MOTIVATIONAL FACTORS, CHARACTERISTICS, AND COMPUTER SKILLS OF MBA STUDENTS IN WEB-BASED COURSES

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ABSTRACT

Not everyone is necessarily suited for, or is comfortable with, participating in courses offered over the World Wide Web. This recent form of asynchronous distance learning is being implemented or considered by a number of business schools, often with no consideration or knowledge of the market. In this paper, in order to begin a characterization of the market, we investigate the motivations, characteristics, and skills of MBA students who had a choice of regular classroom or Web based classes and chose web-based classes. We find that they are motivated more by convenience and necessity, or the same average age and gender proportions as regular MBA students, predominately technically trained as undergraduates, working in predominately technical fields and possessing average to strong computer skills.

INTRODUCTION

The dean of the College of Business Administration at The University of Akron returned from an American Assembly of Collegiate Schools of Business (AACSB) seminar on the use of technology in the classroom with the vision that the college would be among the first to offer the MBA on the Web. The intent was to provide an MBA program that would be available internationally. From the dean's announcement to the department heads in January of 1998 to the first classes in the Fall of 1998 was a very short period of time for implementing the program. Throughout this period of planning and decision-making, the focus was on hardware, software and course development (1).

Only a little thought was given to market characteristics. But it did lead to some doubt as to what the future market success would be. Therefore, after much discussion, the team assigned to implementing the program decided to proceed with a pilot program that would develop five of the eight foundation courses during Fall 1998 and the remaining three during Spring 1999. These foundation courses are taken by students who do not have a recent undergraduate business degree. These included Management and Organizational Behavior, Management Information Systems Applications, Business Statistics, Finance, Marketing, Accounting, Legal Environment of Business and Economics. Additional courses would be added each semester if the foundation courses proved to be a success. The effort expended would have no real downside since learning the technology was important to future teaching activities in classroom-based courses.

Additionally, this pilot program was limited to just local students until startup problems were ironed out. The only advertising was in the college's MBA student newsletter and on the college web page. Simultaneous with the offering of the Web courses was the offering of the same courses in the classroom setting. Students, therefore, had a choice of delivery modes. At the orientation programs, we finally turned our attention to the question of our market by surveying their motivation for being in the program and their characteristics.

Since a few universities have begun offering MBA courses on the web, we suspect that others are also currently studying the market for Web-based graduate programs. However, we did not find any research articles on this subject. There seems to be far more attention to online learning by corporate training centers and contract training companies. At a recent national conference for online training, of the 2500 in attendance, less than 30 were from universities and community colleges.

That aside, the need to know our markets is important (4). Such knowledge will lead toward determining which of the methods of course delivery for distance learning is better, synchronous or asynchronous.

Student motivation and learning styles also need to be understood (3, 6). Not all students are expected to have the motivation needed to learn on their own. To provide some of this societal need that the classroom often provides, and to differentiate Web courses from correspondence courses, collaboration by individuals and groups using e-mail, threaded discussion, chat groups, and even video conferencing is a necessity (1, 2, 5).

DATA COLLECTION

We knew that we could not initially measure if students would have sufficient motivation to successfully complete these Web courses. Only comparing dropout rates, percent withdrawals and intellectual performance of Web-based students with students in the classroom-based courses would give us some basis for measuring that effect. But we knew that we could survey for their expressed reasons for taking a Web based course rather than take the same course in the classroom. We also wanted to characterize these students in comparison to those in regular classes. While we did survey their characteristics, we did not obtain comparison data from classroom classes.

At the orientation before classes began, each student was asked to fill in two different questionnaires, independently developed by the authors. One was oriented toward why they chose the Web class and some educational, business, and computer skill variables, and the other was oriented toward demographics and computer software knowledge. We collected these data for three semesters.

SURVEY RESULTS AND ANALYSIS

The data for each of the questions was tabulated. No attempt was made at hypothesis testing of any sort since the data do not represent a random sample. However, since more than one half of the MBA students taking Web classes were surveyed, the results should be highly representative of the population. Not all students attended the orientations. The non-response error is probably not biased significantly since the notices for the orientation meetings were sent out only three weeks or less before the event and many of the students responded that they had vacation plans or other obligations for that weekend that they did not want to break.

Motivation for Taking the Web-based Course

Our expectation was that students taking Web classes would do so because it fit their learning styles better than lectures, and that they would be very comfortable with computers and learning on their own.

The students were asked an open-ended question as to why they took the Web-based course rather than the classroom-based course. The responses are listed in order of frequency of occurrence in Table 1.

TABLE 1
Reasons for Taking Web-based Course

Reason	Frequency
Flexibility in class schedule	35
Reduce commuting time	25
Convenient times	18
Business travel causes missed classes	12
New experience	6
Work schedule	5
Young children need care, family	5
Learning new technology	4
Curiosity about web classes	4
Distance from campus	2
Regular class full	2
Improve computer skills	2
Better retention from self learning	1
Avoid lectures	1
Convenience of home	1
Become better lab assistant	1
Comfortable with Web	1

These were the given responses. A number of them can be combined to present a more compact picture of their motivations. Clearly, for a number of reasons, Web classes were more convenient. They also eliminated for many the long commute to the university. One surprise was the number of responses indicating that they were taking this class delivery method just to see what it was like. Only two students seemed to reflect on learning styles. So while academics concern themselves with the appropriateness, quality, and applicability of Web education, the students concentrate on convenience.

From a market view, this observation would lead us to expect that students living at a distance from a university anywhere in the world, or those who for work or family reasons cannot regularly attend a scheduled classroom-based class are a prime market for asynchronous, Web-based education. Whether or not they are motivated enough to succeed in this mode or will

find it rewarding is not answered in these data.

Student Characteristics

Our original expectation was that MBA students taking Web classes would, as a group, differ in characteristics from students in the general MBA population. We expected them to be younger since they have grown up with computers and are more comfortable with their use. We also expected that the percentage of women would be less than overall since they are not as likely to have had a technical education. This expectation follows from our belief that the most likely Web students would have undergraduate degrees in engineering or the sciences where the use of computers as a tool is pervasive and where self-learning and self-motivation are part of their education. Likewise, we expected their current employment to be largely in engineering and the sciences.

Our surveys questioned students as to their age, gender, undergraduate degree and current employment. Not all questions were completed, and the results come from two different questionnaires, so the frequencies do not all add to the same numbers.

Age and gender are the first characteristics of interest. Table 2 shows the frequency of occurrence of a number of age groups separated by gender.

TABLE 2
Age Groups by Gender

Age Group	Male	Female
<24		3
24-27	16	8
38-31	14	6
32-35	8	7
36-39	7	2
40-43	3	4
44-47	4	0
>47	2	0

While more than twice as many men as women were included in the sample in the program, a full range of ages was represented in both groups. Although the 44 and above age groups only contained men, the two distributions did not otherwise greatly differ. The average age for men was 32.5 compared with the 30.8 for the distribution of women. The average was 31.9 for all the students in the sample. We learned from the Graduate Office that the average age for all MBA students was 31. The percentages of men and women in the sample were 64% and 36%. The percentages of men and women in the overall population were an identical 64% and 36%. These results suggest that Web students do not differ in age or gender from the overall MBA student population, and that reality was different from our expectations.

The next characteristic of interest was the undergraduate degree of the student. Many different degrees were represented. These were categorized and listed in Table 3 in the order of frequency of occurrence.

Most notable is the fact that at least 51% of the group came from a technical background. Other percentages include 23% from business administration and 21% from the humanities, social sciences and education. In comparison, the Graduate Office reported that in the overall population of MBA students, 23% came from engineering and science, 61% came from

business administration, and 16% came from the humanities, social sciences, and education. It appears that business administration was considerably underrepresented in the Web classes, making possible a higher representation of engineers and students in humanities and the social sciences. This outcome stems from the fact that the overall data is for all students entering the MBA program, while the Web data are only for students in the foundation classes. Normally students with an undergraduate degree in business do not need to take the foundation classes unless their degree is over five years old or their grade in any equivalent undergraduate class was less than a C. It does make comparison of the two sets of percentages difficult. Even so, it does appear that those from the humanities and social sciences are less likely to take Web classes. However, they were better represented than expected.

Another characteristic of interest was type of employment. Table 4 lists the positions held by the Web students by semester.

TABLE 3
Undergraduate Degree

Undergraduate Degree	Frequency
Engineering	31
Business Administration	21
Humanities, Social Sciences	17
Sciences, Math, Computer Science	15
Fine Arts, Communications	4
Education	2

TABLE 4
Employment of MBA Web Students

	Fall 98	Spring 99	Fall 99	Total
Senior Management			4	4
Middle Management		4	4	8
Operational Management	1	1	1	3
Engineering	3	6	7	16
Information Systems	2	4	3	9
Quality	2	2	2	6
Sales	1	1	3	5
Other Professional	5	4	6	15
Other	2	1		3
Full Time Students	7	4	7	18
Total	23	27	37	87

Seventy-nine percent of the Web students were employed. The major types of employment ranged from managerial positions to professional positions. Only three students were employed in non-professional situations. The remainder were full-time students, some of whom served as graduate assistants. Seventeen percent served in some level of management. Of the professionals, 71% worked in engineering, information systems, quality, or sales. These top three categories were all technical fields, and some in sales were engineers in technical sales. Additionally, the category "Other Professional" contained technical jobs that did not fall into the above classifications. Therefore, employment as a variable still pointed to a tendency to have technically trained people as more likely candidates for Web classes.

Student Computer Skills

When we designed the Web courses, we expected the students who would take these courses to be very comfortable with personal computers. Because the course materials were delivered through a course management system on the Web, the students were expected to have a personal computer at home with access to the Internet. Necessary minimum hardware and software requirements were specified for these Web courses on the college Web site. Most of the course materials were developed in HTML format but others were in PowerPoint and PDF format and required students to use plug-ins such as Real Player, Neuron, and Net Show. The students were provided with a CD-ROM with all the necessary browser software, plug-ins, and readers and instructions for installation during the orientation. Students were expected to be able to install the

necessary software on their computers. Since the principal mode of communication between the Web students and instructors was e-mail, the students were expected to know how to send and receive e-mail, how to attach a document to e-mail, and how to read an attachment. All courses required students to prepare all their written assignments such as case studies and term papers with word processing software. We expected the students to be familiar with a popular word processing software package. Some courses like statistics, finance, and accounting also required students to use spreadsheet software for assignments. A few courses required students to prepare presentations using PowerPoint software. So the computer skill expectations of these students were higher than that of traditional students. To see whether the students had the necessary skills to be successful in the web courses, we collected information on their self-perceived skills with computers along with their knowledge of software packages. Table 5 identifies the students' perceived computer skills.

TABLE 5
Self-perceived Skill with Computers

Rating	Frequency
5 Very Strong	23
4	33
3	25
2	2
1 Very Weak	4

This table shows that these students considered themselves to have average or above computer skills. Only a few indicated that they struggle quite a bit with computers. There were no first time users. So the students in general were computer literate and felt comfortable with using computers. Web courses do not seem to attract many that have limited computer skills. Students who had very weak skills either transferred to traditional class or received additional help from the computer center. In addition, the survey showed that all of the participants claimed to be familiar with the World Wide Web and most also have access to the Web from home. They did not come to the program just to learn how to use the Web.

We were also interested in knowing the level of their knowledge of a software package. Most of the students indicated at least a general knowledge with word processing, spreadsheet, and to a lesser degree, database software (Table 6).

TABLE 6
Knowledge of Software Package

	Word Processing	Spread Sheet	Data Base
Expert	34	32	13
Working Knowledge	43	37	40
General Knowledge	6	1	21
Exposure	4	7	13

Another factor we looked at was access to computers. Table 7 shows the frequency of access at home, work and other locations.

TABLE 7
Computer Access Outside of School

Location	Frequency
None	3
Home only	20
Office only	4
Home and office	55
Home, office and other	5

Most of the group had computers at home. Only four had to do their work in the office. Three did not have computer at home or office. We believe these students were full time students and relied on college computer labs to access the course management system. To enable students to use the college computer lab, the necessary software was installed on all the computers in the homework lab.

This analysis would have been more interesting if comparisons had been made with all MBA students, to see if differences exist between the two groups for these skills. These results, of course, are for the Web classes at The University of Akron, serving a largely part-time graduate student body in a metropolitan, commuter campus. Generalizations to other universities may not be appropriate, but we suspect that the findings here will be similar to those at comparable schools.

CONCLUSIONS

The purpose of this research was to determine, through surveys, the motivations, characteristics, and skills of students who chose to take MBA classes on the World Wide Web. This knowledge would help in characterizing the market and, as it turned out, point out the necessity of preparing and supporting students who did not come with the required skills.

The findings showed that our expectations of students were not in all cases met. While we expected students to be motivated by personal learning styles typical of engineers, we found convenience to be the generally stated reason for taking the class on the Web. This has great implications for the advertising to be used for attracting students. We expected students to be of younger average age and predominantly male. The Web students did not differ from all MBA students in either average age or gender. We expected that they would have a technical background, either in undergraduate degree or employment. This tended to be true, but the number of non-technical students was greater than expected. Nevertheless, people in technical jobs are prime candidates for the Web program. We expected that they would not consider taking Web classes if they did not have strong computer skills and ready access to Internet-capable computers. While this was largely true, a small percent had limited skills. The motivations for taking Web courses often overrode the lack of skills in making the choice. Special attention needs to be given to either deciding that those people should not be in the class or in preparing and supporting them once they enroll.

This paper did not determine if any of these factors were correlated with success in the Web classes. It also did not consider students' learning styles. Our original expectation that learning styles would play a role in motivations was not disproved, and we continue to expect it to be a factor. It is currently under investigation.

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