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Putting It All Together:

Creative Ideas for Using Technology in the Classroom

Participant Packet

October 16, 2003
1:30 - 3:00 PM CT

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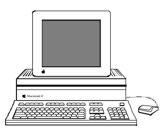

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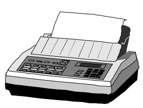

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Name:
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PRESENTERS:

Dr. Michelle Lamberson is the Director of Learning Technology at the University of British Columbia. Michelle joined UBC from WebCT, where she worked for several years in the training and best practice use of the WebCT to build and support exemplary learning environments. In 1997, she was awarded an EducomMedal for her educational technology work.

Dr. Scott Grissom is Associate Professor of Computer Science at Grand Valley State University, Michigan. He has been involved with six National Science Foundation grants related to technology and education, and over fifteen of his journal and conference publications relate to the use of technology to enhance education.

Alisa Cooper is Professor of English at South Mountain CC in Phoenix, Arizona where she teaches hybrid classes utilizing various forms of technology to assist her students' learning. Alisa's doctoral study on the effects of hybrid classes on student retention and satisfaction was the focus of her presentation at the 2002 AECT International Conference.

MODERATOR:

Leticia "Lety" Magana has an extensive background as a television moderator and host for national and regional clients. She also served as moderator for two recent Starlink network teleconferences, "Does Your Online Course Need Extra Credit To Pass?" and "Are We Testing What We are Teaching?"

USING VISUALIZATIONS TO ENHANCE EDUCATION

Scott Grissom

Introduction

Visualization tools can be used to clarify complex concepts in the sciences and other disciplines. These tools are used to increase students' understanding, allow instructors to cover more material in less time, and encourage new modes of learning [Naps96]. *Visualization tools* are applications whose primary purpose is to allow one to create pedagogical visualizations, for example, algorithm animation software. *Visualizations* are prepackaged demonstrations for a specific concept or algorithm, for example, an algorithm animation to demonstrate binary tree insertion or an applet to demonstrate ray tracing.

There is general agreement that visualizations increase student enthusiasm however anecdotal evidence suggests that faculty do not embrace this technology. A short survey was administered in 2000 to investigate these conflicting observations. Ninety faculty representing twenty-one countries responded Demographic information included name, institution, e-mail address, and years of teaching experience. Information about the institution included number of students, computer science majors, computer science faculty, and the technology available in the classroom. The third section asked about their reluctance to use visualization and the perceived strengths of using visualizations.

Survey Results

How often do faculty use visualizations? *Static visualizations* are considered to be single images and hand drawn figures. Faculty report using static visualizations almost everyday (72%), once per week (20%), only a few times per term (8%) and never (0%). *Dynamic visualizations* are defined to be computer-based visualizations that can be controlled to some degree. Faculty report using dynamic visualizations almost everyday (10%), once per week (23%), only a few times per term (54%) and never (13%). It is important to recognize that all faculty completing the survey teach computer science. It seems appropriate to assume that this group is more likely to use computer visualizations more often than the general faculty population.

Why are faculty reluctant to use visualizations? 1) The number one comment was the time needed to develop visualizations. Time to install software, time to transition in the classroom, time to learn new tools, and time to prepare the course were also mentioned. 2) Concerns about equipment in the classroom being available and reliable was the second concern. Survey results indicate that 10% of faculty do not have access to equipment and 28% needed equipment delivered. 3) Perceived lack of effective and reliable software was number three. 4) Only two were concerned about the lack of evidence that it helps. 5) Students can become passive as they simply watch demonstrations in a darkened room.

How does the classroom environment affect the decision to use visualizations? A classroom should have a computer and projection system permanently installed. The room needs to be large enough to hold the equipment and allow students to sit comfortably. It is also critical that the network connection be reliable. Instructors must be confident that the technology will be working everyday. Lighting must be appropriate. Instructors are less likely to rely on in-class demonstrations if the equipment is not reliable.

How can I find the time to learn about the resource? Many faculty seem burdened with too many responsibilities. Who can afford the hours or days to learn a new teaching resource and integrate it into a course? Developers need to give more attention to the usability, installation procedures, and instructions. These outcomes are often the last to be created and the quality is sometimes poor.

What is the payoff*?* – are visualizations really worth the effort? Yes! Studies have been able to demonstrate that visualizations can help to improve learning and student motivation [Byrne99, Hundhausen02]. Unfortunately, these results are not well known outside of a small circle of researchers. A concise review of the literature that explains the strengths of using visualization may help motivate faculty. See the following article that investigates how student engagement with visualizations affects student learning.

How can I find an easy to use tool that meets my needs? Digital libraries are becoming well established means for distributing resources. However, libraries must be designed with sound usability principles. A search on Google for "education resources" yields millions of hits. Instead, go to the Merlot digital library (http:www.merlot.org). Thousands of resources are available within a wide range of subjects. A strength to this digital collection is that visitors are able to post their comments about each resource. These reviews can help you select appropriate resources.

Excerpts from

"ALGORITHM VISUALIZATION IN CS EDUCATION: COMPARING LEVELS OF STUDENT ENGAGEMENT"*

Scott Grissom et al.

Abstract: Software technology for algorithm visualization (AV) has advanced faster than our understanding of how such technology impacts student learning. In this paper we present results of a multi-university study. We measured the effect of varying levels of student engagement with AV to learn simple sorting algorithms. These levels included: 1) not seeing any visualization, 2) simply viewing visualizations for a short period in the classroom, and 3) interacting directly with the visualizations for an extended period outside of the classroom. Our results show that learning increases as the level of student engagement increases. AV has a bigger impact on learning when students go beyond merely viewing a visualization and are required to engage in additional activities structured around the visualization. In particular, students who responded to questions integrated into the AV tool during their exploration of an algorithm showed the most improvement between a pretest and posttest.

Introduction

Algorithm visualization (AV) depicts the execution of an algorithm as a discrete or continuous sequence of graphical images, the viewing of which is controlled by the user. Many algorithm visualization tools oriented toward computer science education have been developed and presented at recent SIGCSE and ITiCSE conferences. There have also been numerous empirical experiments attempting to prove the instructional effectiveness of AV. Hundhausen et al. [2002] presents a meta-study of twenty-one such experiments. Perhaps the most interesting observation growing out of this meta-study is that the determining factor in establishing the effective use of AV is not so much the features of the AV tool. Rather it is the manner and degree with which the learner becomes engaged with activities beyond merely watching the visualization. For example, in the twenty-one studies cited by Hundhausen et al., twelve involved such additional activities. Of those twelve, ten demonstrated improved learning at a statistically significant level. Of the nine studies in which learners merely watched different visual representations of the algorithm, only three showed a significant result.

Results such as these inspired the convening of a Working Group on "Improving the Educational Impact of Algorithm Visualization" at the June 2002 ITiCSE (Integrating Technology into Computer Science Education) conference in Aarhus, Denmark. The report of that group [Naps et al. 2003] identified an engagement taxonomy encompassing six different forms of learner engagement with visualization technology. The group's purpose in defining this taxonomy is to provide a framework for conducting empirical experiments that attempt to evaluate the instructional effectiveness of AV. The six categories in the working group's taxonomy are: 1) No viewing, 2) Viewing, 3) Responding, 4) Changing, 5) Constructing, 6) Presenting.

In this taxonomy, "no viewing" refers to instruction without any form of accompanying AV. "Viewing" can be considered the core form of AV engagement, since all other, more active, forms of engagement with visualization technology fundamentally extend some kind of viewing. Viewing by itself is the most passive of the forms of engagement. Aside from controlling a visualization's execution and changing views, viewing by itself does not entail active involvement with a visualization. Hence, relative to Hundhausen's meta-study, "viewing" would be used to classify the nine experiments in which learners merely watched different visual representations of the algorithm being studied.

Category 3 in the engagement taxonomy is "Responding". The key activity in this category is having the learner answer questions concerning the visualization while it is presented by the system. Answering these questions may be integrated into the AV system, or it may be in the form of questions administered via separate pencil-and-paper exercises that the learner completes while watching the algorithm execute in the AV system. Two of the studies cited in Hundhausen's meta-study used this form of engagement. The first of these was a study in which the researchers found that forcing students to do prediction during the animation of a depth-first search produced significantly better results on a post-test taken by students [Byrne et al. 1999]. Their methodology was to have students in a closed lab setting orally predict the behavior exhibited by the algorithm visualization. A second conflicting result was reported in a more recent study [Jarc et al. 2000]. This study used Jarc's Interactive Data Structure Visualizations (IDSV) software to automate what Byrne, Catrambone, and Stasko had students do orally. That is, the ISDV software system itself asked predictive questions of the students as they watched an algorithm. Hence students could (and were expected to) use the system on their own, outside of a closed lab setting. The students who used ISDV in the study did no better than students who were not using the system. Jarc, Feldman, and Heller hypothesize that this ineffectiveness is because poorer students merely treated the interactive questions as a game. Once they became lost in watching an algorithm, they completed the questions simply by making guesses.

Category 4 in the engagement taxonomy, "Changing," entails modifying the visualization. The most common example of such modification is allowing the learner to change the input of the algorithm under study in order to explore the algorithm's behavior in different cases. Work by Lawrence [1993; Lawrence et al. 1994] that was cited in Hundhausen's meta-study reports on two separate experiments in which learners who engaged in this changing mode of interaction performed significantly better than those who passively viewed an animation.

Category 5 in the engagement taxonomy is "Constructing". In this form of engagement, learners construct their own visualizations of the algorithms under study. Although one would suspect that having students construct their own visualizations should greatly increase understanding, the evidence so far is unclear in this regard. One of the surprising non-significant results in Hundhausen's meta-study was inspired by Stasko's initially enthusiastic response to an experiment in which he had students construct their own visualizations using his Samba system [Stasko 1997]. Stasko reported anecdotal evidence that having students do this seemed to result in their learning the algorithm better than if they merely watched a visualization that was constructed for them. However, a more thorough follow-up study on having students "self-construct" a visualization versus having them actively view an expert-constructed visualization was conducted by [Hundhausen and Douglas 2000]. They found no significant difference. Hundhausen and Douglas attribute this result to the limited time frame (two-and-one-half hours) in which the two groups – the "self-constructors" and the "active-viewers" – had to work with the algorithm in question (a QuickSelect algorithm to find the kth minimum in an array).

Category 6 in the engagement taxonomy, "Presenting", entails having students present a visualization to an audience for feedback and discussion. The visualizations to be presented may or may not have been created by the learners themselves. Apparently no empirical studies have yet been conducted that would indicate the effectiveness of this type of engagement.

The study we present in this paper uses the framework of the working group's taxonomy to compare the performance of three treatment groups having different levels of engagement with visualizations. These three levels are the "No viewing", "Viewing (only)", and "Responding" levels. Hence this study offers the potential of further illuminating the seemingly conflicting results reported in previous studies [Byrne et al. 1999; Jarc et al. 2000].

Design of the Investigation

A between subjects design of three treatments was used. The treatments were identified based on the amount of interaction students had with visualizations of sorting algorithms. Students in treatment None (N=62) did not see any visualizations. Students in treatment Viewed (N=62) simply saw visualizations briefly in lecture that were controlled by the instructor. Students in treatment Responded (N=33) saw the visualizations in lecture but also interacted with the them during a closed lab.

Four faculty members from three universities taught seven sections. Two sections were for a CS 1 course and the remaining five sections were for a CS 2 course. Two professors taught two sections, one with Treatment None and one with Treatment Viewed. One professor taught two sections of Treatment Responded. One professor taught one section of Treatment None.

Materials

Students completed a pretest before reading any information about the sorting algorithms (Appendix A). Seven questions measured the student's self-rating of visual learning preference. For example, "Assembling a bicycle from a diagram would be (easy or challenging)". A response of 'easy' suggests the person has a preference for visual learning. Six additional questions resulted in a possible self-rating of 0 to 7. Four questions measured the student's current knowledge about sorting algorithms. Each question related to the number of comparisons, swaps or passes for one of the algorithms under different input conditions. These questions can be answered with a general understanding of the algorithm. For example, "which algorithm(s) perform the same number of comparisons regardless of the starting condition?"

Instructors used identical lecture slides to describe each algorithm and provided a five-page study guide to each student. Students were encouraged to use only the study guide and not their textbook which was different for each university. Neither the lecture slides nor the study guide used visual representations of the algorithm.

The JHAVÉ visualization tool supplemented the lecture for Treatments Viewed and Responded [Naps et al. 2000]. Treatment Responded had direct access to JHAVÉ. They saw a text description of the algorithm, an interactive visualization, and an integrated on-line quiz (Figure 1).

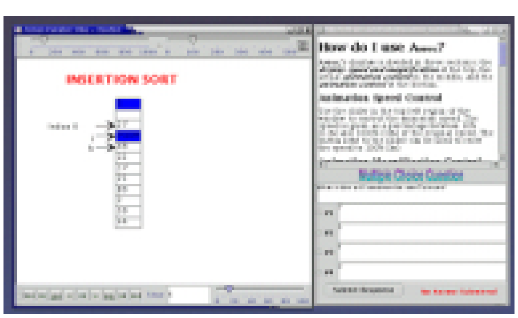

Figure 1. Typical JHAVÉ screen shot.

A posttest included twelve questions about the sorting algorithms and a brief survey about their experience with the learning tool. Four of the questions were identical to the sorting questions on the pretest. Four questions required students to write or read code. We label these Code Questions versus Visual Questions. Visual Questions can be answered with a mental model of an algorithm that does not rely on the underlying implementation.

Results

We used the non-parametric Kruskal-Wallis and Mann-Whitney tests for comparisons between treatments unless otherwise noted. A t-test was not used since the assumption of normality was not met for most data. A 5% significant level was used. Correlation was measured with Spearman's Rho.

There is a significant difference between treatments with respect to pretest scores (p=0.001). Treatment None (N=51) had a mean score of 10.6. Treatment Viewed (N=51) had a mean score of 7.3. Treatment Responded (N=33) had a mean score of 5.1. Post hoc tests indicated the only pair-wise significant difference was between None and Responded (p <= 0.0001).

Assumptions of normality were met for the ACT college prep test scores and an ANOVA revealed no significant difference between treatments. Treatments None and Viewed each had mean ACT scores of 25.4. Mean ACT score of Responded was 23.6.

Four of the posttest questions were identified as coding questions. There is little reason to suspect that these questions would be improved by seeing visualizations since the visualizations did not show corresponding code as the algorithm performed. There was no significant difference between treatments on coding questions (p = 0.194). Treatment None (N = 62) had a mean score of 25.5. Treatment Viewed (N = 62) had a mean score of 27.8. Treatment Responded (N = 33) had a mean score of 28.5.

Eight posttest questions were identified as visual questions. The four pretest questions were a subset of the visual questions. The pretest score was subtracted from the posttest visual questions to measure improvement (Figure 3). There was a significant difference between treatments (p < 0.005) using ANOVA. Treatment None (N = 51) had a mean score of 35.9. Treatment Viewed (N = 51) had a mean score of 39.8. Treatment Responded (N = 33) had a mean score of 46.3. Post hoc tests revealed that the only significant pair-wise difference was between Responded and None (p < 0.005).

Students completed a self-rating of preferred learning style on the pretest. Ratings ranged from 0 for no preference to visual learning to a maximum of 7. There was no correlation between visual learning style and performance on the visual questions.

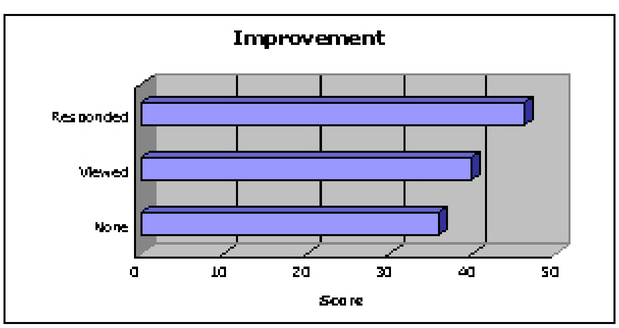

Figure 3. Improved performance on visual questions between the pretest and posttest.

Students in the Viewed and Responded treatments evaluated the effectiveness of the visualization on a scale from one (not effective) to five (very effective). There was no significant difference between Viewed (3.7) and Responded (3.8).

Discussion

What were our significant results?

Our data show that learning improves as the level of student engagement with AV increases. Learning was measured by subtracting pretest from posttest scores. Improvement occurred between each level of engagement (Figure 3). The improvement between not viewing a visualization and interacting with one was statistically significant.

Did the treatment groups have similar academic abilities?

Yes. It is important to determine that each treatment has participants with similar academic skills and experience. This is especially important when the participants are at three different schools. We used the ACT college entrance exam as a measure of general scholastic ability. There was no significant difference between treatments. All students were CS majors taking their first or second course in the programming sequence. Results from the pretest indicated that Treatment None had more initial knowledge about the algorithms. This advantage was factored out by measuring improvement between the pretest and posttest instead of only using the raw posttest scores.

Was there a difference in learning with respect to different types of questions?

Yes. The four coding questions relied on traditional programming skills. One might suspect that such skills would not be improved with a visual representation of the algorithms. Indeed, in our study, there was no difference between treatment groups on coding questions. This confirms that there is some learning that can be improved with visualizations and some that might not.

The issue of trying to determine the type of learning that might be improved with AV is also addressed in the ITiCSE 2002 working group report [Naps et al. 2003]. This report suggests a metric for different types of learner understanding in a study such as ours. This metric is the well-known Bloom Taxonomy [1]. Bloom's taxonomy structures a learner's depth of understanding along a linear progression of six increasingly sophisticated levels:

With respect to the understanding of introductory sorting algorithms measured in our study, we would claim that only the first three levels of Bloom's taxonomy are relevant. That is, our expectations were that the student should understand the "recipe" behind each of the sorting algorithms (Level 1 knowledge), how this recipe results in data swaps and comparisons being made for particular data sets (Level 2 comprehension), and finally how to transfer understanding of the recipe into specific decisions about how to code the sorting algorithm (Level 3 application). Under this interpretation, our results indicate that visualizations help learning at Levels 1 and 2, but not at Level 3. What does this suggest about teaching strategies that incorporate visualizations? Visualizations seem to help with those types of understanding that do not require deep and reflective thought. Hence an instructor might be advised to use visualizations as a means to insure that students understand the "basics" without having to waste substantial class time on such issues. Consequently instructor-student interaction during regular class time can be devoted to higher levels on the Bloom scale.

How do our results compare to previous studies?

In Section 1 we described conflicting results regarding the "Responding" level of engagement in previous studies [Byrne et al. 1999; Jarc et al. 2000]. The former found that learners achieved significantly better results in their understanding of the algorithm while the latter found no significant difference. Our results reinforce the findings of the Byrne study.

While all three studies used the Responding level of engagement, there is an interesting spectrum in how the Responding level was administered. The Byrne study was conducted in a very controlled fashion in which the participating learners were under careful observation during their limited time with the AV system. In the Jarc study, students were given the opportunity to use the system on their own throughout an entire course. Our study falls somewhere in between these studies in terms of the degree of control we exercised over students. Our Responding Treatment group used the AV tool in a closed lab setting. However, this only represented the learners' initial encounter with the AV tool. We also gave students additional time to use the tool on their own. This resembled the Jarc study, except that we limited our period of observation to one topic covered in one week instead of multiple topics covered over a semester-long time frame. On average, our students reported using the AV tool for thirty one minutes on their own.

These studies illustrate a "spectrum of control" exercised by the instructors over the learners. Perhaps not surprisingly, the two studies in which more control was exercised resulted in positive learning results. This is an indication that, if we expect relatively naive students to benefit from AV, we must carefully guide students in their explorations with the AV tool.

What affect did preferred learning style have on response to the visualizations?

Researchers (for example, [Felder 1993]) have suggested that visualizations are more helpful to visual learners than non-visual learners. Our data does not support this suggestion. There was no correlation between performance on the visual questions and the preferred learning style. Our intuition is that there is a correlation between visual learners and their response to AV. Perhaps a different learning style inventory would provide different results. We plan to compeare the inventories used in previous studies to the one we used in this study. It would be useful to identify a common learning style inventory for researchers in this field to use.

Conclusions

The true value of using visualizations may lie not in their content but rather in their serving as a motivational factor to make students work harder. A recent article by Young [2002] laments the decreasing amount of time that today's college students spend studying outside of class. Young posits that "students today are so accustomed to distraction — and bombardment with media images — that they find it harder to concentrate than students in the past." If Young is correct and if visualizations serve to better focus the attention of the modern student, then that may be their greatest value.

To the degree that visualizations helped our students learn material, it must be emphasized that we developed substantial materials to accompany the visualizations. These included lecture notes and a printed study guide in which we were careful to present versions of the sorting algorithms that were consistent with what the students would see in the visualizations. If students interact with visualizations that are not consistent with algorithms they see in their textbooks, then the visualizations may actually serve to confuse more than help them. An unavoidable consequence of this is that "educators who are engaged in visualization need to devote more time to the (development of) accompanying instructional materials, rather than having a single-minded focus on the graphics of visualization" [Naps and Grissom 2002].

Acknowledgements

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Refer to the original publication for the full set of references.

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*Excerpts from S. Grissom, M. McNally & T. Naps, "Algorithm Visualization in CS Education: Comparing Levels of Student Engagement" in *Proceedings of ACM 2003 Symposium on Software Visualization, New York: ACM*, pp87 – 94, 2003.

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   - Weblogs
   - e-Portfolios
3. Summaries of other e-Learning projects
   - How Wireless is Changing Teaching and Learning at UBC
   - Mixed-Mode Learning in English
   - How RSS can Benefit Instructors
4. About UBC's e-Strategy

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Contact: Michelle N. Lamberson
Director, Office of Learning Technology
The University of British Columbia
Michelle.Lamberson@ubc.ca

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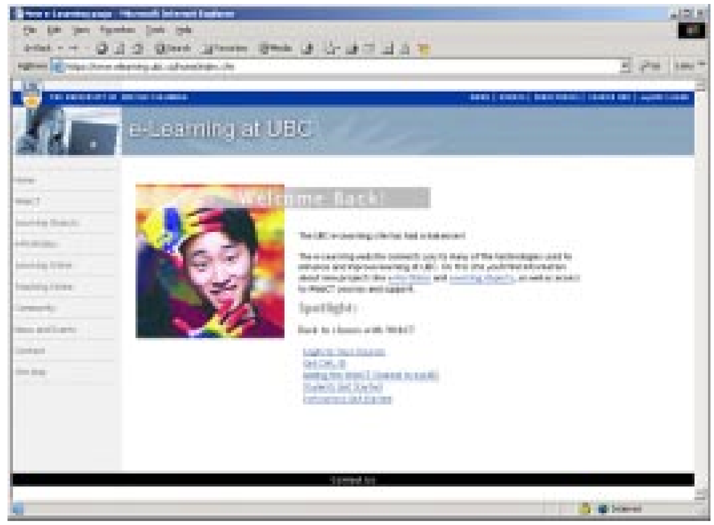

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More on Mixed Mode Course Development

- Separated at Birth? Lessons from Arts and Science Approaches to e-learning. Cyprien Lomas, Ph.D., and Ulrich Rauch, Ph.D., University of British Columbia, Syllabus 2002 Conference Proceedings. http://www.syllabus.com/summer2002/proceedings2.asp?proceeding_code=210
- Lessons from the Chemistry 121/123 Laboratories - Implementing Mixed Mode Course Materials (Sophia Nussbaum, Joanne Nakonechny, Cyprien Lomas) - Skylight Science Centre for Learning and Teaching. http://www.e-strategy.ubc.ca/documents/consultation/th2-nussbaum.pdf
- Final Chapter of English Pilot Project Not The Last Word On Mixed-Mode-Strategy Newsletter, April 9, 2003. http://www.e-strategy.ubc.ca/news/update0304/030408-engl364.html
- Experiences with Mixed-Mode Learning at UBC. The 2003 e-Strategy Town Hall, http://www.estrategy.ubc.ca/townhall/,

Course Management Related Links

Viewing Course Examples:

- WebCT Exemplary Course Project: http://www.webct.com/exemplary
  Since 2000, Maise Caines (College of North Atlantic) and David Graf (Nova Southeastern University) have researched the key elements of online course environments. They developed a rubric that identifies allows instructors to examine their WebCT courses for elements that relate to 5 categories: Course design, Interaction and collaboration, Technology, Assessment, and Learner Support. The detailed descriptions and course access is linked through this web site.
- Outline and Resources for Exemplary Course Workshop at UBC.
  http://careo.elearning.ubc.ca/weblogs/olt/archives/000040.html
- California State University at Chico, Rubric for Online Instruction
  http://www.csuchico.edu/tlp/webct/rubric/index.html

Geoff Herring, UBC Chemistry Professor:

- Teaching General Chemistry Using Information Technology and Interactive Engagement Methods, F.H. Herring, UBC, Proceedings from Non-Traditional Teaching Methods: Methods Other Than Lecture And Assessment Of These Methods, An On-Line Conference March 28 - May 9, 2003.
  http://www.chem.vt.edu/confchem/2003/a/herring/fgherring2003.htm
  Abstract: The recognition that students who are exposed to cooperative learning in the classroom perform better than those taught in a lecture - based system has led to many recent efforts to encourage active participation by students to acquire knowledge. In the last few years many approaches such as the "ConcepTests" devised by Mazur for physics, "Interactive Engagement" methods promulgated by Hake for physics and "Active Learning" espoused by Felder in engineering have been gaining acceptance. Recently a pedagogical strategy known as "Just-in-Time Teaching", devised by Novak, Patterson, Gavin and Christian for physics, which combines high tech (the www etc.) and low tech (classroom) to create a learning environment that responds to the needs of the students and encourages active participation. The adoption of these techniques to teaching First Year

General Chemistry is in a formative phase. This paper will describe the use of Information Technology to implement the Gutenberg Method (the students pre-read portions of the textbook to study before they come to class and are tested on the web) and Interactive Engagement Methods employing ConcepTests in a First Year General Chemistry class. The implementation and experiences with this approach will be described. Preliminary statistical data from a multi-section First Year General Chemistry class at will be presented.

- Non-traditional Teaching: Online conference focuses on methods that enhance or replace conventional lecture format. Stu Borman, C&EN Washington. Web accessible article that relates faculty experiences with non-traditional teaching methods. UBC Chemistry professor Geoff Herring is included in this article. Visit: http://pubs.acs.org/cen/education/8110/8110education.html

Sample Weblogs by UBC educators

Michelle's Online Learning Freakout Party Zone (Michelle Lamberson) – http://careo.elearning.ubc.ca/weblogs/michelle/

Object Learning (Brian Lamb) - http://www.reusability.org/blogs/brian/

42 (Cyprien Lomas) - http://radio.weblogs.com/0100115/

Use and Abuse of Learning Technology (Jim Sibley) - http://blog.apsc.ubc.ca/jim/

UBC E-LEARNING CASE STUDY 1

Mixing Technology with Teaching Adds New Elements to UBC's Chemistry Labs

A team of UBC science educators says their students are better prepared and get more out of their experience in the lab thanks to an e-Learning pilot project that combines technology with traditional teaching methods.

"We can see that the students know more," said Dr. Sophia Nussbaum, the laboratory director for Chemistry 121/123 who led the project. "They have, I think, more fun in the lab because they know what they're doing and they get good results."

Dr. Nussbaum and her team used an approach called mixed-mode learning in UBC's first year Chemistry labs during the two-year experiment.

Mixed-mode learning uses technology to support face-to-face in-class teaching methods. Students use digital media such as Web sites, and CD ROMs, as well as print-based media outside of class to prepare for labs.

The chemistry students first encounter many of the lab elements when they prepare for the lab outside of class. They use a print-based manual, online tutorials and virtual laboratories to see what things will look like in the actual lab. This helps give them a thorough understanding of the experimental concepts before they enter the lab.

The digital simulations aren't meant to replace the experience of conducting real experiments. Instead, these kinds of e-Learning tools give students a chance to make the most out of the time they do spend in the lab.

"You can use the virtual lab to try out your experimental design in the lab," said Dr. Joanne Nakonechny, an educational anthropologist and a research associate with Skylight, the Science Centre for Learning and Teaching, at UBC. "No, it doesn't replace the physical lab experience– being in the lab and manipulating the burets, pipets and everything else."

By using interactive media, they can make as many 'virtual' mistakes as it takes. According to Dr. Nussbaum, the students are more comfortable in the lab because they can focus on acquiring the technical expertise they need. "Although students do spend more time on lab preparation," she said. "They make better use of their time and learn more."

The results of their e-Learning experiment are already beginning to show. "We just finished a project in the second term," said Dr. Nussbaum. "We're looking at their lab reports now and many of them are great. The questions students ask their TAs and the discussions amongst themselves are of higher quality than they were before."

Dr. Nakonechny believes the mixed-mode delivery system would benefit students in other chemistry courses as well.

"The students are so much better prepared when they come into the labs," she said. "They've had a chance to 'run through' the experiment so they're not making the same kinds of mistakes and their questions are deeper. This ties in with our goal of facilitating their process of becoming authentic scholars in their disciplines.”

The initial pilot project ended in April 2003, but mixed-mode learning has since become a mainstay at UBC and courses continue to be offered this year. Mixed-mode learning has also been integrated in the English Department at UBC. For more information on this initiative, read the article at: http://www.estrategy.ubc.ca/news/update0304/030408-engl364.html

UBC E-LEARNING CASE STUDY 2

Beyond the Hype: What's in a Weblog?

The predictions made by prophets of the weblog are dizzying. Depending on who is making the claim (usually a weblogger), weblogs herald a communication revolution. They hold the potential to transform personal and public expression, reshape political participation and render traditional journalism obsolete. They're on their way to becoming the next great "killer app" for organizational knowledge management.

Weblogs are increasingly touted for their potential to foster online interaction and resource sharing in education. They're also gaining attention as an alternative means to delivering instruction online. Effectively, a weblog allows any person with an Internet connection to publish to the Web. Weblogs are a series of "posts" on a webpage, collections of hyperlinks and personal observations, usually organized chronologically with the newest content at the top.

The weblogger enters content using an Internet browser, with no web authoring tools or knowledge of HTML required. The weblog software handles formatting and organization. The technology behind most weblog systems isn't complicated. Their power lies in this simplicity. This ease of use is matched by versatility.

But to be honest, there's not much new about weblogs. The torrent of hype has already generated a backlash. In a recent BBC News article, technology analyst Bill Thompson suggests weblogs are already "losing their appeal", and wonders "how many days can someone keep on posting to their LiveJournal site, or visiting Blogger to add more details about their cat's mysterious illness?"

Trying to define what weblogs are is a bit like explaining how the Internet might be useful – the tool is a means to support whatever work is being done. With millions of weblogs worldwide, and thousands are being launched every day, the range applications is truly staggering. A few selected examples:

Personal Knowledge Management: D'Arcy Norman uses his Learning Commons Weblog to update the community on developments of the CAREO learning object repository system. More than merely a collection of announcements, however, the page offers insight into the process of building educational software. D'Arcy also treats his weblog as an online brain, gathering resources (taking advantage of his weblog's internal search engine), floating ideas to his readers for feedback, and responding to comments from CAREO users.

Personal portfolio: In a sense, weblogs are an evolution of the "personal page" that most web surfers are familiar with. Their chronological structure and facility for quick updates, however, promotes an element of reflection that is lacking from many static homepages, and can over time accumulate small pieces of casual work into an impressive online document. Weblogs combine the benefits of a personal workspace with demonstration of that work, and as such are especially useful to students. Arizona's Maricopa Community College maintains a page supporting the use of weblogs as ePortfolios.

For Instructors: Weblogs are rapidly gaining favour with teachers who want a public forum that offers a space for announcements, references to resources, and a forum for informal discussion (supported by the “comment” functions of most weblog software). And although a distributed network of teacher and student weblogs cannot match the functionality of a course management system, “courseblogs” have also become increasingly popular. Randy Brown of the Learn Relearn Network links to a number of interesting applications.

UBC E-LEARNING CASE STUDY 3

New e-Portfolio Project Creates Online Showcase for UBC Students and Faculty

Students and faculty will be able to present their academic and professional achievements online when a new e-Portfolios pilot project launches at the University of British Columbia this fall.

“e-Portfolios provide a way for self-reflection on the process of learning and a way to celebrate the achievement of knowledge, skills or competencies you’ve acquired over time,” said Karen Belfer, Community of Practice Coordinator for the e-Portfolio project at UBC. “They show something about your accomplishments, the breadth of skills and how you acquired those skills.”

An e-Portfolio is a collection of a person’s work that has been developed over time. It shows what they have done in a course, degree program, or during their career.

e-Portfolios are hosted digitally over the Web and can be customized so that the owner can choose only to show certain aspects of their work to others, such as an instructor or potential employers. The owner can include written reflections about their work and invite feedback from reviewers.

Approximately 500 students and faculty will take part in the first year of the project, which is comprised of five pilot projects involving five different departments, including Education, Agricultural Sciences, Science, Pharmacy, and the Centre for Teaching and Academic Growth (TAG). Other departments, such as Enrolment Services and Student Development & Services, are also part of the university-wide collaborative project.

e-Portfolios will be integrated into courses and programs in different ways in each project and department. Students in Agricultural Sciences and Science are creating e-Portfolios for a single course, while Education and Pharmacy students will develop their personal e-Portfolios over the span of one or four-year programs.

“Students have a greater sense of autonomy, power and control over their work and how they are representing themselves,” Belfer said. “e-Portfolios also give students a better understanding of themselves, how they think and process information, and how they feel about particular learning situations.”

e-Portfolios are not only for students. Faculty will be involved as well, evaluating student work. The pilot project will also expand on faculty members’ teaching portfolios that are already used for performance reviews, hiring purposes, promotions and tenure. Instead of using the current paper-based system, instructors will host their portfolios online.

Most importantly for both students and faculty, their e-Portfolios place them at the centre of their learning process.

“e-Portfolios give students and faculty access to data, tools and systems that allow them to document their learning over time through a reflective and community-oriented process,” said Michelle Lamberson, Director, Office of Learning Technology.

UBC E-LEARNING CASE STUDY 4

Why Wireless, Mixed-Mode and RSS are Integral to e-Learning at the University of British Columbia

How Wireless is Changing Teaching and Learning at UBC

UBC's newly completed Wireless network is giving faculty, staff and students Internet access to resources and research from anywhere on campus. This new level of connectivity creates opportunities for how people use information - from instantly sharing meeting notes with other colleagues to introducing online content in the classroom.

"Because the Internet is accessible all the time, it places the emphasis on what you do with the information rather than the information itself," said Dr. Cyprien Lomas, Research Associate in the Science Centre for Learning and Teaching. "It allows for very rapid follow-up on new ideas or references, in workshops and seminars."

Staff, faculty and students can access the Internet wherever they are, whenever they need it, not just in the office or at their desk.

Read the full story at: http://www.estrategy.ubc.ca/news/update0309/030917-wireless.html

Mixed-Mode Learning Gets Students More Involved in English Class

Mixed-mode courses encourage more student involvement than the traditional lecture format says a UBC English professor who led an e-Learning pilot project. "You get a very high quality of discussion because students are already working with the material," said Dr. Jonathan Wisenthal. "It gets students involved in a way that isn't as easily done in the traditional lecture format."

The project didn't just increase student participation in Dr. Wisenthal's English classes. It also became a unique opportunity for faculty, staff and graduate students from across UBC to design courses that combine technology with traditional teaching.

Read the full story at: http://www.estrategy.ubc.ca/news/update0304/030408-engl364.html

Wouldn't You Love an Easy Way of Adding and Sharing Content You Want from the Web?

Find out why – and how – you'll love using RSS, a formatting language that makes it easy for non-techies to share content across Web sites and add dynamic content to your own sites. Most weblogs support RSS feeds, so communities of like-minded educational webloggers can keep close tabs on each other's postings via their newsreaders. It's great for faculty members who want a way to track developments and new resources in their field. They can also use RSS to easily import automatically updated news stories or learning resources into their WebCT courses, or any other web page. RSS is the glue that binds these communities together.

Read the full story at: http://www.estrategy.ubc.ca/news/update0308/030813-rss.html

WHAT IS UBC'S E-STRATEGY?

UBC's e-Strategy is a guiding framework for the UBC community to align technology projects in learning, research and administration with the university's strategic goals.

e-Strategy activities includes projects, information and resource sharing, and setting long terms goals for information technology at UBC.

e-Strategy projects use technology to enhance UBC's core activities and resources: learning, research, community and people. e-Strategy initiatives are also improving UBC's administrative processes and ensure these core operations directly support the university's strategic goals.

e-Strategy connects groups across UBC who manage projects on behalf of their departments and faculties and have adopted the e-Strategy vision and principles. Other units and groups working on technology issues and projects at UBC also benefit from information and resource sharing opportunities. These include events such as the annual e-Strategy Town Hall, as well as the e-Strategy web site and *e-Strategy Update*, our monthly email newsletter.

e-Strategy sets long term goals and objectives for information and learning technology at UBC. But at its core, e-Strategy is about people. Our goal is to meet the needs of faculty, students and staff by creating new opportunities for online learning, research and community building and radically improving key administrative processes.

UBC's e-Strategy brings together departments, individuals, groups and units from across UBC. e-Strategy is led by the Executive Steering Committee, consisting of UBC's five vice presidents and other senior administrators, working with an e-Stragegy Advisory Council.

e-Strategy projects are grouped under four components: e-Learning, e-Community and e-Business and University Networking.

e-Learning improves the overall learning experience by providing support networks, tools and infrastructure for using technology in innovative and effective ways. Thousands of students go online daily to engage with their colleagues, faculty and work with course content.

e-Community supports online communities that enhance learning and student development. It provides common calendars and scheduling tools to makes it easier to arrange meetings and support collaborative projects and groups.

e-Business eliminates paper forms and makes services available to end users on the Web. It dramatically improves service, saves time for students and faculty, and gives staff the time and tools they need to provide more support to the people they serve.

University Networking is a recently completed $30 million dollar project to enhance UBC's wired network and build UBC's wireless network. This high level of connectivity now provides researchers, students and staff with high speed access to advanced regional, national and international research networks.

COURSE INFORMATION

South Mountain Community College

Week 1: Jan. 20-24

PowerPoint 1 (44032 Bytes)
Study Guide 1 (55668 Bytes)

Date	Day	Activity	Due
1/20	Mon	Martin Luther King Day	No Class
1/22	Wed	Syllabus Overview. Hybrid English Handout	-
1/24	Fri	Blackboard Setup. Read Chap. 8: Beginning a Research Project pp. 230-274. View PowerPoint 1 Lecture.	Study Guide 1

Week 2: Jan. 27-31

Power Point 2 (140288 Bytes)
Study Guide 2 (111069 Bytes)
Position Paper Instructional Video

Date	Day	Activity	Due
1/27	Mon	**Class Online.** Read Chap. 14: Argument: Reading, Writing and Research, pp 396-427. View PowerPoint 2 Lecture	Study Guide 2
1/29	Wed	Position/Proposal Paper Handout A. In-class Exercises. Choose topic for Position Paper	-
1/31	Fri	Using Computers/Online Survey/Quiz 1: Chapter 8 & 14	Survey & Quiz #1

Week 3: Feb. 3-7

Power Point 3 (91136 Bytes)
Study Guide 3 (82684 Bytes)

Date	Day	Activity	Due
2/3	Mon	Read Chap. 9: Tools for Finding Sources pp.275-297. View PowerPoint 3 Lecture. Odyssey Handouts B: Assignments 2,3,4 & 5.	Study Guide 3
2/5	Wed	In-Class Demo: Assign #2 & Assign #3 in Library.	Assn. #1 Due
2/7	Fri	Read Chap. 10:Finding Sources Outside Library pp. 298-304.	

Week 4: Feb. 10-14

Power Point 4 (212480 Bytes)
Study Guide 4 (64848 Bytes)

Date	Day	Activity	Due
2/10	Mon	Chap.11: Putting Sources to Work pp. 305-324. View PowerPoint 4 Lecture.	Assn. 2 Due & Study Guide 4
2/12	Wed	In-Class Demo: Making note cards. In-class Exercises.	-
2/14	Fri	Read Chap. 12: Reporting on Sources pp. 325-332. Online Quiz 2	Quiz 2

Week 5: Feb. 17-21

PowerPoint 5 (84480 Bytes)
Study Guide 5 (41657 Bytes)
Odyssey IV Instructional Video

Date	Day	Activity	Due
2/17	Mon	Read Chap. 3: Writing a Paraphrase, pp. 87-116. View PowerPoint 5 Lecture. **President's Day**	**No Class**. Assn. #3 Due & Study Guide 5
2/19	Wed	Odyssey Handouts B. In-class Demo: A4 & A5/Library.	-
2/21	Fri	Read Chap. 12: Reporting on Sources pp. 333-358. Library Research	-

HYBRID ENG 102

Alisa Cooper

Times have changed. And no matter how much times have changed, one thing stays constant: You must be able to communicate in writing to be successful in college. Every student has to take an English class to get an AA degree, so the college thinks that writing is an important skill to learn in college. The reason why is the same reason I've developed this hybrid English class. Students need to learn to communicate through writing because the most common mode of assessing learning in most disciplines is through writing and most college classes will require our students to write. So why not make this class more applicable?

Imagine being a full time student, working part-time, raising a family or even participating in an athletic program. You have four or five classes which all require a good amount of work. But for the most part, each class's assignments are separate and unrelated to each other. Thus requiring more time from the student. I've created a class that allows students to apply knowledge immediately to other disciplines eliminating meaningless assignments, freeing up more time and making the composition class more applicable and more personal for each student.

Hybrid classes.

This Hybrid class:

- is designed to have students seek out research paper assignments required in other classes and use the English 102 class as their mode to fulfilling the requirements for their individual assignment.
- allows for flexibility in the schedule - Three 50 minute classes on MWF are transformed into what looks like an open writing lab.

Monday: Student A is in class where the professor delivers a lively lecture on the topic of the week. Student A listens and takes notes. Student B, on the other hand, is not in class. This student is viewing a PowerPoint Presentation and instructional video independently and filling out the interactive study guide. Student B uploads the student guide to the professor and retains a copy for notes. Both students receive the same instruction and the same knowledge.

Wednesday: Student A is in class for the Hands on How-to class where students are guided through the individual assignments through a demonstration from the instructor. Student A can watch or work along with the instructor on his/her own assignment while in class. Student B works independently on his/her own time and can view an instructional video that has been created to demonstrate the process involved in doing the assignment. Student B will also be responsible for answering a few questions on the Discussion Board in Blackboard to reinforce understanding of the steps involved in the process of completing the assignment. That student is also able to post questions of her own during the process if any difficulty arises.

Friday: Library Research/Assessment day- Online quizzes have been created utilizing Blackboard to quiz students every two weeks. Having quizzes online frees up class time so that students can have one on one time with the instructor. The class becomes an open lab where students come in to work on their project under the watchful, yet helpful eye of the instructor. Student A takes advantage of the in class help. However, Student B does independent research in the library. It's impos-·

sible to complete the research assignment with less than one hour in the library, so there's no need to monitor library attendance. Quizzes are available online in the Testing center all day Friday, Saturday and Monday.

- allows for acceleration - The class can be accelerated down to 8 weeks. Regular instruction takes place during class time from 8-8:50 and then again from 11-11:50 MWF for a second class. Time is available to "double up" following both classes: 9-9:50 and 12-12:50.
- frees up classroom space and allows for double booking of classrooms.

Key Elements of this Hybrid class:

PowerPoint Lectures

Interactive Study Guides

Instructional Videos

Online Quizzes

One-on-one instruction with instructor

Collaborative help from librarians

Email

Extended Online office hours with Instant Messaging

Blackboard Discussion Board

Blackboard Digital Dropbox

HELPFUL LINKS

Alisa Cooper

Hybrid ENG102 Blackboard site: Click the Preview button

http://bb.dist.maricopa.edu/bin/common/course.pl?course_id=_97_1&frame=top

MLX: Maricopa Learning Exchange:

http://www.mcli.dist.maricopa.edu/mlx/mine.php?id=315

Freshman Composition Webfolio Site:

http://home.earthlink.net/~smcc2003/

Sample Student Webfolio: first year developmental English class

http://home.earthlink.net/~smcc2003/judithtest/index.html

Freshman Composition Newsletter:

http://home.earthlink.net/~eng101/

Sample Student Blog:

http://smc-judith.blogspot.com/

Blogger

http://www.blogger.com

Yahoo! Groups, Email & Briefcase

http://groups.yahoo.com
http://mail.yahoo.com
http://briefcase.yahoo.com

Welcome to the Maricopa Learning eXchange (MLX), which at current inventory status includes **697** "packages" in our warehouse of learning. As our "X" shows, our address is at the intersection of *Teaching* and *Learning.*

What exactly is a package? Just as learning is a concept that defies quantifying, so are examples of learning. That is why we represent them as mysterious wrapped packages, ranging from as small as a spreadsheet activity designed for a chemistry lab exercise to a complete faculty development program. **Simply put, the criteria for a package is anything from Maricopa created for or applied to student learning.** See for yourself by looking at any of the 3 randomly selected packages listed on the right or reviewing in more detail about the type of packages in our collection.

The key to MLX is it being a place for exchange of ideas. Anyone from anywhere can browse and search the warehouse. Each "package" is represented by a descriptive "packing slip" that includes the name of the package creator, college(s) that were involved in developing it, contact information, a description, links to web sites associated with the package, and a collection of media attachments that include images, documents, spreadsheets, movie clips, etc. The attachments provided are free for educational use as long as credit is given to the package owner. (You do not want to meet our Legal Department!)

The other side of exchange is that anyone who works for Maricopa is invited to share their own packages by visiting the loading dock. There, the Dock Supervisor helps you instantly create an account, and the warehouse aides walk you through the process of creatring an entry for your first package. You may check and modify your inventory at anytime, which tells you how often your package has been viewed.

What is a package? Check out these examples:

3 Random Packages

1. Reading River Sediments
This is an introduction to the basics of geochemistry. It reinforces reading contour map skills while it promotes cooperation and problem solving among student. ...

2. Mid-semester Grade Check
A mid-semester grade check helps with retention; students evaluate realistically what they need to do to succeed in the class. This particular exercise uses both an individual stud...

3. Country Analyst Assignment: Economic Resources (WebQuest)
First in a series of four writing assignments given over the course of the semester, this can be used either as a stand-alone or as part of the bigger economic picture....

Greetings from the warehouse architects... "We are glad to see you here! For a more thorough overview of MLX, please proceed to our guided tour."

Memo from the Loading Dock Supervisor... "Hi! Are you ready to get started creating MLX packages? Just check with me for the 1-2-3 Guide. We'll have you loading packages pronto!"

Our research department provides the company history... "If you wonder why MLX was built, then read these Spring 2000 Labyrinth articles Maricopa Learning eXchange (MLX) and Database of Dreams. Furthermore, there is plenty of room for competition! Other excellent collections have been created elsewhere. See MERLOT, Alexandria, SCOUT, Connexions, DSpace, OpenCourseWare, and more to come."

PR department informs us... " Stephen Downes remarked August 8, 2003 that Syndicating Learning Objects With RSS and Trackbacks "was the highlight of the Merlot conference for me, and as I looked around the audience I saw about half of them stunned at what they were seeing and about half nodding enthusiastically" ... Other MERLOT 2003 conference attendes enjoyed the metaphor of our 3D MLX poster ... Downes also praised the online version of the MLX MERLOT poster ... We had 5 minutes of fame at the 2003 NMC Conference ... Creative Commons lists MLX in the featured works ... MLX RSS feeds are mentioned in Philip Long's Syllabus column (Apr 1, 2003) ... MLX is District Office 2003 Innovation of the Year from Maricopa ... Stephen Downes salutes the MLX (Feb 26, 2003 OLDaily) ... MLX appears in EduResources Portal ... The League for Innovation in the Community Colleges spotlights the Great MLX Package Race in the League Connections December 2002...

For an overview of the MLX and its features in detail, see our collection of online presentations ..."

1. African American Literature Project
The African American Literature project includes doing a presentation on an African American author and his/her work. The handout includes a list of over 100 African American novels.(created Feb 28, 2003)

2. Argumentation PowerPoint Lesson
This PowerPoint presentation introduces students to argumentation by discussing the features of arguments. It is accompanied by a Study Guide for students to fill out to check competency. (created Feb 5, 2003)

3. Beginning a Research Project PowerPoint Lesson
This PowerPoint presentation introduces students to research by outlining the process involved in beginning a research project. It is accompanied by a Study Guide for students to fill out to check competency. (created Feb 5, 2003)

4. Classification PowerPoint Lesson
This is a Powerpoint presentation that covers the classification writing mode. THe information was taken from a chapter in the ENG101 textbook. (created Sep 18, 2003)

5. Creating a Free Online Blog
Students in the freshman composition courses are encouraged to keep a writing journal through out the course to practice writing. An online blog motivates students to participate in journaling because it’s fun and it is read by many people and not just the instructor. This handout instructs students on how to create a free online blog at Blogger. (created Jun 26, 2003)

6. Evaluating Sources Powerpoint Lesson
This PowerPoint presentation teaches students how to effectively evaluate general sources and web sources. It is accompanied by a Study Guide for students to fill out to check competency. (created Feb 28, 2003)

7. Finding Research Sources PowerPoint Lesson
This PowerPoint presentation discusses beginning research and identifying all the sources available to students during the research stage. It is accompanied by a Study Guide for students to fill out to check competency. (created Feb 5, 2003)

8. Journals
This is a list of 25 journals that can be used to prompt students to write. These journals are very general and can be used in any class that just wants for students to have something to write about. (created Sep 18, 2003)

9. Keebook Grammar Book
This a grammar book I created using a program called Keebook. It allows users to create their own “books” and produce for example either Web quest scrapbooks, teaching reports or assignment workbooks. It is a tool to gather, enhance and present all types of electronic contents. (created Sep 18, 2003)

10. Outlining Lesson Handout
This handout instructs students on the purpose and the two common forms of outlines. It also includes the eleven steps to creating a reading outline. (created Feb 28, 2003)

COMMON WEB REFERENCES FOR STUDENTS OF THE SCHOOL OF PHARMACY & HEALTH PROFESSIONS

Creighton University Medical Center

Below a list of common references used by students of the Creighton University Medical Center, School of Pharmacy & Health Professions. (Please note that in addition to the sites listed, there are a lot of reference sites used by the students that are subscription items)

http://www.cdc.gov/ - a great source of information about infectious diseases, particularly concerning prevention

http://www.cochranelibrary.com - Evidence-Based Medicine guidelines

http://www.emedicine.com/ - provides a variety of textbooks

http://www.factsandcomparisons.com/ - also known as Drugfacts.com.

http://www.freemedicaljournals.com/ - the name says it all

http://www.guidelines.gov/ - National Guideline Clearinghouse - a great way to find the best way to treat diseases

http://www.immunofacts.com/ - deals with immunizations

http://www.lib.uiowa.edu/hardin/md/index.html - a variety of information, including links to other free sites

http://www.medscape.com/ - contains a lot of articles, publications, etc. One section is specifically for pharmacists

http://www.ncbi.nih.gov/entrez/query.fcgi - Pubmed - a good online search service from the National Library of Medicine (includes Medline)

UPCOMING PROGRAMS

(All times are 1:30 - 3:00 PM CT unless indicated otherwise)

OCT. 30, 2003	CREATIVE STRATEGIES FOR TOUGH FINANCIAL TIMES
NOV. 11, 2003	THECB-CTC ANNUAL UPDATE (1:30 - 2:30 PM CT)
NOV. 13, 2003	TEACHING FOR STRATEGIC LEARNING
NOV. 20, 2003	A BROADER SENSE OF ARTICULATION
JAN. 29, 2004	EDUCATING THE "NETGEN": STRATEGIES THAT WORK
FEB. 20, 2004	THE VALUES OF TEACHING (1:00 - 2:15 PM CT)
FEB. 26, 2004	THE REAL COST OF ONLINE COURSES
MAR. 3, 2004	ANNUAL CARL D. PERKINS RFQ TELECONFERENCE
MAR. 25, 2004	COLLABORATIVE LEARNING TECHNIQUES (COLTS)
APR. 8, 2004	CYBER INSECURITY? PREVENTION AND PROTECTION SOLUTIONS

Programs to be streamed and available via the Internet include:

SEPTEMBER 2003	EXPANDING YOUR ENGLISH TEACHING SKILLS
OCTOBER 2003	LIGHTEN UP AND LIVE LONGER (WELLNESS)
NOVEMBER 2003	COPYRIGHT ISSUES ONLINE
DECEMBER 2003	INTERNET 2: A NEW RESOURCE FOR EDUCATION
JANUARY 2004	SMALL TEACHING CHANGE = BIG LEARNING GAINS
FEBRUARY 2004	COOPERATION, COMPASSION AND CIVILITY IN THE CLASSROOM
MARCH 2004	CHANGE YOUR MIND AND CHANGE YOUR LIFE (WELLNESS)
APRIL 2004	CRITICAL THINKING: REQUIRED LEARNING FOR THE 21ST CENTURY
MAY 2004	CHEATING AND PLAGIARISM USING THE INTERNET
JUNE 2004	ETHICAL DECISION MAKING IN THE PROFESSIONAL SETTING --a special three hour in-service program for professional counselors and heathcare providers
JULY 2004	DOES YOUR ONLINE COURSE NEED EXTRA CREDIT TO PASS?
AUGUST 2004	RETIREMENT PLANNING FOR EDUCATIONAL EMPLOYEES

EVALUATE "PUTTING IT ALL TOGETHER"

On a scale of 1-5, with 5 being the highest, rate the videoconference in terms of its value to you.

	Excellent				Poor
Timeliness of topic	5	4	3	2	1
Objectives clearly stated and supported with effective program elements (discussions, videos, interviews, demos, etc.)	5	4	3	2	1
Moderator	5	4	3	2	1
Panelists or Instructor	5	4	3	2	1
Handouts	5	4	3	2	1
Technical quality	5	4	3	2	1
Overall evaluation of program	5	4	3	2	1

Local site activities were held? _____YES _____NO

1. Institution name:____

2. My current position is: (circle one)

   a. Board Member
   b. Faculty
   c. Administrator/Professional Staff
   d. Classified Staff
   e. Other___________________

3. What did you like most about the videoconference?

4. What could have been done to make it more valuable to you?

5. What topics would you like to see addressed in future videoconferences?

Return to: STARLINK, 9596 Walnut St., Dallas, TX 75243.