Going Online: Instructor and Student Perspectives

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Abstract

This paper describes our perceptions and lessons learned during the process of converting a face-to-face (f2f) skills-development course for graduate students in instructional technology into an online format. The primary author of this paper designed and developed both versions of the course while each co-author participated as a student in either the f2f or online version of the course. The purpose of this paper is to share the authors' collective perceptions regarding the outcome of this instructional development effort.

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Introduction

Before 2005, the Introduction to the Internet course (TECH 575) at the University of Tennessee was taught in a face-to-face (f2f) format. During the summer of 2005, TECH 575 was taught for the first time in an online format. Others (Benbunan-Fich & Hiltz, 2002; Flowers, 2001; Huff, 2002; Twigg & Oblinger, 1996) have reported that online courses and programs offer unique advantages for graduate students. The TECH 575 course was converted to an online format as an experiment to determine whether or not an online format for TECH 575 would be both viable and advantageous for resident graduate students in Instructional Technology (IT) at the University of Tennessee. This paper will discuss the author's perceptions of the advantages and disadvantages associated with converting a technology course for IT majors to an online format.

The Internet: Implications for Teaching and Learning (TECH 575)

TECH 575 is an introductory Internet course offered for Masters, EdS and PhD students in Instructional Technology at The University of Tennessee. Before the summer of 2005, TECH 575 was taught in a traditional, f2f format as a combination lecture/laboratory course. The course met for one three-hour session per week in one of the computer laboratories in the College of Education, Health and Human Sciences. In the summer of 2005, TECH 575 was offered for the first time in an online format. One major reason for converting the TECH 575 course to an online format was to explore the feasibility of teaching a technology skills-development course of this type in such a format. The next several paragraphs will describe the general structure of the TECH 575 course and the specific changes made in putting the course online. Following these

descriptions, the authors (as course instructor, f2f and online student participants) will share lessons learned.

TECH 575 – Course Design

The TECH 575 course is a full-semester experience (4 or 16 weeks) during which students learn various ways to use the Internet and communication and collaboration tools to develop instructional materials and projects that promote student learning. A major focus of the TECH 575 course is learning HTML, the programming language that (along with its variants and enhancements) controls the formatting and publishing of information shared through the World-Wide Web.

Prior to its conversion to online format, the TECH 575 course was primarily a lab-based, hands-on experience that required students to attend class on a weekly basis (three hours per week) for lectures and the completion of HTML programming exercises and a series of Internet-based research activities. In the f2f format, students were required to attend all classes and participate fully during those sessions. The f2f version of TECH 575 course made significant use of Internet resources and used a course web site, email, listserv, threaded discussions and blogging for information sharing outside of class. These aspects of the course provided multiple electronic means for inter-group communication and sharing (Murphy & Coleman, 2004) and were maintained when the course was converted to an online offering.

In order to successfully complete the TECH 575 course (f2f or online version), the students are required to complete an electronic portfolio website that demonstrates their competence in web development. The student sites must exemplify good visual,

technical and structural design principles and contain links to all HTML programming exercises and Internet activity summaries completed as part of the course.

TECH 575 – Online

As a f2f offering, the TECH 575 course already used the Internet and Internet-based resources in helping students learn how to use the Internet for instruction. The primary difference between the f2f version and the online version of the course is the presence or absence of the required series of face-to-face class sessions. The f2f class sessions provided a means whereby students could ask questions and work in a supervised environment during which feedback from the instructor was nearly instantaneous. However, much of the student's pace-of-work was controlled by the flow of information from the instructor during those classes. Although the course syllabus informed the students about what and how material was to be covered during the course, few students chose to work ahead. Rather, most students worked at the pace set by the instructor via the series of weekly syllabus topics and class meetings. Each f2f class/lab session featured a question and answer period that addressed previous and current work, a hands-on period that focused on learning selected HTML tags and features, and an open discussion period that focused on future assignments, quality expectations and expectations for information sharing and student collaboration.

In the online version of the TECH 575 course, the students are given a syllabus and course calendar that provides information about when activities, exercises and assignments are to be completed and submitted for grading, but beyond that, as suggested by Huff (2002), the students are required to work at their own pace to complete all coursework. Students are encouraged to use the calendar as a general guide to pacing

their efforts but they are encouraged to work at their own pace in completing all coursework *except* when contributing to a series of electronic group discussions (conducted in Moodle, an open source course management software application) that are designed to help students share information, problems and solutions. This aspect of encouraging and supporting group interaction and mutual support has been endorsed as a strong instructional design feature for online courses (Flowers, 2001; Schrum & Hong, 2002; Turbill, 2001). The Moodle discussions occur during a specific timeframe throughout the course. All student contributions to these discussions must occur during the specified timeframe in order to ensure that the student dialogues take place in an ongoing and timely manner.

Beyond the Moodle-based, topically-focused group interactions, the students are encouraged to use the course listserv as a daily and ongoing means of communicating among themselves and with the course instructor. Murphy & Coleman (2004) and Turbill (2001) both describe positive experiences with using a listserv in this manner. All members of the class listserv are encouraged to share both problems and solutions with the other members of the class via the listserv. Although using a listserv for communication is distinctly different from the exchanges that can occur in a f2f setting (Turbill, 2001), the use of the listserv is ongoing, responsive and involves *all* members of the group. In addition, the listserv provides a means by which students can practice formulating problem statements and explaining potential solutions to other learners. Further, the written format for this communication provides an easy means for preserving ideas for subsequent use and reflection by others.

Advantages and Disadvantages in moving Online

Disadvantages

The online version of the TECH 575 course has been offered twice, once during the short summer format and once during a typical academic semester. Thus far, relatively few problems have occurred and, though challenging, none of these problems have proved difficult to solve. These problems are not unique to the conversion of the TECH 575 class to an online format. Thus, they represent potential disadvantages to all who might consider converting a course to an online format.

As noted by Schrum & Hong (2002) and Turbill (2001), when putting any course in an online format, every specific detail of the online course must be finalized and programmed (in multiple senses of the word) prior to the beginning of the course. The TECH 575 course was no exception. While this increased organization is desirable, it is also problematic. In the f2f course, many of the final decisions about specific activities, assignments, length of time for exercises or activities and follow-up discussions, could be deferred and finalized just prior to the class period during which these would be addressed. These attributes of the online version of the course needed to be finalized well in advance of the start of the course. This difference in course planning meant that the instructor spent much longer in designing and planning the course than for a comparable f2f course. Further, this difference in when specific aspects of the course are "fixed" sets constraints on the flexibility of the instructor to adapt or change course activities during the conduct of the course itself.

A second and related problem in putting TECH 575 online was that the online version of the course provides less cues to the individual student about how to pace

his/her independent work during the course. Though the syllabus and calendar clearly provide a sequence and pacing information to guide student efforts, these structures are not as fixed or dependable as those provided by the instructor in a f2f setting. "Going to class" provides a comfortable, physical structure that can serve to keep students working at a consistent pace. Without such assistance, many students have difficulty in maintaining an optimal level of engagement with the course activities (Schrum & Hong, 2002; Murphy & Coleman, 2004; Turbill, 2001). Some students want to work ahead and accomplish everything in the shortest possible amount of time. Other students fail to engage for an extended period and then rush to "catch up". Still other students alternate between short periods of intense work and short periods of total inactivity. The instructional design characteristics of an online course can help avoid these problems but since the intent of most such courses is to provide "anytime, anywhere" learning, there is a limit to how much an online course can embody *both* "regular, managed, structured engagement" and "anytime, anywhere engagement".

A third problem in putting TECH 575 online was simply the time required of the instructor in interacting with the students. The fact that a course is an online course does not necessarily mean that the instructor will spend significant amounts of time interacting with the students. However, the online format offers many more opportunities and requirements for instructor-student interactions. For students to "show themselves" in a virtual classroom, means that they must do more than simply "listen" to information sent by the instructor. Students "show" themselves by initiating written electronic communications with the instructor and other members of the class group (Murphy & Coleman, 2004). If an instructor wishes to meet the needs of each individual student,

then s/he will spend a significant amount of time engaging in written electronic communication exchanges with those students and these communications take more time to process and generate (read and write) than oral f2f comments (Twigg & Oblinger, 1996). Thus, the combination of these two aspects: the greater number of written electronic communications, and the time-intensive written format; contribute to the overall increase in time spent by an instructor in communicating with online students. Since the amount of communication time required of the instructor is related to the number of students enrolled, course enrollments must be carefully managed to prevent this factor from negatively impacting the quantity and quality of instructor-student communications in an online course (Waugh, McKenzie, Bennett & Mims, 2002).

A fourth problem in putting TECH 575 online is specified by the unique set of problems presented by individual students needing special assistance. There is no optimal way for an instructor to handle this difficulty except to assist the students in finding appropriate local resources (and sanctioning the legitimacy of this strategy) to assist in solving their unique problems. In the TECH 575 course, the students were challenged to form an electronic support group wherein those students who understood the problems and had sharable solutions should do so. In short, the instructor encouraged the students to work as collaborative problem solvers as they completed the various course activities. Each student was required to create a set of individual web-based materials, but all students were free to share ideas and solutions with other members of the group in order to assist others in completing their work. The instructor is always a participant in this process and, thus far, no students have required f2f tutorial assistance by the instructor in order to complete any activities or assignments.

Advantages

As a result of converting the TECH 575 course into an online offering, the authors noticed several distinct advantages for the university, instructor and students. These advantages are briefly described below.

Though the course structure of the online version of TECH 575 is now more defined and "fixed" for the given term in which it is taught, this extensive organization makes the course much easier to teach from semester-to-semester. Further, the modularity of the various activities and exercises makes them much easier to change or adapt from semester-to-semester.

An online format can give students complete freedom in deciding how to allocate their time to the completion of the various course activities and exercises (Murphy & Coleman, 2004; Schrum & Hong, 2002; Spencer & Hiltz, 2001). The structure of the online format for TECH 575 provides sequence and temporal guidance yet does not constrain students by determining how or when (except for the coordinated group discussions) they must approach the learning tasks. As mentioned earlier, this "freedom" can be problematic for some students. However, for those students who are sufficiently self-motivated, the online format is far more beneficial than the artificially constrained pacing of a traditional f2f class.

The online format provides far more opportunities for students to work together on common tasks. Likewise, the online format enables a much higher degree of instructor-student interaction in a manner that is both timely and ongoing. While neither of these characteristics is inherent in an online format, many online formats can be used to great advantage in promoting instructional experiences of this type.

The online format for TECH 575 provides students with a more realistic context in which to learn both the skills and applications for using Internet resources for instructional purposes. In short, the students are required to use the Internet to learn about how to use the Internet to develop instructional experiences and materials.

A major reason for converting the TECH 575 course to an online format was to explore the feasibility of teaching a technology skills-development course of this type in such a format. In the online version of the course, students do not use university computers but rather make extensive use of their personal computers and Internet connections to complete the course activities. This means that they learn the technology skills using the tool, the specific computer/software environment, which is most relevant to them. Thus, the university computer laboratory formerly allocated for this class has been re-allocated for another purpose. At the time of this writing, the increasing demands placed on institutions of higher education in Tennessee have created an environment in which any improvement in facilities utilization is a major benefit.

Student Observations

From a f2f student's perspective

Contributions of class time to learning. Having a designated meeting time and place has definite advantages for many students. If there is no designated time and place for the class to meet, some students are less likely to spend time in the learning process opting to simply complete the assignments and not spend appropriate time to learn the assigned material. Class time provides students with the opportunity to be involved in meaningful interaction and for engaged learning to take place. In the f2f version of the TECH 575 course, the classroom provided this needed time and location for students to

focus on learning. Thus, the students understood that class was the set time and place where the focus was to be on learning the information provided by the Instructor and other resources. During the class, learning problems were presented and, through teacher/student interaction, solutions were found.

The students' computer skills ranged from very basic to very skilled. This presented a demanding opportunity for the Instructor who took a problem-based approach to leading the class. Each week projects/problems were presented to the students (e.g., how to write HTML code for links on a page), and the students spent time learning how to create the correct code to solve the problem. This specific example presented very little challenge to the more advanced students. Thus, the solution to this problem was to allow the advanced students to work on more complex coding problems and to assist the lesser skilled students.

Availability of help/peer interactions. This author teaches Flash online and has seen the problems that students encounter when there is a lack of peer interaction and visual feedback of the type that is readily available in f2f classes. Classroom time can be effective because students have immediate access to the Instructor and their classmates. By allowing students to communicate and share in learning situations, a new level of learning is possible. Rather than the Instructor being responsible to every student, the students can take part of that responsibility increasing the teaching and learning that takes place in the class. To paraphrase Astin (1984), the more a student becomes involved in his/her learning, the more that student will learn. Thus, through active engagement in the class activities, all students had the opportunity to learn.

Directed versus Independent learning. Different learning styles require different teaching styles. Due to the diverse skill levels of the students in the TECH 575 f2f class, directed learning seemed the best instructional method for assuring that learning took place. If the class had consisted of students with stronger computer skills, then it may have been possible to allow the students to be more self-directed. The f2f session of TECH 575 was directed by the Instructor but not in the sense that most classes are directed. The Instructor used the skills of the more advanced students in the class to help the less skilled students and thus the direction was more individualized to the specific needs of each student.

Personal reflections on the course. The f2f version of TECH 575 was an excellent learning experience as well as an excellent teaching experience, providing the opportunity for this author to assist others in learning about web-based technologies. Class instruction was provided at a variety of levels to assure that learning took place. Because the students in the class had diverse technology skills, the Instructor had to work hard to match the teaching and learning needs. This author's learning was reinforced through helping lesser skilled class members with difficult concepts.

In addition, learning took place for this author through collaborations with like-skilled students engaged in more advanced problem-based learning experiences. As one student would encounter a problem, all students would work together to share ideas for solving the problem. The success of the class was the result of the Instructor allowing student interaction and using problem-based learning techniques in teaching the course.

From an Online student's perspective

Contributions of class time to learning. The online format seemed to maximize the efficiency of the student's time spent engaged in learning. Because time spent at the computer was dedicated to reviewing assignments, working on assignments, and interacting with the other class members via the course listserv rather than waiting through explanations or unnecessary review, this author's productivity was greatly increased.

In many technical courses, the biggest challenge to both instructors and students is the wide variety of student skill levels present in the course. As one example, several students in the online course had significant background experience in web design and HTML authoring. Thus, for this small group, very little additional information and experience was required for them to be able to complete the HTML exercises. If this course were taught in a traditional format, these students would likely have been required to spend considerable amounts of time in lectures covering material that they already knew. The online format eliminated this less productive time expenditure and provided these students with meaningful alternative opportunities to practice what they knew by engaging them in group assistance and mentoring activities.

Availability of help/peer interactions. One of the key issues in providing effective online instruction is pairing those who know and those who need to know course content. In a traditional classroom, the knowledgeable instructor shares his/her knowledge with the students in the class. While peer mentoring can occur in this f2f setting, knowledgeable students are often reluctant to "compete" with the instructor or,

are often not invited to contribute what they know to assist others. While an online environment does not require that peer mentoring occur, it provides an ideal setting in which peer mentoring can be encouraged and promoted. If the instructional goal is for all students to learn, and students are not required to compete with one another, then learning can take place without direct intervention by the instructor. In this manner, each student can contribute according to his/her existing ability and skill. By exercising those skills, each student can improve them.

In practice, the online course proved to be better than past f2f courses at enabling students to network and support each other. This author made an effort to stay active in the listserv discussions and answer questions for people but actually found it difficult to respond to a question before someone else had already shared an answer. Whenever anyone asked a question, there was an incredibly active exchange of information. The nature of the course content probably contributed to this active information sharing. Students wishing to help others with HTML questions could do so simply by going to the web page in question and looking at the page itself or the underlying code.

The activity levels witnessed among students may have been due in part to the compressed timeframe of the course because of the summer schedule. In any case, however, this author feels that it was easier for students to interact online than in a traditional classroom. While it is very easy for multiple people to read a question and respond over a listserv, the physical classroom environment makes it difficult for that to happen, especially while other people are trying to work in the same area.

Directed versus Independent learning. Another factor closely related to the wide variety of skill levels encountered in a technology class is the difference between directed

and independent learning. While a given set of operations in an assignment might be very demanding for one student, the same operations might be extremely easy for another. In such an instructional environment it is necessary for students to pursue independent learning in order to have a quality learning experience.

The online course format makes this easier to do than in a traditional classroom. The highly active student community already mentioned can help to promote ideas and directions for individual students' studies. As just one example, this author had the opportunity to explore the use of web forms in relation to an application at his job. While this far exceeded the requirements of the course activities, it was a positive use of time and served also to provide an example of what was possible to other students. This phenomenon occurred multiple times during the online class with different students working on different, individualized assignments.

Independent student learning can be a benefit to any course, but it is of particular value in graduate study. Since students in the same graduate program may be pursuing different career goals, it is highly desirable for instructors and courses to provide opportunities for individualized instruction and independent learning.

Personal reflections on the course. This author benefited in many ways by taking the online version of the TECH 575 course. First, though experienced in teaching online classes, this author had never taken one as a student. Simply reversing roles provided new perspective and an invaluable learning experience.

Taking the class online was also an excellent way to capitalize on time spent and credit earned. The prospect of attending three hours a week of lecture about basic web design was daunting, at best, given this author's previous level of experience. The online

format eliminated that time commitment and freed this author to pursue the aspects of web design that were most beneficial to him.

Finally, the absence of classroom meetings had an unexpected benefit. The online format of the class allowed this author to pursue other professional development activities without concern for missing any "class time". During the summer, this author participated in two academic conferences, worked, taught as an adjunct professor, and pursued other professional development activities. Some of these valuable experiences would have been impossible if class attendance forced him to be in a given place at a given time during the summer. Because of the online format, it was possible to earn course credit and simultaneously pursue other professional development opportunities during the short summer academic term.

Conclusion

Based on the collective experiences of the instructor and students in the TECH 575 course, the conversion of the course to a totally online format appears to have been successful. The online version of the course provides both the instructor and students with new opportunities for adapting the course content to better meet the needs of individual students. Further, the online format provides a more convenient and relevant means of course delivery. The online version of the TECH 575 course provides students with additional opportunities to use Internet-based communication tools in various ways in collaborating with and mentoring other students and it frees the university from the need to provide an expensive physical instructional setting. In addition, the online format of the course provides unique advantages for graduate students by helping to reduce the

potential for timing conflicts among a wide variety of valuable professional development experiences.

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