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ABSTRACT

This paper describes a year-long program which is in place at Nashville State Technical Institute (Tennessee) to train faculty in the development of World Wide Web-based instruction. The program is based on seven principles that assert that good practice in undergraduate instruction encourages student-faculty contact, encourages cooperation among students, encourages active learning, gives prompt feedback, emphasizes time on task, communicates high expectations, and respects diverse talents and ways of learning. The paper maintains that much of the instruction that is currently on the Web fails in two respects: it is not good instruction and it is not implemented well from the standpoint of using currently available Web technologies. The program currently in place attempts to use free or nearly free tools that are widely available to implement Web-based instruction. This paper summarizes content and goals for each of the following seven sessions that comprise the year-long program: (1) Introduction; (2) Site design; (3) Introduction to Netscape Composer; (4) Navigation; (5) Modifying and imbedding JavaScripts; (6) Preparing PowerPoint for the Web and uses of WebBoard; and (7) Wrap-up session for the first year. Successes and the shortcomings to date are detailed. (Contains 42 references.) (Author/AEF)

Are You Sure You Want To Train Faculty to Develop Web-Based Instruction?

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Abstract

This paper describes a year-long program which is in place at Nashville State Tech to train faculty in the development of web-based instruction. The program is based on the work of Chickering and Gamson, *Applying the seven principles for good practice in undergraduate instruction* (1991). It is the presenter's contention that much of the instruction that is currently on the web fails in two respects: (1) it is not good instruction and (2) it is not implemented well from the standpoint of using currently available web technologies. The program currently in place attempts to use free or nearly free tools that are widely available to implement web-based instruction. This paper details successes as well as admitting to shortcomings based on experience to-date.

Introduction

Much of what purports to be web-based instruction is neither good instruction nor is it effective implementation on the World Wide Web (Web). One of the most widely acknowledged problems in the academy is the lack of knowledge on the part of faculty in the areas of instructional development and delivery. The program that is described below grew from my concerns about the current status of instructional design at my institution as well as the desire to help faculty implement their instruction on the Web and the firm conviction that the world of higher education, as we know it, may well be in the twilight of its history. The actual program grew out of discussions between the dean of technologies, Ms. Sydney Rogers, and myself. Despite my personal misgivings based on a knowledge of the literature, I agreed to conduct a year-long series of workshops to help faculty learn to develop and implement instruction on the Web.

The Current Status of Web-Based Instruction

Harasim, Hiltz, Teles, and Turoff (1995), identified three modes for the use of the Web in instruction. These modes are:

- Adjunct, in which the networks serve as supplement to regular classroom based instruction.
- Mixed, in which a portion of the actual class is conducted by e-mail or computer conferencing.
- Totally online, in which the network serves as the primary means of delivering instruction.

They maintained that the majority of current efforts are of the adjunct mode. A review of many of the sites contained in the listings of *The World Lecture Hall* indicates that this assertion appears to be valid. The first question we must answer is; exactly where do we want to be? To those familiar with the ongoing dialog and comment in both *Change* and *Educom Review*, it would appear that organizations such as the Western Governors Conference are making significant investments based on the proposition that the totally online mode will be the mode of the future.

If the future in fact lies in the totally online mode, the question that must be answered is how do we move from where we are to where we need to be? An even more basic question involves attempting to determine the ramifications of such a change. How is higher education, in its broadest terms, going to be impacted? If the literature is correct, it appears that the future will be different from what we are used to. Competition will increase significantly. An environment in which only results will count for all but the most prestigious of our research institutions will replace the artificial boundaries in place in many of our states. Results will be measured in terms of the amount of learning that takes place. The current human resource literature indicates an ongoing shift in the attitudes of employers in which they are increasingly more interested in the skill levels of new employees than in where they gained those skills. There also appears to be an increasing interest in certifications of all types that certify generic skill sets across business and industry boundaries. In such an environment it is becoming increasingly clear that the future will belong to those institutions and faculty members who are able to deliver quality instruction that leads to real student learning. If the foregoing discussion has any validity, what are the skills that faculty will need as we progress into that future?

Faculty Skills for The Future

In an ideal world, a team of persons would do the design and construction of web-based courses, each bringing their own specialized skills to the table. In some well-funded institutions, where the necessity for well designed and delivered courses has been recognized, this is the case. For the rest of us, individual faculty members must obtain the requisite skills on their own, often with minimal or no support from their respective administrations. It is these cases that this presentation will address.

What exactly are the skills that will be needed by faculty in the future? While no one has a crystal ball that is infallible, the basic skills can be summarized as follows:

- Understanding of basic educational psychology.
- Understanding of basic principles of instructional design.
- Understanding of basic principles of effective instructional delivery.
- Understanding of basic web page design, including the use of those tools that will positively impact learning.

A Framework for Faculty Development

The basic problem facing anyone who would attempt to help faculty develop such skills lies in how to develop a program requiring minimal time while at the same time developing a minimal level of expertise. The framework for such a program must be simple to understand, as well as something that is well-researched and difficult for faculty to find fault with. Chickering and Gamson (1987) provided such a foundation. In the *AAHE Bulletin*, they delineated "The seven principles for good practice in undergraduate education". They were developed based on a review of research that had been done over a fifty-year period. Since their original publication, the basic research has been replicated numerous times. These principles assert that good practice in undergraduate education:

1. Encourages student-faculty contact
2. Encourages cooperation among students
3. Encourages active learning
4. Gives prompt feedback
5. Emphasizes time on task
6. Communicates high expectations
7. Respects diverse talents and ways of learning (Gamson, Fall, 1991).

In addition, there are research findings from cognitive psychology that can and should also be integrated into the instructional process. The following findings are of particular importance:

- The instructor should model the way a professional in a given discipline thinks about solving problems.
- Students benefit greatly from seeing solved problems, including the steps involved in the solution process.
- Students perform better when they have a thorough understanding of what is expected of them. Learning objectives should be spelled out in enough specificity so that students know exactly what they are expected to learn.
- Students learn better when they can see the real world applications of what they are learning in the classroom.
- Students learn more thoroughly when they are given multiple opportunities to solve different types of problems employing the same general principles

The Program at Nashville State Tech

The program we have implemented is a year-long program consisting of seven formal sessions. It is already obvious that demands on faculty time will require that the program be increased in length. The original, and now invalidated assumption was that faculty would be willing and able to spend significant amounts of time between the classroom sessions working on their own. Given the constraints of time as well as a desire to accommodate the majority of browsers currently in use by students, frames and cascading style sheets are not addressed in these sessions. The content and goals for each of the seven sessions are discussed below:

Session One – Introduction.

Prior to the first actual meeting documentation for the use of WebBoard is distributed to each of the participants. Additionally, a copy of Web-Based Instruction by Kahn (1997) and a packet of copies of recent articles are made available to each participant.

In the actual session, In this session, the seven principles as well as their potential for implementation on the Web are discussed in some detail. Participants are also introduced to the theory of designing a web site. They are referred to Yale's style guide at http://info.med.yale.edu/caim/manual/sites/site_design.html .The assignment before the second session is for faculty to identify exactly what techniques they currently use in the classroom and to rough-out on paper a map of their proposed site.

Session Two – Site design.

This session begins with participants looking at sites that already exist on the web. The World Lecture Hall at http://www.utexas.edu/world/lecuture and Web Based Courses at http://ezinfo.ucs.indiana.edu/~smalikow/courses.html are used with faculty members looking at sites in their disciplines. They are then asked to comment on what they find that appears to be good or not so good on the sites they have looked at. Finally, the blackboard is used to identify proposed structures for individual sites. An effort is made to identify all types of pages as well as navigation devices. Faculty are reminded several times that it is possible that the only contact students will have with the institution will be over the Web; accordingly, everything a student needs to know must be included on the site. Various sites containing graphics images and backgrounds are visited so that faculty can get a feel for what is available for free on the Web.

Session Three – Introduction to Netscape Composer

The sites as designed by faculty are implemented in Composer. At this session it became obvious that the computer skills of several of the faculty were sub-par. No attempt is made to link any pages at this session. Faculty members are asked to implement their design for individual pages before the next session.

Session Four – Navigation

The process of creating internal and external links is explored in this session. The topic of on-line testing is also introduced. Several different methods as well as the strengths and weaknesses of each are discussed. Several modifiable Java scripts are distributed and discussed. We are currently using QuizPlease to generate both client and server side testing.

Session Five – Modifying and imbedding JavaScripts.

How to modify the scripts distributed at session four is covered. The process of embedding scripts in HTML code that provide for instantaneous evaluation and feedback is also reviewed. Using PowerPoint to create downloadable presentations is introduced. Participants are encouraged to prepare a presentation before the next session.

Session Six – Preparing PowerPoint for the Web and uses of WebBoard.

In this final session, participants are given hands-on experience in placing their presentations on the Web as well as the uses of WebBoard.

Session Seven - Wrap-up session for the first year.

This session is used to review the work of participants and to help them with difficulties. Participants are encouraged to share their work with the remainder of the group.

At each of the seven sessions, the appropriate principle is stressed as well as the use of web-based tools in implementing that principle. Various techniques and products are made available to faculty outside of the formal sessions. The original idea was to use WebBoard as a communications tool between participants to expand on the work done in the formal sessions. I broadcast various web sites for faculty to use and attempted to establish dialog. To date, this has not been particularly effective. Several of the participants have not yet joined the discussion groups.

Results-to-Date

Although a great deal of progress has been made, there is still much work to do. The incoming skills of faculty in the areas of instructional design as well as basic computer skills has made it difficult to make every session as meaningful as I had hoped. It has become obvious that my initial misgivings were valid. The amount of time planned for faculty contact has, in fact, been inadequate. Given the uneven skill levels of faculty, time must be made available for one-on-one work. Plans are now being made to implement a second year of workshops. Most of the work done to-date has resulted in faculty basically designing a web-based support system rather than a true web-based course. I must say that the results although not what was hoped for have generally been better than I had expected based upon the literature.

A Look Toward The Future

A faculty lab is currently being built that will contain all of the hardware and software necessary to fully support faculty development of web-based courses. Plans include the inclusion of web development tools including FrontPage, Adobe PageMill, Multimedia Toolbook, Macromedia Authorware, Adobe Pagemaker, Adobe Paintshop, and Paint Shop Pro as well as several HTML editors and CD's containing various graphics images, animated GIF files, backgrounds, etc. This lab will also contain the complete Office 97 Suite. As this paper is finished, there is a strong possibility of a switch from Netscape to Microsoft Internet Explorer. We are also evaluating various integrated authoring programs. Thus far, even though several exhibit strengths, they also have significant weaknesses. Long range plans call for a full time curriculum specialist to provide support not only for web-based courses but also faculty generally.

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