CASE STUDY: TEACHING AN ELECTRONIC COURSE

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ABSTRACT

This paper shares the experience of teaching an electronic media based course. The lessons learned while teaching this course are multifold. The E-course required a very different set of skills and efforts for both the instructor and the students compared to a traditional course taught in a classroom. For the students, a strong need for pre-enrollment counseling was realized. For the instructor, 72 percent of workload came from non-traditional areas of teaching. Thirdly, the lack of a classroom environment required additional control efforts to help prevent student dishonesty than are needed in a traditional classroom setting. Finally, trying to keep the E-course material on the Web independent of any particular textbook posed various challenges.

LITERATURE REVIEW

The subject of instruction via electronic media has been discussed much in the recent time. The traditional "chalk and talk" classes (Becker and Watts 1996) are being replaced by the inverted classes (Lage et al. 2000), where events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa. The implications of introducing computer-based instructional technology into marketing education may vary widely. These differences include everything from small clerical changes to "a new terrain of struggle over the purpose and nature of higher education and usher in a new era of labor market restructuring" (Pietrykowski 2001). This paper focuses on lessons learned while teaching an electronic media based course that was one of the pre-requisite courses for an undergraduate degree program in Marketing.

It should be noted that the scope of implementing electronic media for a course varies from one institution to the next and from one course to another. Some education institutions have experimented with using e-media to communicate with their remote students. As an additional study aid, other institutions have tried putting material on Web pages for their students to access. A common need for all such levels of implementation was revealed by Randall et al. (1996), who illustrated that although a broad range of knowledge, training, access, and use of distance education technology existed among educators, the subjects (administrators, faculty, and staff) indicated a strong need for training in all areas of distance education technology, as well as leadership and direction. Not only does this author concur with these findings, but he also has experienced a greater need for the E-course students to obtain in-depth understanding about how E-courses are different before they take such courses. A certain amount of training would also be helpful. By sharing the experience of teaching an E-course, the author hopes to contribute to the empirical pool of knowledge that helps marketing educators further understand

the needs and requirements necessary to teach an E-course.

The ability to offer electronic media-based courses sets a college or university apart from other institutions, but it also creates challenges not only for the instructor, but also for his/her students, as well as for the school's administrators and support staff. Research by Wexler (2000) revealed that the integration of computer technology into educational activities shifted the conventional roles of teachers and students as experts, which contained forms of resistance. The educational institutions are particularly challenged by faculty resistance to implementation of educational technology (Riley and Gallo 2000). As one possible solution, Ives and Jarvenpaa (1996) finds "faculty reskilling to be a significant issue," since "it is clear that nothing will protect the business school from being swept into the current of technologically driven change." To elevate students to the challenge, Stopsky (2000) stresses using dramatically different questions and changing what is required from students, both inside and outside the classroom. The use of computer-based collaboration is found to aid the students in clarifying course concepts (King 1994) and in more effectively learning (Scifres et al. 1998; Hein and Stalcup 2001; Slavin 1991).

Consider the specifics of the E-course implementation. A study by Kunz (2000) found that while "most professors have incorporated some sort of Web-based assignments into their courses, and employ other forms of technology-based applications," the class material management approach can be classified into: "instructor generated and supported materials, institutional-supported servers and systems, and outside, online systems and servers" (Kunz 2000). Further, Web pages can provide different degrees of interaction. These interactions can take place with the content of the Web pages or with other participating entities such as other students, or the instructor. These interactions can take the form of live chat, feedback, group discussion, simulation programs, conferencing, or quizzes (Harasim et al. 1995). The following section describes the extent of use of E-media for the class examined in this paper, the technology used, and the education environment in which the course was offered.

INTRODUCTION

Marshall University, which enrolls approximately 16,000 students, is a state supported university, located in Huntington, West Virginia. The faculty's primary commitment is teaching. The Elizabeth McDowell Lewis College of Business at Marshall University is accredited by the American Assembly of Collegiate Schools of Business (AACSB) and offers a Bachelor of Business Administration degree with majors in Marketing, Economics, Finance, Management, Management Information Systems, and Accounting, as well as a Master of Business Administration degree.

The E-course discussed in this paper used Web Course Tools (WebCT) to create and maintain its World Wide Web-based educational environment at Marshall University, which has more than 660 courses that are either using or have used WebCT for curriculum delivery. Twenty-seven of these courses are fully online.[1] Marshall has had over 12,000 students enroll in classes that are either presently using or have used WebCT for the delivery of instructional material. Of this number, more than 3,000 are currently enrolled in WebCT courses for the Fall 2000 semester. It is important to note that the state's rural nature is part of the reason for the high number of students enrolling in such classes and it makes WebCT an ideal way to deliver education.

WebCT provides an interface allowing changes to the design of the course (color schemes, page layout, etc.), a set of educational tools to facilitate learning, communication and collaboration, a set of administrative tools to assist the instructor in course delivery, and requires no prior technical expertise on the part of the developer of the course or on the part of the student. A course developed using WebCT is

EXHIBIT 1
THE MGT 218E COURSE HOME PAGE
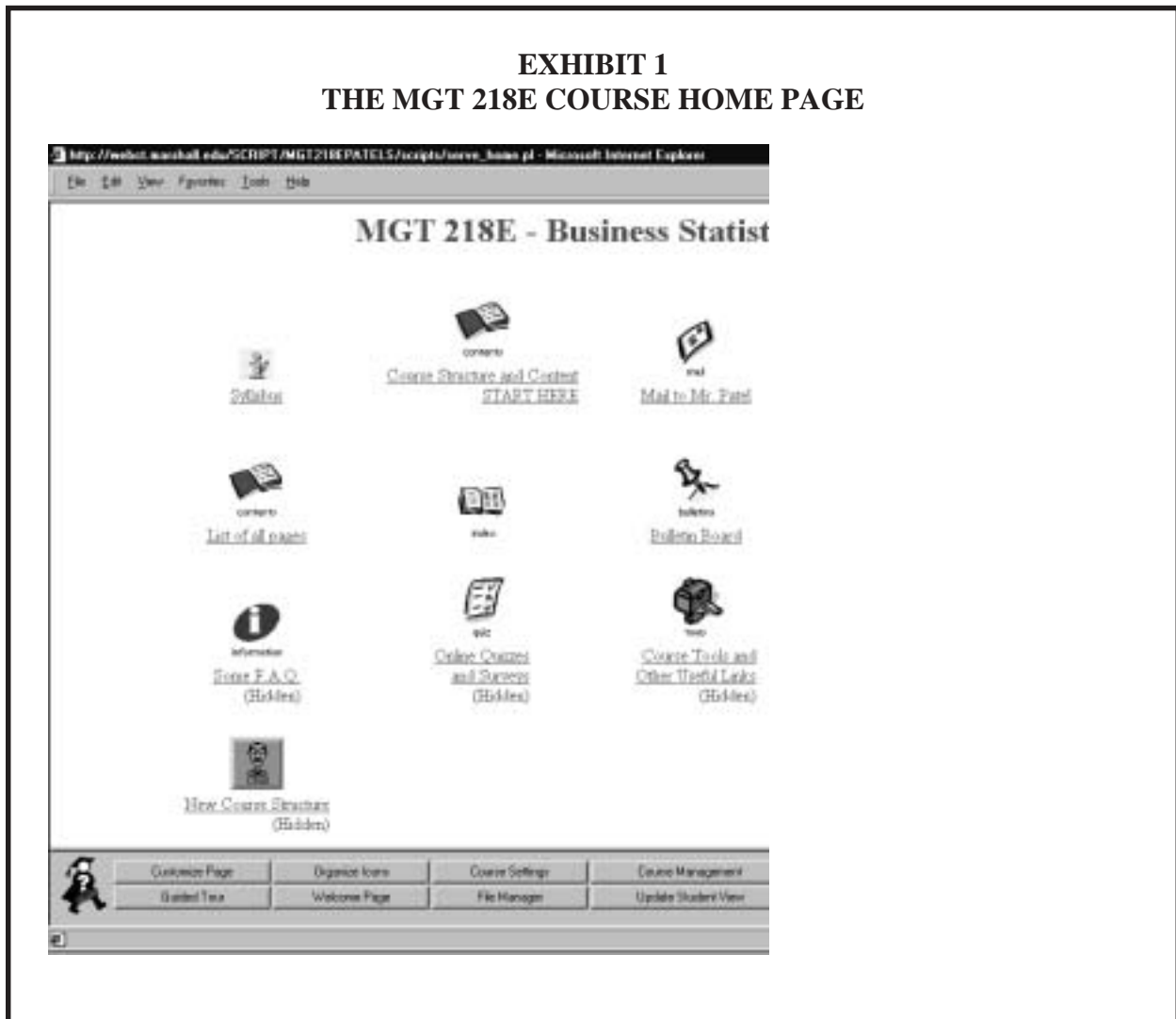
organized around one main homepage, which is the entry point for the course. It can contain, among other things, a banner image, a textual message, links to course content elements (notes and assignments, for example), and links to course tools such as a conferencing system, timed quiz, grade storage and distribution, e-mail between course participants, student self-evaluation, student presentation areas, student annotation facility, student progress tracking, course glossary and an index.

The E-course discussed here was developed in 1998 by a Marshall University faculty member who provided the course content. The structure, interactivity, and course tools were provided by WebCT. While teaching the E-course, the progress tracking, student management, and access control tools were used. No quiz or exam was given online. Exhibit 1 shows the home page. The icons listed as hidden were available only to the administrator/instructor and were not visible to the students. To access this E-course, all that was required was a networked computer with a Web browser.

Incoming freshman are admitted to Marshall University under the pre-business curriculum, a two-year curriculum designed to adequately prepare them for their last two years of advanced business study. MGT 218/E is one of the 10 core courses that the College of Business has identified as prerequisite courses for pre-business students. All study material for MGT 218E was kept

on a secured Web site that was created under the Marshall University Web home page. For this course, the registered students were given user privileges and the instructor had administrative privileges. This enabled the student to take the entire course from a remote location without having to come to the university for a single day. If they chose, they could use their own computers and set their own schedules. Teaching material placed on the Web for this course included narratives, illustrative graphs, programs for the student to perform the on-line hands-on experiments with numbers, and a list of assignments which the student could complete and mail via regular mail at their own schedule during the semester. Although a textbook was listed in the on-line syllabus, the actual course material on the Web was designed to be "textbook independent." This provided flexibility to the course. Startup pages on the Web included a short introduction on how to navigate through the course material and the syllabus.

LESSONS LEARNED

During Marshall University's Fall 1999 semester, the author taught a Web based course on Business Statistics (MGT 218E). The author also taught essentially the same class in three regular classroom sessions (MGT 218) during the Fall 1999 semester and Spring 2000 semester.

The MGT 218E course was divided into seven modules. An exam was scheduled at the end of the third, fifth, and seventh modules. An independent, off-campus proctor, selected by the students and approved by the instructor could administer the exams. In addition to the three exams, the course required the students to complete 16 assignments. Appendix A shows the actual Web page detailing the course structure.

Student Performance

The students' performance in terms of the final grades and the progress through the semester in completing the exams and assignments was disappointing for the E-course. The comparison of the E-course to three class-based, regular courses shows this clearly. For comparison purposes, the students who enrolled but dropped before classes started, those who completely withdrew from the university for the semester, and those who were withdrawn for nonpayment were not counted. Eliminating three students who completely withdrew from the university for the Fall semester from the original 22 students for the MGT 218E left 19 students for that E-course and 108 students for the regular MGT 218 course. The mean grade point average (GPA) of the 108 students in these traditional classes was 2.72, as opposed to a mean of 2.70 for students in the E-course class. Thus, as measured by their GPAs, the E-course and non E-course students appear academically equivalent.

The graph in Exhibit 2 compares MGT 218 to MGT 218E. For both these courses, this graph shows the percentage of students who received grades of "A" through "D," the "F" grades, withdrew ("W") from the course, or got an Incomplete ("I"). The Incomplete grade is given under special circumstances and at the instructor's discretion It allows the student additional time to complete the course requirements. For the MGT 218E course, two students received "I" grades. One of them was later changed to an "F" grade and another to an "A" grade.

As shown in Exhibit 2, the students in the E-course performed poorer in all categories. In order to determine if any particular reason caused more than one third of the class to withdraw, we will look at the withdrawal pattern. The E-course was designed to allow a maximum of 25 students. Its semester starting and ending dates were the same as any regular course. The semester classes began on August 23, 1999 and ended on December 7, 1999. By the end of the normal registration period, 22 students had registered for the course. Eight students (36%) withdrew from this course on different dates during the semester. Originally, seven students withdrew from this course by October 29, which was the last day to drop a full semester individual course that would get

EXHIBIT 2
GRADE COMPARISION: MGT 218 VERSUS MGT 218E

	A-D Grades	F Grade	Wi
MGT 218	75.93	12.96	
MGT 218E	31.58	31.58	
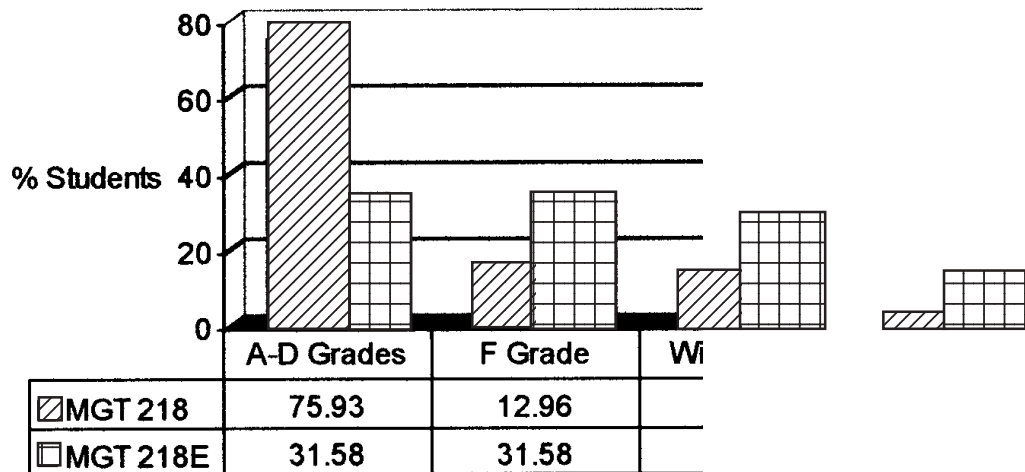
reported as a "W" on the student grade-sheet. Then, one more student withdrew before the December 7 deadline for completely withdrawing for the Fall semester. The graph in the Exhibit 3 shows the timeline for cumulative withdrawals. As the pattern shows, withdrawals occurred at a steady rate, indicating no particular time/event responsible for the high withdrawals.

To consider the performance from a different angle, let us examine the student progress in terms of exams taken and the assignments completed. Using their liberty to set their own time-table for the exams and assignments, most E-course students waited more than the half way through the semester before actually taking the first of three exams. Only eight students ever took the exam. The dates were as follows: October 11, 13, 14, November 1, 11, 16, 20, and December 2. With a total of 107 days in the semester, the graph in the Exhibit 4 plots the semester time-line, and shows when students took the first of their three exams.[2]

In general, the story was similar for sending their first assignment to the instructor. The students needed to complete a total of 16 assign-ments. Concerned about the inadequate student self-motivation, the instructor sent three pieces of personalized e-mail to each student encouraging him/her to send their assignments on a regular basis, although s/he had the entire semester to finish the course. The first eight assignments were received on the following dates: September 21, 26, 27, 28, 30, October 15, 25, and November 30, an average wait of 48 days after the semester began. This was less than a week before the mid-semester point.

The Progress Tracking tool provided by WebCT, which allows the instructor to monitor student activity on the Web, was used to check the student activity and progress. After the instructor sent each student the welcoming e-mail with his or her I.D. and password, about three weeks passed before more than one students logged onto the Web site. During the first two months of the semester, only ten percent of the class was spending enough time on the Web to make steady progress. In contrast, nearly 90 percent of the assignments were received on-time for the classroom based MGT 218 course. A total of four assignments were given during the semester with specific deadlines to submit them

for the classroom based MGT 218 class. Another eight percent of the assignments were received the week following their deadline. Two percent of assignments were never submitted. One mid-term exam and a final exam were scheduled. Only one student out of 108 could not take the exam on the scheduled date, giving the percent of students who took the exam on-time to 99 percent.

One significant advantage an E-course can provide is customized learning formats for its students (Morrison 1996). But looking back, it seems that this liberty of working at their own pace can also work to the students' disadvantage. Reflecting further, it left the instructor with the feeling that requiring student counseling before enrollment in an E-course (to warn the student of such pitfalls) could have resulted in better student time management. Such counseling could also be used to encourage the students in advance to participate in student-to-student communication, possibly yielding better progress through the semester. As suggested by Enomoto et al. (1999), adequate mechanisms are needed to foster effective linkage among the teachers, students, and researchers who hope to successfully extend the use of telecommunications and information technologies in schools.

Instructor's Workload

Although person-to-person teaching efforts were almost none (except for the rare occasions of helping the student by phone), the E-course required much effort in unexpected areas. Microsoft Outlook® e-mail folders and its Calendar, Journal, Task, and Notes utilities were used to keep track of activities throughout the semester. The following breakdown shows the instructor's time spent per week for teaching related activities (not counting other activities such as scholarly and creative work, professional service, etc.):

♦ Communicating via e-mail with the students or exam proctors: 15 percent.

♦ Handling exams (including interacting with the proctor selected by the student, approving them, sending and receiving the exam): 7 percent.

♦ Updating and administering the Web site: 5 percent.

♦ Learning the E-material (material from the E-course Web pages): 20 percent. Since the course was designed to be "textbook independent," it was time consuming to become familiar with all the material that was on the Web before helping the students or grading their mailed-in assignments.

♦ Finding good test questions from the E-material: 10 percent. Preparing the exams was a challenge for the instructor, since the study material on the Web was not covered fully in the textbook and vice-versa. It required much effort to find the topics that were covered without leaving questions on important topics out.

♦ Learning and exploring the rich set of WebCT tools: 15 percent. The most frequently used tools were: Progress Tracking, Student Management, and Access Control.

♦ Traditional activities similar to those found in a regular course (including calculating and posting grades, grading the assignments, and grading the exams): 28 percent.

It was not anticipated that the first six activities listed above would demand so much time. Another interesting fact is that 72 percent of time was spent on activities not found in a regular class-based MGT 218. This could be a problem or issue related to implementing an E-course. Grasha and Hicks (2000) raise concerns about bringing a wide range of faculty to "buy in" to using technology. From teaching this E-course, one lesson that was learned was that institutions that really want to successfully implement E-courses must realize that many of their instruc-

EXHIBIT 3
CUMULATIVE E-COURSE STUDENT WITHDRAWALS
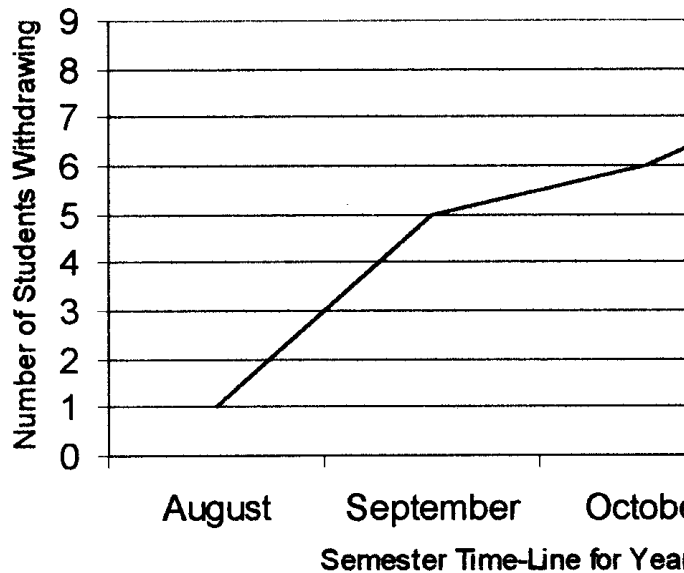
tors will not only need to be reskilled (Ives and Jarvenpaa 1996), they will also need to become accustomed to the different tasks in their daily agenda.
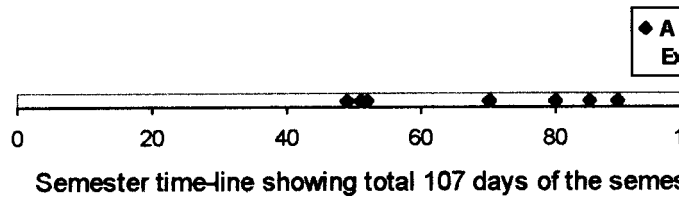
Student Dishonesty

There were three alarming incidences of possible student dishonesty during or after an exam. The exams were supposed to be taken under the supervision of an independent proctor selected by the student, such as his or her employer, and approved by the instructor. Both the student and the proctor were required to complete attestation forms. Once the student completed an exam within the specified time, the proctor had to mail the exam via regular mail to the instructor with an additional attestation stating that no cheating was observed and the exam was completed in the specified time. In the first possible case of dishonesty, a student had already taken the first exam and it had been graded. Just before grading the second exam, it was found that after the exams were taken, the proctor was simply handing them back to the student to mail them to the

instructor. The lesson learned was about the necessity to remind each proctor of many "small" details.

In the second case, an exam included a partial table containing Standard Normal Curve Area Table values for the students to use during their exams. When the instructor received an exam back from a student, it was noticed that a number that the student had used was not listed in the partial table provided with the exam. The only possible resources for this number were either from the textbook or from the course Web page, both of which were not allowed during the exam. Although the proctor reconfirmed by phone that the exam was taken in accordance with class policy, somehow the student had cheated on the exam. Since the student denied any wrongdoing, it was not possible to find out how the second table was obtained.

The third case was about the questionable validity of the proctor the student had selected. The instructor did not receive the attestation from the proctor on a standard company letter-

head. Instead, the letter was in typed format, without the proper company address. Trying to authenticate the proctor over the phone and via e-mail still left the instructor with the questionable impression of the proctor. The letter attesting that the student took the exam without any observed cheating was written by hand on a regular piece of paper. Still, with the lack of the solid proof to deny the proctor and lack of procedural violation, the instructor accepted the student's exam points.[3]

While the existing electronic learning technology is still "immature" (Jennings 1997) is arguable, incidents such as these showed a clear need for better control methods.

Steep Learning Curve for Both the Student and the Instructor

Since neither the instructor nor the students are familiar with the newly emerging electronic courses, the new ways of doing things were challenging at best and confusing at worst. To aid students' efforts to communicate with one another or indirectly with the instructor, WebCT Course Conferencing System (also known as Bulletin Board) tool was provided on the home page. However, no articles were posted by any student during the semester.

There were four students who repeatedly requested assistance on how to use the electronic media. On average, three pieces of e-mail were written (as tracked by Microsoft Outlook®) by

the instructor to each student to help them get started using the Web pages. In addition to their narratives, these Web pages included on-line real-time calculators, graphs, and charts. At the beginning of the semester, the instructor sent a piece of mail to each student with their user ID, password, and a reference to a WebCT "frequently asked" question file.

From the beginning, one student was completely confused as to what his role was ("Just read the material on the Web pages, and then what?"), as well as the instructor's role. Even after writing three pieces of e-mail to this student, he still remained largely unsure about what role that Web pages played in the E-course. He eventually withdrew from the course.

One of the students who received an "Incomplete" grade was under the impression that she had an entire year to finish the course, as opposed to a semester for a regular course. The correct time period was listed on the online syllabus. Although the instructor had sent e-mail messages to all the students through the semester encouraging completion of the work by the semester's end, this misunderstanding was not bought to his attention until the semester was over. Later, this "Incomplete" was changed to an "F," since the student did not complete the course work in the agreed upon time.

The course required instructor proficiency in e-mail features such as personalized group e-mail, updating and navigating through Web pages,

administrating user access to the Web site, etc. Although WebCT provided a rich set of administration tools, considerable time was needed to master and effectively use all of them. As a result, only some of the available tools were ever used. Interestingly, research reveals that e-learning developers often focus on graphics design and production, but ignore training analysis and underlying learning structures (Searbrook and Rushby 2000). More help from the instructor, such as computerized practice tests (Gretes and Green 2000), could have been provided if instructor training was required for teaching an E-course.

Neal (1998) argues that the current technology, with its lack of face-to-face contact among students and teachers, deprives the students of "learning experience." However, the students could have benefitted from the use of Computer-based communication (O'Donnell and O'Kelly 1994). Had a short training period been provided to the students as one of the E-course's prerequisites, and had a mandatory counseling session been used to both discuss the student's readiness in-person and to emphasize the importance of using the communication tools before they could enroll, it is more likely that the course's students would have used such tools.

Textbook-E-Material Discrepancy

To make the course flexible, study material on the Web site was designed to be textbook independent, while keeping the course content identical to that found in the class-based MGT 218 course. However, a textbook had to be listed for the student to do in-depth study. This created a challenge to keep both these study resources in synchronization. This means that either the E-material (the topics discussed on the Web site) will have to be constantly updated (depending on the textbook selected), or additional books will have to be suggested as the text or for reference. Currently, this is a challenge the instructor of the MGT 218E and the similarly designed E-courses have to face.

SUMMARY

Amongst the many services a computer can provide (Roach 2000), the academic community has recognized the pedagogic usefulness of teaching via electronic media (Mitra and Steffensmeier 2000). Recognizing the potential for using electronic media as an instructional tool in marketing education, this paper reflects on the experiences gained while teaching an E-course in a business undergraduate distance-learning program at Lewis College of Business, Marshall University, West Virginia. The experience showed the need for (1) mandatory pre-enrollment student counseling, to help pupils understand what they should expect and what it expected of them, (2) student training to teach them basic navigation, how to use E-material, and how to use advanced features such as Bulletin Board, (3) instructor/faculty orientation, training, and encouragement in learning and using basic and advanced electronic technology, (4) development of a detailed standard methodology with proper controls in place for student assessment, and (5) a degree of skepticism before "buying in" (Grasha and Hicks 2000) to using technology.

ENDNOTES

[1] As of Fall 2000 semester.

[2] As one would notice, the delays in taking the exam included one student who waited until the last week of the semester to take the first exam. In fact, the student managed to take all three exams in the last week of the semester, and received a "C" grade for the course. This was a rare success tale of the student who could complete the course, even after a long wait.

[3] Probably fearing more questioning during the rest of the exams, the student decided to take

the rest of the two exams at Marshall University in the instructor's presence. The student received 40 out of 50 points on the first exam, 35 on the second, and the 20 in the final exam, yielding him a "D" grade.

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APPENDIX A
COURSE STRUCTURE (WEB PAGE IMPRESSION)