Student's Attitudes towards Technology-Enhanced Learning Resources for an Introductory Marketing Course

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Abstract

Marketing educators are faced with the challenge of embracing new technologies for developing learning tools and adopting teaching strategies that facilitate active learning. This study evaluates 291 undergraduate marketing students' attitudes toward technology-enhanced learning resources provided on CD-ROM and a course homepage. Compatibility and study performance were main predictors of students' attitudes. Less than 20% of the students indicated that they have a negative attitude towards a shift from paper-based materials to a technology-enhanced learning environment. Based on the findings of this study, a transition phase that retains some print-based materials is strongly recommended.

Keywords: Student attitudes, Educational technology, Introductory marketing.

Introduction

Marketing educators are faced with the challenge of developing graduates with the prerequisite skills, knowledge, and attitudes to be successful in a technological workplace and a changing global competitive marketplace (Vlosky and Wilson, 2004). Laurillard (2002) argues that universities must adapt to these challenges and become leaders in the application of technologies as learning tools and adopt teaching strategies that facilitate active learning. However in the rush to integrate technologies into teaching programs and the delivery of educational resources, institutions have tended to neglect the impact of these changes on students (Hunt, Eagle and Kitchen, 2004; McDonald and McPhail, 2004). Those innovators and early adopters that have embraced the new technologies in teaching and learning may assume that students will share their keenness and realise the educational benefits. So how willing are students to move into this technological age of education? The purpose of this paper is to investigate introductory marketing students' attitudes toward technology-enhanced learning resources provided on an interactive CD-ROM and a course homepage, rather than via traditional static print-based study materials.

Diffusion of Educational Learning Technologies

Growing application of information and communication technologies has enabled the creation of richer learning environments. Traditional campus-based programs have adopted technologies to complement on-campus course delivery, while institutions with a tradition of distance education use these technologies to 'blend' the on-campus and external experience (McDonald and McPhail, 2004). Many campus-based programs are now supporting lectures and tutorials with multiple technologies including computers, CD-ROMs, e-mail, discussion forums, chat rooms and video/audio conferencing. As distance education moves from second to third generation models (Eastman and Owens Swift, 2001), printed material, audiocassettes and videocassettes are also being replaced with multiple technologies. Static print-based study

materials are being housed on CD-ROM or online. However, the diffusion of these technologies is hindered by the limited number of technology-competent staff, as well as limited financial resources and development time McCorkle, Alexander and Reardon (2001). Incorporating these multiple technologies into programs assumes that students can access the requisite hardware, and are both competent and willing to use these technologies to facilitate their learning process. McCorkle, Alexander and Reardon (2001) describe students who are confident in the technological environment as 'techno-savvy' (i.e. innovators/early adopters), and those who resist technology as having symptoms of 'techno-phobia' (i.e. late majority/laggards). The acceptance of these technologies by students may depend on how well the change process is managed, students' approach to learning, previous technology experience, as well as demographic and psychographic variables (Hunt, Eagle and Kitchen, 2004). Findings from research conducted in New Zealand indicated that the main driving factor to adopt a technology-based teaching approach by students was a positive attitude to information technology (Hunt, Eagle and Kitchen, 2004).

Case Study – an Undergraduate Introductory Marketing Course

The course that is the focus of this case study is a core course within the Bachelor of Business program, and is also undertaken as an elective by students from other Faculties. This is the first marketing course at the University of Southern Queensland to replace static printed-based study materials with a more integrated and interactive approach that delivers learning resources on CD-ROM and the course homepage via WebCT. The CD-ROM contains hyperlinked resources, including a study schedule, course information, enhanced study modules, lecture presentations, interactive diagrams, quizzes, crosswords and review questions. Further, the CD-ROM allows easy access to external websites and other relevant resources. The course homepage provides access to current course information, such as discussion topics, updated lecture presentations, and recent articles. On-campus students also attend lectures and tutorials.

In semester one, students received both print-based study materials and the CD-ROM, and had access to the course homepage. However from semester two, only a small printed introductory booklet will be provided to students with all other study materials and resources housed on CD-ROM and the course homepage. Thus the purpose of this paper is to examine students' beliefs and attitudes towards learning resources provided only on CD-ROM and the course homepage. The model developed to test the relationship between beliefs and attitude is outlined in the next section.

Model Development

The model developed for this study is grounded in the theory of reasoned action (Fishbein and Ajzen, 1975). The dependent variable*, attitude towards learning resources provided only on CD ROM and the course homepage*, refers to the degree to which students indicate a favourable or unfavourable evaluation of the enhanced learning resources (Dabholkar and Bagozzi, 2002; Davis, Bagozzi and Warshaw, 1989). Students' attitudes are based on an underlying belief structure that may or may not be influenced by direct experience. Further, related technology experience may also facilitate the development of students' beliefs and attitudes. The important independent belief variables included in this study were drawn from

the literature that examines the diffusion of new technologies into consumer and business environments.

Central to the diffusion of new innovations is the user's perceptions of how useful, easy to use, and compatible the innovation is, and how risky the innovation is to use. *Perceived usefulness* and *perceived ease of use* are core variables in the Technology Acceptance Model (TAM) (Davis, Bagozzi and Warshaw, 1989), and in the context of this study we propose that these two variables will have a positive influence on students' attitude. Further, the more *compatible* (Moore and Benbasat, 1995) the enhanced learning resources are with students' current approach to study, the more positive their attitude will be toward using these resources. However, their *study performance or perceived risk* (Laroche et al., 2004), that is the uncertainty and consequences associated with studying in this new environment is only expected to have a mild positive influence on the attitude of students toward the enhanced learning resources.

The final variable in the model is *capability* or *self-efficacy*, which in the context of this study refers to a belief in one's perceived ability and confidence to successfully perform specific study tasks using the CD-ROM and course homepage. Past research has demonstrated that confidence in one's computer-related abilities and knowledge can be expected to form a base for students' judgment about how easy or difficult it may be to study in this environment (Bandura, 1977; Venkatesh, 2000). We therefore propose that students will have the ability and confidence to study in the enhanced learning environment, and thus *capability* will have a positive influence on attitude.

The independent variables selected for this study are grounded in the literature and provide a sound base for this exploratory study. The next section briefly outlines the research method followed by the results of the study.

Research Method

The variables included in the model are provided in Table 1, along with the number of items developed to measure each variable. Based on research conducted by McPhail and McDonald (2004) and the literature in the respective areas, the scale items were constructed and pilot tested on a number of academics and a small cohort of students. The questionnaire was administered online to all external students (with two reminder emails) and self-administered to on-campus students in the Introductory Marketing lecture in week four. Students that were not present at the lecture were asked to complete the questionnaire in a subsequent tutorial.

Research Findings and Discussion

Two hundred and ninety one students (44%) responded, comprising 191 (75%) on-campus students and 100 (25%) external students. On-campus students were younger on average with 76% in the 17-20 age group, and with equal numbers of males and females. The external students were older with 32% of respondents in the 21-25 age group, followed by 33% (26-30) and 9% (31-35), and 75% were female. Most (97%) of the on-campus students were enrolled full-time, while 75% of external students were enrolled part-time. Of the students that responded, 75% of on-campus students were in their first semester of their degree

program, while only 35% of externals were in their first semester, with a further 35% having completed less than six courses in their degree program.

A series of questions assisted in profiling the students' use of and ability to use various technologies. On average, on-campus students used a computer 29 hours per week and external students 47 hours per week. On average, on-campus and external students considered their ability to use a computer for word processing and conducting Internet searches to be good to excellent, studying from a CD-ROM to be fair to good, using the course homepage to be good, and studying in an online environment to be fair. At this early stage of the semester, students had used the course CD-ROM one-three times on average, with usage rate for external students being slightly higher.

Prior to further analysis, aggregate scales were formed for each variable, with the exception of the variable *capability* as it was measured with only one item. A summary of the scales are provided in Table 1, including correlations, means and standard deviations. All items were measured on a five-point Likert scale with the exception of *attitude towards learning resources provided only on CD-ROM and the course homepage* where a seven-point semantic differential scale was used.

Table: 1: Descriptive Statistics and Correlations Between Measured Variables

Model variables	A	B	C	D	E	Mean	SD	Items
A. Attitude [a]	—					4.78	1.38	4
B. Compatibility	.558**	—				2.89	0.99	2
C. Study performance	.594**	.662**	—			3.38	0.70	4
D. Capability (self-efficacy)	.386**	.584**	.611**	—		3.41	0.97	1
E. Perceived ease of use	.573**	.594**	.744**	.629**	—	3.53	0.80	2
F. Perceived usefulness	.593**	.653**	.778**	.631**	.806	3.39	0.84	2

*p< .05. **p< 01. (a) [a] 7 point Semantic Differential scale – bipolar adjectives; 1 bad; 7 good; (b) All other scales measures on a 5 point Likert scale 1- strongly disagree; 5 strongly agree (c) SD = standard deviation

The relationship between the five independent variables in the model and *attitude towards learning resources provided only on CD-ROM and the course homepage* were investigated using a multiple regression analysis (Table 2). The finding for the combined on-campus and external student model indicates that 43% (adjusted R^2) of attitude can be explained by the five independent variables in the model. For the on-campus student model the adjusted R^2 was 0.38 (38%), and for the external student model the adjusted R^2 was 0.50 (50%). The main predictors of attitude across all three models were *compatibility* and *study performance*. These findings indicate that students who like to study directly from a computer screen and use the CD-ROM and course homepage are more likely to have a favourable attitude towards learning resources provided only on CD-ROM and the course homepage. These results support previous research findings (Hunt, Eagle and Kitchen, 2004; McPhail and McDonald, 2004). The mean for *compatibility* was 2.98, with 36% of on-campus and 41% of external students somewhat and strongly agreeing with the compatibility statements. In terms of *study performance*, if students reported that the technology-enhanced learning resources provide more study support, allow them to study more efficiently, the hyperlinks within the CD-ROM enhance their learning experience, and the learning environment is not perceived as overwhelming, then students have a more favourable attitude towards the technology-based

learning resources. On average, 56% of all respondents perceived that the technology-based learning resources would enhance their study performance.

Table 2: Regression Coefficients of Independent Variables in the Technology-Enhanced Learning Resource Model: On-Campus and External Students

Independent Variable	Unstandardised Coefficient ONC & EXT	Standardised Coefficient ONC & EXT	Unstandardised Coefficient ONC	Standardised Coefficient ONC	Unstandardised Coefficient EXT	Standardised Coefficient EXT
Compatibility	0.35	0.25**	0.27	0.21**	0.49	0.33**
Study performance	0.45	0.23**	0.32	0.17*	0.57	0.27*
Capability (self-efficacy)	-0.19	-0.14**	ns	ns	-0.31	-0.17*
Perceived ease of use	0.31	0.18**	0.34	0.22**	ns	ns
Perceived usefulness	0.32	0.19**	ns	ns	ns	ns

** $p < 0.05$; * $p < 0.10$

The final three variables were significant in the combined model, however *capability*, that is the confidence a student feels in their ability to manage in the enhanced learning environment was only significant in the external student model, while *perceived ease of use* was only significant in the on-campus student model. The unique contribution of each of the final three variables in the combined model was marginal, while in both the on-campus and external models two of the variables were not significant.

The research findings from this study provide the first step in understanding marketing students' attitudes towards technology-enhanced learning resources. Overall students reported that they had a neutral to slightly positive attitude ($\mu = 4.78$). However further analysis revealed that approximately 65% of students had a slightly positive to extremely positive attitude towards the learning resources provided only on CD-ROM and the course homepage. Our results also indicate that a small group of on-campus (12%) and external students (19%) reported some degree of negative attitude toward the move from static-print based materials to a combination of CD-ROM and course homepage. This result could be expected as resistance is one of the outcomes to change of habit (Ram and Sheth, 1989). Some students may prefer the print-based materials as they are more aligned with their current study habit of adding notes and highlighting important sections. Further having spent many hours in front of a computer screen at work, external students prefer to limit any further use of a computer to assignment work only. To assist these students to adapt to the change to technology-based resources, there is a need to provide some printed study materials during the transition stage.

Limitations and Direction for Future Research

The model developed for this study explained a modest 43% of attitude. Hence, other variables should be considered so as to gain a more informed view of the main drivers of attitude for both on-campus and external students. Other situational variables, such as the time taken by students to print-out materials, students' access to suitable computer equipment, and limited flexibility of electronic resources across study locations should be investigated. To strengthen the measurement of some variables in the model, additional items should also be developed. Further, the findings of this study reflect the students' beliefs and attitudes early in the semester, and thus after further use of the technology-enhanced learning resources results could be more favourable.

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