



helping instructors teach with technology

digital media  
center*2008 TECHNOLOGY-ENHANCED LEARNING (TEL) GRANT PROGRAM***APPLICATION FORM**

If you have questions about the program or require assistance in completing this form, please contact the Digital Media Center's TEL Grant Program manager, **Kurtis Scaletta**, [kurtis@umn.edu](mailto:kurtis@umn.edu), (612) 624-1323.

<b>Project Title:</b>	<b>Teaching for Success: Linking Technology and Learning Styles in Preservice Teacher Education</b>
<b>Abstract (50 words):</b>	Flexible learners access content through multiple learning style modes. This project will design software to assist preservice teachers in identifying learning style modes necessary to successfully complete course assignments and effectively apply course content, the goal being to lead students from rigid to flexible learning styles.

**Note:** You will also need to enter the Project Title and Abstract into the TEL Grant tracking tool.

**I. PRINCIPAL INVESTIGATOR/PRIMARY CONTACT**

*Please designate a single investigator to whom we can address official correspondence, and enter this investigator's name in the space provided.*

<b>Name:</b>	<b>Pamela A. Solvie</b>		
<b>Department:</b>	<b>Elementary Education</b>		
<b>College or Unit:</b>	<b>Division of Education</b>		
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**II. ADDITIONAL INVESTIGATORS**

<b>Name:</b>	
<b>Department:</b>	

<b>Name:</b>	
<b>Department:</b>	

**III. PROJECT DESCRIPTION (250 WORDS OR FEWER)**

*In this section, please describe your proposed TEL grant project in 250 words or fewer. In addition to describing the technology-enhanced learning activity or process you will develop, provide details on the courses that will be affected by the project, your expected learning outcomes, and the roles each member of your design and development team will play.*

**1. LEARNING ACTIVITY OR PROCESS**

*Describe what specific activity or learning process you will design.*

Software will be designed to identify characteristics of Kolb’s Learning Style (KLS) modes that align with the skills and dispositions necessary for successful completion of course tasks. This software will assist preservice teachers in using learning style information to guide their learning and teaching practice, which includes lesson planning, presentation, and assessment in K-6 classrooms. Research has shown preservice teachers have used the KLS Inventory to identify their learning styles but have not used learning style information to make changes in their learning and teaching practice. The KLS Inventory will still be used to identify learning styles, but the software will help students recognize when they may need to move from their preferred learning style to another style, which matches more closely the requirements of course assignments and application of course content. The software will thus assist students in moving from rigid to more flexible stances in their learning style preferences. Such flexibility in use of learning styles will increase students’ comprehension and utilization of content.

Learning style research has also shown preservice teachers prefer modeling and visual display of information for content delivery. Because of these preferences, syllabus revisions including clarification of course assignments through use of graphics along with text, and provision of digital video exemplars to serve as models, will be created. The models will be used for analysis in class for identification of the multiple learning style modes necessary to successfully plan and present lessons and assess student learning in K-6 classrooms.

**2. Courses Affected**

*Describe the course(s) or curricula that will be affected by TEL grant funds.*

UMM preservice teachers in Elementary Education 3102 (Reading Methods: Literacy and Language Instruction in the Elementary School) will be directly affected by TEL grant funds. The results of this project are intended to improve practice for preservice teachers in nearly all of our other University of Minnesota Morris elementary and secondary education courses.

### 3. LEARNING OUTCOMES

*Define the expected student learning outcomes from the project.*

Four learning outcomes are the focus of this project. These outcomes are four of the multiple standards set forth by the Minnesota Board of Teaching that preservice teachers must reach for elementary education program requirements and state licensure.

Preservice teachers will connect disciplinary knowledge to other subject areas and to everyday life (Standard 1: C).

Preservice teachers will use varied viewpoints, theories, ways of knowing, and methods of inquiry in teaching subject matter concepts (Standard 1: E).

Preservice teachers will understand how students internalize knowledge, acquire skills, and develop thinking behaviors, and know how to use specific instructional strategies that promote student learning (Standard 2: A).

Preservice teachers will understand and identify differences in approaches to learning and performance, including varied learning styles and performance modes; and know how to design instruction that uses a student's strengths as the basis for continued learning (Standard 3:A).

### 4. TEAM ROLES

*Describe the roles and responsibilities of investigators, teaching and/or research assistants, University support staff members, and outside developers.*

Pamela A. Solvie, Assistant Professor of Elementary Education, Division of Education -Research, project planning, direction and implementation, software development

Engin A. Sungur, Professor of Statistics, Division of Science and Math-Software planning and development

Roger Boleman- Director of Broadcast Engineering and Media Services-Videography, editing, and digitizing for the web

Mike Cihak, Assistant Department Director of Media Services- Videography, editing, and digitizing for the web

Pamela Gades, Computing Services Instructional Technology Specialist –Consulting and trouble shooting

UMM Bush Grant Student Worker (to be identified)-Desk side assistance, office tasks in survey development, software trials

Preservice Teachers enrolled for Fall 2008 in ELED 3102 Reading Methods: Literacy and Language Instruction in the Elementary School-Completion of learning style inventories, course assignments, and survey instruments

Four K-6 Cooperating Teachers ) to be identified (Two at Tiosopa Zina Tribal School in Agency Village, South Dakota and two at Edgewood Elementary in Brooklyn Park, Minnesota) -Planning and presentation of exemplary lessons

Rationale for Selection of Schools:

UMM's Teacher Education Program places practicum students and student teachers at both Tiospa Zina Tribal School and Edgewood Elementary Math, Science and Technology School. These sites were selected for videography of exemplary lessons in that their mission statements, instructional practices, and curriculum align with effective practices shared in the Teacher Education Program and the outcomes identified for this grant project. Digital video of Lessons taught at these schools will provide opportunities for preservice teachers to analyze lessons and identify skills needed to be effective with *all students* in diverse classrooms, though addressing learning styles, interests, and learning needs of all students can be challenging.

Tiospa Zina Tribal School in Agency Village, South Dakota (near Sisseton) is a K-12 school with a population of 619 students. The school building is laid out in the shape of an eagle whose wings form lodges for K-2, 3-5, 6-8, and 9-12 students. While the professional staff at Tiospa represent diversity in culture (38% Native American and 62% Non-Native American), the student population is 100% Native American. A majority of the students have a lower socioeconomic status and qualify for free and reduced lunch. Dakota culture, including language, is taught at the school. This aligns closely with the school's mission: "Learners will retain their own unique culture and be prepared for a technological/multicultural society."

Edgewood Elementary Math, Science and Technology School, located in Brooklyn Park, Minnesota, serves a student population of 480 K-6 students. Designed as a magnet school to support integration and interaction of a diverse population, Edgewood offers specialized curriculum and instructional methods while addressing state standards and District 279 learning outcomes. Edgewood's mission states the school is "dedicated to creating life-long learners who are actively involved in inquiry, exploration, and discovery". This is accomplished as students "inquire about the world around them, discover answers to relevant questions and challenges, explore through reading, research, and investigation, and achieve and become life-long learners".

#### IV. PERSONAL STATEMENT (150 WORDS OR FEWER)

*Provide one or two paragraphs (150 words or fewer) outlining your experience and interest in teaching with technology and describing how this program fits with your professional development goals in this area.*

I have been interested in using technology to engage learners and support students' understanding of content for some time. While working at the K-12 level, I served as Instructional Technology Curriculum Specialist for UMM's PT3 (Preparing Tomorrow's Teachers to Use Technology) Project from 2001-2003. Since coming to the UMM as an instructor (now assistant professor) in 2003, my formal research has focused on the role technology plays in supporting literacy development. I have investigated critical engagement of early learners through use of electronic whiteboards and encouraged use of technology for critical literacy development. For the past three years my research (supported by UMM Bush Grants) has focused on investigation of learning styles, technology, and preservice teachers' development in literacy and language methods. Currently I am investigating a gap I see in the literature, and in my own research, about assisting learners in becoming more flexible in their learning style preferences.

**V. TIMETABLE & BUDGET (NO MORE THAN 1 PAGE)**

Timeline	Project Task	Point Person
April 2008	Task (assignment) analysis; syllabus development	Solvie
April 2008	Task and learning style alignment; develop survey tools for pre, mid, and end of semester data collection	Solvie, Bush Grant Student
April 2008	Recruit cooperating teachers for lesson (exemplar) presentations	Solvie
April-May 2008	Videotape exemplar lesson presentations	Boleman, Cihak, Solvie, Cooperating Teachers
May 2008	Software planning	Sungur, Solvie
June-July 2008	Software development	Sungur, Solvie
June 2008	Video editing, video exemplars formatted for the web	Boleman, Cihak, Solvie, Bush Grant Student
July-August 2008	Software trials	Sungur, Solvie, Gades, Bush Grant Student
August 2008	Distribute IRB forms and collect pre-project survey data	Solvie, Bush Grant Student, and Preservice Teachers
August-September 2008	Collect preservice teachers' learning style data, introduce syllabus and assignment detail, introduce learning style/task analysis software	Solvie, Preservice Teachers, Gades
September-December 2008	Use learning style/task analysis software and complete course tasks	Solvie, Preservice Teachers, Gades
October 2008	Collect mid-semester learning styles and task completion data	Solvie, Preservice Teachers
December 2008	Collect end of semester learning styles and task completion data	Solvie, Preservice Teachers
January –February 2009	Project evaluation and data analysis	Solvie
March –April 2009	Writing	Solvie
April– May 2009	Dissemination of project findings	Solvie

**Budget**

Expense	Rationale	TEL	In Kind
Software Design and Development	2 weeks summer salary paid and three weeks contributed for Pam Solvie and Engin Sungur . 1 Student and Consultant, Pam Gades, as inkind.	\$7,532.31 salary \$1,545.63 fringe	\$11,298.46 salary \$2,318.45 fringe \$500 student \$350 Gades
UMM Media Services/Videography	15 hours of paid wages for Mike Cihak. 15 hours of inkind from Cihak and 30 hours inkind from Roger Boleman. Equipment use, editing costs, and use of cameras all inkind donations.	\$353.03 salary \$115.44 fringe	\$1,308.53 salary \$427.89 fringe \$400 equipment \$1,800 editing \$1,000 cameras
Videos and Software Development Supplies	25 CD's for software development, Videos to record exemplars, and misc. supplies: printing inserts for CD's, copying, paper, etc. SmartDraw Software	\$100 Video tapes \$100 Software	\$50 CD's and printing \$60 Misc supplies (Education Division) \$197 Software
Travel to tape Exemplars	Media Services and Solvie travel to Tiospa Zina Tribal School (SD) and Edgewood School (MN)	one trip each school \$60.84 Tiospa Zina \$159.45 Edgewood	one trip each school \$60.84 Tiospa Zina \$159.45 Edgewood
Cooperating Schools	Honorarium for participating teachers at \$100 each		\$200 Tiospa Zina \$200 Edgewood (UMM Dean's office)
<b>TOTAL</b>		<b>\$9,966.70</b>	<b>\$20,330.62</b>

## VI. ALIGNMENT WITH LEARNING OUTCOMES

*Describe the relationship of this project to the University's undergraduate learning outcomes ([http://academic.umn.edu/provost/teaching/cesl\\_outcomes.html](http://academic.umn.edu/provost/teaching/cesl_outcomes.html)).*

Four University undergraduate learning outcomes are expected as a result of this project. The learning outcomes and their relationship to the project (identified in parentheses) are described below. Students:

- 1) Students can identify, define, and solve problems. (Students will analyze task expectations and bring forward necessary skills and dispositions, from multiple learning styles, to successfully complete tasks.)
- 2) Students can locate and critically evaluate information. (Students will locate and critically evaluate information, including information on learning styles, for use in task completion including lesson preparation and presentation.)
- 3) Students have mastered a body of knowledge and mode of inquiry. (Students will master literacy and language instructional methods, using multiple learning styles to access and apply content in this field.)
- 4) Students have acquired skills for effective citizenship and life-long learning. (Students will become flexible in their learning style preferences. Recognition of, and flexibility in, learning style preference will support life-long learning—beyond instruction in literacy and language methods.)

## VII. CONFLICT OF INTEREST

I/we certify that I/we  do  do not

have a conflict of interest as defined under the Board of Regents' Individual Business or Financial Conflict of Interest policy ([http://www.umn.edu/regents/policies/administrative/Individual\\_COI.htm](http://www.umn.edu/regents/policies/administrative/Individual_COI.htm)). If you selected "do," please describe the nature of the conflict of interest below.

## VIII. OUTCOMES FROM PREVIOUS TEL GRANTS

*Applicants who have previously received TEL grants should describe, in 1-3 paragraphs, the outcomes of each TEL grant received. Be sure to include the title of the grant and the year it was received.*

I have not previously received a TEL Grant.

## SUBMITTING YOUR PROPOSAL

- Once completed, submit your TEL grant **Application Form** to <http://telgrants.dmc.umn.edu>. Instructions on using the tool are available at <http://dmc.umn.edu/grants>.
- Also complete and return the **Signatures Page** signed by your department head(s) and dean(s) following the instructions on that document. (<http://dmc.umn.edu/grants/>)