



# WebNet 97

**WORLD CONFERENCE**  
**of the WWW, Internet, & Intranet**

Edited by  
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Proceedings of WebNet 97 —  
World Conference of the WWW, Internet & Intranet  
Toronto, Canada, November 1-5, 1997

**AACE** Association for the  
Advancement of Computing in Education

# INTEGRATING WEB-BASED SYSTEMS INTO TEACHING INSTRUCTIONAL TECHNOLOGY

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## INTRODUCTION

A portion of the master's program in Instructional Technology at the University of Southern California (USA) School of Education is offered through a cooperative agreement with the Los Angeles County Office of Education (entitled the Institute for Technologies and Learning - ITL) for the purpose of training specialists who will guide schools and related-type organizations in technology planning, implementation, utilization, and research.

Courses in the program are offered through the use of distance learning technologies such as e-mail, virtual libraries, multimedia institutes, Web-based chat rooms, and Web-based electronic books as well as through personal interactions with university faculty and Los Angeles County Office of Education professional staff. Significant parts of the program are designed for pursuit individually and in small work-place groups. Student assignments are organized to build on workplace goals and internship opportunities are available in technology oriented learning organizations. Successful completion is predicated on successful demonstration of six learner competencies: These learner competencies are:

- 1) Instructional design, use of technology tools and the integration of tools into teaching strategies.
- 2) Applying theory of human learning relative to the use of technology in instruction.
- 3) Designing and directing learning resources management.
- 4) Leadership skills in advocating roles of technology and information literacy in the reform of education.
- 5) Designing and maintaining infrastructure and connectivity.
- 6) Interpreting and conducting research in technology and learning.

## WEB-BASED SYSTEMS

Various delivery mechanisms and Web-based systems are integral components of the ITL. These include the use of a Web-based digital library textbook and the integration of two Web-based projects into the curriculum.

The Web-based form of a textbook, *Instructional Technology; A Systematic Approach to Education* [Knirk & Kazlauskas, 1997], is organized into 14 chapters, a portion of which are used, for example, in the first course in instructional design. A student has the ability to navigate, read and review content, search, and annotate the electronic text. Other common Web features, such as copying and printing text, are also available.

The applications associated with two Web-based funded projects are integrated into the content of the instructional technology program, for example in the courses which deal with technology tools and technology integration. The project, Information System for Los Angeles (ISLA), is an exploratory regional information system for classroom integration of digital humanities materials funded by the National Endowment for the Humanities (NEH) and other organizations. ISLA provides access to digital research archives of Los Angeles materials in multiple information formats and its scope includes the widest variety of information from all historical periods, linked by spatial and temporal coordinates. The primary, long-term goal is to create a system that will enable all kinds of users, including K-12 students, to search and access a rich and diverse range research materials.

The other project incorporated into the curriculum is the Virtual Factory Teaching System (VFTS) funded by the National Science Foundation (NSF). This project addresses the educational needs of new engineers, and potential engineering students, by creating a manufacturing education workspace that will exist in the intersection of the three domains of education, the Internet, and virtual factories. The workspace takes advantage of advanced communication technologies in presenting manufacturing complexities in a realistic setting. The design of the workspace will enable students to participate in the functioning of the virtual factory by assuming the roles of various factory personnel in small team settings. Through acting out these roles, they will witness the range of decisions an engineer or a manager makes and their effect on the performance of a company. Student teams may even span institutional boundaries.

For both of these project, students are involved in learning the use of the applications, and then in integrating the applications into K-12 classroom settings through the development and evaluation of lesson plans and appropriate teaching materials.

## CONCLUSION

One of the keys to the success of technology in the classroom is appropriate teacher training in technology use, integration, and classroom teaching approaches. The value of technology is limited unless technology training is integrated into the entire teacher education curriculum (Yildirim, 1997). To this end, we are incorporating technology both into the delivery of the instructional technology program, as well as integrating applications of technology, specifically web-based applications, into course content. The program is still new and we are currently in the process of examining the effectiveness and usability of the various Web-based systems used in the instructional program.

## REFERENCES

[Knirk & Kazlauskas, 1997] Knirk, F. G. & Kazlauskas, E. J. *Instructional Technology; A Systematic Approach to Education*. Belmont CA: Hynet Technologies Inc. [Note that the textbook is login and password protected].

Yildirim, I.S. (1997). Effects of an Educational Computing Course on Pre-service and In-service Teachers' Attitudes Toward Computers. Unpublished Doctoral Dissertation. University of Southern California, Los Angeles.

## ACKNOWLEDGEMENTS

The Web-based applications described in this paper are supported in part by Hynet Technologies Inc., and grants from the National Endowment for the Humanities (ED-20525-96) and the National Science Foundation (CLRT-CDA9616373).