, Computers in Education: On-line Communications and Information Retrieval, Information Literacy, Instructional Design and Development, Technology in Science and Mathematics instruction, Creating Multimedia Productions, Distance Learning Networks, and Web Design. Initial efforts reached 52 teachers and approximately 1,000 students in fourteen small districts.

Phase **III** (Strengthening links among Regional PK-12 Schools) activities emphasized strengthening the social context to support high-risk activities associated with changing long-held teaching and learning paradigms. Through a variety of face-to-face and electronic mechanisms, VLTC participants shared their developing knowledge of current regional projects, established new ways to communicate, and publicized ongoing efforts. Participants were encouraged to think about technology as a tool for learning subject matter rather than just learning about technology. Projects ranged from introducing desk top video conferencing into classrooms and using asynchronous learning environments such as NiceNet and Lotus Notes Learningspace to building class web pages to using video editing tools and graphics design tools.

Three current projects focus specifically on context building. Each project took a different approach to bring together educators from different places and levels to focus on common goals. The *Technology Mentors* program uses a multiplier model to support k-12 staff, university and high school students, and preservice teachers as they work to redefine curriculum, instruction, and assessment in technology-rich classrooms. During the first year of the program, nine master mentors participated in technology staff development and leadership activities to prepare them to work with other building teachers. Each teacher worked with two additional teachers to build a network of 27 teachers prepared to support others and to serve as hosts for preservice teachers. The design for the second year required that each master mentor and building mentor work with two additional teachers (thus supporting 54 additional teachers). The success of year one activities was so high that 42 new teachers applied for the Mentors program. By the end of the project, the original target of 81 teachers will be surpassed. Over 160 teachers will receive advanced staff development aimed at increasing their ability to integrate technology into instruction. Fifty-one teachers will participate as staff development leaders by conducting training, presenting model integration strategies for peers, and coaching teachers in classroom settings.

*You're I.T. (Integrating Technology into the Curriculum)* blended 70 VLTC and Technology Mentors staff and teachers in a two-day symposium and staff development series in March 1999. The symposium began with a dinner and debate examining the pros and cons of bringing technology into classrooms. Participants were divided into teams one month before the symposium and assigned the task of finding evidence from the literature to support their argument. Listservs were set up to facilitate team planning and sharing of information. The debate was moderated by an area School Board President. The following day, a series of breakout sessions provided opportunities for the Technology Mentor teachers and VLTC teachers to share strategies with an audience of invited teachers, university educators, preservice teachers, and k-12 students. Sessions were structured to emphasize integration strategies and discussions of successes and failures rather than just showcasing technology. The symposium closed with an evaluation session and discussion of networking strategies to ensure that participants were able to connect with presenters and each other. *You're I.T II* will extend the success of the first symposium by including additional participants, increasing staff development responsibilities of mentor teachers, and showcasing projects completed by student teachers and interns.

*FastforWord* (involving 6 K-12 students, 30 undergraduate students (preservice teachers), 1 graduate student, 1 university faculty member and 1 K-12 teacher) assesses the validity of a CD-ROM and Internet based program that claims to improve the language skills of children with specific language impairments, and specifically, dyslexia. The focus of *FastforWord* is evaluation of commercially developed support technology. Participants will conduct research to determine if the program improves the temporal

sequencing deficits that cause specific language impairments and dyslexia. FastforWord provides an opportunity for teachers and students to take a more critical stance toward the integration of technology into learning by testing developers' claims against independent evaluations. Consequently, teachers and students will develop a clearer view of the time, processes, and resources needed to assess the impact of technological tools on student development.

Phase IV (Supporting New Projects Impacting Students In VLTC Schools) activities emphasize (a) extending participants opportunities to work together, (b) institutionalizing new groups, courses, and connections, and (c) disseminating the VLTC model. VLTC will continue phase III activities, particularly the FastforWord, You're I.T. and Technology mentors activities. In addition, several new projects such as small grants for teachers, and advanced graduate studies drawing on Phase III activities, have been introduced.

Phase IV also includes evaluating the impact of VLTC. Tracking the influence of VLTC activities on teacher knowledge, classroom practices, and student learning is complicated by the very nature of the project. As the variety of activity increases, tracking impacts on practices becomes more complex and difficult to document. Table 1 at the end of this document illustrates the links among project goals, activities, outcomes, and assessment strategies. Current activities include collecting post data using survey instruments, assembling portfolios of teacher and student work, and conducting exit interviews with students and teachers. Each data set documents ways the project influences practices and helps identify new questions deemed important by the participants. A sample of teacher projects, complete analyses of survey and workshop interview data, shared presentations at conferences and descriptive data illustrating patterns of participation will be archived through the VLTC web page.

## **Using Outcomes to Support the Transition to a Self-Sustaining Model**

When the VLTC project began, we envisioned a set of small districts developing links with each other, and with regional agencies and Universities. The partners would work together to increase the amount and quality of student learning through a variety of uses of technology. During the course of three years, the community has grown from an initial set of six schools to include more than 30 small schools and one large urban/suburban district. By the end of the 1999-2000 school year, 300 K-12 teachers and their students will have been impacted in some way by the community activities. Twenty teaching interns will have completed semester-long experiences focused on different ways to enrich student learning through technology. VLTC established a regional technology staff development symposium drawing 75 - 100 participants, supported teacher development in the use of distance learning technologies, and draws participants from preservice teachers, university teacher educators, K-12 teachers, and K-12 students. We face significant challenges, though, in moving from an externally supported to a self-sustaining community. Several important transition issues are highlighted below.

**Maintaining a teacher-driven model.** While the initial impetus for VLTC came from a small collaborative group, the identification of teacher development goals rests mainly in the hands of the participants. By respecting participants' changing perspectives and helping them develop better ways to learn from each other, the community is internally driven. One indicator of the success of the internally driven approach is the sheer increase in participants in VLTC activities at a time when teachers are inundated with technology-oriented staff development opportunities through graduate courses, service area workshops, and other local, regional, and state-supported opportunities. The need remains for participant-driven development that offers something different from the "shopping mall" available to educators. We are challenged by demands on participants' time, changing expectations about costs/benefits of participation, and just getting lost in the total volume of opportunities.

**Institutionalizing community activities.** A second important element is securing and maintaining institutional support for community activities. Two new courses initially funded by VLTC now exist as regularly offered on University summer and academic year schedules. Two distance education initiatives are now attracting internal funding; interest and hardware/software resources generated through the VLTC experience provide a sufficient base for continued pilot project development.

Large scales summer staff development opportunities have sufficient history and visibility to attract some institutional support, but are more difficult to sustain. Competition for larger amounts of institutional resources may limit the long-term feasibility of such initiatives, especially as educators are faced with more and more choices for investing their time.

Five schools now contribute \$4,000 per intern to bring advanced preservice teachers into their districts to complete student teaching and work with classroom teachers to integrate technology into teaching. The interns complete a technology integration project in the host school. They provide release time for supervising teachers to attend staff development, work with other teachers, and engage in resource development. Hardware/software support for the interns and their supervision will continue through University funding. However, as more projects offer internships and compete for quality preservice teachers, we face limitations in the number of qualified preservice teachers available to fill the slots offered by schools. Without continued successful placements, K-12 districts will shift resources to other projects.

Our experience clearly highlights the need for a coordinator who is a recognized, active member of the school communities where staff development is occurring. The coordinator is in a unique position to identify linkages and common needs across buildings and districts, and make the "people connections" necessary to create and sustain the conversations needed to bring groups together. The current coordinator position will be continued with support from a regional agency.

## **Summary**

The VLTC has achieved the goal of creating a community that is driven by internally-defined goals, includes a variety of learning opportunities and communication possibilities, and brings together educators at all levels. The project web site provides an archive and "one-to many" communications tool. Sharing mechanisms such as You're I.T. highlight the gains in technology skills and instructional integration made by community members and help sustain connections among participants.

Sustaining the community concept requires that the participants have gained sufficient value during the project that they begin assuming responsibility for the costs and organizing activities required to bring people together. As the VLTC funding cycle ends, we are working to develop strategies for sustaining the community concept. Our success in shifting some grant-supported activities to institutionally supported events is encouraging. However, we will need to develop more strategies to sustain links among VLTC teachers, foster new staff development projects, and help teachers make increased use of distance learning technologies.

**Table 1**  
**Links among VLTC Goals, Outcomes, and Assessment Activities**

<b>Goal</b>	<b>Key Activities</b>	<b>Outcomes</b>	<b>Assessments</b>
Phase I: Establish the Community	<ol style="list-style-type: none"> <li>1. Coordinator hired</li> <li>2. Monthly meetings at different sites</li> <li>3. First K-12 sites and activities identified</li> </ol>	<ul style="list-style-type: none"> <li>- Coordinator will be sustained at CESA 11 at reduced level after project ends</li> <li>- K-12 districts commit teachers and \$\$ to intern projects</li> </ul>	Technology Needs and Practices: Large scale pre-post survey to track changes in teachers knowledge, use, and confidence with technology
Phase II: Establish links with Regional Institutions	<ol style="list-style-type: none"> <li>1. Interns placed at three K-12 Districts</li> <li>2. Staff Development activities offered through CESA 11</li> <li>3. Partnership with U.W. Stout's Nakatani Center</li> <li>4. UWEC Graduate Courses offered</li> </ol>	<ul style="list-style-type: none"> <li>- Increased staff development at Intern schools</li> <li>- Twelve workshops for 52 teachers in 4 districts impacting 1000 students</li> <li>- Three new courses offered for the first time supported by Universities</li> </ul>	<p>Intern Interviews</p> <p>Post workshop surveys, exit interviews with evaluator</p>
Phase III: Strengthen links among Regional K-12 Schools	<ol style="list-style-type: none"> <li>1. Technology Mentors VLTC partnership links teachers in two regions</li> <li>2. You're I.T. brings K-16 educators together in common forum/workshop</li> <li>3. Expanded staff development activities through CESA 11</li> <li>4. Distance Ed. Activities extended to CESA 10 Districts</li> <li>5. Video-conferencing across districts</li> <li>6. Collaborative Presentations to a variety of audiences</li> <li>7. Continued intern placements</li> </ol>	<ul style="list-style-type: none"> <li>- CESA 11 teachers worked directly with Eau Claire School Teachers and staff development team</li> <li>- You're I.T blends 70 educators and students across all levels</li> <li>- workshops for 260 teachers and 6000 students in 20 districts</li> <li>- Nice-net and Net meeting projects in elementary and middle schools</li> <li>- Distance education facilities used for content and practice with D.E strategies</li> <li>- Three national, seven State/Regional and three local conference presentations</li> </ul>	<p>Exit surveys, group interviews, number and type of presentations at workshops</p> <p>Exit surveys, interviews with teachers and students</p>
Phase IV: Support new and ongoing classroom projects; disseminate model; shift support to regional institutions	<ol style="list-style-type: none"> <li>1. Small grants for K-16 teams</li> <li>2. Advanced graduate study by a cohort of teachers</li> <li>3. Continued Staff development through CESA 11</li> <li>4. Rotated Intern placements to support new projects</li> <li>5. You're I.T. The Next Steps</li> <li>6. Continued Presentations</li> </ol>	<ul style="list-style-type: none"> <li>- Opportunities for 6 – 10 small group projects linking University and K-12 educators</li> <li>- Workshops will be maintained at current levels with increased school/CESA funding</li> <li>- Teachers will present curriculum projects and strategies</li> </ul>	<p>Project summaries and artifacts,</p> <p>Examples of revised curriculum</p> <p>Post workshop surveys</p> <p>Number and type of presentations</p> <p>Technology Needs and Practices Post Survey</p>