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Non-technical issues involved in moving a college course from the traditional classroom to cyberspace

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Non-technical issues involved in moving a college course from the traditional classroom to cyberspace

Abstract

Advances in communication technologies have rapidly led to interest in the development of online learning programs. The value of these programs is beginning to be accepted as a way of providing an alternative delivery system to students in higher education whose work schedules, family issues, or geographical location make it impractical to attend regularly scheduled classes on a college campus.

Despite the potential of online learning, online instruction is not simply a traditional class gone digital. The teaching and learning processes of traditional classes needs to be reexamined for online classes, as the technology becomes more widespread. Educators need to be aware .that there are many issues, both technical and non-technical, in moving a college course from the traditional classroom to cyberspace. This review of the literature addresses some of the non-technical issues.

Non-Technical Issues

Involved in Moving a College Course

From the Traditional Classroom to Cyberspace

A Graduate Research Paper

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INTRODUCTION

Advances in communication technologies have rapidly led to interest in the development of online learning programs. The value of these programs is beginning to be accepted as a way of providing an alternative delivery system to students in higher education whose work schedules, family issues, or geographical location make it impractical to attend regularly scheduled classes on a college campus. Despite the potential of online learning, online instruction is not simply a traditional class gone digital. The teaching and learning processes of traditional classes needs to be reexamined for online classes, as the technology becomes more widespread. Educators need to be aware that there are many issues, both technical and non-technical, in moving a college course from the traditional classroom to cyberspace. This review of the literature addresses some of the non-technical issues.

Teaching a class online does not mean copying lecture notes and syllabi word for word to the World Wide Web. Materials and activities that are used in a face-to-face class need to be redesigned for delivery online, while keeping them similar to what on campus learners are doing. In many instances, the new technologies are being used to do teaching and learning in the same old ways. As electronic delivery of classroom experiences increase, educators must carefully design learning

experiences that do not allow the learning process to become electronic correspondence courses with electronic mail drops (Fulkerth, 1997). Shrank, (cited in The state of online learning, 2000) believes that educators have fallen magically in love with e-learning and are trying to put courses online as fast as possible. As a result, Shrank considers most of what is currently online a disaster because educators have given little or no thought to the issues involved in creating or delivering online classes.

Gillis (1997) observed that the changes in distance education are phenomenal since the computer replaced the television as the delivery vehicle of choice for distance learning. The World Wide Web is transforming the entire curriculum by making possible learning applications that educators only dreamed of a few years ago. In the past, educators often developed good teaching practices by taking the best elements that they experienced as students and adopting those techniques for their classrooms. Since so few faculty today have experienced online learning as a student, it can be difficult to relate to the online student's unique experience (Rosenblum, 2000). Today's educators are currently being challenged to design classes for online delivery that operate effectively using the new technologies, while keeping intact traditional educational objectives. The good online course designer must realize that there is more to online teaching than just digitizing the content

of a face-to-face class and uploading it to the World Wide Web (Sherry, 1996).

METHODOLOGY

The scholarly literature was searched for articles pertaining to issues involved in preparing a traditional college course for the online learning environment. Primarily, the ERIC database was searched. Since online learning is a relatively new approach to teaching, and information on the field is changing rapidly, emphasis was placed on finding articles published in the last three years. Other databases searched included Expanded Academic Index and recent research published on the World Wide Web. A number of conference papers were also located on the World Wide Web and are included in this review.

RESEARCH QUESTIONS

A review of the literature and research for this paper indicate that, in general, the higher education community still has a great deal to learn regarding how and in what ways technology can enhance the teaching and learning processes, particularly in the online environment. The number of instructors in higher education who want to teach online, or have been told to teach online is rapidly rising (Ko and Rossen, 2000). Many instructors are both anxious and apprehensive of the new phenomenon. What are the non-technical concerns for online educators? How should online educators' concerns be addressed during the process of designing online instruction? This paper will provide some practical information about these issues for educators who are considering teaching online.

TERMS

Assessment

A formal event or process that reveals how far each learner has progressed toward the outcomes that were specified at the beginning of instruction.

Asynchronous discussions

Communication in which interaction between parties does not take place simultaneously.

Bulletin boards

A computer file that is shared by many people enabling them to post messages asynchronously.

Cyberspace

A place where humans interact over computer networks.

Deliverables

Anything the student must return to the instructor, or share with other students, such as assignments, projects and tests.

Digitize

Conversion of material to a format viewable on the Internet.

Distance education

The process of providing instruction when students and instructors are separated by physical distance and technology. In the paper distance education most often refers to online learning.

Distance learning

The desired outcome of distance education.

Face-to-face class	A class taught in which the instructor and students are in the same classroom at the same time.
Hyperlink	An icon, image, or specially marked text that represents a new file, application, or web page.
Online	A course delivered on the Internet
Post	Upload a file to an Internet server so it is viewable on the World Wide Web.
Traditional class	A class taught in which the instructor and students are in the same classroom at the same time.
World Wide Web	A graphical hypertext-based Internet tool that provides access to pages created by individuals, businesses, and other organizations.

LITERATURE REVIEW

The Instructor

An important factor for successful online learning is a caring, concerned instructor who is comfortable with the equipment, tolerant of changing technologies, and maintains a high level of interaction with the students. The expertise needed by an online instructor is just as varied and important as that of a face-to-face instructor. The course designer and facilitator play a vital role in developing and maintaining an online program that is effective, smooth, and supports the attainment of the planned learning outcomes. Collins and Berge (1996), categorize the various roles demanded of an online instructor into four general areas: pedagogical, social, managerial, and technical.

Pedagogical Role

The pedagogical role of an online instructor revolves around the issue of facilitating the online course. Faculty delivering courses online must be comfortable being a facilitator of learning rather than a transmitter of knowledge. Basic facilitation skills include such things as demonstrating an open and accepting attitude, listening to understand, and responding to clarify (White & Weight, 1999). Some instructors may adapt easily to the online environment, others may find the transition a challenge.

It is difficult for an instructor to feel thoroughly in charge of an online course when some students know more about the technologies being used in the class than the instructor does. Control of the class seems even less when students can enter a course activity at will, follow linked material in the order of their own choosing, or respond to discussions or assignments whenever they please (Johnston, 1998). Facilitating a course, rather than delivering a course, involves giving up control of the direction, even the content of the discussions, and, instead, acting as a participating member of the class. Every online instructor needs to be aware of ways to increase his or her own visibility to the students. Students need to know someone is out there who cares about their successes and will help keep their failures in perspective (Fister, 2000).

Social Role

Promoting human relationships, affirming and recognizing students' input, and providing opportunities for students to develop a sense of community are all critical to the success of an online course. The online instructor must carefully watch the use of both humor and sarcasm. Gone is the face-to-face contact, traditionally available in a classroom setting. The ability to verbally communicate is replaced with communication with a keyboard and monitor. Using text-based

communication, it is especially difficult to construe intent and tone from the computer monitor (Collins & Berge, 1996).

Communication is often intense and demanding in an online course. Online instructors and students need to be able to read and write and use these processes effectively to convey ideas and information. It is critical that both the online instructor and the student are comfortable with their writing skills. An online instructor will come to know his or her students by the words and ideas expressed in assignments rather than by face or where they sit.

In traditional instruction, the instructor has an opportunity to become acquainted with the students and can intuitively gain a feel for how students in a particular class will work in groups. The instructor is able to identify group leadership skills and position them in different groups to help engage students in the group process of solving problems (Palloff & Pratt, 1999). Additionally, the instructor is present in the classroom to monitor and help facilitate group efforts. In online courses, the instructor does not have personal contact with students. The instruction and assignments are designed and developed before the course begins.

The online community is not something that simply happens. Steps for structuring collaboration are not always obvious in the online

environment. In a traditional class, an instructor can assign a group activity and expect the class to form groups based on seating arrangements or class friendships. Online learners will not automatically group themselves. If the online instructor does not designate specific learning groups, it is advisable to provide some guidance to students in forming groups and to establish a deadline by which the group must form itself into being. Letting students form groups can be difficult since potential group members log on at their convenience and may not receive or respond to a request to join a group. Frequent encouragement and reminders from the instructor are needed to help students quickly form online partnerships (Palloff & Pratt, 1999).

Managerial Role

Managing an online course, so that students feel empowered to take charge of their own learning, presents new challenges. The instructor is in charge of monitoring all online classroom activities; making certain students are participating, adhering to guidelines, and maintaining timelines. The instructor's managerial role involves setting the agenda for the course by creating timelines, deadlines, and logical consequences if timelines are not met. It also includes enforcing the rules and guidelines while helping the learners deal with information that is presented.

Classroom management also includes all the organizational and procedural measure that keep a class moving along. Teaching online can be a nightmare for record keeping. When teaching an online course, the classroom becomes the discussion and work areas of group projects. As the course progresses the work area becomes very full. To help manage the online course, instructors need to learn to make folders for student submissions and emails, and use them. The online instructor does not have the advantage of being able to make last minute changes in lectures, assignments, resources, or handouts as might occur in a traditional course. These decisions are all made before the class goes online. Revisions are possible but sometimes difficult and time consuming to make. An instructor does not want to spend online teaching time apologizing or attempting to make real-time revisions in cumbersome ways (Meyen, Lian, & Tangen, 1997).

Technical Role

Online learning entails using a new set of technology skills for both the student and the instructor. Even students who believe they are competent computer users may experience formidable challenges when they first attempt to navigate the online learning environment. One of the major challenges for distance education instructors has been the need to help students learn to use educational software so they can participate in

online learning activities. Before moving an existing course to the World Wide Web, an online instructor needs to take a realistic look at the computing environment the students will be using. Students will be accessing content from their homes by dial-up, in campus computer labs, or through campus network connections in dorms. The online instructor must be prepared to tell students how to access the online course. This process includes identifying which classrooms or labs on campus offer Internet access, explaining how to obtain Internet access through a commercial Internet service provider, and how to use any course management tools that are employed in the delivery of the course. Before the course begins, the online instructor should find out who is available for technical support beyond his or her skills. The ultimate technical goal for the instructor is to make the technology transparent. When this is done the learner can more easily concentrate on the educational tasks at hand (Collins & Berge, 1996).

Clearly, the role of the instructor in any type of course is to ensure that learning is taking place. In the face-to-face classroom that role is generally of the expert imparting knowledge to the students. Creating a friendly, social environment in which learning is promoted is essential for successful online courses. In the online class, the instructor's role

becomes that of a facilitator of knowledge, providing gentle guidance and a loosely constructed framework for the course.

<div align="center">The Syllabus</div>

The instructor of an online course is also the course administrator, who posts initial guidelines, usually in the form of a syllabus for the course. The syllabus is an important part of both the face-to-face class and the online class. The traditionally syllabus usually includes information about the class and the instructor, class expectations and policies, assignments, and other important information for the student (Ko & Rossen, 2000). These elements are even more essential in the online class. The format of the online syllabus may differ greatly from the syllabus of a face-to-face class. Typically, first-time online instructors include too little information in the syllabus (Ko & Rossen, 2000). Palloff & Pratt (1999) suggest making the syllabus topic-driven by including discussions topics.

Class and Instructor Information

The first contact that the online student has with the instructor will probably be with the course syllabus. The online syllabus acts as a blueprint for the course with students accessing the syllabus many times in order to link to other components of the class or other online resources (Kearsley, 1999). The syllabus for students taking their first online course

needs to anticipate and address the higher level of uncertainty that students experience as they begin working in the online environment for the first time (White & Weight, 1999). In the campus classroom, the instructor's appearance, voice, and comments help establish the tone for the course. Similarly, online instructors use the syllabus to set the tone for the virtual classroom. Online instructors, whose face-to-face syllabus is based on a fifty-minute time period, need to rethink the class schedule in terms of learning events rather than time frames (Boettcher & Conrad, 2000).

Class Expectations and Policies

The syllabus for the online course is a good place to include class expectations and policies including the pattern of communication the instructor will use in the class (Johnston, 1998). Does the instructor have virtual office hours? How will students receive feedback on exams and assignments, and how soon? Are phone calls to the instructor appropriate? If on the campus, can students stop by the instructor's office and at what times?

Online instructors should decide on the degree of formality or informality desired in the online class and present these expectations regarding classroom climate in the syllabus The online syllabus is also a good place to address many of the student's anticipated expectations

Many students enroll in an online class thinking it will be much easier than a traditional class. Others imagine the class will be an independent study, while some expect the instructor to be available anytime. The syllabus, as well as other introductory material, can help manage a student's expectations, correct misconceptions, and set the stage for a class that unfolds smoothly for both the instructor and the student (Johnston, 1998).

Although it is difficult to take attendance in an online course, students should be made aware of the number of times a week they are expected to logon to the course. The meaning of the term participation, to the online student, will not be obvious. The online instructor needs to be explicit in the syllabus and explain what is meant by participation. Students need to be aware if their participation will be considered in the final grade. If students are not graded, the great majority will not actively participate (Boettcher & Conrad, 2000).

Since all communication is written, the instructor should include expectations for written material in the syllabus. If spelling and grammar are important in chat or discussion sessions, it should be made clear to the students in the syllabus. The instructor must specify if writing assignments should be formal essays or informal journal entries and approximately how many words. Students should understand that, "I

agree," and, "So do I" do not constitute a response to a posting. If the online class is available to anyone, anyplace, careful attention must be paid to various time zones throughout the world. Make certain the students understand if due dates are calculated by the instructor's time zone or the student's time zone. Time will also be an issue if the class is using real-time chats (Ko & Rossen, 2000).

Assignments

The online syllabus needs to reflect a sequence of assignments that will include sufficient time to learn the online technologies. Students need to know if they can do assignments at different times during the course or need to complete assigned tasks in chronological order, the usual format of a face-to-face class. It is essential to have all assignments clearly outlined in the syllabus. If an instructor is going to include any measure of self-pacing, this information should also be included in the syllabus.

The online syllabus should explain how to present deliverables. Deliverables may be presented to the entire class or to the instructor. In the face-to-face classroom, assignments are usually handed to the instructor or displayed on a screen for other students in the class to see and critique. In the online class, assignments and other deliverables may be presented through email, bulletin boards, or other

means (Schweizer, 1999). Instructors should specify acceptable file formats for email and email attachments. Additionally, online instructors need to set due dates and deadlines in the syllabus. However, instructors must remember that just as in the face-to-face classroom, online learners may not adhere to dates and deadlines. The course syllabus should spell out specific penalties for not doing so.

Technology

The online syllabus should act as a guide for students in locating other components of the class. This is particularly important when using course management software that often has unique category headings. Students need to know where to find discussions and assignments and may need to know how to use the software. In an online course, it is easy to lose track of where information was last seen. For that reason, important instructions are given in the syllabus, and in other locations, also.

How to use required media should be explained in the syllabus. If applications need to be downloaded from the World Wide Web to access course components, students should be made aware of the technologies they will need and provided a link to places from which they can download the needed software. Students need to know how to communicate with the instructor and with each other. A primary medium of communication with

the students should be chosen, but the instructor should not hesitate to try other methods. Not only should the rules of communication be defined in the syllabus, students should also be told what to do when communication breaks down (Ko & Rossen, 2000).

The course syllabus establishes course guidelines and is the basis for a successful learning experience for the student. Even in traditional courses, clear, concise directions in the syllabus are of vital importance. The online environment offers exciting and challenging possibilities for instructors to redefine the nature of the course syllabus from the instructor-oriented approach to one where the online student becomes actively involved in the learning process.

<div align="center">Interactivity</div>

Studies have shown that learners profit immeasurably from an environment which encourages shared learning (Creed, 1997). Too often the class bell brings an end to a face-to-face class before a discussion has reached closure. The asynchronous nature of an online class prevents that from happening. A class discussion in an online course can go on indefinitely, or as long as two individuals are willing to continue a dialog. Harasim, Hiltz, Teles and Truoff (1995) suggest that high quality interaction and sharing is at the heart of a quality education.

The World Wide Web presents an especially good opportunity for asynchronous collaboration in which students work together but not necessarily at the same time. As students develop camaraderie within a discussion group, the discussion area becomes a social environment that can help motivate the learner and create a forum within which ideas can be tested and applied (Harasim et al, 1995). Online learning is as much a social activity as an individual one. Instructors are finding that an online learning environment is quite similar to a classroom discussion, in the sense that it is most successful when students send messages to each other rather than only to the instructor.

Many of today's learners received the bulk of their education in a lecture-based classroom (Goldberg, 1999). Therefore, learners often require an orientation to their more active and responsible roles in the online environment. Part of the challenge of creating online instruction rests with the instructor's ability to clearly communicate these course expectations to the students

There is widespread agreement that effective discussions require careful preparation on the part of the instructor. Knowlton, Knowlton, and Davis, (2000) contend that an effective discussion requires more preparation than a lecture. Planning the online discussion requires the instructor to know exactly what the expected outcomes are for discussions

and to identify the concepts and content students should explore before the discussion. In designing the online discussion, the instructor needs to encourage interactions by establishing the importance of replies and responses. Some students may vigorously reply to each posting, others will simply reply to fulfill an assignment. Requiring replies forces students to interact and share ideas. Online instructors need to emphasize the importance of contributing to an online discussion by appropriately weighting the discussion in grading procedures. A student's willingness to actively participate in discussions is usually directly related to the percentage of the overall grade that the discussion is worth (McCormack & Jones, 1998). These standards must be clearly communicated to the students. Students need to know the minimum amount of postings that are acceptable, how these postings will be evaluated, and if spelling and grammar count. A common practice in online courses is to instruct students that online postings should contain substance. However, a student's definition of the term substance can be far different from an instructor's definition of the term. Instructors might consider posting a preliminary question with an answer as an example. If the discussion strays too far from the course objectives, the instructor should step in to redirect the flow. Messages that are not content driven should be minimized since discussions need to focus on the topic being explored.

However, for the most part, the instructor must control the urge to lead and become a follower to engage in collaborative learning (Beaudin, 1999).

Maximum learning requires the instructor to give students free reign over an online discussion. Instructors should not use the discussion to lecture and postulate their own views. Students must be responsible for generating and elaborating on ideas about the course material. Instructors are responsible for guiding and facilitating students' interactions with each other (Ko & Rossen, 2000). Students are often so well indoctrinated into a teacher-as-leader/student-as-responder model of thinking that they must be retrained to make meaningful contributions to discussions (Beaudin, 1999). Online instructors can help students by modeling appropriate responses to other students, synthesizing comments to highlight the key issues, and asking questions to encourage elaboration and clarification.

In an online course, the instructor needs to rethink traditional class communication and expectations. The shift in any online discussion or activity needs to be to a reader-writer relationship. Social contact is created through word choice, tone, and sentence structure. The success of an online discussion is not happenstance. As in a face-to-face class, learners will vary in the extent to which they participate in a discussion. Many will contribute frequently, others will read all messages but rarely

contribute. Participation is not likely to happen in the online learning environment unless it is carefully constructed and meticulously planned so that students will have substantive opportunities to share and defend their positions.

<div align="center">Time Commitment</div>

It is very important that course designers understand the time required to develop online instruction to avoid frustration and overload (Fulkerth, 1997). Many faculty and institutions mistakenly believe that teaching online is easier than teaching face-to-face classes (Palloff & Pratt, 1999). An online instructor cannot simply digitize face-to-face classroom materials, post them to a web site, and walk away. According to NC State University Computing Services (1998), an eighteen-month lead-time from pre-planning to delivery is needed to have a polished, finished online course. The time commitment involved in an online class needs to include time to develop and design an online class as well as time to deliver the course.

Design Time

Moving a class to the World Wide Web requires a set of skills and resources on the part of the instructor. The types of skills needed fall into two large categories: knowledge of the technology tools and knowledge of the teaching and learning processes for online learning (Time

management, 1997). Both take time to learn. Many factors can influence the amount time involved in designing an online class.

- keyboard skills. Typing skills become a bottleneck whenever the fingers cannot produce the written word as fast as the mind can compose it.

- the ability to use software applications. Instructors need to realize that the Internet is not only the delivery mechanism for their class, but can also provide relevant content. Knowing how to find appropriate information on the World Wide Web to be used for content and course resources can save time.

- organizational skills. It is critical that a copy of the syllabus, important correspondence, and grades be easily and quickly accessed. Knowing how to cut and paste, and work with more than one window at a time can be a major time saver. An online instructor should know how to quickly find messages from specific students as well as where to access current grades and records of work completed.

- The subject matter knowledge that an instructor possesses is inversely related to the amount of time needed to respond to student questions. It is far faster to respond to a question if one is an expert in the area rather than having to seek out the answer.

White and Weight (2000) suggest that effectively managing the time to design an online course requires more than good technical and subject matter skills. Managing time is a decision process that requires setting appropriate priorities and remaining flexible.

Few hard and fast rules dictate the amount of time for designing an online class. According to some studies, it takes anywhere from five to twenty-three hours of an instructor's time (with an average of eighteen hours) to create one hour of online instruction (Boettcher & Conrad, 1999). One of the significant differences between face-to-face and online instruction is the online class must be entirely designed in advance. All plans must be in writing, and all components must be in place before the first day of class. Lesson plans cannot be changed the night before; and handouts cannot be photocopied minutes before the class.

Designers of online courses need to set aside specific times to develop course materials. Amounts of time needed differ depending on the task to be completed. Instructors may spend a period of time searching the World Wide Web for instructional resources, creating materials, learning the technology, and downloading and upload information. Ideally, these should be distraction free times when instructors can devote full attention to the course development. Like the

students, instructors will be dealing with content and new technologies at the same time (Moore, 1997).

<u>Delivery Time</u>

Instructors who teach online will find that the time needed to deliver a course is two to three times greater than to deliver a face-to-face course If an instructor is use to teaching a course that meets once or twice a week, the change will be dramatic. An instructor can structure which parts of the day are devoted to responding to postings, but response has to be daily, with the possible exception of weekends. As it becomes possible to predict the students' study patterns, it is possible to develop a structured schedule. However, students study habits are also strongly influenced by the instructor's pattern of responding (Meyen & Lian & Tangen, 1997).

Additionally, the online instructor must be prepared to help students manage their online time and the potential for developing addiction to the medium. Part of what students need to learn from an online class is how to divide their time into tasks. Instructors can assist with this process by assigning reading material in manageable chunks, enforcing time limits on discussions, and establishing participation guidelines (Palloff & Pratt, 1999). Instructors must also be sensitive to the impact of the online assignments on the overall student workload. Helping students manage their time online may involve both acquiring a better understanding of

student access to technologies and a shifting of the assignments required in a face-to-face classroom (Fister, 2000).

To help manage delivery time, instructors need to resist the temptation to respond to anything and everything. Only selective responses are needed and those should be brief and done in a timely fashion. Instructors should respond to the most urgent messages first. With the new teaching technologies, it is possible for an instructor to be available anytime, anywhere, and many dedicated instructors would like to be available at all times. As a result, many students expect faculty to respond immediately to questions. Instructors can manage their time and response expectations by setting up a framework for turnaround time. Usually, a response within twenty-four hours is acceptable to students. Instructors should tell students there will be times that this response time will be suspended and keep them apprised of these times well in advance.

The instructor's role in an online course includes more than just responding to email questions. The communication flow should be structured so the instructor is not the hub of all communications. An instructor should consider breaking students into groups, if necessary. In a class of fifty students, where each student is required to post one message and one response a week, there will be over one hundred messages to read. Both students and instructors are apt to be

overwhelmed with the amount of reading that needs to be done to keep current with the postings.

White and Weight (1999) suggest that online instructors keep a record of both development time and time spent delivering the class. It becomes valuable information when developing additional courses. Instructors will learn what activities take the most time and can seek or develop strategies to minimize time allocations where possible. Keep in mind that the time required to provide effective student feedback is always substantially more the first time a class is taught. It takes less time the second time a course is taught online. Schweizer (1999) estimates the first time a course is taught can take forty percent more time than a traditional course. But the second time an online class is taught, the time is cut in half to twenty percent and most of this time is spent in individual communication with students.

Modifying the Events of Instruction for Online Learning

If an instructor simply posts lecture notes and a syllabus to the World Wide Web, he has not necessarily created a viable tool for learning. The missing element is instructional design. There is no question that course design has a significant impact on teaching and learning. While good instructional design is at the core of any quality course, it is crucial in the online environment. The planning requirements for developing online

instruction, however, are much more rigorous than those of a face-to-face class (Ko & Rossen, 2000). It is important that instructors keep in mind the teaching goals and objectives as the course is being redesigned, and not allow the technologies being used to direct the learning.

The transition to online delivery presents a new set of issues that necessitates at least some knowledge of instructional design to provide quality outcomes (Fulkerth, 1997). The World Wide Web environment brings with it the need for instructors to reexamine what they know about teaching and learning. The basic principles of instructional design can provide faculty with a plan to follow when redesigning a face-to-face course for the World Wide Web environment. Most college faculty have a high level of competence in their content area. Most faculty also have a great deal of experience in designing and delivering instruction, but they may not have had the time or opportunity to learn about teaching and learning in any formal manner. Their focus remains on the content that is being taught and the research that supports it. Faculty are often unconsciously competent in the area of instructional design (Boettcher & Conrad, 1999). Faculty know what to do, but don't know why they do it. Given the need to support a new environment, it is important to remember the why of what is known about designing instruction.

Today, educators know more about how students learn than they have in the past. The World Wide Web offers the opportunity to use this knowledge in new ways (McCormack, & Jones, 1998). Because the outcomes the instructor seeks for an online course are the same in a face-to-face class, a quality learning experience, the course designer needs to ask many of the same fundamental questions that are asked when designing face-to-face instruction: (a) Who are the learners, (b) what should they learn, (c) what resources are available and (d) what outcomes will indicate student success (Gagne, Briggs & Wagner, 1992). As the answers to these questions are posed, however, it is important to consider the special needs and issues of students in the distance-learning environment and to know the expectations of online students in order to accommodate them as much as possible. Most learners attracted to online classes appreciate the flexibility online instruction allows (Fister, 2000).

Instruction can be defined as a purposeful interaction to increase a learner's knowledge or skills in a specific area (Rosenblum, 2000). In this context, publishing a web page with links to other resources does not constitute instruction. Instructional sequences usually include at least seven common elements: (a) Motivating the learner, (b) explaining what is to be learned, (c) helping the learner recall previous knowledge,

(d) providing instructional material, (e) providing guidance and feedback, (f) assessment and (g) providing enrichment or remediation (Dick & Reiser, 1989).

Motivating the Learner

Creating a sense of anticipation is a key step in motivating online learners (Illinois Online Network, 2000). Anticipation involves generating a sense that important and interesting elements of instruction are still to come. Online instructors should strive to persuade learners both emotionally and intellectually to stay with it. Gaining attention and creating expectancy are difficult tasks when the learners are not known or seen in the classroom. Face-to-face with students, faculty use several methods to engage students' interests. The use of graphics, color, animation, video, and sound has been used as external stimuli in the past to motivate learners. With a little modification, these can all be included in an online course. Luck (cited in Carnevale, 2000), senior instructional designer for Pennsylvania State University's distance education division states, "I've never run across anything that couldn't be done. It just has to be done differently" (P. A37). However, simply adding media does not ensure a quality-learning environment. Excessive use of media is often counter-productive. Online delivery filters out much of the sensory stimuli that help make these strategies effective. The online environment can deliver

imagery, animation, and sound in small amounts and instructors should use them where they enhance the learning experience. However, instructors should remember to not just decorate lessons with pictures and sounds, but consider if the files will transmit enough information to justify the download time for the learners. Instructors must be careful to use sensory appeal that does not distract learners from key points. All too frequently, technology is included in the cyber classroom for its own sake without considering if it will actually enhance student outcomes. The aim should be to focus the students' attention on the online environment, but if students focus on the wrong idea, a new obstacle to learning is created (Illinois Online Network, 2000).

Explaining what is to be Learned

As with any good course, an instructor needs to begin with the end. As part of the instructional design process, learners should be informed about their responsibilities and expected outcomes in a distance-learning course. Learners need to know an online course requires self-discipline, self-motivation, perseverance, and the ability to work independently (White & Weight, 1999). With the tendency of users to free associate while web surfing and to allow their attention and learning to be drawn away from the desired outcomes, explaining goals and objectives to the learners for each unit of instruction is a critical component when designing instruction for the

World Wide Web. Outcomes need to be broadly defined in an online course so learners may take the course in directions based on their own interests and needs. In the online course, outcomes and objectives should be left more open allowing students to develop new ideas, exercise critical thinking skills, and develop research skills (Palloff & Pratt). Learners need to know what material will be covered and by what means. Learners must be aware of what they will be expected to do to complete each unit and what they can take away from the lesson in the end.

Learners who are clear about what is expected from them will perform better. In traditional instruction, students learn what to expect from the instructor's verbal comments, nonverbal clues, sense of humor, and from other students. In online instruction, students learn what to expect from the instructor over time, but not as quickly as in the traditional classroom (Funaro & Montell, 1999). The instructor can help learners by precisely stating expectations at the beginning of the course. In the online environment, creating lists or web pages, similar to handouts used in the face-to-face classroom, can help learners know what to expect.

Helping the Learner Recall Previous Knowledge

Learning is a process of connecting new and unfamiliar ideas with things that are already known and understood. The easiest way to do this, online or in the traditional classroom, is to ask the students. In the face-to-

face classroom, instructors accomplish these things in discussions with students. The classroom exchange is immediate. As feedback, it helps instructors adjust teaching strategies. The online environment simply requires the use of some technology tools. Bulletin boards allow instructors to engage students in asynchronous discussions. Listserv technologies, Usenet, newsgroups, and e-mail are other examples of asynchronous technologies that allow learners and instructors to contribute to and monitor conversations at their own convenience (Schweizer, 1999).

Providing Instructional Material

The World Wide Web not only serves as a delivery vehicle for an online course, but also provides content for students. With web pages, it is easy to create links from an online course to other resources. Multiple links allow learners with diverse backgrounds and knowledge bases to review previously learned information before new knowledge is offered. Cognitive psychologists agree that for information to be retained in long-term memory, learners must construct a memory link between the new information and related information already stored in long-term memory (Gagne, Briggs & Wagner, 1992). In the online classroom, learners can select the most significant link to remind them of previously learned knowledge. By

identifying similarities and differences between existing knowledge and the knowledge to be learned, students quickly grasp relevant information.

As educators begin developing courses for the World Wide Web, designing from a time perspective provides a point of reference and assurance that instructional methods that have worked in the past are not changing too drastically. The core unit for academic planning is the three-credit course, which usually requires 135 hours of student time (McCormack, & Jones, 1998). Classes on campus generally meet three times a week for fifteen weeks, for a total of forty-five contact hours. Additionally students are expected to spend time outside of class working on the course. The most common belief is that students devote two hours outside of class for each hour in class. Boettcher and Conrad (1999) note that most hours in an on-campus course are spent outside the classroom. Changes in the online environment are primarily in the amount of time devoted to independent inquiry, group study, and interactions.

Given the difficulty of designing objective measures of achievement for an online course, the time-based model has a certain amount of validity because learning requires time. Educators need to design online instruction with the knowledge that while time for learning is necessary, time alone, is not sufficient to ensure successful learning. Although it is

possible that the student workload in an online course is too light for the designated credit hours, in most cases it is too heavy (Kearsley, 1999). Instructors are inclined to give assignments involving online collaboration, research, or writing that are more time consuming than assignments in traditional classes, without realizing how long it takes to complete these assignments. Online instructors need to keep in mind that an online education is already a reading-intensive medium and may want to reduce reading assignments slightly in comparison to an on campus class (Palloff & Pratt, 1999). When student hours spent online are compared to on campus students in the same class, the numbers are often far greater. However, these numbers normally include time spent learning and using the online technologies (Boettcher & Conrad, 1999). Kearsley (1999) notes that faculty usually discover the high workload for students when it translates into a higher workload for the instructor.

The planning and presentation of course materials are of particular importance in maximizing the opportunities for online students to achieve their full potential (Wood, 1997). An instructor standing in front of the classroom is not necessary, or even a sufficient ingredient, for learning to take place (Lambert, 2000). Communication is often asynchronous and many distant learners require direction at a time the instructor is not readily available. Expectations should be clear

and concise at the beginning of the course. Online curriculum, like traditional classroom curriculum should focus on the application of knowledge to the real world and foster critical thinking skills. When new materials are presented, distant learners need to receive step-by-step directions on how to reach the learning goals that are expected of them. Directions should define what students must do for the entire class, each module, and each activity.

The curriculum of an online course should be designed for the short-term, collaborative nature of online learning. Face-to-face curriculum can certainly be used, if it is modified for the online learning environment. Curriculum should be well organized into modules or units with comprehensible instructions. Assignments should not be overly complicated and have specific deadlines. The language of the online class should be understandable and friendly. When writing or rewriting content for the World Wide Web, online instructors need to keep in mind the composition of the online class is more diversified than an onsite class, but is also less noticeable (White & Weight, 1999). This diversity poses a challenge for the online instructor to develop material to meet the needs of a potentially wider range of students in background, experiences, and expertise.

The lecture is one of the most frequently used instructional methods in adult education. It assumes the instructor to be an expert in the content field and is an efficient way of disseminating information. Most educators agree that a good lecture lays the foundation of the subject matter for the student. Even in the face-to-face classroom, lectures are most effective when used in combination with other instructional methods. The efficiency of an online lecture, saved to a computer file, converted to HTML, and posted to the World Wide Web is obvious. But a lecture delivered online should be constantly in transformation. The World Wide Web allows the ability to modify, update, and adapt each lecture to the unique class composition and a backdrop of changing events (Goldberg, 1999).

Onsite instructors can establish enthusiasm for the material verbally, with a glance, smile, or gesture. In contrast, online instructors convey enthusiasm for the material with the language of the lecture, humor, and the sharing of personal or professional examples. Traditional lectures are often accompanied by a slide presentation and instructors often want to include slides in an online presentation. Online instructors need to remember, slides that accompany a face-to-face lecture cannot be simply digitized and added to an online course. In a face-to-face class, students hear the instructor's comments, but online, slides must carry the

entire presentation. An instructor in a traditional class usually says more than is shown in a presentation. Unless an audio or video clip is included, presentation slides will need to be modified to include more information for use in an online course (Brusilovsky, 2000). Some online classes feature videotaped lectures that have been converted into streaming video files on the web site. Although streamed video is indeed an option, it isn't a particularly good choice given the present state of modem Internet access (Ko & Rossen, 2000). Online learners, who do not have high-speed connections to the World Wide Web, will find this a frustrating way to access lectures.

In the online environment, lectures should be short and more to the point than lectures in face-to-face classrooms that often exceed the attention span of even the most eager learner (Knox, 1997). The online lecture should function on three levels:

1. The lecture should convey information, theory, and subject matter to the student. This level should present to the student a general format to apply to common situations.

2. The lecture moves to a second level with questions from the instructor in a chat room or forum regarding: concepts and theories covered, the presentation of specific problems that require students

to sort out facts and issues, the application of the new knowledge, and the development of logical courses of action.

3. Instructors can further stimulate the learners' thinking by adding a third layer to the lecture that includes challenging students to test the techniques and ideas presented (White & Weight, 1999).

Shorter lectures can be compensated for with opened-ended remarks and activities that elicit comments and a wide variety of viewpoints. Links to related resources on the World Wide Web can easily be embedded into online lecture notes, but instructors should remember that once students link to information not contained within the course, students might become distracted and not immediately return to the course content. Knox (1997) argues that a lecture filled with hyperlinks violates the expectations of the student, which is to move quickly through the material and have a clear idea of the boundaries of the work. While in theory, lectures containing hyperlinks offer the student the opportunity to explore, in practice, this opportunity is often regarded by the student as an unknown number of additional reading assignments. Knox suggests the online instructor create an additional web page of supplemental readings that is posted at the end of the lecture.

Content in lectures should be presented in small, easy to digest modules and chunked into essential information units. Fister (2000)

recommends breaking large blocks of content into modules that can be completed in short amounts of time. Headings and subheadings should be utilized to lead the learner through the content. The online learner should never have to read more than three screens of information without some break in the pattern (Muter, 1996). Because the learner and the instructor are separated, information must be sequenced in a logical fashion using the course objectives to eliminate unnecessary information. The trend in online learning is to reduce the amount of information delivered and to increase the interactive value of the learning experience (McCormack & Jones, 1998).

Providing Guidance and Feedback

One of the important keys to effective online education lies, in large part, with the instructor's ability to provide prompt and timely feedback to students. Whatever the topic of instruction, one thing every learner wants to know is how they are doing. Feedback helps answer that question. Feedback is communication with the student that responds to his or her performance (White & Weight, 1999). Such communication can come from the instructor or from peers. An important element that should be built into an online course is the expectation that students will provide constructive feedback to each other. The expectation of meaningful feedback from students should be available in the course guidelines and posted and

discussed with the syllabus at the beginning of the course. Feedback can occur as part of an ongoing discussion or in response to work submitted. However, constructive feedback does not come easily to some people. The instructor must teach, model, and encourage students to give meaningful feedback to their peers. Comments such as I agree, or good job` should be discouraged (Palloff & Pratt, 1999).

Feedback in the form of dialog and discussion helps both student and instructor. The student can use it to fine tune or correct any misunderstandings. The instructor can make corrections to the course, in midstream, in response to student performance. In a traditional class, students may arrive early or stay late to find out how their performance was judged or how they could improve. Effective online instructors not only contribute to class meetings frequently, but also provide frequent and consistent feedback to the class, as well as to individual students. These skills are not unlike those of an instructor in a face-to-face classroom; but the frequency and consistency of feedback in the online environment is even more necessary. Online students cannot see the instructor smile encouragingly, nod his head in agreement, frown, or look quizzical. Nonverbal feedback in a classroom must occur through written messages in the online classroom (White & Weight, 1999).

Providing timely feedback is important, particularly in online discussions. Since an online class moves quickly, it is essential to give students timely guidance. When guiding asynchronous discussions, the instructor needs to facilitate and foreshadow instead of catching up with the discussions that have already been posted and digested (Palloff & Pratt, 1999). Less timely feedback may lead to a perception that the instructor in not fully involved in the class. Timely feedback assures students that the instructor is focusing on them and their learning needs. Constructive feedback reinforces correct learning and helps directs wayward minds to right path again.

Assessment

Student assessment remains a fundamental part of instructional design. The goal of student assessment in a traditional classroom or an online class is to determine if learning outcomes have been met and to give the instructor a better idea of what students are understanding as well as the concepts that still need clarification (McCormack & Jones, 1998). In conventional teaching practice, assessment means testing in one form or another. This testing is usually with a pencil and paper at the end of a learning unit. In the past, traditional assessment often involved no more than absorbing and memorizing facts. In recent years, however, there has been a great deal of research into how people learn and the development

of alternative methods of assessment. Many of the alternative methods

have adapted nicely to the online environment. However, there is a great

deal of debate about what the best alternatives to testing might be. How

does an online instructor choose among all the possibilities? It really

depends on the role assessment plays in the instruction (Schweizer,

1999). Assessment should be designed to demonstrate what the student

has learned in the online course, by applying the learned information to

current topics of interest to the learner. Assessment can take several

forms: (a) Written assignments, (b) portfolios, (c) simulations, (d) various

projects, (e) demonstrations and (f) presentations. Educators today seem

united in their view that conventional testing reveals, at best, only part of

what a student has really learned. Online or off, it is the *learners* who have

the most critical need for the information assessment provides (Nelson,

1998).

In almost any discussion of student assessment, someone

eventually brings up the subjects of cheating and plagiarism. These age-

old problems have new implications in online courses.

Cheating. Like traditional courses, online courses need some

component to assess the fact that learning is taking place. What that

component should be, and how it should be conducted to avoid cheating,

is a frequent topic of discussion among educators involved in online

learning. Educators worry not only if students are really who they say they are, but are concerned about online term paper mills and other digital aids to cheating. It is probably worth noting that any traditional classroom in which students are not strictly monitored is also open to abuse. Online methods of assessment are no exception (Illinois Online Network, 2000). Measuring the extent of online cheating is difficult. But, it appears the potential for cheating in an online course is about equal to that in a large traditional classroom (Galles, 1997). Students who sit in a large lecture hall with hundreds of other students can feel isolated. It is this feeling of isolation and anonymity that prevents the creation of a bond between student and instructor that might discourage cheating. This same feeling of isolation can worsen in an online course (Carnevale, 1999). Because of this isolated feeling, student assessment in an online course should employ a diverse range of methods. Test scores, alone, should not be used to determine if students are meeting the desired learning objectives in an online course. Test scores should be examined in combination with task performance. If students are evaluated using various methods, an instructor has a reasonably good idea if real learning is taking place

Plagiarism. Plagiarism, like cheating, is not unique to online courses. Rooks (1998) believes the key to combating plagiarism in the online course is in the requirements online instructors give for creating

papers. He offers specific suggestions for online writing assignments and testing. According to Rooks, online instructors should:

- avoid giving open-ended or generic topics. Instead, selected topics should be very specific to current class discussions or current events.

- require material from class notes to be included in the paper or assignment

- require an annotated bibliography

- require a description of the research process to be included with the paper or as a supplemental document

- monitor the entire writing process by requiring students to turn in a topic statements, preliminary bibliographies, copies of research notes, outlines, rough drafts, and a final copy. This method is nearly foolproof but is also incredibly time-consuming for the online instructor.

Harris (1999) asks students to include an abstract of each paper they turn in and to be prepared to answer questions or to defend the arguments in their papers. Harris also requires papers to contain a certain number of current or specific references, such as an article from a reading list, an interview or survey, or a specific number of World Wide Web resources, journal articles, or books.

When a course is well constructed, and learner-centered, the notion of cheating should not be a concern. If assignments promote the use of critical thinking and are designed to be shared with classmates, students will develop a sense of responsibility for producing pieces of learning that will be useful to others in the class (Paloff & Pratt, 1999).

Providing Enrichment or Remediation

New knowledge has little value to students, if they cannot apply it to new situations. Online students need varied practice opportunities. Such practice enhances retention and helps students become adept at applying what they have learned in situations that go beyond the setting in which they first encountered the new skills and ideas. Online instructors should seek out opportunities to revisit topics at various points in the online instruction. In the face-to-face classroom, reinforcement is often provided by incorporating work that students did at the beginning of the course into assignments that integrate multiple points of instruction. Online, the use of the World Wide Web's hypertext character can enhance these experiences by supporting links back to materials, explanations, and examples that the student has already seen or produced. Such links provide convenient routes to clarification of points that students may have forgotten.

To enhance retention, information must be sequenced in a logical fashion. The use of a hypertext medium, like the World Wide Web, allows great flexibility in how instructional material is sequenced. It is possible to include supplemental learning supports, for those who need them, without forcing everyone to use them. All learners can be provided with a choice of alternative learning pathways to follow, as they progress in understanding from level to level. But one thing that hypertext does not do is relieve the designer of the obligation to provide some kind of structure (Knox, 1997). The structure suggested by the design should help students grasp relationships within the new material, as well as between the new material and things they already know. Structuring the unfamiliar is an important function of instructional design. It becomes even more important when designing for the World Wide Web environment.

The way human's learn does not change, discovering who the learners are, in terms of learning styles, backgrounds, and expectations is still a primary key to effective instructional design (Boettcher & Conrad, 1999). Adhering to sound principles of instructional design will not overcome all obstacles encountered en route to developing effective distance education programs, it will, however, provide a process and procedural framework for addressing the instructional challenges that arise.

CONCLUSION

Prior to the mid-1990s, distance learning most often referred to correspondence courses or courses delivered on instructional television. Today, distance learning is no longer the black sheep of the academic family, read about only in advertisements on matchbook covers and in the backs of magazines. Online distance learning is one of the hottest topics on campuses and in corporate America (White and Weight, 1999). With all the attention being paid to online learning, more and more effort needs to be made to make online learning not only reputable but also a satisfying method of learning for students. A review of a variety of online courses, degree programs, and certificate programs reveal that many online courses are in need of renovation. Many are poorly designed, pedagogically unsound, and amount to not much more than lecture notes or portions of textbooks cut and pasted into a web site (Schweizer, 1999).

One of the biggest challenges in implementing online learning is with the changing role of the instructor in the online learning environment, where instruction needs to be student-centered rather than instructor-led. The role of the instructor, either in a traditional class or an online class, is to ensure that some type of educational process occurs. In the traditional classroom, the instructor is generally regarded as an expert imparting knowledge to the class. Instruction in the online environment needs to be

redesigned in a nonlinear fashion, so students can actively gather information themselves or in groups rather than having it fed to them. It is up to the instructor to create a container within which the course progresses, by posting expected outcomes for the course, initial guidelines for participation, thoughts and questions to begin discussions, and assignments to be completed collaboratively (Palloff & Pratt, 1999). Then it is time for the instructor to sit back and facilitate the course.

The online instructor is the common thread through the learning process. The instructor's personality, attitude, and training with the technology impact the online environment. A successful instructor must know how to integrate life experience, communication, professionalism, and content into the learning environment, while compensating for the lack of physical presence in the online classroom. The personality of the instructor sets the tone of the online classroom. If the instructor is encouraging, students quickly develop a level of comfort with the online course (Illinois Online Network, 2000).

The instructor needs to provide only a framework for the course that allows students to explore course materials and other resources on their own (Palloff & Pratt, 1999). The online instructor needs to present general topics for the class to read, then ask thought-provoking questions about the material for students to comment upon in chat rooms or bulletin

boards. Students need realistic situations and simulations to help develop complex problem solving skills. Instruction needs to be designed to focus on the important goal of being relevant to the student.

Important information about the class needs to be conveyed to the student in an effective online syllabus. In the new territory of online learning, students will use the syllabus as a map, so one of the first things an online instructor must do is explain the layout of the course. Students in an online class may feel more disoriented without the traditional first-day-of-class orientation from the instructor, and may wonder if any of the same rules will apply in the online environment. The online syllabus is a good place to address these issues. The syllabus in an online class should be more open than a traditional class syllabus, giving students more leeway for exploration. Palloff & Pratt (1999) found that the most successful classes are guided by a syllabus that is topic-driven.

It is important for the online instructor to realize that the online class is not the same as a guided self-study course or a face-to-face class. The online course should not be an isolated experience for the learner. Successful online courses focus on the critical task of creating a sense of community and collaboration among learners. Components of the online class should focus on methods that present attitudes, strategies, and techniques that are socially based. A feeling of isolation is one of the

major reasons online students drop out of college courses. If a student connects to an online classroom and finds messages in the bulletin board, chat room, or mail box, the student is reassured he or she is working collaboratively with the instructor as well as the rest of the class. Bischoff (as cited in White & Weight, 1999) suggests that new faculty teaching online courses think, first, about online communication with the students and between the students, then about the content for the course. The creation of a learning community supports and encourages the acquisition of knowledge. It creates a sense of excitement about learning together and from each other. The total outcome of knowledge acquired and shared is far greater than what would be generated through independent study (Palloff & Pratt, 1999). With the rapid advances in technology, and the abundance of web-based tools at the disposal of educators, there remains an urgent need to understand the pedagogical roles online collaboration tools can play and how to get the most out of their use (Funaro & Montell, 1999).

Online class development and teaching is labor intensive. Translating an existing course to the World Wide Web is as much work as developing a course from scratch (including all the research time), and another half again. The data suggests that if faculty are going to be successful in redesigning courses for the World Wide Web, they need

strong organizational and time management skills. Identifying what is important is the key to this process. The quality of the course will be dependent on the extent to which there is time to design the course. If the traditional design to contact ratio are accurate, and indications are that they are correct, institutions new to developing online learning need to look closely at the effects on quality when trying to move too quickly from the design phase to delivery (Moore, 2000).

In 1992, Moore (1997) supported the assertion of the U.S. Office of Personnel Management that "design time to contact time" ranged between 300:1 to 50:1. Since then, Moore has accepted the 50:1 ballpark ratio as realistic (Moore, 2000). Moore attributes this decline in design time to the acceptance by a generation of students of mediocre quality online courses as the price of liberation from on campus courses, and the fact that students have no better distance learning experiences with which to compare what they have today. Moore also contends the time involved in designing instruction for the World Wide Web depends on how well the providing institution is organized to support faculty efforts, and the amount of individual interaction included in the course.

It is widely accepted that learning effectiveness is a function of effective pedagogical practices (Joy & Garcia, 2000). Accordingly, the online course designer should consider what combination of instructional

strategies and delivery will best produce the desired outcomes. The emergence of the World Wide Web, with its easy-to-use graphical interface, has drastically altered the way in which people access information. Venturing into this new method requires thoughtful analysis and investigation of how to use the World Wide Web's potential in concert with instructional design principles. Without necessarily becoming an expert in instructional design principles, an online instructor needs to be aware of what he or she normally does to create a face-to-face class and then think about applying those steps to the online course. Designing courses for delivery online is a formidable challenge. Instructors who are teaching an online course must address a different teaching challenge than when teaching in a traditional classroom.

Most college teaching is still based on faculty lectures that explain and supplement assigned textbooks. The development of online learning material should take into account both the unique environment and opportunities of an online education, as well as the purposes of the course. Just as an instructor might use a mix of lecture, readings, graphics, audio, video, and hands-on techniques to present new material in the classroom, online instructors need to think about variety when presenting new materials online. Variety enables instructors to reach students with different learning styles and skill sets. Assigned readings or

lectures are not the only methods for presenting new material in the online environment. The World Wide Web supports formats beyond text, such as hyperlinks, and small amounts of sounds, graphics, and video. Advances in web programming enable skilled online developers to create computer applications and tools to illuminate concepts that are difficult to make in a face-to-face classroom.

The new technologies also require instructors to rethink and redesign assessment measures so they are closely integrated with the topic of the course and student interests. The best assessments of student learning will come from assignments that engage both students and their instructors in the process of research, discovery, and writing in order to enhance the learning experience. Today's employer wants an employee who works as a member of a team to solve problems and be able to communicate well. When students are on the job they will seldom be forced to solve difficult problems in isolation (Nelson, 1998). Therefore, successful assessment in online classes lies in making the evaluation as realistic as possible. Students should be able to solve realistic problems, work effectively and comfortably with each other, and clearly communicate the results. Real world problems are often open-ended, poorly stated, and have no clear-cut answers. At times, it takes a group approach to solve such problems and the answer may require specialized knowledge that is

not immediately available. If students need to research, write, and communicate using the World Wide Web, they are also learning skills that will make them more marketable when seeking jobs (Nelson, 1998). The problem then becomes not how to evaluate online work or how to prevent cheating, but how to design assessment tools that are realistic enough to make cheating more difficult.

The World Wide Web represents a new way of looking at instruction - at how it is organized and presented. Faculty may need to revisit the guidelines for designing courses. These guidelines can help the first time instructor ensure that as the environment changes from the familiar classroom to cyberspace, sound instructional methodology and strategies are included. There are a fairly large number of schools with courses on line and there are strong indications of exponential growth in interest in online instruction. There is a realistic possibility that this technology or part of it will become a standard tool for teaching. Transitioning to online delivery is complicated, time consuming and professionally challenging. At the same time it provides an exciting opportunity for faculty to learn new skills and to reexamine the way they teach both their face-to-face classes as well as online classes. The results can be gratifying for faculty while providing new opportunities for under-served segments of the adult education market.

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