

Title

Development and Testing of Teaching/Learning Strategies for Continuing and Professional Education Web Casts

Co-Principal Investigators

Denise A. Guerin, Ph.D., Professor and Coordinator, InformeDesign®
Caren S. Martin, Ph.D., Assistant Professor and Director InformeDesign

Project Description

Activity or Learning Process Developed and Tested

The co-principal investigators will develop and evaluate on-line teaching/learning strategies for continuing and professional education (CPE) courses, specifically for Web Casts housed on InformeDesign. We will develop one Web Cast to control the content, but record it using three different teaching strategies (one control and two test strategies). We will launch, house, and test it via InformeDesign. We will randomly select 25 registered users from InformeDesign to test each strategy. These registered users are design practitioners who represent architects, interior designers, and landscape architects, all of whom are required to complete CPE courses to retain their licensure. They will view the Web Cast, complete an on-line evaluation of course content, and complete a second questionnaire related to teaching/learning strategy effectiveness. Follow-up interviews may be conducted to delve further into effective strategies for the engaged design practitioner.

This project builds on a previous TEL grant (2006-2007), in which Web Cast policies and protocols as CPE were developed and tested. One component of the on-line teaching/learning delivery discovered during that grant project was the primitive nature of the research related to on-line teaching strategies for the CPE audience, i.e., the adult learner manifested in engaged (busy) design practitioners. In fact, a literature review for this proposal turned up no relevant studies in which on-line teaching/learning strategies had been tested. There are many Web sites, generally university sponsored, where faculty with on-line experience have published their teaching strategies, course 'tips,' and anecdotal experiences (Instructional strategies for on-line..., 2006). But the research on effective strategies for adult learning in a visual, on-line environment is limited.

Several studies identified teaching strategy recommendations for high school and college students. But they are not always transferrable to the adult learner, specifically the architect, interior designer, and landscape architect, who are visual learners (Watson & Thompson, 2001). For example, one recommended strategy is to pause every 10 minutes during an on-line presentation and ask students to reflect on the content in a specific way or consider how they might apply the new information (Madden, 1999). This chunking and reflection tactic works well for high school and college students. However, in an informal testing and evaluation of the Web Cast completed during the prior TEL project, it was discovered that this strategy did not work with engaged practitioners; they wanted the information quickly, visually, and then be able to apply it immediately. Participants in the College of Design's (CDes) CPE courses, who are generally design practitioners, have been evaluated on their preferences for teaching strategies, and we've found they prefer visual images such as graphs, pictures, project photos and hands-on and interactive experiences.

More important is the concept that on-line learning is based on the theoretical framework of multimedia learning. Design principles of multimedia learning are derived from cognitive theory. A cognitive theory of multimedia learning assumes that the human information processing system includes dual channels, limited capacity, and active processing. First, humans possess dual channels for visual/pictorial and auditory/verbal processing (Baddeley, 1992; Mayer, 2001; Pavio, 1986). Second, each channel has limited capacity to process information (Baddeley, 1992; Chandler & Sweller, 1991; Mayer, 2001). Third, active learning entails carrying out a coordinated set of cognitive processes during the learning experience

(Mayer, 1997; 2001). It will be on this type of research that teaching/learning strategies will be developed for this project. We will search further for any teaching/learning strategies that have been developed and tested for CPE, but at this point, all research found relates to students in general, i.e., high school and college.

Course/Curriculum Affected by TEL Grant

The project outcomes will affect all CPE Web Casts developed by InformeDesign or other CDEs outreach centers, specifically those who provide courses through CDEs' Continuing Education office. This will create significant access to CDEs center and faculty research as well as the research of renowned designers and researchers who become InformeDesign's Web Cast presenters. Additionally, development and testing of effective on-line teaching strategies will contribute to the teaching expertise of DHA faculty who are involved in this project as well as those with whom the outcomes are shared. These learning strategies can be disseminated to CDEs and other University of Minnesota faculty and via refereed publications.

This project will assist the College establish a niche in continuing education by providing courses that reflect adult learners' needs for 24/7 access and learning strategies geared to their busy work lives. We will be able to increase the presence of e-learning within CDEs; within the international design community (InformeDesign's registered users count over 12,000 national and international); and increase the capacity of CDEs faculty to provide credible, high quality, learner-centered continuing education courses. We have a built-in, captive audience in that these three design professions require a significant number of continuing and professional development units every biennium (24 in Minnesota).

Alignment with Learning Outcomes of Accrediting CPE Agencies

Architects, interior designers, and landscape architects have organizations that oversee the CPE of their fields. They each have identified learning outcomes that a CPE course must meet so that the course contributes to the level of knowledge they perceive a professional must attain via CPE. Additionally each organization has established protocol for developing, approving, and monitoring CPE courses. These are briefly shown in Appendix B. These criteria will be used to guide the development of our test course. We will use these organizations' learning outcomes to shape the content of the Web Cast. CDEs has provided CPE for all three of these organizations so we are familiar with their required outcomes.

Co-PI's Expertise and Benefits Derived

InformeDesign staff members have produced 10 Web Casts, which are available on the Web site for design practitioners' CPE. We have the protocol, policies, and legal copyright stipulations developed from a prior TEL grant. Dr. Guerin is an expert educator and will develop the Web Cast content and three different teaching/learning strategies (one control and two test strategies). She has worked on Web Cast development and has delivered many components of them. Developing effective CPE courses is an outreach goal of Drs. Guerin and Martin. Additionally, as interior design educators, they can apply what is learned about teaching to visual learners and to undergraduate and graduate students the design classroom, as it, too, becomes more e-enhanced. There are many professional CPE businesses in the design world today, but they are all providing on-line education in the same traditional way; simply redo face-to-face lectures as Power Points and up/download them to the audience. A documented effective teaching/learning strategy will fit InformeDesign's mission to facilitate design practitioners access to current research in a designer-friendly format. Once these outcomes are known, all Web Cast presenters will be trained in their use and delivery. We will be able to produce high quality Web Casts whose presenters all use effective teaching/learning strategies for the engaged design practitioner.

Disclosure of Conflict of Interest

There is no conflict of interest identified for the co-PIs or InformeDesign staff members.

Timetable and Budget

Category	Task	Dates	CDes	TEL
Co-PI Guerin	Oversee project	6/1/08 – 5/30/09	\$6000	
	Complete literature review to identify appropriate teaching/learning strategies to be used in project with co-PI	6/1-7/1/08		
	Develop teaching strategies and evaluation methods with co-PI	6/1-7/1/08		
	Develop Web Cast content and teaching Strategies. Record.	9/1-10/15/08		
	Conduct testing, collect & analyze data	10/15/08-4/1/09		
	Develop report	4/1-5/1/09		
Co-PI Martin	Complete literature review to identify appropriate teaching/learning strategies to be used in project with co-PI	6/1-7/1/08		\$3000
	Develop teaching strategies and evaluation methods with co-PI	6/1-7/1/08		
	Analyze data	2/1-4/1/09		
	Develop report	4/1-5/1/09		
Assistant Director (InformeDesign)	Manage development, editing, and production of Web casts via tested protocols	9/1-10/15/08	\$4000	
	Manage pre-testing of strategies	10/15-10/30/08		
	Manage selection and follow-up with subjects	10/15/08-1/15/09		
	Register courses with professional orgs	4/1/-5/1/09		
McDonogh Brothers, computer programmer	Programming for new site features that support on-line teaching strategies, develop linkages, program test software	10/1/-11/1/09		\$3000
Web Cast Producer	Record and edit Web Casts	9/1-10/15/08		\$1500
Software	Purchase test scoring and reporting software	9/1/08		\$2500
Budget Total			\$10,000	\$10,000

References

- Baddeley, A. D. (1986). *Working memory*. Oxford, England: Oxford University Press.
- Chandler, P., & Sweller, J. (1992). The split-attention effect as a factor in the design of instruction. *British Journal of Educational Psychology*, 62, 233-246.
- Instructional strategies for online courses. (2006). Available at:
<http://www.ion.illinois.edu/resources/tutorials/pedagogy/instructionalstrategies.asp>
- Madden, D. (1999). 17 elements of good online courses. Available at:
<http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/online/web-elem.htm>
- Mayer, R. E. (1997). Multimedia learning: Are we asking the right questions? *Educational Psychologist*, 32, 1-19.
- Mayer, R.E. (2001). *Multimedia learning*. Cambridge University Press.
- Paivio, A. (1986). *Mental representation: A dual coding approach*. Oxford, England: Oxford University Press.
- Watson, S., & Thompson, C. (2001). Learning styles of interior design students as assessed by the Gregorc style delineator. *Journal of Interior Design*, 27(1), 12-19.

Appendix A. Project Report for Previously Funded TEL Grant, Denise A. Guerin

Title of Project:

Development, Dissemination, and Marketing of Research-Based Design Curriculum Offered On-Line

Date

2006 – 2007

Project Outcomes

1. Developed policies, forms, and documents for Web Casts to routinize this revenue generating component for continuing education
 2. Developed and launched one Web Cast.
 3. Developed and launched one on-line course
 4. Developed and implemented marketing plan for revenue generation
-

Appendix B. Continuing and Professional Education Organizations, Standards, and Evaluation Methods

Interior Design Continuing Education Council (IDCEC)

Criteria: Continuing education emphasizes attitudes, competencies, knowledge and skills in a specific subject that enhances an individual's performance. Learning experiences focus on the learner through activities dealing with thinking, doing and reflection. Continuing education strengthens the interior design profession by improving individual attitudes, competencies, knowledge and skills in specific subject areas essential to interior design. Learning experiences focus on the individual and involve activities that encompass thinking, doing and reflection.

American Institute of Architects (AIA)

Any CPE program must have a clear purpose with stated learning objectives and program must be designed as a learning activity. The percentage of health, safety, and welfare (HSW) content in any HSW-related course must be a minimum of 75% to qualify a program or educational event for HSW credit. This accomplishes three goals:

- To ensure that HSW-related programs have a real relevance to our members
- To eliminate any question of whether the content of a program was actually HSW-related
- To protect AIA members with state mandatory continuing education (MCE) requirements

American Society of Landscape Architects

Courses must contribute to the Registered Landscape Architects' knowledge about topics that directly benefit the health, safety, or welfare of the public.