Using "Seven Principles for Good Practice" to Teach Online Courses

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Abstract

Today, we are witnessing the rapid development of Web-based learning. The instructional strategies for Web-based learning are different from those of traditional classroom teaching. In order to identify a set of strategies to be used in Web-based learning environments, four online courses offered by a mid-western university in America were examined. Data were collected from document analysis and interviews with the online instructors. The author used "the seven principles for good practice in undergraduate education" by Chickering & Gamson (1987) as a framework for identifying instructional strategies on the Web. While seven principles are originally developed for the traditional course format, this study is an effort to identify the specifics of the principles to fit the Web environment. This paper describes the effective instructional strategies that were used in the online courses, and provides practical guidelines to teaching online for instructors.

Key words: learning, teaching, e-learning, online teaching, high education, interactive classroom, active learning

Ⅰ. Introduction

According to Khan (1997), Web-based instruction (WBI) is a type of distance education delivered in whole or in part by the Web and related technologies. Through the years, distance education incorporated current technologies into the teaching and learning environment: the telecommunication technologies of radio and television broadcasting, audio and video recording, combination of live, two-way interactive audio, video, or both and synchronous and asynchronous computer-based interactions, the Internet and finally theWorld Wide Web (the Web) (Moore & Kearsley, 1996).With the development of the Web technology, WBI is getting popular in many educational situations. It is also

available in many formats and several terms are linked to it such as e-learning, online course, online courseware, and distance education online.

The communication patterns and characteristics of online learning environments are different from face-to-face lecture-based environments. In a Web-based learning environment, all verbal and non-verbal (e.g., gestures, tone of voice, and facial expressions) communication cues of face-to-face disappear. In this new environment, supportive teacher-student interaction and student-student networking become very important. If we consider almost all students grow up in a lecture-based educational system, we can imagine how hard it is to teach online.

Teaching online requires new set of skills and pedagogy. To simply duplicate the traditional strategies is not good enough. Since the history of WBI is fairly short, there are a few well-developed instructional strategies for online instructors to enhance student's learning. While many authors argue that there is promising future in the use of the Web in education, there is no satisfying answer for the question of how it can best promote learning. Even though it seems the Web is capable of offering or delivering sound educational experiences in general, none of the trends and issues in WBI is well researched or identified (Keast, 1997). Jung (2001) also indicates the current studies rarely focus on the teaching and learning process of WBI. According to her, the main focuses should be on "how to design effective WBI, how to encourage interaction, and what arethe effects of WBI on learner satisfaction and perceived learning outcomes."

The purpose of this study is to provide a set of instructional strategies to which online instructors can refer. Teaching online is an overwhelming and daunting task in comparison to the face-to-face instruction. However, well-articulated guidelines and teaching strategies may help instructors go through this difficult task with an efficient and effective manner. As Harasim, Hiltz, Teles, and Turoff (1995) and Feenberg (1998) argue, in the hands of instructors who know whatthey aredoing, online instruction can be superior to face-to-face instruction.

Many researchers agree that the underlying principles of traditional classroom teaching are often similar to those found in onlineenvironments (e.g.,ADEC,1999). For example, it is important both on face-to-face and distance education to scaffold student's inquiry, facilitate active learning, and set high expectation. Even though we agree that the essential features of good teaching in traditional classroom are similar to those of online courses, it is important to note there are some different skill sets and strategies unique to the online classroom. With thedevelopment of the Internet, a new set of instructional strategies and different approaches to teaching are most important (Meyen, Lian, & Tangen, 1997). Meyen et al. (1997) are raising serious questions regarding what effective online strategies would be. For example, central to online instruction is asynchronous teaching, which is a method that allows students to study and interact with instructors at times convenient to their schedules. Asynchronous teaching is completely new situation to the traditional face-to-face classroom instructors.

Therefore, it might not be useful to merely duplicate the instructional strategies for the

traditional classroom. Rather, online instructional strategies should be ones considering the features and powers of the Internet to actually do better than what normally occurs in the traditional classroom (e.g., Bonk & Dennen, 1999; IDE, 1999; Jung, 2001 Meyen et al., 1997; Wills, 1993).

As an underlying perspective, constructivist perspective plays a major role in doing online instruction. TID report (1999) cautions that for the online instruction the teaching paradigm must be different from the traditional lecture format. Online environments offer interesting opportunities for learning to take place through social interactions in areas where the individual's prior and emerging knowledge meet.

With this regard, online instructor's role is quite different from the traditional instructor. Their role changes from the 'sage on the stage' to the guide and moderator. Feenberg (1989) indicates that the online instructors as moderators need to open the discussion, facilitate group collaboration, prompt students' work, provide meta-comment (remedy problems in context), and summarize state of discussion. Bonk et al. (1999) suggests instructional guidance that fosters students' knowledge building activities: providing 'electronic mentoring' (p.12) and apprenticeship to facilitate students' knowledge construction.

In addition to this, online instructors need some specialized skills and strategies. They must plan ahead, be highly organized and communicate with learners in new ways (mainly with a written form). They need to be easily accessible to the students and work in teams with the students when appropriate.

Planning online courses is different from planning traditional courses. Online instructors need to prepare syllabus, activities, resources, and assessment criteria and make them explicit beforehand. Many researchers agree with that both careful planning and teaching skills are important components of online teaching (IDE, 1999; Meyen et al., 1997; TID, 1999; Wills, 1993). According to Meyen et al. (1997), much of the teaching process in online instruction is a result of the instructional design built into the course as it is developed. Activities, projects, examinations, and assignments should be developed before the course begins. The online instructor does not have the advantage of being able to make changes in lectures, resources, or even assignments on a routine basis. These decisions are all made before the course goes online.

Online teaching strategies include developing one's own communication style, considering variability, teaching time management skills, and maintaining group activities. Online instructors need to develop one's own communication style since learners only see the text on the computer screen. Maintaining collaborative activities among students is one of most important tasks. In many ways, the behaviors conducive to successful performance in online instruction are conducive to collaboration. Researchers indicate the necessity of providing a roster, encouraging communication among students, creating situations in which students are required to communicate with each other, and placing a value on communication among students (Bonk et al, 1999; Meyen, et al., 1997; TID, 1999)

With the development of the distance education based on the Internet, a new mode of instructional practice and a different approach to the teaching have emerged. It is hardly said that the new practice or the approach is based on sound pedagogy (Jung, 2001). This study provides theoretical background to the existing practices by using seven principles for good practice.

This study also identifies the effective online instructional strategies by examining the four online courses. In online environments, instructors are forced to change their teaching style fit the online situations. However, it is not easy to change the teaching styles at all once. The changes might be made by reflective practices. This study provides the insight and reflection by online instructors when they were struggling with effective instructional strategies. By providing specific guidelines fitting online instruction, this study helps online instructors to develop their teaching skills.

Even though the WBI is getting popular, there is not much solid research on instructional strategies online. According to Windschitl (1998) and Keast (1997), much of the published works about distance education has been anecdotal description of activities such as setting up on-line mentoring or how to get students involved in collaborative Web activities with other schools. This study is an effort to enrich the literature on distance education by identifying the strengths and weaknesses of the current practices.

This study focuses on identifying practical guidelines on instructional strategies and tactics that are appropriate to online environment. The specific research questions are the following:

- ? How can be "the seven principles for good practice" refined and elaborated for the online environments?
- ? What are instructional strategies to fit the online environments?
- ? What are practical guidelines to improve online teaching?

Ⅱ. Methods

A. Participants

Four online courses in a large program of a mid-western university in America were examined to identify online teaching strategies. Each course instructor designed one's own online course independently, so each course was unique in content and design. For example, some instructors used *WebCT* as a Web course authoring system, and some did not. Some used problem-based learning approach, some topic-oriented approach, and so forth. Although there were differences, all had common features, e.g., use of asynchronous system and e-mail as main communication tools. Four evaluators examined each course during the academic year of 1999-2000. They were advanced

graduate students in educational technology department in a mid-western university.

B. Data collection

Document analysis and interview were used as the main data collection methods. First, course Web pages were evaluated. Also, each evaluator got permission to access discussion data of each course and the vast amount of entries in Web discussion forum were reviewed. When confronting with difficulty in interpreting the data, evaluators sent e-mail to the instructor for more clarification. After scrutinizing the data, each evaluator interviewed the instructor who had taught the course examined. To improve the credibility of data, two of the evaluators interviewed each instructor. During the data collection and analysis process, the evaluators had regular meetings to evaluate, analyze the data and seek for the meanings of the data.

C. Data analysis

The data were organized and arranged by seven principles of good practice by Chickering & Gamson (1987). The seven principles are a popular set of guidelines for evaluating traditional campus-based courses. These seven principles are the following:
? Good Practice Encourages Student Faculty Contact
 ? Good Practice Encourages Cooperation Among Students
? Good Practice Encourages Active Learning
? Good Practice Gives Prompt Feedback
? Good Practice Emphasizes Time on Task
? Good Practice Communicates High Expectations
 ? Good Practice Respects Diverse Talents and Ways of Learning
Sine the principles were initially developed for traditional classroom, they need to be refined so as to be applied to online courses. The data from the interviews and document analysis were sorted and rearranged to fit each principle. Again, these instructional strategies were examined and confirmed as valid ones in successive evaluators' meetings.

Ⅲ. Seven Principles for Online Courses

In the following sessions, each principle of seven principles of good practice is briefly introduced and the online instructional strategies related to the principle are reported.

A. Good Practice Encourages Student Faculty Contact

"Frequent student-faculty contact in and out of classes is the most important factor in student motivation and involvement. Faculty concern helps students get through rough times and keep on working. Knowing a few faculty members well enhances students' intellectual commitment and encourages them to think about their own values and future plans" (Chickering et al., 1987).

Developing appropriate strategies for creating student-faculty interactions is especially important in an online environment because students do not have the guaranteed contact time that comes from regular class lectures. Conversely, the 24-hour availability of email to students provides a mechanism for interacting with faculty unparalleled in the past.

To further complicate matters, the instructors in this study were often wary about fostering high levels of online interaction with the students for fear of becoming inundated with email messages or bulletin board postings. The instructors could encourage interaction with students by clearly communicating an email response policy to the students. Students often assumed that instructors have easy, constant access to their email. If they contacted their instructor and did not hear back within an expected timeframe, they felt that the instructor was ignoring their request.

This type of misunderstanding can be reduced if the instructor communicates to the students a general policy or timeline for answering students' email questions. A couple examples of such policies are: (1) an instructor makes it clear to her students that she will make every effort to respond to email within two days of receiving it or (2) an instructor clearly designates three mornings a week that he will respond to email requests. In each case, the communication expectation is set, reducing the chance of students feeling ignored. In this way, instructors increase personal involvement. As Holmberg (1991) indicates, personal relationships with the instructor promote emotional involvement and emotional involvement promotes learning.

The instructional strategies to facilitate students-faculty contact are the following:
 ?If possible, use face-to-face meetings for initial ice-breaking
 ?Introduce oneself and be familiarized with students by putting a picture on the web and sharing biographies
 ?Guide how to contact faculty using various online tools

B. Good Practice Encourages Cooperation Among Students

"Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's own ideas and responding to others' reactions improves thinking and deepens understanding (Chickering et al., 1987)

Interaction among students is a key success factor of online instruction. It is critical to understand what kinds of interaction does asynchronous conferencing foster. According

to Eastmond, (1998), it can support various types of interactivity, e.g., simple interaction (receiving meaningful from others) to more complex ones (online discussion). On-line class discussions allow students to collaborate and students can work together in doing project in which the joint outcome is more complex than it could have been if done individually (Estmond, 1998, p.35). Getting students to discuss issues related to a topic is a typical way for instructors to encourage student-student interaction in the traditional classroom. The use of asynchronous conferencing tools has madediscussions an integral part of many online courses.

Research exists which claims that asynchronous discussion, while not as good for spontaneous idea generation, is actually superior to face-to-face discussions for generating depth of thought (Mikulecky, 1998). However, it is hard to facilitate and manage asynchronous discussion. Actually, in the interviews with online instructors and through observation of the bulletin board discussions in the online classes, the instructors often struggled, not knowing exactly how to facilitate successful asynchronous discussions. For the instructional use of asynchronous conferencing, here are specific strategies (CRLT, 2000).

?Require student participation: If participation is not required, students will generally disregard using the tool for meaningful types of tasks. To involve students in the discussion, make grade dependent on it. At least a portion of the final grade should be based on the student's participation in the asynchronous discussion.

?Prepare a task for students to focus their discussion: A common mistake that is made when using asynchronous conferencing tools is that students are just asked to use the tool to "discuss" a topic. This often results in shallow "talking around" the topic in question. The instructor should provide a specific task to the students to help focus their online discussion. One practice that has been used in the past to get students started into a discussion task is to assign specific roles (e.g., pro vs. con position, etc.) to students in the discussion.

? The task should have a product or something that brings closure: The focus task given to the students should result in a product thatrepresents the core ideas from their discussion. This could be as simple as a document that synthesizes the main arguments from the discussion.

?The task must engage the learner in the content: The task that is chosen must strive to engage the learner in critically thinking about the content material and issues.

? The discussion structure should be carefully thought out: Instructors should appropriately structure the physical discussion space to facilitate the discussion and minimize potential confusion. In the courses that were evaluated there were some discussion structures that made it very difficult for the students to remember where they were suppose to be posting at which times during the semester. The discussion structure (including public, private, topical, team forums, etc.) should be simple and easy for the students to understand. Multiple postings from students in the wrong discussion space is a clear indication that the discussion structure is too

complex.

?Discussion must be evaluated based on quality of content and not length of posting or number of postings: Evaluation of postings based on number or length of postings encourages students to contribute trite and thoughtless information to the discussion just to be "counted." Discussion postings should be evaluated based on quality of content. This might be done by evaluating the synthesis or final product developed from the discussion.

? Instructors should post examples of expectations for discussions: Instructors can improve the quality of student discussions by explicitly giving exemplars to the students. For example, in one course students were given example scenarios for three "types of postings". One good example, one from a student who thought she knew everything, and a third from a student who was just agreeing with other posts and not adding anything substantive.

?Students must get some kind of feedback on the discussions: Receiving feedback on the discussions is crucial in helping the students learn. Feedback can come from various sources including instructors and other students.

? Discussion groups should remain relatively small: Experience dictates that if the number of students in a discussion group gets too large that meaningful discussion is less likely. If there are a large number of students in an online course it is more productive to divide them into several smaller discussion groups which work in parallel.

C. Good Practice Encourages Active Learning

"Learning is not a spectator sport. Students do not learn much just sitting in classes listening to teachers, memorizing prepackaged assignments, and spitting out answers. They must talk about what they are learning, write reflectively about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn part of themselves" (Chickering et al., 1987)

In the process of examining the four online courses, there were many opportunities for instructors to help students relate learning activities to real-world issues. For example, in some courses students were asked to do real-world projects that related the course to their full-time work. When the students were allowed some flexibility (e.g., to choose their own topic, project format, etc.) the learning was more meaningful to them and was often more authentic than if the instructor had mandated the assignment.

It is reported that WBI can be adaptable learning environment by providing the content to match each individual student according to his or her goals, previous knowledge, or other characteristics (Jung, 2001). No adaptable and interactive learning environment, however, comes alone without careful guidance from the instructor. Especially in an online situation, students can be easily distracted from their learning. Without a proper motivation strategy, it is hard to engage students in active learning.

It is also important for students to present their work to the rest of the class. This is an important step that is often skipped perhaps because instructors are unsure of the best way to do online presentations. While formal synchronous presentations may not be practical in an online environment, the project work can be made available for other students to review and specific questions can be formulated to help structure a productive asynchronous discussion about the project or assignment work. Students learn by seeing examples. As they see the exemplary work of their peers (in the current semester or previous semesters) they are motivated to perform at a higher level. The followings are instructional strategies for facilitating active learning:

? Activities or assignments should be related to real world problems.

? The instructor needs to prepare resources to help active learning beforehand.

? The instructor needs to involve students in the decision making process.

- Have the students add additional resources.
- Share the responsibility for facilitation with students.
- Include the student's self- and peer-evaluation into the grade.

? The instructor needs to choose appropriate assessment tools and clearly communicate his/her expectation with students.

D. Good Practice Gives Prompt Feedback

"Knowing what you know and don't know focuses your learning. In getting started, students need help in assessing their existing knowledge and competence. Then, in classes, students need frequent opportunities to perform and receive feedback on their performance. At various points during college, and at its end, students need chances to reflect on what they have learned, what they still need to know, and how they might assess themselves" (Chickering et al., 1987)

Prompt feedback is a basic tenet of quality instruction. There are typically two main types of feedback used in online courses: acknowledgement and information feedback (Duffy, 1999). "Acknowledgement feedback" ensures online presence of the instructor, and confirms or assures the student that some event has taken place. In a face-to-face environment, this kind of feedback happens all the time and is often communicated through non-verbal cues. Acknowledgement feedback is often not readily available to students in an online learning environment. "Information feedback," on the other hand, is informational or evaluative in nature. It is often manifested as the answer to a student question or as an assignment grade and comments.

Most of the instructors for the courses in this study gave information feedback on assignments and projects in a fairly timely manner. It is recommended that the turnaround time for giving feedback on assignments should be one week or less. The longer it takes to get feedback the smaller the impact the feedback is likely to have on the student. It is important to monitor bulletin boards regularly and give specific information feedback to students. Instructors may also guide students by asking them

questions and encouraging them to find their own solutions rather than just giving them answers to their questions. Although instructors in this study were fairly good at giving information feedback, there seemed to be a lot of room for improvement in providing more and better acknowledgement feedback. Instructors can alleviate many student concerns by sending them a brief note of acknowledgement when they receive an assignment via email. Also, if an instructor is too busy to give a detailed answer to a student question in a timely manner, the instructor should give the student a acknowledgement email stating that they have received the question and will address the question indicate when they will respond.

Here are instructional strategies to facilitate prompt feedback.

- ? The instructor needs to discuss each student's progress on a regular basis
- ? For the acknowledgment feedback, set clear guidelines for timing of feedback and indicate clearly what type of feedback that will be provided
- ? For informative feedback, the turnaround time for giving feedback on assignments should be one week or less and the feedback should be detailed, including strengths and weaknesses of the student's work.

E. Good Practice Emphasizes Time on Task

"Time plus energy equals learning. There is no substitute for time on task. Learning to use one's time well is critical for students and professionals alike. Students need help in learning effective time management. Allocating realistic amounts of time means effective learning for students and effective teaching for faculty. How an institution defines time expectations for students, faculty, administrators, and other professional staff can establish the basis of high performance for all." (Chickering et al., 1987)

Learning results from time on task. Students need to know how to use their time effectively. In online courses it can be challenging to maintain students' attention and motivation throughout the semester. Students are easily distracted from their study, so they need help with time management skills. A student's time on task depends on how demanding the task is and the expectation the instructor sets for working (Duffy, 1999). Most courses examined in this study had assignments with specific deadlines that required students to participate in the class on a regular basis. Having regular assignments due throughout the semester helped to encourage students to spend time on the course and not to procrastinate - which is easy for students to do when they are not meeting regularly with their class. This can be communicated explicitly through email as well as through the structuring and due dates of the assignments. It is important to require students to stay on task and work weekly throughout the semester. Having regular discussions using an asynchronous conferencing tool is a common way of requiring regular participation.

Here are instructional strategies to maximize time on task.

- ? Prepare a structure with deadlines that are spread throughout the semester

? Indicate the complexity of the task and expected time to finish the task

? Prepare online resources or use easily accessible resources so as to avoid unnecessary time spent on searching for the materials

? Check students' progress via e-mail and send reminder messages about the due dates

F. Good Practice Communicates High Expectations

"Expect more and you will get it. High expectations are important for everyone - for the poorly prepared, for those unwilling to exert themselves, and for the bright and well motivated. Expecting students to perform well becomes a self-fulfilling prophecy when teachers and institutions hold high expectations for themselves and make extra efforts." (Chickering, et al., 1987)

Generally speaking, the more the instructor expects, the better students perform. Communicating high expectations is important, but is not always easy to implement in an online environment. Without face-to-face meetings and visual cues, online instructors need to make sure that their expectations are explicitly communicated. Most of the instructors interviewed listed their expectations on their course Web sites. In addition to listing the assignments and their due dates, instructors would often provide grading rubrics for the students. Instructors would also communicate their expectations by publicly calling attention to excellent performance by the students in bulletin board discussions or class listservs. Giving positive attention (when deserved) to the students provides motivation as well as feedback about the kind ofexcellence that the instructors are looking for.

Another strategy for communicating expectations that was used was to model different qualities of postings to the discussion forum. One instructor modeled three postings of different qualities for students to view. One was an exemplary posting while the other two were examples of what not to do and highlighted poor trends she had seen in the past that she wanted students to avoid.

Here are instructional strategies to clearly communicate the high expectations.
 ?Clearly indicate their expectations on their course Web site including criteria of the discussion quality
 ?Reward high performance in a public way. Also, publicly call attention to excellent performance or work done by the students
 ?Periodically discuss how well the class, groups, and individuals are doing during the semester

G. Good Practice Respects Diverse Talents and Ways of Learning

"There are many roads to learning. People bring different talents and styles of learning to college. Brilliant students in the seminar room may be all thumbs in the lab or art studio. Students rich in hands-on experience may not do so well with theory. Students need the opportunity to show their talents and learn in ways that work for them. Then they can be pushed to learning in new ways that do not come easily" (Chickering et al., 1987).

Students bring different talents and learning styles to the online education. Because of such differences, students rich in hands-on experience may struggle with theory and

vice versa. Students need the opportunity to show their talents and learn in ways that work for them while challenging student to try new learning methods. WBI seems to provide individualized learning environments that allow instructors to provide individualized learning (Jung, 2001). For example, for the visual learners graphs and images can beprepared along with the text. And the instructor allows students to select their preferred learning materials.

Instructors interviewed attempted to learn about the different backgrounds and interests of the students through online icebreaker activities at the beginning of the semester. Additionally instructors often included learning exercises filled with real-life examples that represented diverse, unique perspectives. As a good example, an instructor allowed students to shape their own coursework by choosing project topics.

Instructional strategies that instructors can use to respect and support diverse talents and ways of learning are the following.

- ?Include an online "ice-breaker" activity for online courses to allow students to share their own interests and learn about peers' backgrounds and interests
- ?Encourage students to express diverse points of view in discussions.
- ?Allow students to shape their own coursework by choosing project topics
- ?Create learning activities filled with real-life examples and diverse perspectives.
- ?If necessary, create a course caf site with no faculty access and let students discuss about the course freely.

Ⅸ. Conclusion

Higher education is rapidly implementing Web-based instruction (WBI). WBI has a great potential to improve learning of distant learners, but only if designed with sound pedagogical principles.While it is hardly said that many current practices orapproaches are based on sound pedagogy, this study provides theoretical background to the existing practices by using seven principles for good practice.

Since there is not much solid research on online instructional strategies, this study enriches the literature on distance education by identifying the strengths and weaknesses of the current practices. In this regard, practical guidelines on instructional strategies and tactics that are appropriate to online environments were identified. By examining four online courses, the author could findthe effective instructional strategies and tactics which online instructors can refer to. The strategies and tactics are valuable resources if they are used in creative ways. Many online instructors may find these strategies and tactics useful in their improving teaching skills on the Web.

References

ADEC. (1999). *ADEC Guiding Principles for Distance Learning.* [Online]. Available: http://www.adec.edu/ admin/papers/distance-learning_principles.html [2000, February 6].

Beaudoin, M. (1990). Instructor's changing role in distance education. *American Journal of Distance Education, 4(2),* 21-29.

Bonk, C. J., & Dennen, V. (1999). Teaching on the Web: With a little Help from My Pedagogical Friends. *Journal of Computing in Higher Education, 11(1),* 3-28.

Center for Research on Learning and Technology. (2000). Teaching in a Web based distance learning environment. *CRLT Technical Report No. 13-00.* Indiana University Bloomington.

Chickering, A. W., & Ehrman, S.C. (1997). *Implementing the Seven Principles: Technology as a Lever.* [Online] Available: http://www.aahe.org/technology/ehrmann.htm [2000, Feb. 5]

Chickering, A. W., & Gamson, Z. F. (1987). Seven principles of good practice in undergraduate education. *AAHE Bulletin, 39,* 3-7.

Duffy, T. (1999). Personal communication. [1999, Dec. 28]

Dewal, O. S. (1989). Pedagogical issues in distance education. *Prospects, 18(1),* 63-73.

Eastmond, D. V. (1998). Adult learners and Internet-based distance education. In B. Cahoon (Ed.), *Adult learning and the Internet.* San Francisco, CA: Jossey-Bass.

Feenberg, A. (1989). The written world: On the theory and practice of computer conferencing. In R. Mason & A. Kaye (eds.). *Mindweave: communication, computers, and distance education.* Oxford: Pergamon Press.

Harasim, L., Hiltz, S. R, Teles, L., & Turoff, M. (1995). *Learning network: a field guide to teaching and learning online.* Cambridge, MA: MIT Press.

Harrison, N., & Bergen, C. (2000). Some design strategies for developing an online course. *Educational Technology, 40(1),* 57-60.

Hill, J. R. (1998). Distance learning environments via the World Wide Web. In B. H. Khan (Ed.), *Web-based instruction.* Englewood Cliffs, NJ: Educational Technology Publications.

Homeberg, B. (1991). Testable theory based on discourse and empathy, *Open Learning, 6(2),* 44-46.

IDE. (1998). *An Emerging Set of Guiding Principles and Practices for the Design and Development of Distance Education: A Report of the Faculty Initiative.* The Pennsylvania State University. [Online]. Available: http://www.outreach.psu.edu/de/ide/. [2000, March 20].

Jung, I. (2001). Building a theoretical framework of Web-based instruction. *British Journal of Educational Technology, 32(5)*

Keast, D. (1997). Toward an Effective Model for Implementing Distance Education

Programs. *The American Journal of Distance Education, 11(2)*.

Khan, B.H. (1997). *Web-based Instruction.* Englewood Cliffs, NJ: Educational Technology Publications.

Meyen, E., Lian, Cindy H. T., & Tangen, Paul. (1997, Fall). Teaching Online Courses. *Focus on Autism & Other Developmental Disabilities, 12(3),* 166-174.

Mikulecky, L. (1998). Diversity, discussion, and participation: Comparing Web-based and campus-based adolescent Literature Classes. *Journal of Adolescent & Adult Literacy, 42(2),* 84.

Moore, M.G. & Kearsley, G. (1996). *Distance Education: A systems View*. Belmont: Wadsworth Pub. Co.

Moore, M.G. (1990). *Contemporary Issues in American Distance Education.* Elmsford, NY: Pergamon.

Rankin, W. (2000). A survey of course Web sites and online syllabi. *Educational Technology, 40(2),* 38-42.

Rumble, G. (1989). On defining distance education. *American Journal of Distance Education, 3(2),* 8-21.

TID report (1999). *Teaching at an Internet Distance: the pedagogy of online teaching and learning. The Report of a 1998-1999.* University of Illinois

Wills, B. (1993). Strategies for Teaching at a Distance. *ERIC Digest.* EDO-IR-92-8.

Windschitl, M. (1998). The WWW and classroom research: What path should we take? *Educational Researcher, 27(1),* 28-33.