Learning Technology

publication of

IEEE Computer Society
Learning Technology Task Force (LTTF)

http://lttf.ieee.org/learn_tech/

Volume 4 Issue 2	ISSN 1438-0625	April 2002
Editorial board	Subscription	Author guidelines

Advertising in the newsletter

Contents

- From the editor ..
- The Use of WebBoard in Asynchronous Learning (Haomin Wang)
- Technology Training for Teachers: The Proliferation of Means (Howard C. Woodard, Catherine C. Wooddy & Michael D. Richardson)
- Finding the Right Blend for Effective Learning (Peter Saunders & Kenneth Werner)
- Web based Information Systems Learning Strategies (Om Kumar Harsh & Syed Saleem)
- Student perspectives on PBL in advanced technology courses (Aisha Wood & Richard E. Ferdig)
- Conference Notice

From the editor ..

Welcome to the April 2002 issue of *Learning Technology*.

The IEEE International Conference on Advanced Learning Technologies, Kazan, Russia (September 9-12, 2002) is turning out to be a very high quality conference. The website of the event is http://lttf.ieee.org/icalt2002/. The review process is currently in progress. I invite you to visit conference website and check out the registration details and other information.

You are also welcome to complete the FREE MEMBERSHIP FORM for Learning Technology Task Force. Please complete the form at: http://lttf.ieee.org/join.htm.

Besides, if you are involved in research and/or implementation of any aspect of advanced learning technologies, I invite you to contribute your own work in progress, project reports, case studies, and events announcements in this newsletter. For more details, please refer author guidelines at http://lttf.ieee.org/learn_tech/authors.html.

Kinshuk
Editor,
Learning Technology Newsletter
kinshuk@massey.ac.nz

Back to contents

The Use of WebBoard in Asynchronous Learning

Introduction

Web-based distance education can be synchronous or asynchronous, or a combination of both. In synchronous mode, interaction occurs in real time with immediate feedback, whereas in asynchronous mode, feedback is delayed. Among the advantages of AC, time flexibility is a major attraction to distance learners. In addition, AC has been found to promote analytical and reflective thinking (Jonassen, 2000; Harasim, 1990; Cashing & McKnight, 1989).

Discussion board is a primary means of communication in asynchronous learning. Originally developed by O'Reilly, WebBoard is one of the many discussion board systems currently available. This paper discusses the use of WebBoard to facilitate class interaction in asynchronous learning. The study examines students' perceived advantages and barriers in using discussion board for class interaction, and their expressed needs for instructor's direction and guidance.

Methodology

Two questions were posted on six web boards hosted by the WebBoard server at Dakota State University. The questions asked about students' perceptions of advantages and barriers in using WebBoard and their views of instructor input. Out of a total of 124 students enrolled in six courses, 103 responded to the questions. Students' responses were analyzed and categorized on convergence in perceptions.

Findings and Discussion

A primary advantage of WebBoard as identified by the majority of the students is time flexibility which meets their needs of family and job commitment. Time flexibility also gives students more time to contemplate and revise their messages. In addition, about a third of the students say that the threaded organization of messages in discussion board makes people stay more on task than in a chat, because participants can always see the path of discussion. Many students (21%) say that Internet has now become a primary information resource for them (see Table 1). Linking Internet recourses to their discussion encourages them to associate external learning with their course work.

Through written discussion, many students feel that their writing competency is improved. About half of the students feel that conversing via discussion board allows an individual to be known for her thoughts rather than looks, and introvert or shy students would feel less inhibited from expressing their views. In fact, introvert students often make more insightful observations than other more vocal peers when they do speak up. However, a few other students disagree and note that those who speak less may not have enough knowledge of the topic and therefore do not feel comfortable enough to participate. Others report that they sometimes do not actively participate because they have little interest in the topics or they cannot relate the discussion to their personal experience.

Table 1. Students' perceptions

Categories	Numbers of responses	
anytime accessibility	90	87%
reflective thinking	78	75%
collaborative learning	56	54%
focus on thoughts	47	46%
less inhibition	44	43%
coherent conversation	33	32%
student-centered learning	31	30%
associative learning	22	21%
writing competency	15	15%

N = 103

Student-centered, collaborative learning is another major feature of discussion board. About 30% of the students surveyed feel that discussion board allows them more control over what they can say and when they say it. They contribute more messages in discussion board than in traditional classroom setting. Over half of the students feel that they learn a tremendous

amount by exchanging information and sharing experiences with their peers. As for instructor input, students prefer questions that have no right/wrong answers and questions that allow students to relate to their diverse individual background and experiences (see Table 2). The most desired input students wish to have from instructors is direction on further resources. Students also want instructors to correct their misconceptions in a timely manner, and would be happy to get acknowledgement for their efforts. Significantly fewer students have expressed need to get encouragement from the instructor (see Table 3).

Table 2. Constructive questions

Types of questions	Numbers of responses	
no right/wrong answer	54	52%
diverse backgrounds and experiences	39	38%

N = 103

Table 3. Types of instructor input desired

Types of input	Numbers of responses	
direction to related resources	69	67%
correction	52	50%
acknowledgement of efforts	49	48%
encouragement	28	27%

N = 103

Conclusion

The findings of this study lead us to the proposal of the following guidelines:

1. Students should be allowed adequate time to respond to questions, but they also need to be trained in time management and help them become well-organized and self-responsible learners.
2. Students should be encouraged to share thoughts with as many peer learners as they can to maximize collaborative learning. Collaboration can help distance learners overcome the often reported sense of isolation.
3. Instructors should be around and monitor student discussions regularly and respond to students' needs in a timely manner. For those less active participants, instructors may need to check with them individually through private email to find out if they need any additional help.
4. When providing input, instructors should avoid giving their opinions because instructors' opinions tend to stifle students' active thinking and collaborative learning. The best input instructors can give to students is thought-provoking questions.
5. Given the growing popularity of the Internet as a primary information resource for students, instructors should encourage students to cite Internet-based resources to support their discussion.

References

Cashing, W. E. and McKnight, P. C. (1989). "Improving Discussion," In R. A. Neff & M. Weimer (Eds.), Classroom Communication: Collected Readings for Effective Discussion and Questioning, Madison, Magna Publications, Inc., 33-40.

Harasim, L. M. (1990). "Online Education: An Environment for Collaboration and Intellectual Amplification," In L.M. Harasim (Ed.), Online education: Perspectives on a New Environment. New York: Praeger.

Jonassen, D. (2000). Computers as Mindtools for Schools: Engaging Critical Thinking. Upper Saddle River, NJ: Prentice-Hall Inc.

Haomin Wang
Dakota State University

wangh@pluto.dsu.edu

Back to contents

Technology Training for Teachers: The Proliferation of Means

Albert Einstein (1950) once observed that the world is characterized by a proliferation of means and a confusion of goals. If this can be said of the world in general, it certainly is true of K-12 education. The information society is sweeping educators towards a future dependent upon technology.

Technological proliferation is particularly evident in classrooms where teachers have access to numerous resources that permit them to reach more students in new and innovative ways. However, to take full advantage of these technology resources, teachers need training (Cuban, 1993). In addition, buildings, old and new, must deliver technologies to the classrooms. In new buildings wiring can become part of the infrastructure; however, wiring an old building provides significant resource challenges for school systems (Castaldi, 1982). The technology proliferation is significantly hampered when wiring is not in place.

The needs for training and adequate facilities are obvious. Educators are teaching children how to live successfully in their future. That is a formidable task for every teacher, but especially in today's rapidly changing world. Historically, teaching involved imparting knowledge and teaching students to think; however, today teachers must make a paradigm shift. Teachers still teach students to think, but instead of imparting knowledge, teachers must help students understand where and how to find information (Cuban, 1999). The proliferation of knowledge means that teachers cannot maintain currency. Finding information is as important, or more important, than knowing facts that promptly become obsolete (Drucker, 1999). Exposing students to information sources available through today's technology becomes the teacher's primary job (Coley, Cradler, & Engel, 1997). Consequently, teachers must understand the technology, use it in their classrooms and make it available to students. Success demands a proliferation of means.

The proliferation of means presents challenges, as does the other part of Einstein's statement, for a confusion of goals pervades in the world of K-12 education. Many educators operate from crisis to crisis and do very little planning (Kaufman, Herman, & Watters, 1996). Educators must prepare students for a future far different from today (Schofield, 1995). That goal demands strategic planning and constant adaptation by educators (Kaufman et al). Yet, technology implementation is meeting resistance from educators who cannot or will not accept the new reality of teaching thinking AND application and not thinking OR application (Means & Olson, 1995).

Recognizing the need to adequately train teachers for technology utilization, the State of Georgia implemented INtegrating TECHnology (InTech) (Georgia Education Technology Training Centers, 2001). Begun in 1997, InTech is intensive hands-on technology integration training involving in-class experience and on-the-job performance integrating new skills and teaching methods. Administrators must agree to provide the essential hardware, software and peripherals for the teacher (Georgia Education Technology Training Centers). Every Georgia teacher must participate in the training before renewing their certification or must pass a state mandated test on technology. By June 30, 2006 all certificated personnel within the state must meet the revised technology requirement (Georgia Professional Standards Commission, 2002).

Is the program working? Since InTech is a work in progress it is too early to tell. There are arguments to support what has been done but there are also some serious questions that have been asked (Dugas & Adams, 2001). On the positive side, InTech is helping Georgia teachers cross the great digital divide (Dugas & Adams). However, there are two strong potential arguments against InTech and all such training processes. The first is that wiring schools will not save them. Technology can be a positive but wiring and infrastructure will not improve instruction. Improving instruction takes planning, goal congruence, and a function for technological innovations. The other argument concerns the effectiveness of technology. The impact of technology on the academic progress of students is unknown. No data are available to substantiate that learning has increased because of technology. Perhaps with more study, technology can be shown to improve learning, but now the effectiveness is only assumed, not proven.

Whether positive or not, society is on the fast information superhighway. Educators on this highway have a proliferation of means and confused goals to guide them. Georgia has taken giant steps toward controlling the means and establishing the goals. Time will tell if they have chosen wisely–when the students of today are fully functioning members of tomorrow's world.

References

Castaldi, B. (1982). Educational facilities: Planning, modernization, and management (2nd ed.) Boston: Allyn and Bacon.

Coley, R., Cradler, J., & Engel, P. (1997). Computers and classrooms. Princeton, NJ: Educational Testing Service.

Cuban, L. (1993). How teachers taught (2nd ed.) New York: Teachers College Press.

Cuban, L. (1999). How scholars trumped teachers: change without reform in university curriculum, research and teaching, 1890-1990. New York: Teachers College Press.

Drucker, P. F. (1999). Beyond the information revolution. Atlantic Monthly, 284(4), 47-57.

Dugas, J., & Adams, P. (2001). Summative report for preparing tomorrow's teachers to use technology: Co-reform in west Georgia. Retrieved January 15, 2002, from http://www.ga-edtech.org/Integration.html

Einstein, A. (1950). Out of my later years. London: Thames and Hudson.

Georgia Educational Technology Training Centers. (2001). InTech information. Retrieved January 14, 2002, from http://www.ga-edtech.org/intech.html

Georgia Professional Standards Commission. (2002). A+ education reform act of 2000 new certification renewal requirements: Implementation timeline. Retrieved January 14, 2002, from http://www.gapsc.com/hb1187

Kaufman, R., Herman, J., & Watters, K. (1996). Educational planning: Strategic tactical operational. Lancaster, PA: Technomic Publishing Company, Inc.

Means, B., & Olson, K. (1995). Restructuring schools with technology. Menlo Park, CA: Sri International.

Schofield, J. (1995). Computers and classroom culture. London: Cambridge University Press.

Howard C. Woodard
Associate Professor of Information Systems and Communications
Georgia College & State University, USA
hwoodard@gcsu.edu

Catherine C. Wooddy
Director
Dublin Center
Georgia Southern University, USA

Michael D. Richardson
Professor of Educational Leadership
Georgia Southern University, USA

Back to contents

Finding the Right Blend for Effective Learning

A Move to Blended Learning

Blended learning has been defined as "learning that employs multiple strategies, methods, and delivery systems" (The Node's Guide to Blended Learning, p.5, 2001, The Node Learning Technologies Network).

Given the great variety of instructional, presentation, and distribution methods available today, determining the right blend can be an enormous task. Where does one begin? How do we know if the blend serves learning and learners well, and not just the delivery of teaching and training? When one looks at the fundamentals of learning, it is clear that no single approach or method can achieve maximum learning across a variety of learners. Only a blend of methods and approaches can produce the richness and achieve the desired learning outcomes.

This short paper discusses why we chose a particular blend of instructional, presentation, and distribution methods, how we implemented the blend, and how learners responded to the blend.

Rooting the Blend in the Fundamentals of Learning

We believe that once one focuses on learning and how to support and produce learning across a variety of learners, selecting the most effective instructional, presentation, and distribution methods as well as assessment methods for the blend becomes much easier.

Drawing on current educational research we identified seven elements found in most if not all effective learning environments (Based partly on M. David Merrill, First Principles of Instruction)

1. Problem-based Learning
2. Collaborative Learning
3. Activation of previous knowledge
4. Demonstration of new knowledge
5. Application of new knowledge
6. Integration of new knowledge into the learner's world
7. Assessment of the learning process and learners' progress

Centra Symposium

The platform we selected for our study was Centra Symposium which received high praise as an on-line learning platform. We selected Centra Symposium because of its impressive track record for supporting real-time, Web-based learning that incorporates tools for lecture, collaborative learning, application sharing, evaluation and assessment.

Pilot Study

We designed a web page which organized an ethical dilemma or claim into a series of tasks which could be resolved by using internet resources to address specific components of the problem-based dilemma (element 1). Problem-based learning was supported throughout the learning activity. The learner was guided through a short lecture of PowerPoint slides on the topic of international business and globalization (element 3). The subject matter expert led the lecture and helped activate learners' prior knowledge in the content domain. They were encouraged to collaborate (element 2) with other team members in processing the claim by selecting specific team roles (Captain, Optimist, Reflector, Skeptic/Realist). Participants were given opportunities to process the claim in two separate breakout room sessions. Each breakout room session contained a separate agenda, and both the claim and internet resources were available for participant review. At the conclusion of the first breakout room session the main classroom was reconvened, and team members discussed some of the possible solutions to the ethical dilemma.

Once the discussion ended, the participants returned a second time to the breakout rooms, and were instructed to build a PowerPoint slide presentation (1-3 slides maximum) which summarized their major findings. Team members reconvened in the main classroom and were made co-presenters so they could present their slides to the entire class. A final key question helped participants wrap-up their learning, and to arrive at closure concerning the ethical dilemma. Application sharing made it possible for the participants to collaborate within breakout rooms when building their PowerPoint slide presentations, and to co-present this material to other team members in the main classroom (elements 4, 5, & 6). Application sharing permitted learners to apply new knowledge, and to integrate it into their knowledge base.

Assessment was conducted from two perspectives: (1) strengths, interests, and improvements which would assess the effectiveness of team collaboration in resolving the ethical dilemma, and (2) evaluating blended learning through an electronic survey. The first assessment instrument was designed with the Centra platform evaluation tool, and the second with Perseus Survey Solutions. Both instruments were presented to participants within the Centra platform, and captured participant demographics while assessing usability of the Centra interface and the effectiveness of e-learning through the Centra delivery platform (element 7).

Learning with the Blend

Participants agreed (63%) and strongly agreed (18%) that the Centra platform was effective when it came to sharing applications such as PowerPoint. The only difficulties encountered involved the sizing of multiple windows on the desktop during application sharing. Learners adopted different strategies when building their slides, and some preferred to verbally

suggest improvements to the slide presentation while delegating actual slide construction to other members in the breakout room. Overall, learners agreed (55%) and strongly agreed (45%) that they were satisfied with their blended learning experience. If given an opportunity to take a course using the Centra platform, 64% indicated that they would take it, and 36% said that they might take such a course. When choosing between a regular course, or one offered on-line with the Centra platform, 45% indicated interest in a Centra delivered course while 54% said they would like a combination of the two approaches. Participants indicated that their performance as a learner was enhanced by using the Centra platform (73%) as a presentation and delivery method to complete assignments, while only 27% indicated that it was about the same as a regular classroom.

Blending Learning and the Seven Elements

It appears that blended learning offers the most flexible approach to the design and implementation of elearning strategies. By designing elearning programs around the seven elements, developers, instructors and institutions can maintain a consistency in the quality of the learning they provide. These principles will also help with the selection and evaluation of hardware and software. Most importantly, the link between learners and learning remains at the heart of the elearning experience.

At Western Michigan University we are using the seven elements of learning to develop a two-day training workshop for instructors that focuses on designing effective online teaching and learning.

For full article go to: http://www.wmich.edu/teachlearn/new/blended.htm

Peter Saunders, Ph.D.
Director, Center for Teaching and Learning
Western Michigan University, USA
saundersp@wmich.edu

Kenneth Werner, Ed.D.
Learning Systems Specialist
Center for Teaching and Learning
Western Michigan University, USA

Back to contents

Web based Information Systems Learning Strategies

Abstract

A strategy to achieve learning through the web information systems has been discussed in order to find out a simple solution to the problems of learning. It has been found that time, space, place, technology, interaction, and control can be represented within a three dimensional learning environment. The skills required for this learning environment is compared with that of Hanson et al. model and an interesting correlation has been found.

Introduction

In literature, various contemporary research activities (1,2,4,5) are available on learning, which includes the conative, affective and social influences. It can be realized that still we are not creating even a theoretical stage for the Web based learning while surprisingly every user has been using one or other way an Information Systems over the Web. However, learning a Web Information System is becoming an inevitable and future of the Internet technologies lie in the design and learning of a "Web base Information Systems".

Now the question is that how time, space, place, technology, interaction, and control combines with the appropriate Human

skills to create an adequate web based learning environment?

Detailed Description

Piccoli et al. (6) have mentioned that learning environments are defined in terms of time, place, and space. According to them, it is also possible to expand the traditional definition of learning environment to include three further dimensions: technology, interaction and control. However, their definition did not include the consideration of learning Web Information Systems and the corresponding skills required. In the present article we considered the learning process of entire Web Information Systems in the lights of the above-mentioned factors. For this we need the learning skills for Web Information Systems and their order of usefulness in the lights of the time, place, space technology, interaction and control.

Steve et al. (3) have described the skills and their hierarchy or order of use, which is based on the Human Interaction, Management and Technical factors and their appropriate involvement or interaction with the structure of the organization. Accordingly, the skills required for Web-based Information Systems developers are Human Interaction, Management and Technical which can be represented by the three dimensional axis as

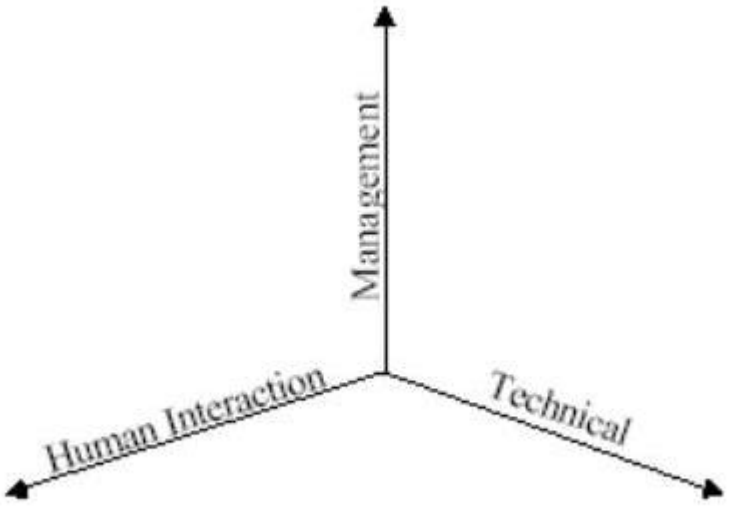


Figure 1:- The skills requirements for Web-based Information Systems developers

As shown in fig 1, all these three factors namely Human Interaction, Management and Technical are independent to each other and are collectively responsible for the classification of players of Web Information Systems (3), e.g. End Users/Web Browsers, Contact Developer/Providers band Web Publishers, providers, Web Publishers/Web Engineer, Web Support officers and Web Developers/Web Engineers level 2.

Here we assume that the skills required to develop a Web Information System will have corresponding requirement for learning as that of Web Information System. This assumption is based on the work of Piccoli et al. (6) which mentions that traditional learning environment are defined by Time, Place, Technology, Interaction and Control. However, by combining the work of Steve et al. (3) and Piccoli et al (6), we can re-describe the various dimensions and their role in learning the Web Information Systems as:

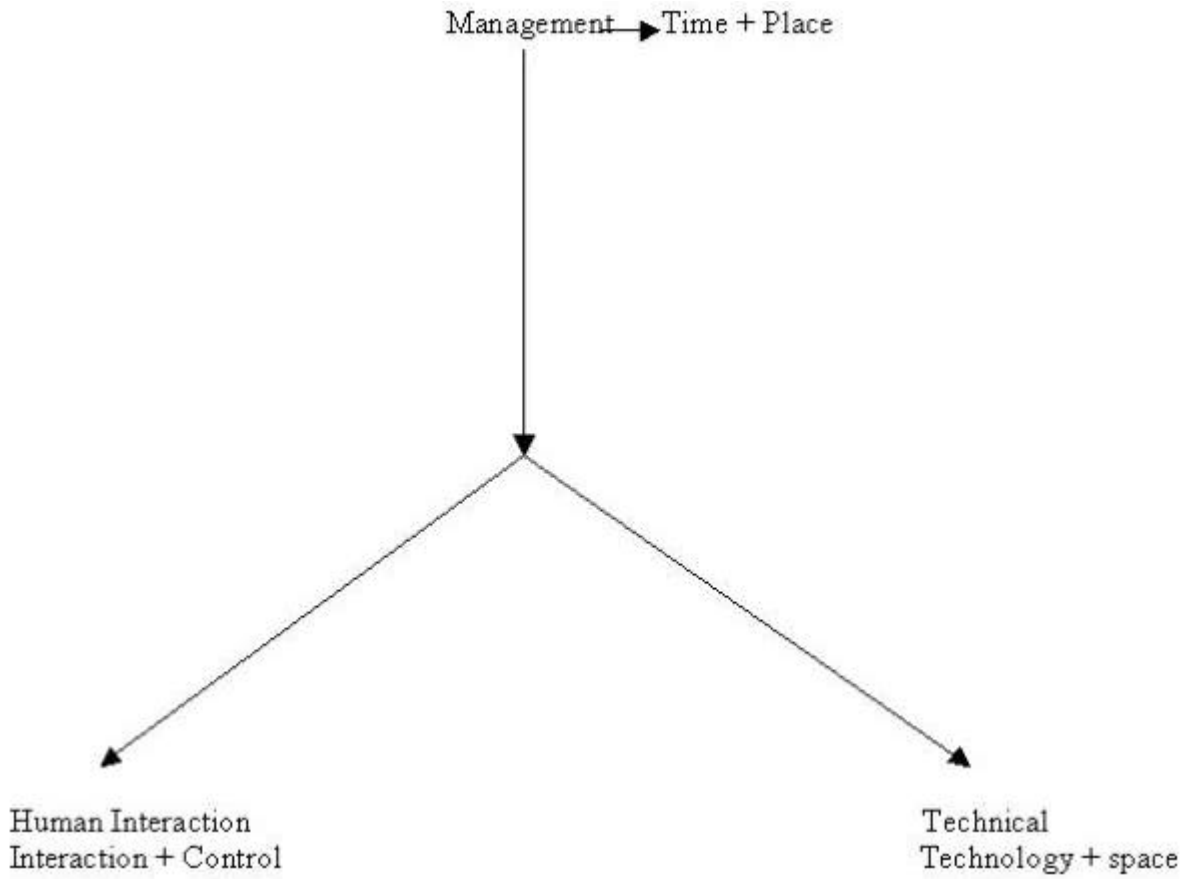


Table 1: Classification of participants, dimension in the Web learning environment

Dimension	**Title**	**Functions, RequiredSkills/Knowledge base**	**Indicator**	**Example of Web based Information System teaching and learning methodology**
Time	Browser	Use the Web as an information system for communication, searching	Communication literacy	Can use e_mail or directly discuss with other users on the Internet
Place	Content Developer Provider	Specialized approachin various areas including education, marketing etc.	Critical Approach	Knowledge of latest technological tools and their critical uses
Space	Site Publisher/Web Engineer	Ability to produce HTML, pages with links etc.	Learning strategy	Range of tools and assignment are available using various type of audio visual equipments on the Internet
Technology	Web Support Officer	Responsible for update of database	Understanding the technology	Working with the IT tools, Using practical skills with the computer.
Interaction	Web Developer	Appropriate Training	Degree of contact	Analysis of requirements.
Control	Web Administrator	In charge and quality oriented job	Self evaluation	Comparison of various assignments and their evaluation which are on the world wide web

Guidelines for Learning

The skills required for Web Information Systems learning can be viewed in terms of the above mentioned factors. Since the skills needed for a Web development are more or less related to these factors, therefore, there is certainly a correlation between "Web Information Systems learning" and "Web Information Systems development". These skills can be further categorized for various types of users or learner according to their needs and requirement.

Conclusion

Present article highlights important factors, which are essential for the learning of Web Information Systems under the varying skill, needs and technology. The important aspect is that how to exploit the learning environment to create a useful learning strategy by doing the trade-off between time, space, technology, control, place and interaction.

References

Bereiter, C., and Scardamalia, M., Surpassing Ourselves: Inquiry into the Nature and Implications of Expertise, Chicago: Open Court, 1993.

Corno, L., and Mandinach, E. B., The Role of Cognitive Engagement in Classroom Learning and Motivation, Educational Psychologist, 18(2), pp. 88-108, 1983.

Hanson, Steve, Deshpande, Yogesh and Murugusan, San, A Skills Hierarchy for Web Information System Development: http://www.serveyor.com/misc/docs/A_Skills_Hierarchy_for_Web_Information_Systems.pdf

Deci, E., and Ryan, R., A Motivational Approach to Self: Integration in Personality, In R. Dienstbier (Ed.), Nebraska Symposium on Motivation: Vol. 38. Perspectives on motivation (pp. 237-288). Lincoln: University of Nebraska Press, 1991.

McCombs. B., Alternative Perspectives For Motivation, In Developing Engaged Readers in School and Home Communities. In L. Baker, P. Afflerbach, and D. Reinking (Eds.), Hillsdale, Lawrence Erlbaum Associates, pp. 67-87, 1996.

Piccoli, Gabriele, Ahmad, Rami and Ives, Blake, "Web-Based Virtual Learning Environments: A Research Framework and a Preliminary Assessment of Effectiveness in Basic IT Skills Training," MIS Quarterly (25:4), 2001, pp. 401-426.

Om Kumar Harsh
Department of Computer & Information Science and Physical Sciences
University of South Australia (Whyalla Campus),
Nicolson Avenue, Whyalla Norrie,
South Australia 5608 Australia
OmHarsh@unisa.edu.au

Syed Saleem
Department of Computer & Information Science and Physical Sciences
University of South Australia (Whyalla Campus),
Nicolson Avenue, Whyalla Norrie,
South Australia 5608 Australia

Back to contents

Student perspectives on PBL in advanced technology courses

Project Background

Masters and Ph.D. students at the University of Florida have a chance to participate in a number of advanced technology production courses. Although the focus of each course varies, project-based learning (PBL) undergirds the design and implementation of every course. The use of PBL to provide authentic and legitimate opportunities for students to become involved in a community of practice (Newman, Secada, & Wehlage, 1995; Lave & Wenger, 1991) has been well documented as beneficial in achieving pedagogical aims and goals (Gallagher, 1997; Bridges & Hallinger, 1997). However, proponents and critics agree that PBL projects succeed when students are active, engaged, interested, and have the skills to complete their projects (Blumenfeld, P., Soloway, E., Marx, R., Krajcik, J., Guzdial, M., & Palincsar, A., 1991). In this article, an advanced, educational technology graduate student describes her experiences with PBL in EME6405-a class in which she was given the opportunity to learn about the production process. The purpose of this writing is to provide insight into a student's thoughts about what makes PBL interesting, authentic, and possible. We also describe an end product of the course that may be applicable for other curricular uses.

Initial thoughts on project description

As a student in "Educational Technology and Teaching," I was asked to create a product to be used in an actual teaching or learning environment. I learned that I would be responsible for taking part in the entire production process including the design, implementation, and evaluation of the product. I would also have to contact the individuals I was creating the product for, complete a needs analysis, and begin constructing my product.
I had three initial concerns regarding the assignment: time, assessment, and design.

1. Time. My first concern was time. Project-based learning sounded like it would require an extensive amount of planning and development. I was not sure I could complete the assignment in the time allotted. I was more familiar with simple tasks that were scheduled on a much smaller timeframe.
2. Assessment. Another concern was assessment. Traditionally, I would take a test at the end of a course project and my work would be marked correct or incorrect. Would the instructor use a similar rubric to determine if I met his standards for an "A"?
3. Design. Finally, I worried about the design process. This process required meeting the intended audience of my product. What if my learning goals, ideas about functionality, and design did not align with their needs? What if they did not understand the process? The entire concept was daunting.

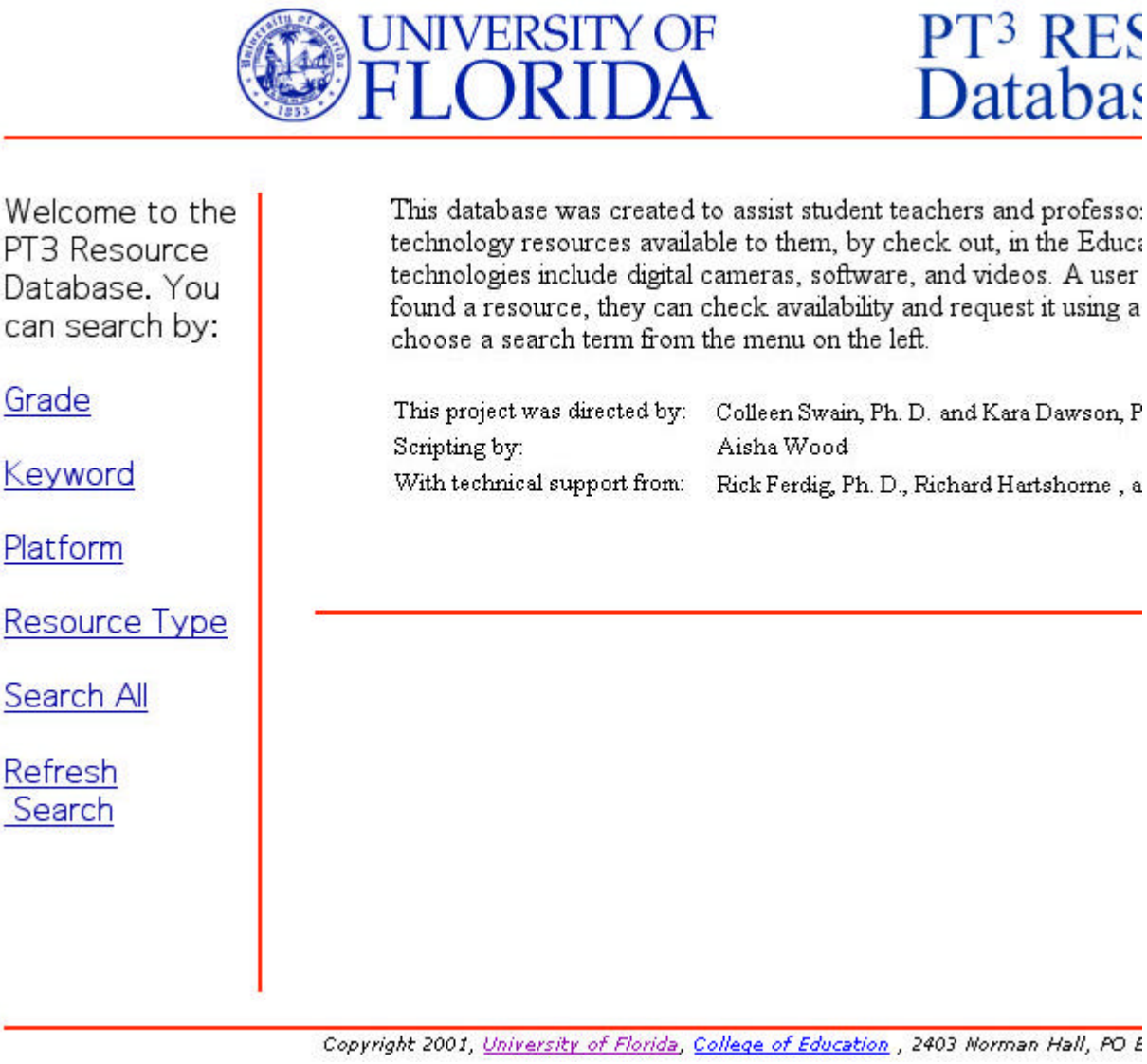
Even with my uncertainties, I was excited about the assignment because I knew it afforded an opportunity to use the skills I had learned in new and exciting ways. More importantly, the end product would have meaning and importance to the individuals I was creating it for.

Process of deciding on the project description

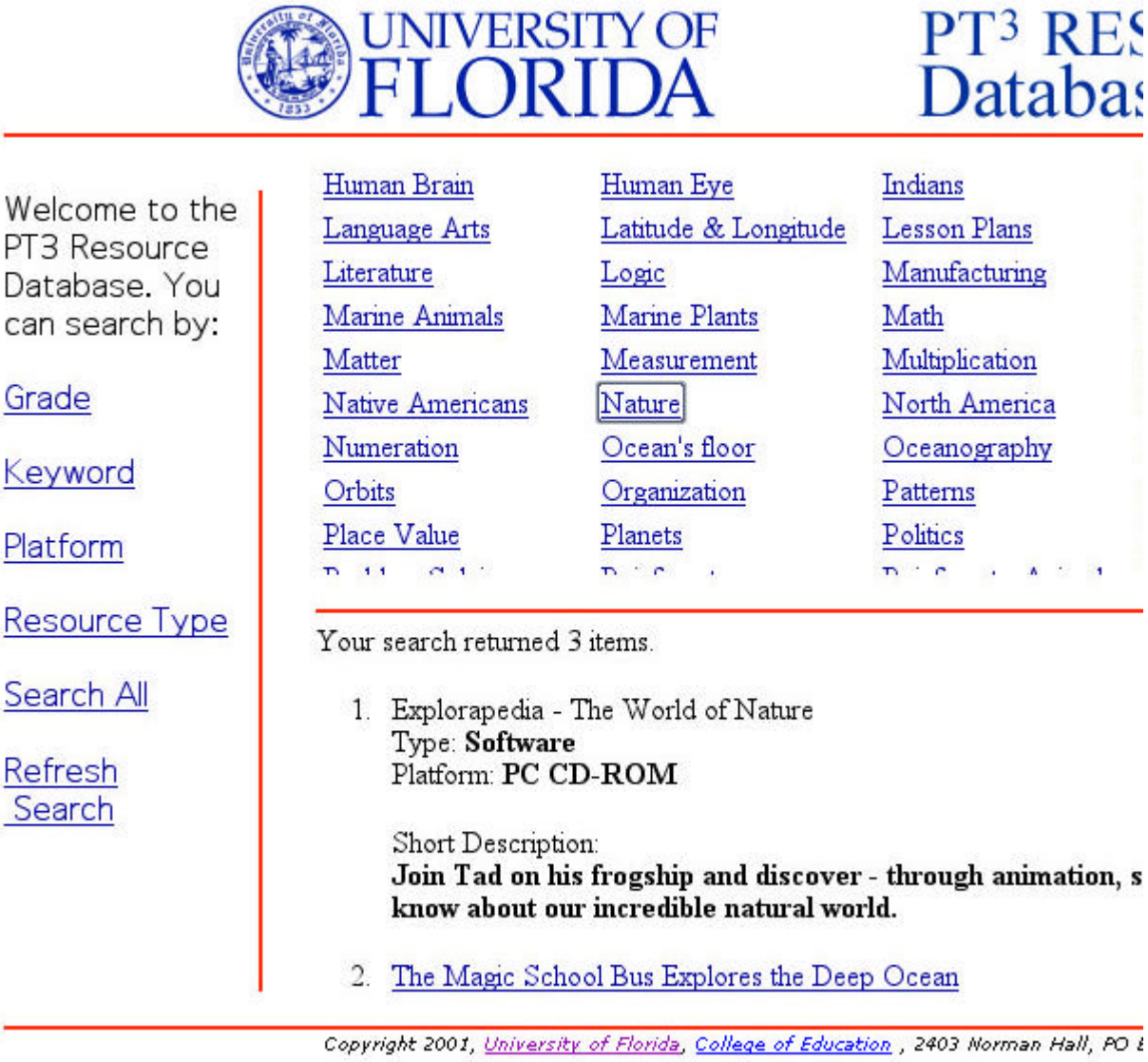
I planned on creating part of a website for our recently funded PT3 Grant (Preparing Tomorrow's Teachers to Use Technology Today). After talking with my audience (the grant coordinators), I determined the most useful product would be an online database that would store information about the technology resources available to pre-service teachers in the College of Education. This opportunity was perfect because I would be creating a product that would help the students in the College while at the same time learning new skills and an enhanced understanding of production concepts. With a lot of support from the instructor and other students in the class, I was able to successfully complete my project-a PT3 Resource Database.

PT3 Resource Database Project

The PT3 Resource Database is a web and database-enhanced tool that allows users to search for items available for checkout in the Educational Technologies media lab. Active Server Pages (ASPs) and SQL databases were used as the main production components. After users log on, they can search for technology resources by Grade Level (for software or video), Keyword, Platform (PC or MAC), or Resource Type (software, hardware, or video). (See Figure 1)



One of the database's most powerful tools is its Keyword search (See Figure 2). If a pre-service teacher needed a specific piece of software or if they were not sure what they were looking for, they could select Keyword (frame 1) and choose from a list of keywords relating to the topic they choose and the software and video items available in the database (frame 2). The results of their search come up in frame 3. Clicking on a returned item provides a short description and where available, an accompanying web site.



Discussion

When I started this project, I had a difficult time conceptualizing database structure. When the instructor tried to explain how databases are built, the concepts went over my head. It was not until I was left alone with the scripts to write and troubleshoot (when things did not go right) that I was able to really understand how databases work. Conversely, I also learned that we were smarter collectively than we were individually. Without a classmate who was also working on databases, I would not have been able to complete the assignment.

Implications for PBL and Technology Instruction

The instructor set up an environment where PBL could be successful. I was concerned with time because I was more familiar with traditional educational formats where assignments were not valuable or meaningful. PBL requires an investment of time and a commitment, which allowed me to plan, revise, and reflect. However, the authenticity of the project and the fact that I had choice gave me the initiative to make that commitment. I was not concerned with evaluation because I had helped set criteria for assessment. At the end of the course, I was more concerned with the benefits of implementation than a course grade. A final mark of successful PBL is high levels of collaboration. My concerns about design diminished because there was constant communication between the authentic audience, my peers, the instructor, and myself.

References

Blumenfeld, P., Soloway, E., Marx, R., Krajcik, J., Guzdial, M., & Palincsar, A. (1991) Motivating project-based learning: Sustaining the doing, supporting the learning. Educational Psychologist, 26 (3 & 4), 369-398.

Bridges, E.M. & Hallinger, P. (1997). Using problem-based learning to prepare educational leaders. Peabody Journal of Education, 72(2), pp. 131-146.

Gallagher, S.A. (1997). "Problem Based Learning: Where Did it Come From, What Does it Do, and Where is it Going?" Journal for the Education of the Gifted, 20(4), pp. 332-362.

Lave, J., & Wenger, E. (1991). Situated learning: Legitimate peripheral participation. Cambridge: Cambridge University Press.

Newman, F. M., Secada, W. G., Wehlage, G. (1995). A guide to authentic instruction and assessment: Vision, standards and scoring. Madison, Wisconsin: Wisconsin Center for Education Research.

Aisha Wood
Doctoral Student
University of Florida
College of Education
awood@coe.ufl.edu

Richard E. Ferdig
Assistant Professor
University of Florida
College of Education
rferdig@coe.ufl.edu

Back to contents

Conference Notice

19th International ASCILITE 2002 conference
8-11 December 2002
UNITEC, Auckland, New Zealand
http://www.unitec.ac.nz/ascilite

Back to contents