



t h e Labyrinth

Sharing Information on Learning Technologies

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Center for
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Technology and Change ... duh!

ALAN LEVINE
MCLI

How can one say anything about technology and change without sounding clichéd?

This issue's theme made it easy to identify potential faculty authors. Given the breadth of innovation with technology by Maricopa faculty, we could not find anyone who could write about their use of technology without speaking also about change.

In this issue of the *Labyrinth* we are zooming beyond the change of the technology itself (continual software upgrades, newer CPUs, faster networks, web sites by the bucket load) to explore what changes technology brings for the way we learn, the way we teach, the way we do business, or even what we do for fun.

We have words from Jon Lea Fimbres about the permeating sense of change she has seen first hand in Egypt. Jeanne Franco (Paradise Valley Community College) describes her experience as a student in an on-line course and how it inspired her to build tutoring support into the web courses she is developing. Richard Effland (Mesa Community College) shares his extensive experience at creating rich, interactive technology experiences for Anthropology. Dean Stover (GateWay Community College) writes about his new idea for using video clips of students as a means for them to understand their own writing. We have some thoughts on change from Walter Skurda, a student at Scottsdale Community College. Also, we interviewed John Arle (Rio Salado College) to highlight the change he has encountered (and embraced) in bringing computer simulations to science classes and how he is incorporating technology into Rio's Internet courses.

We have change in our publication as well. As an effort to increase the interaction between our authors and readers, we are adding an on-line discussion area to the *Labyrinth/Forum* web site. This is nothing of extreme novelty to those in our system that have long experience with the Electronic Forum. However, in a web environment the discussions are enhanced by an ability to link to related information resources within the context of our own words. In addition, the web environment changes the impact of a static print article if it can grow from the ideas reflected from its readers. Quite a few Maricopa faculty (including at least two of our authors) are already actively using web discussion boards in their classes.

We've recently experimented with a new system for creating "Web Boards" that is very flexible and functional. One problem with on-line discussions is that without a critical mass of people who check in on a regular basis (or without it being a required part of a class!), the discussions tend to wither. Our new "Web Board" has an option that allows a message writer to request an email notice when a response to his or her message is received. This feature lets one know when to check the board.

So read this issue of the *Labyrinth/Forum*, on-line or off-line, on screen or on paper, but then think about change and join us at <http://www.mcli.dist.maricopa.edu/labyforum/>. Just follow the "discuss" hyperlink on the black side bar, and start a conversation about any of the articles. Let's see what happens.



Some Thoughts on Change From Egypt

JON LEA FIMBRES
CAIRO, EGYPT

Jon Lea Fimbres, former PVCC faculty member, currently Regional Educational Advising Coordinator of the Middle East and North Africa, and humble learner.

I have been struggling with the topic of "change" for several weeks. My frustration has puzzled me since for the past year and a half, I have lived in a state of constant change - cultural, professional, personal, physical and/or spiritual. It seemed like the more I learned about change, the more aware I was about how little we know and how simplistic our models. In my quest to find a better way to express myself, I was reading an old (1973) ecology/natural history book, "One Cosmic Instant: Man's Fleeting Supremacy" by John A. Livingston. The title captured my attention because life in Egypt makes you very aware of time, change and impermanence. The first chapter says what I have learned about change:

We cannot change our biological inheritance, but we can and do change our cultures -- consciously. Conscious change of direction toward the environmental ethic will mean the practice of a kind of artificial selection -- choosing certain positive elements in our traditions and rejecting negative elements. The selective process will not be easy, for it will demand something that is foreign to us -- humility. It will demand willingness to see ourselves in the perspective of time of infinite duration and of events of unimaginable magnitude.

Livingston's words describe three aspects of change that I have been living with for the past year and a half. The idea of conscious change requiring the embracing of the positive traditions and letting go of the negative, the development of humility as an essential life skill and the willingness to see ourselves as connected to something bigger than our day to day struggles summarize the lessons of my life in Egypt.

Although Egyptians will tell you they are a culture that doesn't like change, their country has gone through more changes in the last 50 years than the U.S. has from its inception. Since the late 40's, Egyptians have politically and culturally changed from a British controlled monarchy to a socialist political state to a capitalist agenda to the current climate of cautious entrepreneurship. During these times they have seen their educational systems, governmental infrastructures and livelihoods influenced by Western liberal values and Islamic traditionalist values. In order to cope with these rapid changes, the Egyptian people have had to constantly reevaluate their fundamental ideals and values. The challenges and complexities of saving what is a good cultural tradition and letting go of what is not working is evident in every day life. Seeing a covered Muslim woman answering a cellular, portable phone or watching an ancient donkey cart lumber through the chaotic stream of Cairo traffic while transporting trash are constant reminders of the struggles to balance the old and the new and the traditional and the liberal.

As a counselor trained in transitions and inter-cultural communications, I learned very quickly that humility was the most essential skill for dealing with change. Armed with the fast-food knowledge of the stages of transition, I felt prepared to deal with all of the exciting opportunities available to me in living overseas. The tidy steps of culture shock -- honeymoon, frustration, denial, anger, numbness, anger, and acceptance -- could more accurately be pictured either as a chaotic ride or a natural metamorphosis that may or may not include all, some, or none of these phases. They may be experienced in one year, one week, or one hour. The best analogy has been the lessons of driving in Cairo. Out of the seeming chaos and anarchy of the Cairo traffic, comes a set of unwritten guidelines: honk to let others know of your presence, watch out for others as you would have them watch out for you, and trust that the flow of traffic will take you where

you want to go eventually or deliver you to some exciting new destination. Never think that you have mastered driving in Cairo, always travel with the humility of a beginner.

The last insight into change -- the willingness to see ourselves connected to something bigger than our day to day struggles is a constant part of life in Egypt and the Middle East. Whether it is living in a "waiting zone" while super powers debate whether to wage war or not or listening to the five times a day muezzin call to prayer, my life is filled with reminders of how we are all part of a vast universe that only allows me a tiny glimpse. One cannot listen to the 5000+ years of Egyptian history on a star lit night in Karnak Temple, Luxor and not be reminded of how impermanent our paradigms of living have been. Ironically the very thing the Egyptians are sometimes criticized for is also one of their greatest coping strengths. Egyptians are sometimes known for their own version of "IBM". It has nothing to do with the big conglomerate that makes computers. Inshallah, (God-willing), Bukra (Tomorrow) and Malesh (There's nothing you can do about it, so why worry) can be very valuable guiding principles for change. While some of my expatriate American colleagues are caught up in whining and complaining about the mini-details of their day to day lives such as the availability of designer brands at local stores, the cost of golf club memberships and the inconvenience of learning a new language, the Egyptian people react daily with the quiet dignity of the "IBM" philosophy to regroup after the terrible set-back of the Luxor tragedy, to adjust to the challenges of learning three to four languages to compete in an international setting and to continue to walk the delicate line between Western capitalist, progressive values and the traditional values that have sustained them for dynasties.

My concluding thoughts have to do with the mystery of it all. With the humility that I have lived with since the day I arrived in Cairo, I would never



presume that these ideas are any more than temporary thoughts on a complex and exciting process. Before I left Maricopa, I had the pleasure of co-teaching a series of lectures on story-telling and myth with Karen Kabrich and John Nelson. These lectures were reminders that our stories are constantly evolving and unfolding. Everyday I am reminded of the words of the poem "Oceans" by Hernandez:

My boat struck something deep, nothing happened. Silence, wind, sounds. Nothing happened or perhaps everything happened. And I am sitting in the middle of my new life.

Ma Salaama (In Peace)

Creating Opportunities for Student Success

JEANNE FRANCO
PVCC

Sitting at my computer last fall while taking a UCLA online course in Java Programming, it occurred to me that as a student I needed a tutor. The material was giving me a little trouble, but I didn't want to bother my instructor with my minor questions. Had I been taking this course at PVCC, I could have run over to the Learning Assistance Center, grabbed a tutor, and had my questions answered in ten or fifteen minutes. Searching through the support services offered by the UCLA online program, I found nothing that resembled tutoring assistance. I decided to ask some of my peers if they thought an online tutor would be a welcome enhancement to the program, and I received a resounding "Yes." What a revelation!

I had taken the UCLA online course for two reasons; first to learn Java programming language, but more importantly to witness, from a student's viewpoint, what it was like to take a course totally online. I had spent a lot of time researching the merits of going online with a course, and I felt I had a grasp on the pedagogy involved in creating an online course. However, I wanted to experience the other side of the coin before I stepped out with an online offering of my own. After my UCLA experience, I realized the importance of creating support systems to supplement and enhance the learning experience for online students.

Picture this. You are a student of accounting in an online program that you have chosen because of your busy work and family schedule. It's 2 a.m., and after reading the text and re-reading your instructor's supplemental material, you can't figure out how to measure the cost of a plant asset purchased in a non-cash transaction. You know your instructor reads and replies to all of his email messages at about 6 o'clock every evening, but

your paper is due tomorrow by 6 p.m. so you won't be able to ask your question and receive an answer before the deadline.

All of a sudden you remember that there is an online tutoring web site you could access tonight. Perhaps your question has been asked by a former student, and it is listed and answered on the FAQ (Frequently Asked Questions) page at that site. You log on to your service provider, pull up Netscape and type in the URL for the Online Tutoring Web Site. You click on the FAQ link and access the questions for Chapter 10 - "Plant Assets" and there is your answer.

As an instructor of accounting at PVCC, I understand the importance and the benefits of a strong, comprehensive tutoring program. I know that the more opportunities we can make available to students to ask questions and receive academic support, the more we increase their chances for success. That is why on the first day of class I always spend a few minutes explaining to my students that there is additional support for my course. Our Learning Assistance Center offers group and walk-in tutoring as well as supplemental audio and video materials and computerized accounting tutorials.

Given my experience with the positive outcomes of students who take advantage of tutoring and my experience as an online student, I began to search cyberspace for online educational opportunities that included this important student support service. I found NYU, the University of Phoenix, Duke University each with virtual MBA programs. I located sites at Johns Hopkins, Cornell,

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Rice, Stanford, Rutgers and the Open University of England each with varying degrees of online offerings, but nowhere could I find an example of online tutoring to support student success. Before I created my online courses in accounting, I decided that I needed to have a tutoring web site in place.

In pursuit of this idea, I created "The PVCC Online Tutor." PVCC students who access this site discover that there are three ways in which they can get extra help with their course. First, students may access a Frequently Asked Questions (FAQ) page that lists questions and answers by chapter/topic to see if their question has already been asked and answered. The FAQ pages will be updated and expanded often by a content expert as new questions are identified. Therefore, each time students visit this site they should find something new.

Next, at this site students may access a Tutor Web Board which allows them to introduce themselves to their peers, to read other students' course related postings, and add their own inquires and comments to the board. With the click of the mouse each of the entries to the Tutor Web Board is automatically threaded and posted to a web page. A content expert will monitor the Web Board to ensure that postings remain within the realm of the course content and to offer expertise to the discussions.

Lastly, students are given an opportunity to ask a specific course related question directly to a tutor via email. An online tutor will be trained and assigned to read all email questions several times each weekday and to respond to each student in a timely fashion. Questions from this site can then be used to further develop the FAQ pages.

After creating this Online Tutoring Web Site, I realized that online students may not be the only students who could benefit from this service. I began considering those traditional PVCC students, both day and evening, who find visiting our Learning Assistance Center difficult because of time constraints created by attending school while working or raising a family. After discussing my idea with our LAC Director, David Gerkin, I realized that while the online tutor is not designed to take the place of an onground tutoring program for all traditional students, it would serve a niche of students as an enhancement to our current LAC program. Since our discussions, I am now offering this web site to all Accounting Principles I and II students, and David has identified instructors in Mathematics and English who are interested in expanding the program.

As a side note, I have also created some enhancements to the web site that I hope will prove to be beneficial. As with traditional tutoring, a major factor in running a successful program is

letting students know that tutoring is available and motivating them to use it. Toward this end, I have created three sets of colorful flyers which introduce accounting students to the site. Each set has been designed to attract attention at different times during the semester. In addition, I have added music to the opening pages of the site and plan to run a "name that tune" contest in the fifth week of the semester to attract additional interest and visitors.

Beneficiaries of this site will ultimately be our students, but the college will benefit as well. Having a tutor available anywhere and anytime at the end of a mouse will prove beneficial for busy onground and online students alike. Further, the site encourages student interaction with their peers through use of the Web Board. For the traditional student, this is interaction outside of class that may not have taken place if students were to visit the Learning Assistance Center individually. For the college, at the cost of a tutor to staff the web site several times each day, the college is able to extend additional tutoring support services effectively and efficiently. Even for those disciplines that don't require a full time tutor and for those 200-level courses where it is so difficult to find tutors, the online tutoring web site is an efficient new opportunity to support students. Further, answering student questions via email several times a day gives tutors a new found opportunity to ask for expert help with difficult questions. Therefore, tutors are given an added opportunity to learn while they help those they tutor. Finally, team building will occur between faculty and the LAC staff as we work together on this project for the benefit of students.

The speed at which technology is changing our world is phenomenal, and with technology we have all been afforded the opportunity to create new ways to reach students and assist them in expanding their horizons. As we move into cyberspace we are finding that many of the traditional pedagogical techniques used in the classroom are not transferable to cyberspace, and new ways of creating interfaces between the student, instructor, and knowledge are currently being developed. But some proven onground methods are still applicable to online education. The key is figuring out which techniques are transferable and can continue to enhance the student experience. There is one thing, however, of which I am certain. The more opportunities that we can make available to all students to ask questions and receive academic support, whether online or onground, the more we increase the chances of our students' success.

<http://www2.pvc.maricopa.edu/tutor/tutormain.htm>



Playing out the Imagination's Wildest Scenarios: Engaging Learning Through the World Wide Web

RICHARD EFFLAND
MCC

Introduction

The World Wide Web (Internet or just plain "Web") has burst upon the world over the past three years like no other technological invention that mankind has ever known. It has become the most engaging and innovative component of the information age. With its capacity to display and transfer two- and three-dimensional graphics, static or animated images and text, stereo sound, video, and virtual-reality walk-throughs, the Web is a compelling place to play out the imagination's wildest scenarios. The Web can be hard to browse, and frustrating when trying to find a particular piece of information, but it also can be fun, entertaining, personable, challenging, and educational. It has impacted the educational field as it has everything else with a ferociousness that has many educators wondering how to deal with this revolutionary development. I was an early adopter of the Internet yet am constantly in amazement of the rapidity by which this technology has swept across our culture. This article is an attempt to share some personal insights into the evolution of the Web usage within the educational context of Anthropology at MCC.

Many educators are struggling to adapt to the true "information age" that has mushroomed with the advent of the Internet. Students are adapting at the same time and in some regards faster than many of us. It is easy to become intimidated by the changes and by the very fact that our students have become as well versed if not more so with the Internet and its creative powers. We now all look out at classrooms where more and more students have their own Web pages and use the Internet on a regular basis to obtain information and communicate globally.

The Web has changed in character since I first began to develop Web pages to assist instruction in Anthropology. While there has been a proliferation of information that is now available over the Web, the way one accesses that

information has changed dramatically. Browsers are more powerful, search engines incredibly powerful, and multimedia is ever present. It is multimedia presentation of information that makes this environment a medium by which the "Nintendo generation" can feel more comfortable learning within. I believe it will become more of a standard means by which to access educational materials. One student summed up his reaction to the Web from his first exposure by saying that "This is worth two or three text books and is a lot more fun to use than any text book." The Web is clearly more engaging today as a multimedia experience. This makes the Web an exciting place to learn and yet we are only starting that multimedia evolution -- more will come in the next few years. So the real exciting potential is still ahead of us.

A Lesson Learned

Anthropology at MCC has had an emphasis on use of the technology for teaching and learning based upon our earlier use of hypermedia applications. Our conversion into a Web world has been rapid and extensive. There are now over 4,000 files in the Anthropology server area at MCC. All of these are designed to provide a basic knowledge for courses such as "Buried Cities and Lost Tribes," "Human Origins," "Southwest Indians," and "Introduction to Social and Cultural Anthropology." Dr. Shereen Lerner has teamed with me in developing strategies and materials for the Web. Teamwork in development has enhanced the effectiveness of the Web instructional base. We have tried a number of different approaches for development that have taught us several lessons in terms of what seems to work and not work relative to engaging students in a learning process.

In our own evolution, we have attempted to provide access to information that directs students to pertinent content materials available on the Web. Extensive course guides point to specific URLs that students can use in the learning process. This addresses the issue that "the Web can be hard to

browse" by using a focused pursuit of information that is course responsive. Our "Buried Cities" course guide has won an educational award for its direction of learning.

Two years ago, we tackled a problem for our Social/Cultural Anthropology course. Basic principles and concepts of anthropological linguistics are part of this course. This has always been a particularly difficult subject to teach since the vast majority of students don't find it particularly interesting. Our approach was to couple a videotape about linguistics with a "probing" Web area. We hoped that through exposure to the video and follow-up on the Web that students would obtain a better appreciation of the subject. Several issues arose as we used this approach. The first is that the Web area is "text intensive" and still rather dry in terms of content. Perhaps more significantly, we found that students did not always have the capacity to hear the sounds or see video segments that were embedded in the program as a result of the configuration of computers on campus. Clearly, the biggest problem, at least on the surface, was access, but there is still an underlying issue of content effective delivery. While this has improved with the evolution of more powerful browsers, we are still faced with a rather "dry" content base, which will ultimately limit the effectiveness of this application. It is simply too text oriented without a real means to grab interest.

Two subsequent developments were designed with less text and more of a problem solving environment in an effort to engage students. Both our "Navajo-Hopi Explorations" and our "Southwest Archaeology" areas were developed with the shortcomings of the language application in mind. Both of these are more successful as learning tools. In a sense, our own imagination and creativity now limits restructuring of that language Web exercise. Yet it was a valuable lesson to learn despite the frustrations inherent in it.

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<http://www.mcli.dist.maricopa.edu/labforum/>



Engaging Students

We learned that the delivery of information is critical for "engaging" students. The heart of the issue is to get students involved in the learning process. If design of the technology fails, students will fail to become part of the learning process. It is interesting to note that the visual qualities of page design alone can engage. I now call this the "Madonna Effect." During the fall semester, students read two selections and wrote a reflection on them. We found that the vast majority preferred one article. The students tended to write reflections suggesting the content of the other article was not exciting. The interesting part to this is that the one liked most by students has a longer word count by about 35 to 40 percent. The readings were written by the same person -- Brian Fagan, who is an excellent writer. The article liked least should, in our opinion, have evoked a rather strong reaction, yet it did not. The primary factor that made these two readings different was that one had a colorful picture background and included a number of images. The other was rather plain, lacking any images. We attribute the difference in student reaction to the visual quality differences. We would argue that color and visual effects can play a major role in drawing student interest to a Web page thus engaging their learning. This is the "Madonna Effect." Given the way students are drawn to so much of the world through visual effects today, we need to design with this in mind. They have grown up with color and sound as a major part of their lives. The human brain simply seems to work better at comprehending things with sight and sound engaged. When was the last time you saw a black-and-white television set? Web pages with color (and even better multimedia), therefore, should appeal to students since they conform to the visual stimuli environment that students are so use to on a day to day basis. This should not detract from the content but merely be a means to involve the students in the content. Sound will add even more to color.

Recently, one student was working with her Web assignment in our small departmental computer lab. She has a printed copy of the page which appeared on the computer screen. She was coming back, having printed the page a few days before and was there to look at the

page again since she felt something was missing. Her strategy for Web use was to look up the site and print a copy because she "did not have time to sit at a computer." This is the "Print and Walk" syndrome as I call it. What she missed in not sitting at the computer and working through the information were animated images that contained valuable insights into solving the problems that were posed in the assignment. By having a static printed page from the "Print and Walk" strategy, the student lacked critical insights. This forced her to return to the computer. Statistics tell us that more than a page and a half of text is about the limits of what students will sit at a computer and read -- this doesn't consider what will happen if they encounter small text on that page! Therefore, we must recognize that students are prone to "Print and Walk." We really want students to site and be "engaged," and the Web provides the means by which to do that if we can work around the mental perception that by printing the page one can walk away and be done faster. The issue is what happens to the engagement process when a student walks away. The technology is not "hooking" the student but is another means to information retrieval and nothing more. In this case, the student did return to be engaged, but many students did not and this "Print and Walk" syndrome hindered the effectiveness of this exercise.

We believe that pages need to revolve text around a problem or set of problems. One of the recent Web pages that I have developed is entitled "The Land of Ur." It is a Web area devoted to Mesopotamia. Included on this page are a clickable image map, a timeline, a diagram of a Mesopotamian house, and links to various URLs regarding Mesopotamian history and mythology. Students are asked to interact with the map and define geographic references to the timeline stages. They are forced to use the computer as a means to solve the first of three problems. They can't walk away by simply printing the page. We have made that obvious to them. They are then led to ponder the implications of Mesopotamian culture over time and across cultures. For example, they are asked to consider the implications of the story of Gilgamesh and the Mesopotamian flood with that in Western Civilization. The text in this portion of the exercise is longer. We expect

the student will print the page and work on this aspect of the problem at home.

The student is led to the initial "engagement" on the computer. The problem is set up by the way the page is designed. Only at the third and final stage can the student literally "print and walk." The page is relatively short, highly visual, interactive and engaging, and constructed around a definitive problem set related to a theme. The Web has become a tool for learning. Students are encouraged to engage in interactive activities in order to explore problems. Text is minimized for much of the activity set. The problems are formulated in a clear way that will enable the student (learner) to have to ponder the implications of what they are discovering in the process. The initial interactive element to the page is designed to grab the interest so that the rest of the learning process can occur anywhere -- the student is hooked on the problem through this design.

We have a similar Web area that probes the consequences of agriculture on human societies. A central question guides students to think about these consequences. The problem is set up by a walk-through of the agricultural revolution. This is a highly visual introduction with concise text. One other area is required to initiate the "thinking process" -- a powerful animated image of population expansion in the Washington D.C. and Baltimore area over the past 200 years. The student then can select any of seven different outlets to read about the problem of whether the advent of agriculture was a good or bad event in human history. Each article that can be read begs the question and raises specific issues. What is perhaps most interesting about this Web area is that to answer the question one has choices. There are different choices of readings. There is not a right or wrong response. However, a specific program is defined and students are given specific materials to interact with on the computer. There is a combination of the "Madonna Effect" -- visual dressing and multimedia power -- and problem orientation. Students are to use the computer with a clear learning objective in mind and with all its appealing power because of the design of the exercise.



An Evolution in Pedagogy -- Student/Faculty Synergy

It is clear there are quite a variety of approaches to Web development and use in Anthropology today. I wish to share one interesting case. Last fall, one instructor (from an unnamed institution) set up a Web page. This included links to three assignments. Each assignment required the students to prepare a "not to exceed" six page paper and submit it in typed format. The Web pages served as a replacement for what traditionally would have been handouts. Information for the students to do their assignments was provided on a Web page as an alternative, but students were still required to do what can be considered as traditional "term paper" work. A new Web area was added for this course. This explores a prehistoric site from Peru. It involves multimedia to explore the site graphically. Students are asked to submit answers to three question in computer form input. The students are not able to see the areas on the server where the answers go; that is reserved apparently for the grader.

I use this example because it shows that the use of the Web for instruction is evolving. It appears, however, that the evolution can easily be restricted by the pedagogical framework in place. The use of electronic student input is not an open process, in this case, and it can't be until there is a critical shift in the pedagogy in the mind of the "teacher." At MCC, we have used form input Web Boards in a way that students are put into an authoring mode and placed in a more equal stance to the "teacher" in the learning process. Student responses have shown high quality input with fewer grammatical and spelling deficiencies than anticipated. Students are very aware that they are writing to the world. The Web, in this sense, becomes a problem solving platform and a means for dialogue between learners. Critical inquiry and thinking are enhanced through feedback as fellow learners engage with one another.

Students share that they are more able to think about a response and submit a thoughtful and thorough response in the open Web dialogue. This has even gone as far as students revealing that they might not have wanted to share their insights in a class discussion because the "idea was only half baked"

at the time, and they were "unsure" if the response was "appropriate." Several students, who were normally extremely quiet in class, made contributions within the Internet discussion that led to numerous responses from fellow students. All of this is possible because of the relationship defined between "teacher" and "student."

The Future

I am currently looking at even more innovative means for making Web material directed toward problem solving, critical inquiry along with a more interactive and personal feel. The development is no longer aimed at simply providing information but providing that information as an experience or an activity. Clearly the concept of our "Exploratorium" and the "Activities Area" typifies that direction. These areas imply a capacity to stimulate intellectual curiosity for anyone interested in Anthropology.

We are working toward streaming audio and video through cooperative efforts of the MCC Center for Teaching and Learning. We are also looking at interactive exercises for helping students learn about race using Java script. These directions will enhance the engagement process for Web page usage. The CTL also provides leadership in the use WEBCT as well as other means for integrating Web materials into a consistent format for student interaction. This is an important feature of a coordinated distant learning program for the college.

Most importantly to me is the communication which takes place with my MCC colleagues in Anthropology. This communication is a positive direction which helps each of us to better understand the changing nature of technology in relation to teaching and learning.

The realm of global interaction for building cultural awareness is another avenue that we have developed. We are opening discussions with Wuyi University to begin an innovative project which helps our students in Anthropology work within a global community. This exciting new direction means that we will be able to have students in China write about Chinese culture, and Anthropology students here write about American culture. This interchange is a medium by which our students will learn about another culture in a personal way and at the same time have a real life anthropological experience. This active learning

environment for our students should be a very rich one. It should stimulate learning and interest in Anthropology for a lifetime.

Our use of technology as a means of communication designed to push student thinking and writing skills is already ahead of the scale in terms of how others are using the Internet. Yet it can be taken further. Our dialogue with China is one way. We also are working in partnership with Paradise Valley colleagues to build a Web area devoted to the exploration of the cities' role in terms of social problem solving. This is an innovative partnership with a great deal of potential to link data bases with text information with interactive communication areas in an effort to probe at the issue of "homelessness." We are exploring means to visually communicate as well.

Our "Introduction to Archaeology" Web area is complete with one case study and more are planned. These will illustrate how Archaeology works and why it is important. They will be available as a lesson in Archaeology that can be used by almost any age group as a learning experience.

Our "Hominid Journey" Web area is a strong base which allows us to continue keeping pace with the dynamic and exciting scientific endeavor of finding human origins. If we can work out details with the Institute for Human Origins, we may find this area is a platform for the very latest in research findings. It too is designed as a public information area that can be used in the context of a course or simply for learning about human origins.

Education must focus on the fact that the Web is a compelling place to play out the imagination's wildest scenarios. Student created Web pages are emerging as an important part of the Web building process. Tools by which to make pages have evolved to make it easier to develop for the Web. One does not need programming anymore to make a contribution. I would encourage readers to explore what a group of MCC Honors students did at the following URL: <http://www.mc.maricopa.edu/anthro/honors/index.html>

What perhaps limits us as educators is our ability to face change and to feel free to unlock our own imagination and

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Learn Today, Apply Tomorrow

WALTER SKURDA
STUDENT , SCC

My job as a professional writer at Motorola has gone way beyond using a pencil and pad of paper to convey my thoughts and ideas. Computers are the 'must have' tools of today and the computer animation class which teaches the ins and outs of multimedia program development is an integral part of my everyday work scene.

Taking a class used to mean what you learned might be of use someday. All that is changed. What I learn in class during my evening session gets put to use the very next morning at the office. The days of learn-it-once-and-use-it-for-ten-years are gone. Things in the computer graphics world change almost daily. Today, the classroom is one of the major keys to success.

Upcoming Events



Learning Styles, Student Responsibility, Collaboration, Technology, and Assessment: Five Reasons to Videotape Your Students

DEAN STOVER
GWCC

In the past few years, I have become more aware of and sensitive to addressing different learning styles. Although books and class discussions with handouts and notes on the board can be seen as meeting the needs of visual and auditory learners, I have been thinking about a process to reinforce what students hear and see in my class with the use of technology, and about ways to make students more responsible for their own learning, something Dr. Guskin, who spoke at the 1998 MCCC Convocation, encouraged. In 1996, I attended a presentation by Academic Systems, a group which has developed software to guide developmental writers through the process of writing essays. The part of the software I liked the best was the use of video clips; in these clips, students talked about the problems they encountered while writing a particular essay. I liked these clips because students were teaching other students, and students could refer to these clips whenever they needed the information; it would also be useful for students who missed a class.

For the past five years, I have had students write an essay about their own writing process (how they generate and arrange ideas, and how they compose, revise, and edit drafts); students tend to keep repeating whatever process they learned in high school, even if it's not effective or productive, unless they do some metacognition. Reflecting on their own writing process helps students record what they have been doing and explain what they could do to improve the approach to the writing process. In Fall 1997, I decided to turn this assignment into a collaborative effort in order to give students some practice working as a writing team, something that is very common in the workplace. I also decided to add a grammar and punctuation component to the assignment since they have difficulties improving these skills during the semester. As the theory goes: we learn what we do and teach.

I assigned students to groups based on a particular grammar or punctuation problem I discovered in their diagnostic essays, i.e., sentence fragments, comma usage, and transitions. The students in each group were also assigned one part of the writing process stated above. To help each group, and since I teach a computer-assisted class using Daedalus, I asked students to briefly explain each part of their

writing process in a chat room called Interchange. Students in each group could access and use this information to explain the processes most students in our class use when they write. Each group was also assigned to explain this information, students could use their textbooks and Internet sites such as Purdues On-Line Writing Lab (<http://owl.english.purdue.edu/>), which has good information about the writing process. This site was also useful for finding grammar and punctuation information and exercises.

After two days of working on the project, students spent one day teaching the writing process and one day teaching grammar and punctuation rules and exercises. I videotaped their presentation so I could edit and put these presentations on my home page <http://gwinfo.gwc.maricopa.edu/div/lar/stover.html> (at this point, I need to convert the video to digital in order to get it on my home page; this process will be easier once the college has a digital video.)

Once these videos are on my home page, I will be able to refer students to them whenever they have questions about the writing process or grammar/punctuation. The videos will not only be another way to meet the needs of visual and auditory learners, but they will be another resource that students can refer to, so students will be teaching other students. Once I feel I have enough quality videos on this information, I can develop other video assignments that I think will be useful for students; for example, I could have students discuss what particular problems they encountered with each assignment and how they solved these problems.

After doing this assignment, I have realized that videos could also be used for assessment. Last semester, I asked students what they learned in my compositions class and what advice they would give to future composition students in order to help them succeed. This semester, I am going to ask students to talk about their problem-solving skills at the beginning and end of the semester. What better way to hear, and see, what students themselves think they learned in my class. Although videos are just another assessment tool, they are a highly visible one for students, teachers, and outside evaluators. I now see video assessment as a valuable tool for documenting teaching and learning.



From Computer Biology Simulations to Virtual Science Courses at Rio Salado College: An Interview with John Arle

ALAN LEVINE, MCLI

The audio version of this interview, taped on March 13, 1998, is available in RealAudio format from the Labyrinth-Forum web site

- A: A few years ago, you started a project with a fleet of laptop computers for your remote science labs. How is this lab used?
- J: The two simulations we use in introductory Biology deal with genetics and photosynthesis. The student's experience is well beyond what they get in the "traditional" labs. With the photosynthesis software, students can manipulate individual variables such as light, humidity, and temperature, and then they can monitor the rate of photosynthesis for their "cyber-plant." After a whole series of experiments they graph data and summarize results. With the genetics software, students conduct breeding experiments by choosing organisms, mating them, and then analyzing the characteristics of the offspring.
- A: Over the years, how many students have gone through these labs?
- J: Every student who has taken our labs in the last 5 years...hundreds. I've actually quit collecting feedback data because it hardly changed from the first year.
- A: These labs are taught by part-time faculty -- what kind of support is available for these teachers?
- J: I have a full-time lab technician who moves around town to set up the labs, and he keeps track of the faculty who are teaching the classes that use computers. The first time they teach such a course, he provides an orientation to the software and checks out a laptop to them so they can become familiar with it. He is also "on call" in the evenings so, if there is a problem, the teacher can page him and he can immediately respond.
- A: Switching gears, tell us about teaching science via distance learning.
- J: We provide options for either a print-based or an Internet-based "lecture." The labs are done with "kits" that we send by regular mail. For the environmental class, I have taken a botanical approach. We have individually packaged labs, for example, a seed dispersal lab. Students get several types of seeds which they plant and collect data as they grow.
- A: How do your distance students compare to your classroom students?
- J: The lab reports on the average from the distance learning students are vastly superior to the classroom students. I receive better data collection, better presented data results, better graphs; every aspect of the lab report is better. I think they're putting in a higher quality of individual time.
- The pattern that we find is that students who get A's and B's in the introductory course, say BIO 100 or BIO 181, and then used it as a pre-requisite for Anatomy and Physiology or Microbiology tend to get A's and B's in the follow-up classes, regardless of where they took those classes. Likewise, students who earned C's or D's in the introductory course tended to get C's or below in the follow-up class. These factors tell me that a work ethic or application is involved rather than anything else the instructor is doing in the course. They're getting the introductory content from us adequately enough to be competitive at the next level.
- A: Tell us about the Anatomy class you are developing for the Internet.
- J: Last June, I attended a seminar run by A.D.A.M. software where they displayed their latest product. I thought their previous products were "cute" and useful as an add-on. When I saw the improvements in their newest product, I started to understand that I could take an entire course and wrap it around the material on an A.D.A.M. CD-ROM as well as Internet resources and augment it with my own writing. So the direction I have gone is away from a textbook. It's a savings over what the students would be paying for the book, the lab book, and the lab fee.
- A: What kind of activities are on the CD-ROM?
- J: On the "Interactive Anatomy" disc they have everything from a complete body dissection that can be manipulated one layer at a time. Each one of the diagrams are coded so that the student can click on any body part and see what it is. With the new utility software, I can select a particular body part and ask the students to investigate the 15 major structures found on that screen. So now this is not a lecture which points out the parts and names them. It allows the students to go to their own screen and find the parts. With this, I have access to a tremendous reservoir of medical-quality images around which I may create entire lessons. The learners are responsible for finding these parts; they are engaged in the activity.
- A: Since the media is on the CD-ROM they won't have to download big data files?
- J: Right. The file is a tiny little instruction file. All of the gripping

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Community College Assessment Library

JACKIE MORAN
MCLI

The Maricopa Center for Learning and Instruction (MCLI) has developed a web-based Assessment Library to assist MCCD faculty and staff who are searching for measurement tools to assess student learning outcomes. The database currently includes 45 commercially-published tests. These tests have been culled from hundreds of tests because they met our criteria which specified that the tests:

- are designed primarily for a post-secondary age group;
- assess outcomes related to general education, developmental education, or certain occupational areas;
- are readily available for purchase from a publisher.

To access the Assessment Library website, either type in the full address below, or follow these steps:

1. Go to the MCLI web site at:

<http://www.mcli.dist.maricopa.edu>

2. Look under the heading "Learning, Period".
3. Click on "Assessment Tools" to go to the site.

The website allows you to search the assessment database by category (e.g., "critical thinking") or by keyword (e.g., "Adaptive Style Inventory"). It also contains contact numbers and addresses for requesting test copies. Additionally, most tests in the database are linked to their test description in the ERIC Assessment and Evaluation Test Locator website. The descriptions in the ERIC site are more comprehensive and informative than those in the MCLI database.

If you decide there is a particular test you would like to review, a physical reference collection of the 45 assessments is housed in the MCLI offices. Tests may be reviewed at the MCLI by MCCD faculty and staff. However, due to copyright restrictions, **the tests may not be copied nor checked-out** of the office. Teams of 10 or fewer are welcome to visit the MCLI and review the tests. The MCLI is open from 8:00 a.m. to 5:00 p.m., Monday through Friday during Fall and Spring semesters, and 7:00 a.m. to 6:00 p.m., Monday through Thursday during the summer. Groups may contact Tracy Price at 731.8296 to schedule visits in advance to ensure test availability. If you have any questions or suggestions regarding the Assessment Library collection, please contact Jackie Moran at 731.8298.

Assessment Library

<http://www.mcli.dist.maricopa.edu/ae/tools/index.html>





Computer Bio Simulations (continued from page 10)

images, some three-dimensional, some 360 rotating that can be manipulated, are stored on the CD-ROM.

And that is only one of the discs! The other discs cover physiology. These are programmed content, written by Elaine Marieb, author of one of the best selling Anatomy and Physiology textbooks. Students work through these modules as well as simulated lab activities such as learning how to measure blood pressure or how to draw blood. A student doesn't learn how to put the cuff on a patient or how to insert the needle to draw blood, but s/he learns all of the analytical parts that surround these procedures. So if I am looking at this as an introduction to the concepts, I think it is a superior way of covering the content.

As far as the development of what I am doing now, it's fun. It is fun to be structuring a course totally different from what I've done in the past in the classroom. I am convinced that when I am done, the new curriculum will provide a better experience for students than my previous classroom activities.

A: Are you using other technologies for the Internet courses?

J: I'm using a program that creates Java-based interactive crossword puzzles, another great way to test vocabulary. Another program, "QuizPlease," can write a quiz with multiple choice or fill-in-the-blank items. My primary use is for practice items that provide immediate feedback. I will tell them up front that some of the questions will be used on the proctored mid-term and final exams.

Also after students enter all of their answers, they click a button that will give them a total score. It won't give them individual item

feedback, but at the bottom, I can provide some suggestions for what they should do if they scored in a particular range.

A: What do you see in the future?

J: For Rio, what I see are fewer and fewer classroom sites. The trend indicates that more students are enrolling in the distance programs. Two or three years from now I may not have any classroom instruction here in the Phoenix metro area. What I would like to see is a nationwide program of students. I think we can enroll thousands and thousands of students nationwide. The implications support that I will need adjunct faculty nationwide. Maybe even globally.

A: It sounds like you thrive on constant change.

J: I've learned to... although initially I didn't. Our student base is one that is mostly working, students who cannot afford to spend the entire day taking class. These distance learning classes work very well for them. And I see a superior body of work from these types of students, better writing, and better analysis. Technology is enabling it.

A: It puts a lot of responsibility on the student.

J: It's a ton of responsibility. But again, the average student we have in these classes have accepted that responsibility. This is a student-active process, the exact opposite of passively sitting in class.

Web References

Cogix Crossword Wizard
<http://www.cogix.com/>

QuizPlease
<http://www.quizplease.com/>

A.D.A.M.
<http://www.adam.com/>

Imagination's Wildest (continued from page 7)

creativity. It is what I term the "framebreaking" mindset that provides the potential for exploration of what is possible with the educational use of the Web. Innovators provide a vision of what can be because they see beyond the "boxes" that confine our environment. This visionary mindset requires freedom to explore change. The operative concept is to "just do it" and if doesn't work, do something else. This is the force that will drive the evolutionary process by which the World Wide Web becomes a better platform for learning.

It is important to remember that some people accept change more readily than others. Those that

accept change will be the heart of this evolutionary process. They are the ones who can share insights with others thereby building a more solid base. Only through greater collaboration in Anthropology at MCC have I reached greater depth in my own creative endeavors. This contribution in a collaborative sense is the most exciting part of the future for me personally because it will drive more and more exciting potential to enhance learning.

Visit the MCC Anthropology Web Site:
<http://www.mc.maricopa.edu/anthro/>