

Drivers of Student Satisfaction with an Online Learning Tool

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Introduction

Malhotra (2002, p. 1) defines technology in marketing education as “Instructional technology includes hardware and software, tools and techniques that are used directly or indirectly in facilitating, enhancing, and improving the effectiveness and efficiency of teaching, learning, and practicing marketing knowledge.” Just prior to the new millennium, a study (Smart, Kelley and Conant, 1999) identified technology issues as the second greatest challenge to marketing education following only our own disciplinary challenges. Use of technology in marketing education is increasing exponentially. For technology use in the classroom to have a positive impact on student learning process, it depends on how technology has been integrated into the curriculum in a meaningful way (Ueltschy 2001; Zeon et al. 1999). This topic has drawn much attention in the marketing education literature as well as from educators from other disciplines (Malhotra 2002).

Despite of all this attention, our empirical pedagogical literature continues to treat educational technology as an either or proposition. In this article we shift the focus. That is, rather than comparing technology mediated learning approaches to more traditional approaches, we take a technology mediated approach apart to determine what about the approach leads to satisfaction or dissatisfaction among students. This is done through the application of standard, attribute based customer satisfaction measurement and management approaches common in the marketing literature.

First, we discuss some recent research on technology mediated education. Then we discuss an attribute level approach to satisfaction research as is currently operationalized in commercial approaches to satisfaction research. Next we introduce the learning tool utilized in this study which is called the Marketing Plan Explorer (MPE), and discuss how our study was carried out. Finally, we present the results of our satisfaction investigation and discuss implications for marketing education.

Research on Technology in Marketing Education

The considerable research on technology mediated learning differs both in the technologies utilized, and the applications of that technology. Benbunan-Fich et al. (2001) proposed five alternative technological modules for integrating technology into marketing education, which

include (1) web-based communication among students and instructors, (2) marketing department websites as a learning resource, (3) the Internet as marketing medium, (4) computer-supported market analysis and decision making, and (5) computer-enhanced business presentations. Atwong and Hugstad (1997) discuss six areas of use for educational technology for marketing education. These include; lecturing, designing instructional materials, facilitating student collaboration, mentoring individual students, evaluating student performance, and recruiting marketing majors. Because the last three areas mentioned present formidable methodological challenges to researchers, research on the effectiveness of technology mediated learning approaches has been confined to really only the first three areas identified by Atwong and Hugstad (1997). Hannaford et al. (2002) further summarized the evolution of technology in marketing education into two approaches: infusing technology into a traditional course or adding a course specific to the issues (either at a general or a detailed/specific level).

Webster and Hackley (1977) examined the impact of the utilization of video conferencing technologies in the delivery of lectures on perceived medium richness and student outcomes, comparing students in originating video sites with remote sites. They found that perceived medium richness was lower in the remote sites than the originating sites and that both were lower than in face to face interchanges. They also observed a positive relationship between perceived medium richness and several student outcome measures. Clow (1999) also examined compressed video technologies and found differences in student course evaluations between distance learning and more traditional approaches. He found greater differences in evaluations of undergraduates than graduates and concluded that the technology may be more suitable for graduate education. Utilizing database sources, e-mail, and videoconferencing to enhance student collaboration in international business classes, Lawson, White and Dimitriadis (1998), concluded that the technology should be seen as a way to deliver experiences to large numbers of students but should not be considered as a replacement for more traditional methods. Similarly, Sweeney and Ingram (2001) compare face to face tutorials with online synchronous and asynchronous forms and conclude that face to face tutorials were superior.

Wood and Suter (2006) examined how to use an online auction game to illustrate specific Principle of Marketing concepts as a living case study. Their study demonstrated that the online auction as a tool helped deliver the topics typically covered in Principles of Marketing classes such as the marketing mix, consumer behavior, ethics, e-marketing and marketing research. They concluded that the online auctions could be used as effective supplement to Principles of Marketing course. In another study, Henson et al. (2002) presented web-based cases as an alternative to traditional teaching cases. These new type of cases were compared with traditional cases. The results indicated that as an adjunct to traditional cases, web-based cases offered up-to-date case material presenting students with challenging, real-world experiences. Conducting an assessment of instructional technology in the classroom based on an exploratory survey of 87 senior marketing majors, Ferrell and Ferrell (2002) suggested that although many advantages of technology outweigh the limitations, balancing between traditional methods and the use of technology is required to enhance effectiveness in the classroom.

Some other studies focus on using technology in distance learning-based/online-based marketing education (e.g., Hansen 2008; Kaynama and Keesling 2002; Malhotra 2002; Priluck 2004; Smith 2001). For example, in Smith's (2001) study, two versions (electronic and traditional

classrooms) of a marketing planning course were contrasted based on requirements such as exams, teamwork, discussion, and research techniques. The author provided a detailed discussion of the difference and similarities between electronic and traditional methods. Similarly, Priluck attempted to investigate how student evaluate two technologically different teaching methods: traditional method versus web-assisted method. A traditional method of teaching includes lectures, in-class discussions, assignments, and exams while using a web-assisted method 7 of 14 class sessions met asynchronously online. This research revealed that in general students were more satisfied with the traditional method, and felt that the traditional course were more effective in developing their skills such as team building, critical thinking, oral and written communication, global perspective, and social interaction.

Within the marketing education literature, only Kaynama and Keesling (2000), have concluded that technology mediated education outperforms traditional methods. Given that the application area was an Internet Marketing Course, the course content may have been better suited to technology mediation than other courses.

It is interesting to note that our general Socratic method of instruction has been with us for considerably more than two millennia now, and technology mediated education approaches have been around for somewhat less than three decades. Indeed, in terms of pedagogical utilization, computing networks have been referred to as “relatively new,” (Siegel, 1996) and the internet “still in its infancy” (Natesan and Smith, 1998) fairly recently. It seems inherently unfair to compare techniques with such dramatically different lineages directly to each other. Indeed, the mere fact that technology mediated techniques might be compared to our established traditional methods is testimony to their enormous potential to enhance teaching and learning. Given the broad range of technologies employed, discipline and course application areas and objectives that might be realized, it is unlikely that any method is going to be shown to be superior in any general sense. It may even calm some of our more techno-phobic colleagues if researchers think of technologies less in terms of replacement than in terms of augmentation.

Here our view is one of augmentation, rather than replacement. Our objective is not to replace one technique with another, but rather to enhance our technology based method to the greatest degree possible. We apply straightforward, and relatively standard attribute driven customer satisfaction measurement technology to an online tutorial in order to dimensionalize it, and determine what attributes lead to student satisfaction with the tutorial.

Attribute Driven Satisfaction

Satisfaction is a major outcome of marketing activity and serves to link processes of decision making and consumption with postpurchase phenomena, such as attitude change, complaining behavior and word-of-mouth, repeat purchase, and brand loyalty (Wirtz and Mattila 2001). Consumer satisfaction is generally defined as an evaluative response to the perceived outcome of a particular consumption experience (Day 1984; Westbrook and Oliver 1991). A psychological comparison of some sort is a central component in the conceptualization of the satisfaction process. The most widely used model in this area is the expectation-disconfirmation model which is parsimonious and intuitively appealing and which has received strong empirical support (Wirtz and Mattila 2001). In addition to the widely used disconfirmation paradigm, a number of studies

have also examined consumer satisfaction using alternative paradigms, such as affect model, equity model, and attribution model (Folkes 1989; Oliver 1993; Oliver and Swan 1989; Tsiros, Mittal, and Ross 2004; Westbrook 1980).

The multi-attribute approach for evaluating consumer satisfaction is based on the widely used disconfirmation paradigm (Mittal et al. 2001). Such an approach first identifies various attributes that comprise a product or service, and then try to evaluate how performance on each attribute impacts overall satisfaction. Firms and marketing academics consider it important to understand how attribute level performance impacts overall satisfaction with a product or service (c.f. Bolton and Drew 1991; Hanson 1992; Oliver 1997; Mittal et al 2001). In general, this is accomplished by measuring performance on attributes, and then using correlation or regression based approaches to determine attribute weights in terms of their contribution to both overall satisfaction, and repurchase intention. It is thought to be important because of the high level of specificity and diagnostic utility it affords (LaTour and Peat 1979; Parasuraman, Zeithaml, and Berry 1988; Oliver 1993), because it mirrors consumers' processing of information regarding consumption experiences (Garidal et al. 1994), and because it can lead to new insights about the processes leading to overall satisfaction (Oliver 1993; Mittal et al 1998).

The Marketing Plan Explorer (MPE)

The Marketing Plan Explorer (Katrichis, 2002) is a web based online learning tool designed to help students understand the intricacies of and obstacles to the creation of a marketing plan. It is a fully tree structured outline of a marketing plan with descriptions and examples at every level of abstraction in the outline. It has a drill down design which is meant to accommodate both linear and nonlinear learning styles. As most students create marketing plans while sitting at their computers, this tool allows the student to get help for the part of the plan they are writing at the time they are writing it. A student can simply open a browser window next to their word processing window, see a description of the section they are currently working on and compare their own work with the provided example for that section. The MPE has been utilized at the undergraduate level in the senior level capstone Marketing Strategy course, and at the graduate level in the core Marketing Management course. The goals of the marketing plan explorer were to improve student performance, help make each student's time more productive, and to make the course more interesting. Measures of performance on these three goals were included in this study. While the presentation here assumes that the goal of the analysis is to maximize satisfaction with the MPE, any of these goals could be alternative targets for improvement.

Methods

In focus groups and interviews with students after they had utilized the MPE for their course work, five dimensions of an on-line learning tool were identified. These included appearance, ease of use, organization, content depth, and content clarity.

Measures included overall satisfaction with each of these dimensions as well as overall satisfaction with the MPE. Overall satisfaction was measured via a five point scale ranging from

extremely satisfied (5) to extremely dissatisfied (1). Because most students are not likely to repeat the same course, we did not ask about repurchase intention. Instead, we asked how likely the student would be to recommend the MPE to future students in the class. This was measured utilizing a five point scale anchored by extremely likely (5) and extremely unlikely (1). Attribute performance and outcomes were measured by five point Likert type (agree-disagree) measures in response to items addressing these dimensions. Overall usage of the MPE was also measured by asking the frequency of usage and average time using per usage occasion. Measures of demographics, expected course performance (grade) and overall internet usage and experience were also taken to explore any differences that might arise. Respondents were also asked to rank the importance of 5 possible improvements to the MPE. These included improved appearance, improved organization, improved content clarity, the addition of more examples, and more detailed content. Surveys were administered to 92 students along with standard institutional course evaluation instruments at the end of courses that utilized the MPE.

Results

The average student in the sample had 5.42 years of experience using the internet, which they accessed more than twice a day (18.92 times per week), for an average of 37.16 minutes per occasion. While most students accessed the internet from multiple locations, over half of all access (50.7%) occurred from home, with 29.5% occurring from work and 19.7% from school.

Students used the MPE an average of 16.2 times for an average of 21.47 minutes per usage occasion, or a total of 5.8 hours over the fifteen week semester. This represented 1.56% of the average student's overall internet usage over the duration of the course. The average student printed hardcopy of just over one third (38.3%) of the total 400 page content of the MPE. Average overall satisfaction with the MPE was 4.21, with students' likelihood of recommending it to future students rated at 4.61.

Table 1: Descriptive Statistics

	Mean	St. Dev	r w/satis	Improvement Score
<u>Satisfaction Measures</u>				
Overall Satisfaction	4.21	.70		
Recommend to Future Students	4.61	.57	.643	
<u>Outcome Measures</u>				
Improved Performance	4.25	.88	.276	
Course More Interesting	3.80	.82	.504	
Time More Productive	4.09	.75	.391	
<u>Attribute Performance</u>				
Content Depth	4.11	.97	.450	.401
Content Clarity	3.89	.93	.375	.416

Appearance	3.83	.87	.535	.626
Organization	4.14	.75	.557	.479
Ease of Use	4.15	1.02	.277	.235

All r sig <.001

No significant differences were found by gender, by graduate vs. undergraduate, or by student's national origin (domestic or international). While not significant, international students seemed to use the MPE slightly less frequently and for slightly less time per usage than did domestic students even though international students reported higher internet usage overall. On the other hand, undergraduate students reported both a higher frequency and duration of usage of the MPE than did graduate students, but this higher usage represented a lower percentage of overall internet usage as undergraduates reported higher usage rates for the internet overall.

Table 1 indicates that overall satisfaction correlated significantly with each of the attribute satisfaction measures and the three outcome measures utilized. In other words, it seems that students believed the MPE improved their performance, made the course more interesting, and made their time more productive.

The last column in Table 1 indicates improvement scores for each dimension. This is calculated by taking the difference between each attribute rating and the maximum possible attribute rating (5.00) and multiplying that attribute difference potential by the correlation. There are in general two approaches to calculating improvement scores, the one used here based on simple correlations and one based on beta scores in a multiple regression model (cf. Mittal et al, 2001). In this case both led to identical results. The scores would indicate that the greatest improvement in satisfaction could be achieved by improving the appearance of the MPE. That would be followed by improving the organization, improving the clarity of the descriptions, improving the depth of the content and finally by increasing the ease of use of the MPE.

These improvement scores differ markedly from a simple ranking of potential improvements that students made (Table 2). When students were asked to simply rank a set of improvements, appearance was clearly ranked last. Instead students ranked two measures of depth (more examples and more detailed descriptions) first and second in terms of improvement of the MPE.

Table 2: Rankings of Improvements

Average Simple Ranking of Improvements	Mean	S.D.
Add more examples (content depth)	1.97	1.14
More Detailed Descriptions (content depth)	2.23	1.16
Improved Clarity	2.99	1.19
Improved Organization	4.12	1.17

Improved Navigation	4.62	1.15
Improved Appearance	4.87	.87

As shown in Table 3, overall satisfaction was significantly correlated with total usage, but was not significantly correlated with other usage issues surrounding the MPE, and the correlation of satisfaction with expected final grade in the course where it was used is remarkably close to zero.

Table 3: Correlations of Overall Satisfaction with Usage and Grade Measures

	Correlation
expected course grade	-.001
MPE usage frequency	.121
MPE usage duration	.193
MPE total usage (freq*dur)	.222*
internet experience	.186

*sig <.05 all others not significant

Conclusion

Over the past several decades, the use of technology in marketing education has become more and more important. Research has been called for empirical examination of the use of different technologies in this area (Malhotra 2002; Robinson 2006). In order to response to this call, this study investigates the determinants of student satisfaction with an online marketing learning tool- the Marketing Plan Explorer (MPE).

Most of the previous research on technology in marketing education has treated educational technology as an either or proposition rather than as a means of enhancing the learning process itself. We propose that it is the time to shift the focus. More research should be conducted to recognize the strengths and weaknesses of each type of technological tools that have been used in marketing education. As Young (2001) suggested, the real question facing marketing educators is not whether we should integrate various technologies into the marketing curriculum but how we can best incorporate technology.

This study demonstrates that multi-attribute approach appears to be an appropriate means by which to assess students' overall satisfaction towards the Marketing Plan Explorer (MPE). This

study reveals that the students' response to this MPE tool is very positive and they believe that the MPE as a facilitator helps to improve their performance, makes the course more interesting, and makes their time more productive. The present findings are interesting because they indicate that the attribute driven satisfaction approach provides a general method of evaluation of student satisfaction on different technological tools used in marketing education.

In this study, the MPE has been used at the undergraduate level in the senior level capstone Marketing Strategy course and at the graduate level in the core Marketing Management course. We feel that this approach of learning could be applied in other marketing courses such as Principles of Marketing, International Marketing, Industrial Marketing, and Advertising and it has given marketing educators a great deal of flexibility in discovering areas of emphasis that they might seek in a given marketing course.

It is worth noting that there are several advantages to this type of online tool such as the MPE. One of the advantages of the MPE as an online tool is its nonlinear, constructivist approach that enables students to independently select relevant materials without the contextual constraints frequently imposed by textbooks or manual books. Another advantage is that MPE supports text, color graphics, and many other data formats, which is very easy for the instructors to conduct real-time modification and update the course materials based on the students' feedback or interaction with them. It has taken an important role as a facilitator of the marketing class and as a tool for enhancing communication.

The relatively low number of participants is a weakness of this study. Thus, generalizations to other samples and settings should be made with caution. Future research may use multivariate analysis in determining the multitude of effects on student satisfaction.

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Relevance to Marketing Educators, Researchers and Practitioners: This paper is useful for faculty members who design learning tools for their students.

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