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Marketing the Marketing Discipline: The Influence of Delivery Modes on Discipline Major Choice

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Abstract

To meet the increasing diversity of student backgrounds and to create flexibility in teaching and learning practices, higher education institutions are embracing ICT. This study provides an insight into whether a 'forced' online learning environment inhibits the ability of universities to attract students to, and retain them in, an undergraduate program. Least square regression analysis was used to model the influence of different modes of teaching delivery on students' choice of major. Results indicate students' preference for wholly online delivery positively affected student satisfaction, whereas, students preference for face-to-face mode of teaching delivery did not lead to satisfaction.

Keywords: student diversity, online learning, mode of teaching delivery, student satisfaction, student preference, higher education major

Introduction

Recognition of the need to provide more flexible and independent study pathways in higher education has been driven by a changing student cohort. University students no longer follow the traditional path of physically attending lectures and tutorials within a campus environment. This can be attributed to a multitude of internal and external factors. For example, students often need to find a balance between paid employment and other responsibilities including family and the completion of further education (Bunn, 2001; Spector, 2005). Ramsden (2003) argued that the internal and external challenges that students face call for greater flexibility in the education delivery mode. With the increas-

ing diversity of student backgrounds, flexibility in teaching and learning practices becomes even more essential (Havrila & Zhang, 2009).

Universities find they need to deliver courses more efficiently and effectively, often by offering multiple modes of education delivery (Bickle & Carroll, 2003, Reisetter & Boris, 2004) while striving to prevent cost over-runs (Burnett & Collins, 2010, Goodyear, et al., 2001, Rowntree, 1995, Rumble, 2001, Twigg, 2003). To meet the changing tertiary environment, higher education institutions are embracing information communication technology (ICT) as an important pedagogical tool for delivering courses and programmes to a wide array of audiences (Peltier, et al., 2007). Arguably, students of today are being raised in the information technology era of interactive platforms, communication-intensive and knowledge-based environments which form the framework of their learning environment (Ueltschy, 2001). As a result, there has been growth in the application of ICT to create a richer learning environment (McPhail & Birch, 2004) through the use of innovative modes of teaching delivery (Hannafin, et al., 1997). Larreamendy and Leinhardt (2006) suggest that the introduction of ICT into not only the traditional classroom setting, but as a 'stand alone' mode of teaching delivery, has transformed the landscape of tertiary education.

Many universities are now complementing their campus-based and distance education programmes with a blended learning environment. That is, traditional face-to-face programmes have been augmented with various online or web-based platforms including forums, discussion groups and audio-visual material in an effort to enhance the learning experience for both on- and off-campus students. The integration of various ICT techniques into the learning environment appears to offer many advantages over the conventional face-to-face teaching approach including cost economies (Hirschheim, 2005), increased access and enhanced educational opportunities for students and more flexible teaching and learning approaches (Holt & Thompson, 1998, Oliver, 1999, Richardson & Swan, 2003). However, has this over-reliance on ICT by tertiary educators gone too far? This study aims to gain an insight into whether a 'forced' online learning environment as opposed to face-to-face delivery, inhibits the ability of universities to attract students to and retain them in the context of an undergraduate marketing discipline (Adam & Nel, 2009). The findings of the present study identify the needs of a diverse student population with the realisation that the over-use of ICT may promote an ineffective learning environment. Deficiencies in the learning environment and the student experience often lead to poor student satisfaction (Sit, et al., 2005).

The Study in Context

In order to facilitate the technological challenges of modern times, the university under consideration implemented a policy making it mandatory for students enrolled in any undergraduate degree, including commerce, to undertake at least one wholly online unit to satisfactorily complete their degree. As a result of this policy, it was decided to 'transform' the core marketing unit from traditional face-to-face delivery to a mode of wholly online. The structure of the commerce degree is such that every student enrolled in the commerce undergraduate degree programme was required to undertake the core marketing unit solely in an online mode. This meant that they lost the opportunity to choose the mode of teaching delivery they wished to receive as they had in each of the other 23 units in their degree course (that is, face-to-face, online or a blended mode – a combination of the former two modes). Furthermore, in this wholly online environment, students were actively discouraged from any face-to-face contact with the unit teaching team irrespective of geographic location. To this end, the authors posit that such a lack of choice impacts on student satisfaction and, more importantly, future decisions relating to majoring in the marketing discipline (Adam & Nel, 2009).

In order to explore this assumption, the literature pertaining to the growing importance of technology in the tertiary sector, mode of teaching delivery, student satisfaction and the choice of discipline major is discussed and research hypotheses developed. This section is followed by an overview of the methodology, a discussion of major quantitative and qualitative findings and culminates with concluding remarks.

Literature Review

Growing Importance of Technology in the Tertiary Education Sector:

The level of ICT integration across the tertiary sector for the dissemination of information is diverse (Sit, et al., 2005). According to Bell, et al.'s (2002) study on behalf of the Department of Education, Employment and Workplace Relations, in 2002 there were 207 fully online courses offered by 23 Australian universities with 31 percent delivered in only online mode. More up to date empirical details of ICT integration within the sector is difficult to determine due to the diversity of consortia and institutional alliances, however, one of the report's major findings concluded that the use of technology in Australian universities will increase in the interim (Bell, et al., 2002). By 2011, the Australian Government was investing many millions of dollars in expanding online education at all levels, in particular spending some \$27 million over four years to permit students to gain from the roll-out of a nearly \$40Bn

National Broadcast Network (NBN) (Department of Education Employment and Workplace Relations, 2011). With the growing importance in the use of technology in the delivery of the learning experience and the transfer of knowledge, 'higher education in general and marketing education in particular are embracing the challenge to continually improve the quality of the educational experience and meet standards of accountability in a highly dynamic educational environment' (Taylor, et al., 2004, p.42). Numerous studies have addressed diverse teaching and learning styles within the higher education context (Davis, et al., 2000, Dunn, et al., 1990). So too have studies been conducted that integrate the role of information technology in teaching and learning pedagogy (Taylor, et al., 2004) as measured by student perceptions, attitudes and satisfaction with the online delivery mode.

There are frequent advantages from the use of ICT at the tertiary level. Extant literature (Burnett & Collins, 2010, Or-Bach & Van Joolingen, 2004, Painter-Moreland, et al., 2003, Renes & Strange, 2011) asserts that the introduction of interactive technology leads to increased student participation, improved team building skills, enhanced student satisfaction with the type of learning material and, to a certain degree, improved assessment outcomes. For example, Petrides (2002) reported participants felt it easier to work in collaborative groups in an online environment without re-arranging time schedules which is often the case in the face-to-face environment. Ueltschy (2001) also found that student participation had increased and, the breadth and depth of students' responses in terms of quality and truthfulness had also improved. This is reiterated by Chizmar and Walbert (1999) and Birch and Volkov (2007) who found that the public display of online discussions lead to participants taking greater care and reflection in their responses. This leads to an opportunity for increased communication between students of the key concepts and experiences (Swan & Richardson, 2003).

Moreover, the dynamism of two-way interaction impacted upon the level of cognitive involvement in terms of a more attentive approach to the learning process such as enhancing their knowledge acquisition (Ueltschy, 2001) and critical thinking skills (Flick, 2000). Young (2006) found convenience and flexibility as the most cited advantage of online courses due to the ability of students to be able to study 'when and where they wanted' (p. 74). Tallent-Runnels, et al., (2006) suggested that an attractive feature of the online learning environment is the ability of students to control the pace of their learning resulting in an improvement in engagement and ultimate satisfaction.

However, there are also drawbacks in the use of ICT from a student's perspective. Ueltschy's (2001) study demonstrated that students disliked the delay in responses encountered when attempting to clarify 'fuzzy' concepts and felt the online environment hindered their learning experience (Ueltschy, 2001). This was also supported by Summers, et al., (2005) who found students enrolled in a statistics class online thought they were disadvantaged due to the lack of immediacy and depth of explanation in response to questions. Lack of immediacy in responses was similarly reported by Petrides (2002), in regards to asynchronous online discussions where feedback was reliant on others reading and responding. Clarity with regard to the questions, problems and the opportunity to interact with teaching staff were identified as major issues with students studying online which lead to a sense of isolation (Summers, et al., 2005).

This isolation and a lack of a sense of community (Song, et al., 2004), together with the creation of positive engagement between peers and teaching staff were put forward as major challenges in the online learning experience (Hara & Kling, 2000, Northrup, 2002, Vonderwell, 2003). The notion of a lack of 'human interaction' also lead to the lack of opportunity to establish peer support (Sit, et al., 2005), which is an important criterion in the students' learning experience. Other barriers to online learning cited in the literature (Birch & Volkov, 2007, Hirschheim, 2005, Song, et al., 2004) include students:

- Citing difficulty in understanding the goals and objectives of the course;
- Complaining of technical difficulties;
- Questioning the value of Internet-based learning; and,
- Feeling that they 'missed out' educationally by undertaking an online course leading to perceptions that they received a lower level of education and an overall, general loss of educational quality..

Mode of Teaching Delivery and Student Satisfaction:

There has been increased interest in the literature relating to the most effective mode of teaching delivery (face-to-face, online or blended) to meet the needs and preferences of a changing tertiary student cohort (Reisetter & Boris, 2004). Students' experience with online learning appears to be an important factor in their perceptions of learning and satisfaction (Kim, et al., 2005). A number of studies have specifically addressed students' overall satisfaction with the different modes of teaching delivery with paradoxical findings. Neuhauser (2002), Diaz and Cartnal (1999) and Brown and Kulikowich (2004) found no significant difference between online and face-to-face mode of teaching delivery with the majority of students finding the course to be as effective

or more effective than the traditional classroom teaching mode suggesting '[. . .] that equivalent learning activities can be equally effective for learning for online and FTF groups' (Neuhauser, 2002, p. 111). These findings were also supported by Reisetter and Boris (2004) who contrasted online and traditional modes of course delivery and found, on the whole, that students' perception of the learning outcome was comparable across the different modes of delivery. However, others preferred the traditional mode of face-to-face delivery (Allen, et al., 2002), especially in the case where the subject material was perceived as being complex and difficult (Reisetter & Boris, 2004). Summers et al., (2005) supported Reisetter and Boris's (2004) findings in relation to complexity of subject material. In the context of a statistics class, Summers et al., (2005) found students preferred the traditional face-to-face mode of delivery due to instructor explanations, approachability and interaction, as well as the general quality of the class discussions and feedback received when compared to online classes.

Roach et al., (1993) found the use of ICT increased student participation in terms of effective team building, participation levels and enhanced student satisfaction. A study conducted by Swan (2001) found increased satisfaction and beneficial learning outcomes were influenced by clarity and consistency across course structure, interaction with teaching staff, constructive feedback and proactive and dynamic peer discussion. Eom et al., (2006) reported course structure (usability, clear communication, logical format); self-motivation (achievement of personal goals, amount of effort); learning styles (written versus oral expression and direction); instructor knowledge and facilitation; interaction with staff and students; and instructor feedback (responsiveness, timely feedback, dedication to student learning) were significant factors in influencing students' satisfaction (quality on par with face-to-face course, recommend the course and intent to participate in online course again). However, only learning styles and instructor feedback influenced perceived learning outcomes (learnt as much or more as the face-to-face mode of delivery and quality of the learning experience is better than face-to-face courses) (Eom, et al., 2006).

Navarro and Shoemaker (2000), and more recently Birch and Volkov (2007), found that students studying online preferred the ability to learn at their own pace and were not required to attend lectures. On the other hand, students undertaking the traditional course delivery mode indicated that they felt more comfortable in a familiar learning environment and they perceived they would not learn as much in an online environment. Faux and Black-Hughes (2000) compared traditional, blended and online modes of teaching delivery in order to deter-

mine the effectiveness of online learning. They established that students experiencing the face-to-face mode of delivery did not feel comfortable learning online (41.7%). This outcome is consistent with Navarro and Shoemaker's (2000) findings and can be attributed to students' preference for 'auditory stimulation' in the learning environment through attending lectures and receiving feedback from teaching staff in person rather than online. They argued this may have implications for students' ability to be self-motivated and take responsibility for their own learning experience.

Sit, Chung, Chow and Wong (2005) examined the factors effecting student satisfaction with online learning and found the key variables being convenience and flexibility, independent learning (gaining confidence in the completion of difficult tasks and better understanding of subject material); self-motivation and empowerment (taking responsibility for their own learning); and effective delivery (the interactivity of the online learning environment). Further, Drennan, Kennedy and Piskarski (2005) argued that the key factors effecting student attitudes toward flexible online learning and ultimate student satisfaction rested with possession of a positive attitude toward technology (ease of access and use of online flexible learning material) and an autonomous learning environment.

Choice of Major:

The choice of discipline major has repercussions for both universities and students alike. The ability to attract and sustain student numbers has implications for university budgeting (Kaynama & Smith, 1996). On the other hand, students have a greater variety of universities, courses and discipline majors to choose from in a highly competitive tertiary environment. The choice of discipline major at tertiary level is an important decision for students as it has an effect on subject and subsequent degree satisfaction (Pritchard, et al., 2004). But as Kaynama and Smith (1996) have stated, 'the decision of a college major is a multi-criteria, complex, and unstructured choice decision' (p. 57). One such criterion is the affect the mode of teaching and learning delivery has on student decision-making. More specifically, consideration has not been given as to whether the over-reliance on ICT in a 'forced' online learning environment adversely impacts on student satisfaction and subsequent choice of major in the context of the marketing discipline. Based on the aforementioned discussion, the following hypotheses have been developed:

H_{1a}: Student preference for wholly online mode of teaching delivery is positively related to student satisfaction in the case of a core undergraduate marketing unit.

- H_{1b}: Student preference for face-to-face mode of teaching delivery is positively related to student satisfaction in the case of a core undergraduate marketing unit.
- H_{1c}: Student preference for face-to-face mode of teaching decreases the relationship between preference in wholly online mode of teaching delivery and satisfaction in the case of a core undergraduate marketing unit.
- H₂: Student satisfaction with a core undergraduate marketing unit is positively related to intention to major in the marketing discipline.

Method

To gain a broader understanding of student experiences and to offer increased insight into student attitudes, perception and satisfaction with a wholly online unit of study in a tertiary education context, a qualitative and quantitative method was used within the confines of a single case study. The research method involved conducting an electronic survey over a three week period. The survey was administered to undergraduate university students undertaking a wholly online, core marketing unit in a commerce degree course at an Australian-based university.

Students were asked to report on their preferences and satisfaction levels regarding the core undergraduate marketing unit. Single item measures were used as it was believed all attributes/items were 'concrete singular' (Rossiter, 2002) indicating that the attribute is 'easily and uniformly imagined' (Bergkvist & Rossiter, 2007, p. 176) by respondents and effortlessly reflects the meaning of the construct under consideration. Following information theory, all items were measured on an 11 point *agree/disagree* scale since an 11 point scale instrument portrays a larger amount of variance and is more accurate in measuring the phenomenon at hand (Alwin, 1997). From a qualitative perspective, students were required to provide written comments (positive and negative) regarding their attitude toward and perceptions of the marketing unit.

The survey, accessible via a secured link, was posted on the unit's online teaching and learning platform with responses collected utilising an opt-in approach where students clicked on an embedded link. Respondents were restricted to students enrolled in the undergraduate marketing unit. To improve the response rate, electronic reminders were regularly posted to encourage completion. Of the 860 students enrolled in this unit, data was collected from 112 respondents (13 per cent response rate).

Results and Discussion

To estimate and test the validity and structural relations of the hypotheses, multiple regressions analysis was employed. Table 1 (see appendix for tables and figures) presents descriptive statistics of the variables under consideration. Analysis showed no departure from normality with regard to skewness and kurtosis.

The estimation of proposed model entails structural equations, described as follows:

$$\begin{aligned} Y &= \beta_1 + \beta_{11}X + \beta_{12}V + \beta_{13}XV + \varepsilon_1 \\ Z &= \beta_2 + \beta_{21}Y + \varepsilon_2 \end{aligned} \quad (1)$$

where Y = Satisfaction with marketing management unit, X = Preference in wholly online mode of teaching delivery, V = Preference in face-to-face mode of teaching delivery and Z = Intent to major in marketing. β_1 and β_2 are the intercepts, β_{11} , β_{12} , β_{13} , and β_{21} are the slope parameters, while ε_1 and ε_2 represent the error terms of the respective equations. As suggested by Cohen and Cohen (1983), before conducting the regression analyses X and V were centred in order to get reliable parameter estimate for the beta coefficient (β_{13}) of the interaction variable.

However, because Y is both endogenous (in the first equation) and exogenous (in the second equation), before deciding whether to adopt ordinary least squares (OLS) estimation, it was necessary to establish if the zero mean conditional assumption held. In other words, we have to resolve whether $E(\varepsilon_1 | Y) = 0$, that is to say $\text{cov}(Y, \varepsilon_1) = 0$ (for elaboration, see Greene, 2003). In other words, it was necessary to determine if the exogeneity condition was violated (and therefore endogeneity present) which, in turn, might have lead to bias and inconsistent estimation of the parameter β_{21} (see Heckman, 1979). Following the advice given by Davidson and MacKinnon (1993), using Stata 11, an augmented regression test (also known as the Durbin–Wu–Hausman test) was performed. This was undertaken by including the residuals of each endogenous right-hand side variable, as a function of all exogenous variables, in a regression of the original model. In the present study, using the previous notation, such a test is described taking the first part of eq (1) as follows:

$$Y = \beta_1 + \beta_{11}X + \beta_{12}V + \beta_{13}XV + \varepsilon_1 \quad (2)$$

next, estimating the residuals of Y , that is Yr , and then performing the following augmented regression:

$$Z = \beta_3 + \beta_{31}Y + \beta_{32}Yr + \varepsilon_3 \quad (3)$$

If β_{32} was significantly different from zero, then the estimation given by OLS is biased and inconsistent. In this case the Durbin–Wu–Hausman test yielded $F(1,109) = 9.71$ $\text{Prob} > F = 0.0023$ suggesting OLS estimation not to be appropriate. It was therefore necessary to adopt an instrumental variable regression with the use of two stage least square (TSLS) estimation. Refer to Table 2 (see appendix) for the TSLS results and Figure 1 for the model depicting the relationships between the variables under examination.

As shown in Figure 2, a graph was plotted for the interactions between the two variables reflecting the students' preferences for the marketing subject to be taught online (ONL) versus traditional face-to-face (F2F) mode. The graph shows, as the preference of F2F learning mode increases, the effect of preference for the ONL learning mode on the satisfaction (SAT) of the core undergraduate marketing unit becomes progressively greater.

The findings support H1a, indicating students' preference for wholly online mode of teaching delivery positively affects student satisfaction in the core undergraduate marketing unit. This result was contrary to what was expected. That is, it was anticipated that the preference for the wholly online mode of teaching delivery would negatively affect the satisfaction levels of a core undergraduate marketing unit and as a consequence the intention to major in the marketing discipline. The other hypotheses were not supported (Refer to Table 3).

To further enrich our findings and to provide a deeper understanding of the quantitative results, thematic analysis of qualitative data was conducted. Students' responses indicated that the online environment brings its own benefits, constraints and challenges to learners (Motteram & Forrester, 2005). The findings of the present study uncovered a number of key themes which supported students' satisfaction with the online mode of delivery. Firstly, the theme of *flexibility* as illustrated by the following responses:

"I like how flexible it is, it is good for busy students who may be juggling work and school." (R48)

"[. . .] allowing us to (if we wish) get ahead [. . .] instead of waiting [. . .] allowing us to manage our time better (especially for those of us working full time and supporting a full time course load)." (R59)

Reflecting further on the literature it is clear that these findings are consistent with previous studies. Flexibility is a considerable advantage of online learning (Young, 2006) offering fewer time constraints together with the notion that the learning experience is asynchronous (Peltier, et al., 2007). This latter point means that students are able to interact at a time and place of their own choice (Morrison, et al., 2003, Taylor, 2002, Taylor, et al., 2004). This finding is consistent with those of Biesenbach-Lucas (2003) and Ortega (1997) who found that flexibility is an important facet of online learning with most students satisfied with their ability to learn at their convenience and thus experience a more convenient learning environment.

The second theme, termed *temporal benefits* addressed the issues of time management and the overall fulfilment of the educational needs of students. A number of students were satisfied with the time-related temporal benefits that a wholly online delivery mode offered:

“The fact it is completely online works well with my schedule.” (R71)

“[. . .] so not having any [lectures] for this subject is a relief[. . .] also, it is encouraging us to increase our time management skills, which I have found to be essential from my work in an accountants firm where every staff member has to deal with numerous clients and files at any one time.” (R40)

“I can work through the topics in my own time. No wasting time travelling to uni.” (R75)

In general, the teaching and learning platform used (embedded web-based forums, discussion groups and audio-visual material) was perceived as being an important aspect of student satisfaction in the online delivery mode. *Information accessibility* was the third theme identified and entailed the provision of teaching and learning material in and easily accessible electronic format:

“I like that everything is so accessible such as the discussions and modules.” (R29)

“I like very much how the whole [learning and teaching platform] is organised, everything is excellent from lecture notes, lecturer is outstanding with excellent and very quick replies.” (R15)

“The [learning and teaching platform] is easy to navigate.” (R40)

The final theme supporting student preference for wholly online mode of teaching delivery is the importance of *replicating the on-campus experience (interaction)* in the online environment as illustrated by the following indicative quote:

"I enjoy the interaction of students and lecturers [. . .] being able to ask questions and discuss issues relating to the topics [. . .] it feels similar to attending lectures on campus." (R42)

Despite the quantitative results supporting the preference for the wholly online mode of teaching delivery and satisfaction with the core undergraduate marketing unit, the self-learning nature of a 'forced' online mode of teaching delivery was a major constraint for some students. Although, it must be noted, that students in this unit were given clear advice on expectations and were provided with various strategies they could utilise to ensure they remained focussed in the online learning environment. Some respondents still struggled with the concept of *self-directed learning* and *personal drive* due to a lack of motivation:

"[. . .] have difficulties of catching up with it all the time as it is not in the timetable, and tend to neglect it." (R53)

"Being an online unit, you tend to leave the subject last on the list when studying for it and completing the weekly readings." (R58)

"I appreciate the flexibility that it offers being a totally online unit. However, I am struggling with motivation." (R49)

"Marketing was the subject I was looking forward to the most, and it has turned out to be disappointing. Not because the material is bland, but I am not a person who will benefit from zero personal contact and explanations. I am, by nature, not easily self-motivated and this is proving evident by my lack of commitment to this subject" (R95)

Due to the asynchronous nature of online learning, it is imperative that learners become self-directed and take control of monitoring and managing the cognitive and contextual aspects of their learning experience (Garrison, 2003). In line with the constraints of self-directed learning, a number of students found the lack of face-to-face communication with teaching staff and peers was a major hurdle to the online mode of teaching delivery:

"I do not like the online aspect of this subject [. . .] I learn more when I am able to participate and ask questions and talk face-to-face. I find it is more personal and therefore I feel more motivated." (R70)

"I learn more when I am able to participate and ask questions and talk face-to-face. I find it is more personal and therefore I feel more motivated. Doing this subject online makes me a bit lost and confused and I wish I had someone I could talk to about it." (R70)

Face-to-face communication with teaching staff and peers (Freitas, et al., 1998, Perreault, et al., 2002) was perceived as being a critical el-

ement in the learning experience (Reisetter & Boris, 2004, Rourke, et al., 2001). Furthermore, Billings et al., (2001) suggested online communities can lead to feelings of isolation and a lack of interaction with peers thereby being detrimental to the educational experience and leading ultimately to student dissatisfaction. This is also reiterated by Hara and Kling (2000), Northrup (2002) and Rovai (2002) who also emphasised the notion of isolation, frustration and a lack of motivation (boredom) in an online learning environment.

The online learning environment also posed issues regarding *information overload*. In the context of the present study, information overload can be attributed to *information entropy* (Hiltz & Turoff, 1985) whereby messages are not sufficiently organised by topic or content to be easily recognised as important or relevant (Hiltz & Turoff, 1985):

“[. . .] checking [the online teaching and learning platform] and reading through the module discussions. I find it time consuming.” (R64)

“[. . .] the way [the online teaching and learning platform] discussion board is setup is really annoying not just this unit it's the same for every unit it's so slow and hard to follow.” (R99)

Extant studies have revealed that student participation in online discussions are integral to the development of effective online communities (Peltier, et al., 2007). Drago and Peltier (2004) stated that members of online communities are more likely to interact and be committed to the community if they perceive their interaction adds value to their learning experience through the receipt and dispersion of value-added information. Rovai (2002) reported a significant positive relationship between students' perceived sense of belonging to a community and perceived cognitive learning outcomes in the learning environment.

Concluding Remarks

Tertiary institutions are faced with the challenge of developing effective modes of teaching delivery (e.g. face-to-face, online and blended) in order to meet the changing demands of a diverse and changing student population. Further, there is also an economic need to be more cost effective in the delivery of tertiary education. It has become important to undertake research that examines the use of ICT and its application in the higher education sector in terms of aiding student learning and service delivery as measured by student satisfaction. The use of the online mode of teaching delivery often impacts on students' subject and course perceptions, attitudes and ultimate choice of discipline major and study programme. In the context of the present study, it can be seen that undergraduate students' preference for the wholly online

mode of teaching delivery is positively related to student satisfaction with the wholly online core undergraduate marketing unit.

Some students have a positive attitude toward ICT and embrace this autonomous learning environment due to its flexible nature (Biesenbach-Lucas, 2003, Morrison, et al., 2003, Ortega, 1997, Taylor, 2002, Taylor, et al., 2004, Young, 2006). Further, socially and pedagogically, students seem to enjoy the ability of a classroom situation to stimulate discussion about subject content and to make any queries to gain a relatively immediate response from others. An online environment where this is also enabled to occur is perceived by the students to be important (Althaus, 1997, Stacey, 2002, Turcotte & Laferriere, 2004). In addition, positive attitudes toward the online learning experience does exhibit traits of constructivist learning (Jonassen & Rohrer-Murphy, 1999, Stacey, 2002) whereby students recognise the need to be proactive and independent in their learning experience (Howland & Moore, 2002). However, Ryan (2001) suggested that there is a growing body of evidence indicating some students lack the capacity and inclination for independent learning as required in an online environment.

A primary role of marketing educators should be to effectively promote the marketing major to the diverse student cohort. The decision to 'force' students to undertake the core undergraduate marketing unit in a wholly online teaching and learning environment may be detrimental to student satisfaction and therefore their ultimate choice of major. Increasing flexibility for the current student cohort requires a teaching delivery system that allows students to choose the preferred learning environment that best suits their needs and expectations (Eom, et al., 2006, Faux & Black-Hughes, 2000). If a key objective of the marketing discipline is to produce successful learning outcomes for students, a lack of choice may result in students being lost to marketing and, as a consequence, we fail in our role as marketing educators.

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Appendix

Table 1: Descriptive statistics

N=112

	IMM	SAT	ONL	F2F
Mean	5.43	5.73	5.40	6.35
Std. Deviation	2.744	2.505	3.019	3.105
Skewness	.125	-.059	.236	-.195
SE of Skewness	.228	.228	.228	.228
Kurtosis	-.908	-.821	-1.226	-1.395
SE of Kurtosis	.453	.453	.453	.453

Note: IMM= Intent to major in marketing, SAT= Satisfaction with marketing management unit; F2F= Preference in face-to-face mode of teaching delivery, ONL= Preference in wholly online mode of teaching delivery.

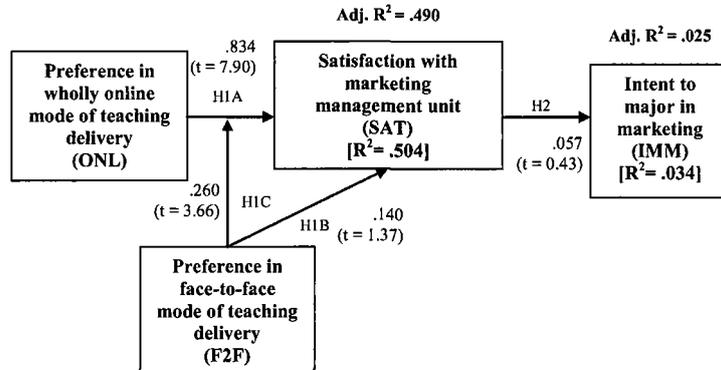
Table 2: Two-stage-least-square regression

Equation	Obs	Params	RMSE	R-sq	F-value	P-value
IMM	112	1	0.987	0.034	0.19	0.667
SAT	112	3	0.714	0.504	36.54	0.000
	Coef.	SE	t-value	P>t	95% Conf. Interval	
IMM						
SAT	0.057	0.132	0.43	0.667	-0.203	0.317
_cons	5.071	0.867	5.85	0.000	3.360	6.780
SAT						
F2F	0.140	0.102	1.37	0.172	-0.061	0.341

ONL	0.834	0.106	7.90	0.000	0.626	1.042
F2F*ONL	0.260	0.071	3.66	0.000	0.120	0.400
_cons	1.904	0.920	2.07	0.040	0.088	3.718

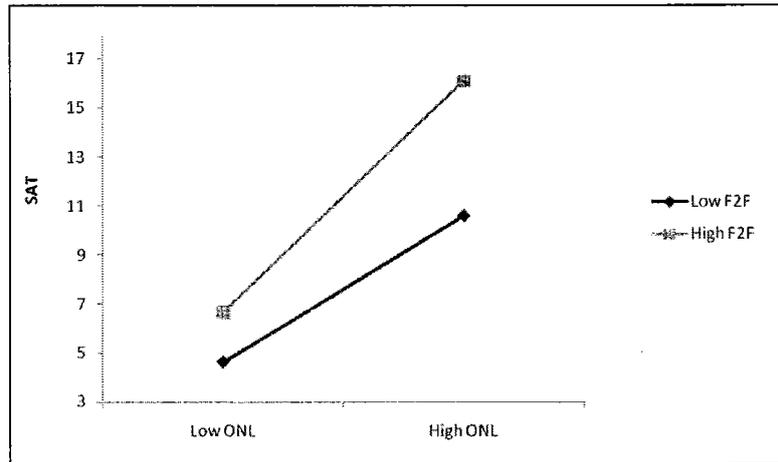
Note: Beta coefficients are completely standardised. IMM= Intent to major in marketing, SAT= Satisfaction with marketing management unit; F2F= Preference in face-to-face mode of teaching delivery, ONL= Preference in wholly online mode of teaching delivery.

Figure 1: Student preferences and satisfaction with intent to major in marketing



Note: The above estimates are standardised

Figure 2: Interactions graph



Note: SAT= Satisfaction with marketing management unit; F2F= Preference in face-to-face mode of teaching delivery, ONL= Preference in wholly online mode of teaching delivery.

Table 3: Results

Hypotheses	Hypothesis supported
H _{1a} : Student preference for wholly online mode of teaching delivery is positively related to student satisfaction in the case of a core undergraduate marketing unit.	Yes
H _{1b} : Student preference for face-to-face mode of teaching delivery is positively related to student satisfaction in the case of a core undergraduate marketing unit.	No
H _{1c} : Student preference for face-to-face mode of teaching decreases the relationship between preference in wholly online mode of teaching delivery and satisfaction in the case of a core undergraduate marketing unit.	No
H ₂ : Student satisfaction with a core undergraduate marketing unit is positively related to intention to major in the marketing discipline.	No

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