FACTORS INFLUENCING STUDENTS' CHOICE OF STUDY MODE: AN AUSTRALIAN CASE STUDY

Dirk Ifenthaler, Maree Gosper, Matthew Bailey and Mandy Kretzschmar
Macquarie University, Australia

ABSTRACT

Despite the expansion of online and blended learning, as well as open education, little research has been undertaken on what motivates students to enrol inparticular study modes at university level. This project addresses this gap in higher education research by exploring the reasons why humanities students choose to study through specific modes.The research was conducted between October 2013 and March 2014 administering three waves of data collection to over 700 students who were enrolled in humanities units being offered simultaneously through three different modes: on-campus, distance, and open and online. The findings suggest that students choose different enrolment modes based on factors such as personal, learning support, environment,advise and marketing, teaching and learning as well as logistics. However, the importance students ascribe to particular factors changes during their educational experience. This study found significant differences in the importance of factors betweeninitial and subsequent choices of enrolment mode, suggesting that the 'lived' experience of students at university influences their perception of which factors are important.

KEYWORDS

Educational pathways, study mode, higher education, Australia, humanities students

1. INTRODUCTION

Reductions to government funding of tertiary institutions have fostered a more competitive environment in Australian higher education over the past decade(de Zilwa, 2010; Bradley, 2008; Currie, 2002). Universities have been pressured and encouraged to explore new avenues for additional income and to view students as more consumer-like in their choice of a course and university. A heightened competition for prospective students has required tertiary institutions to adopt more flexible modes of delivering education to meet student demands. Pedagogically, blended models of learning combining face-to face and online experiences (e.g., lectures and tutorials supported by podcasts, online discussion, materials and activities) have led to teaching methods and resources that blur the boundaries of delivery(Lefoe and Albury, 2004; Lefoe and Hedberg, 2006; Woo et al., 2008; Aspden and Helm, 2004). Research has shown that online learning also increases the accessibility of tertiary education due to its capacity to overcome the spatial and temporal limitations of traditional teaching settings(Bates, 2005). Open access online education(Greenland and Moore, 2014) and distance learning (Cohen, 2003)have thus become critical long-term strategies of many universities to encourage higher education participation(Allen and Seaman, 2006; Ziguras and McBurnie, 2011). Further, the implementation of web-based learning technologies across modes of delivery has blurred the distinction between the experiences of on- and off-campus students. Recent research has therefore emphasised the need to develop a validated measure for differences in the motivation to enrol in a specific course format(Johnson et al., 2013).

There is a wealth of research on why students choose their institution of higher education. The reputation of the institution has been found to be the primary factor that guides students' decision-making(Harkera et al., 2001; Chapman, 1981; Hayes, 1989).Also of importance is the reputation and "nature" of the particular course, the quality of teaching in the department, the department's reputation and the friendliness of the department(Cebula and Lopes, 1982; Booth, 1997). However, there has been little research undertaken on what motivates students to study certain units through particular modes at university. Research on, and discussion of, why students study individual units in the humanities is largely absent from the literature. This project thus addresses a gap in the higher education research by exploring the reasons students choose to

study specific modes of study well asproviding invaluable information for shaping study programs, thus laying the ground for future research into educational pathways.

1.1 Choosing a Study Mode

The decision-making processes of students at the entry point to higher education have become the focus of several research projects. Studies conducted since the early 1990s have examined intrinsic motivations such as interest in an area of knowledge and related career opportunities(Sugahara et al., 2008; James, 2000). Bornholt et al. (2004)have shown how interlinking personal and social factors influence student preferences, confirming the results of an earlier study by James et al. (1999)that rural and remote locations and low socio-economic background impact on students' choice to consider a higher education pathway in Australia. Demographic factors have been found to play a role in the choice of study mode: gender enrolment trends indicate that a significantly higher proportion of women than men choose online courses as an educational pathway to obtain a degree(Price, 2006).Moore and Kearskey (2005)have observed that the majority of students enrolled in distance education programs are adult learners between the ages of 25 and 50 years. There is also evidence that age, gender, educational background, work commitments and family status impact on completion rates in higher education(Colorado and Eberle, 2010; Tsay et al., 2000). However, studies into how these variables affect students' preferences for a specific educational pathway that suits their learning and personal needs as they progress through their studies are yet to be forthcoming.

1.2 Research Question and Hypotheses

The present study was set to investigate and compare why students choose different modes of study, i.e., on-campus (mainly face-to-face study), distance (off-campus study including on-campus components), or open and online (open entry and fully online study). Previous research shows that there are many reasons why students choose different modes of study, for example: to fit with family and lifestyle priorities; balance work and study; an inability to get to campus due to distance or inconvenience; administrative and organisational constraints (e.g., timetabling of classes; special access and learning needs); or in response to differing pedagogical approaches, resources and services(Hrastinski and Jaldemark, 2012). In particular, the following research question and hypotheses were addressed:

Do the importance of personal, logistics, teaching and learning, support, environment as well as advice andmarketing factors among students enrolled in different study modes (on-campus, distance, open and online) change from initial choice of study (not completed a level 100 unit) to the current choice of study (after completing one or more units)? We assume that the importance of factors (personal [H_1], logistics [H_2], teaching and learning [H_3], support [H_4], environment [H_5], advice and marketing [H_6]) change from initial to current choice of study among students enrolled in different study modes (on-campus, distance, open and online).

2. METHOD

2.1 Setting and Context

Macquarie University has a long history of providing flexible offerings and pathways to study. It has a well-established distance program to complement many of its on-campus offerings and several alternate pathways for entry to academic programs including the Jubilee Scheme, Non-award pathways and open and online programs through Open Universities Australia (OUA; www.open.edu.au). OUA offerings have increased in recent years with a total of 138 individual units now on offer at undergraduate, postgraduate and non-award level. At the undergraduate level, Macquarie has 92 individual units on offer as well as a Bachelor of Arts. Whilst not all units and programs at Macquarie offer the full range of flexible offerings and pathways, there are those (particularly in the Faculty of Arts) where students are able to choose between one of three modes of enrolment:

- On-campus mode: On-campus offerings, with the expectation of an on-campus presence and typified by a blend of face-to-face and online learning experiences (variable: on-campus study mode).
- Distance mode: Equated to distance learning where students study off-campus however there may be an on-campus component. Delivery can vary from fully online to a blend of online, print and multimedia (variable: distance study mode).
- Open and online mode: Open-access study and fully online delivery (variable: open and online study mode).

The principle means of data collection was an online survey which was conducted between October 2013 and March 2014 in three waves of data collection over three teaching sessions - Session 2, 2013, Session 3 over the summer break and Session 1, 2014. These aligned with OUA's third and fourth study period, 2013, and first study period, 2014.

2.2 Participants

Participants in the study were drawn from students studying units in the Faculty of Arts BA program that were offered concurrently in the three modes: on-campus, distance as well as open and online.In total, N = 744 students from the Faculty of Arts participated(70% female, 29% male, 1% indeterminate/intersex/unspecified). Their average age was 27.16 years (SD = 10.42). 7% reported having a physical or learning disability that impacted their experience at university. 77% were full-time students and 23% were part-time students. 2% of the participants reported to be Aboriginal or Torres Strait Islander. 10% were in full-time employment, 19% worked less than 10 hours per week, 22% worked between 11 and 20 hours per week, 12% worked 20 or more hours per week, and 37% were not in paid employment. Over half of the participants reported having completed the final year of secondary education (59%), 7% had completed a Diploma or Associate Degree, 13% had started and 3% completed a Bachelors degree, 1% a Masters degree, and 2% had completed a Postgraduate degree. The remaining participants reported to have VET/TAFE or other post school qualifications (13%), and 2% reported having no prior educational attainment.Initially 57.4% of participants were enrolled in on-campus mode, 5.4% in distance mode and 22.5% in open and online mode. After studying for one semester or more there has been an overall shift in the enrolment pattern which is reflected in the current enrolment status of 51.2% in on-campus mode, 10.5% in distance mode and 18.6% in open and online mode. In each of the three survey waves, as an incentive participating students were offered the chance to win one of twenty $30 iTunes vouchers.

2.3 Instrument

The survey consisted of the following sections: 1. Enrolment profile, 2.Motivation to study, 3.Factors influencing initial choice of study, 4.Factors influencing the current choice of study, 5.Technology skills, 6. Demographics. Most items were answered on a five-point Likert scale (5 = extremely important; 4 = very important; 3 = neither important nor unimportant; 2 = very unimportant; 1= not at all important). Table 1 provides a summary of the factors covered in each of the sections. Items were adapted from a pilot survey conducted at Open Universities Australia and were supplemented by additional items generated by an expert team. The six factors have been successfully tested for reliability with Cronbach's alpha $.681 \leq r \leq .869$. The survey was implemented on the Qualtrics platform (www.qualtrics.com). It took approximately 15 minutes to complete the survey.

2.4 Data Collection and Analysis

Using enrolment lists for units offered concurrently in the three modes (albeit with variances in start and end-dates), participants were invited to complete the survey using the Qualtrics platform bulk email function. All data stored on the Qualtrics platform was anonymised, exported, and analysed using SPSS V.21. Initial data checks showed that the distributions of ratings and scores satisfied the assumptions underlying the analysis procedures. All effects were assessed at the .05 level.

Table 1. Example items of the survey

Section	Example items
Enrolment profile	Program, major, units completed, study mode (on-campus, distance, open and online)
Motivation to study	How important are the following factors for undertaking university level studies? Factors comprised: To gain employment, To progress my business, To start a business, Career change, Career progression, Job requirement, Knowledge and skill development, Prerequisite to another course, and For personal interest.
Initial choice of study	How important were the following personal factors in making your initial choice of study? There were six factors comprised of several items. 1. *Personal* factors comprised five items: Personal, Cultural and/or religious orientation, Special/ specific learning needs, Confidence in your academic ability or capacity to succeed at university-level study and Prior experience of studying at MQ or OUA. 2. *Logistics* comprised eight items: Cost of study per unit, Distance from campus, Ease of access to campus (e.g. transport, parking), Flexibility in studying at your own pace, Flexibility in studying at your time of choosing, Flexibility in managing work-life-study balance, Flexibility in studying at other universities and Range of units available to choose from. 3. *Teaching and learning* comprised six items: Extent to which teaching and learning is conducted online, Being able to work collaboratively with other students, Access to study materials and resources, Expected workload, Engagement with academic staff, and Reputation of high quality teaching. 4. *Support* for learning comprised four items: Access to services to support learning (e.g., writing, numeracy and literacy support), Access to IT services and support, Access to course and careers advice and Ease of administration. 5. *Environment* and campus/community wellbeing comprised three items: Access to personal support services (e.g. medical, disability services counselling), Access to campus facilities (e.g. gym, swimming pool, clubs) and Meeting and socialising with other students. 6. *Advice and marketing* comprised three items: Experience of other students, Advertising/ Website/ Social Media and Advice from Student Advisors or other university services.
Current choice of study	As for initial choice of study.
Technology skills	Please rate your experience with using technologies for learning. Experience included: using the computer; surfing the Internet, with using blogs, wikis, podcasts, YouTube and discussion forums; doing Internet searches, setting bookmarks; uploading and downloading files, doing Internet searches; installing software and changing configuration settings on my computer; and getting help if I have computer problems.
Demographics	Socio-demographic information

3. RESULTS

In order to test our hypotheses, six repeated-measure MANOVAs with the *importance of factors (personal [H_1], logistics [H_2], teaching and learning [H_3], support [H_4], environment [H_5], advice and marketing [H_6])*at *two measurement points* (initial and current) as a within-subjects factor, and *study mode* (on-campus, distance, open and online) as a between-subjects factor were computed (see Table 2 for descriptive statistics and Figures 1-3 for a visual representation of trends).

Table 2. Means, standard deviations of importance of factors for two measurement points and study modes

Factor	Measurement point	Study mode		
		On-campus	Distance	Open and online
Personal	Initial	3.08(.58)	2.89(.73)	2.88(.78)
	Current	3.08(.62)	3.10(.76)	2.99(.76)
Logistics	Initial	3.32(.77)	3.52(.70)	3.69(.59)
	Current	3.29(.74)	3.56(.70)	3.50(.73)
Teaching and learning	Initial	3.42(.90)	3.73(.77)	3.81(.70)
	Current	3.23(.98)	3.73(.85)	3.70(.84)
Support	Initial	3.31(.85)	3.23(.94)	3.26(.94)
	Current	3.25(.82)	3.08(1.09)	3.02(1.03)
Environment	Initial	3.28(.82)	2.55(1.14)	1.91(.94)
	Current	3.29(.76)	2.44(1.21)	1.97(.97)
Advice and marketing	Initial	3.27(.77)	2.77(1.06)	2.74(1.09)
	Current	3.29(.72)	2.67(1.21)	2.67(1.14)

Note. Means are based on a 5 point scale where 5 = extremely important and 1 = not at all important

For *importance of personal factor[H_1]*, the difference between measurements (initial and current) was significant, $F(1, 741) = 18.45$, $p < .001$, $\eta^2 = .024$ (small effect). We also found a significant interaction (time and study mode), $F(2, 741) = 6.78$, $p = .001$, $\eta^2 = .018$ (small effect) and a significant difference between study modes (on-campus, distance, open and online), $F(2, 741) = 3.05$, $p = .048$, $\eta^2 = .008$ (small effect).

For *importance of logistics factor[H_2]*, the difference between measurements was significant, $F(1, 741) = 4.10$, $p = .043$, $\eta^2 = .005$ (small effect). We also found a significant interaction (time and study mode), $F(2, 741) = 4.64$, $p = .010$, $\eta^2 = .012$ (small effect) and a significant difference between study modes (on-campus, distance, open and online), $F(2, 741) = 11.08$, $p < .001$, $\eta^2 = .029$ (small effect).

For *importance of teaching and learning factor[H_3]*, the difference between measurements was significant, $F(1, 741) = 8.03$, $p = .005$, $\eta^2 = .011$ (small effect). However, no significant interaction, $F(2, 741) = 2.96$, p = n.s. was found. However, MANOVA revealed a significant difference between study modes (on-campus, distance, open and online), $F(2, 741) = 17.72$, $p < .001$, $\eta^2 = .046$ (small effect).

For *importance of support factor[H_4]*, the difference between measurements was significant, $F(1, 741) = 26.20$, $p < .001$, $\eta^2 = .034$ (small effect). We also found a significant interaction, $F(2, 741) = 4.98$, $p = .007$, $\eta^2 = .005$ (small effect). The difference between study modes was not significant, $F(2, 741) = 1.81$, p = n.s.

For *importance of environment factor[H_5]*, no significant difference between measurements, $F(1, 741) = .21$, p = n.s., and no significant interaction, $F(2, 741) = 2.19$, p = n.s., was found. However, MANOVA revealed a significant difference between study modes (on-campus, distance, open and online), $F(2, 741) = 144.71$, $p < .001$, $\eta^2 = .281$ (strong effect).

For *importance of advice and marketing factor[H_6]*, no significant difference between measurements, $F(1, 741) = 2.61$, p = n.s., and no significant interaction, $F(2, 741) = 1.91$, p = n.s., was found. However, MANOVA revealed a significant difference between study modes (on-campus, distance, open and online), $F(2, 741) = 35.25$, $p < .001$, $\eta^2 = .087$ (small effect).

To sum up, the different between study modes for the environment factor showed the biggest effect size ($\eta^2 = .281$) indicating high importance of environmental factors for on-campus students and low importance for open and online students. Small effect sizes were found from initial to current mode of study for personal, logistics, teaching and learning, as well as support factors. Therefore, we accept the following hypotheses: H_1, H_2, H_3, H_4.

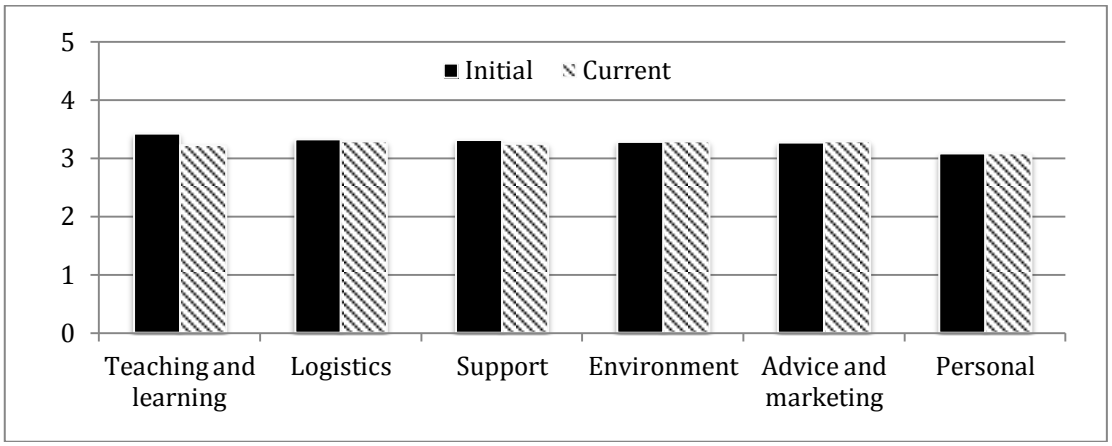

Figure 1. Trajectory of mean of importance of factors for *on-campus* mode of study

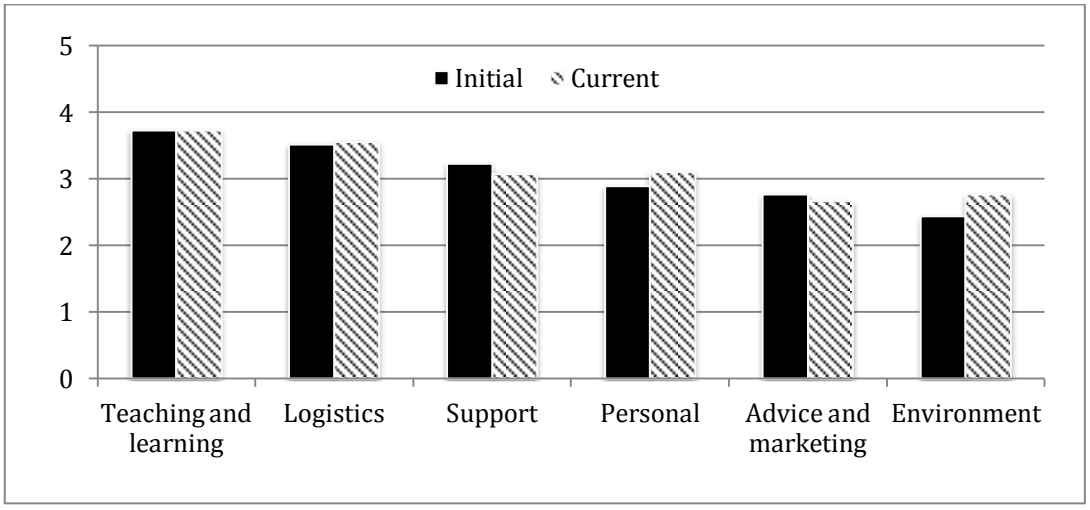

Figure 2. Trajectory of mean of importance of factors for distance mode of study

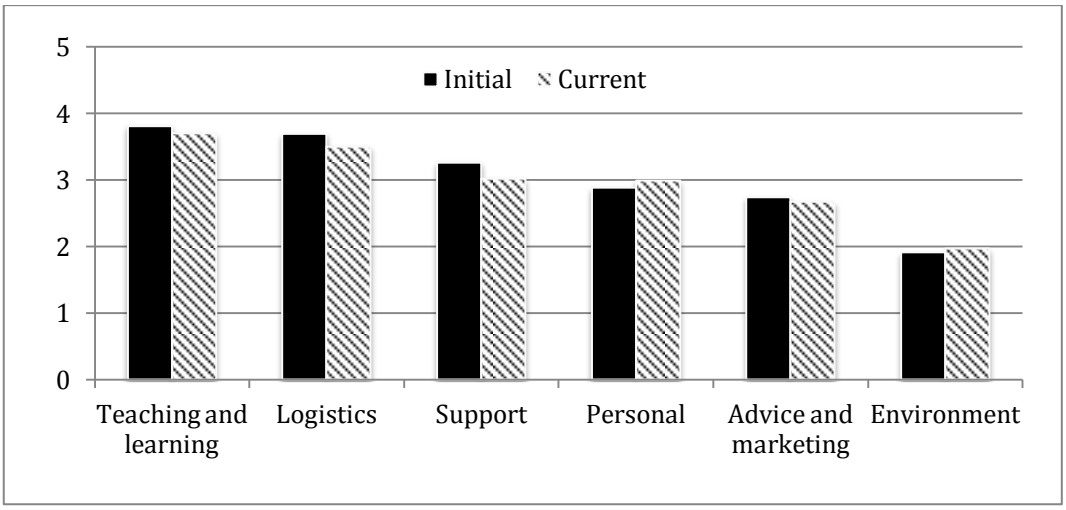

Figure 3. Trajectory of mean of importance of factors for open and online mode of study

4. DISCUSSION AND CONCLUSION

The study explored the influence of six factors (personal, logistics, teaching and learning, support, environment, advice and marketing) on the choices students are making about their mode of study, whether in on-campus and distance mode at Macquarie University or in open and online mode through Open Universities Australia. Wehypothesised that the importance of these factors for students would change as they progressed through their studies. We found that there were changes in importance for all factors, and that this was variable depending on study mode. There were significant changes from initial to current study mode in thepersonal, logistics, teaching and learning, and support factors, while the environment as well as advice and marketing factors were relatively stable.

The high mean score of importance for the teaching and learning factor for initial and current mode of study across all cohorts emphasises the importance of maintaining and ensuring quality delivery and providing a high level of transparency in the information provided to the students about the nature and requirements of different modes of study, teaching methods, the learning experience, workload and assessment processes. That the mean was higher on this factor for the distance as well as open and online cohorts when compared with the on-campus cohort, suggests that an absence, or relatively limited degree, of face-to-face contact serves to increase the importance of such items for students.

At Macquarie University there is consistency in the design of learning across the three different modes, with students reporting an expectation that technologies and online learning will be integral to their university experience (Gosper et al., 2013). The LMS and web-based lecture recordings, both of which are mandatory in the Faculty of Arts are key components of a blended environment for on-campus students and they also form the backbone for the delivery in distance mode as well as open and online mode. The key characteristics which define a distance learning environment – interactions between student-content, student-student and student-staff (Anderson, 2003) – are virtually the same for distance as well as open and online students, and to a lesser degree on-campus students, thus blurring the boundaries between the three modes of delivery (Woo et al., 2008). This helps to explain the shared high level of importance for the teaching and learning factor.

Differences in the study environment, though, explain the similar means and trajectories for the distance and open and online cohorts, and their distinction from the on-campus cohort. The environment factor captures this distinction most clearly with the later cohort according it a significantly higher mean importance than both the distance as well as open and online cohorts. That distance students in turn rate this factor higher than open and online students reflects the former's closer association with the Macquarie campus. Distance students have an equivalent access to campus and library facilities as on-campus students if they choose to use them. Open and online students, however, are restricted in this usage and all their learning is conducted online. For on-campus students environmental factors did not significantly change in importance after their initial choice, suggesting that as they become more aware of on-campus facilities and acclimatised to campus life, these become habitual components in their overall study experience.

For some time now students in Australia have been demanding more flexibility to enable them to study while managing their work and family commitments (McInnis and Hartley, 2002). Backing this up, a study by the Australian Vice-Chancellor's Committee (2007) found 71% of Australian university students undertake paid employment during semester, working an average of 15 hours per week. It is likely that in 2013 the work-study balance was similar or even more demanding, which begins to explain the importance studentsaccord to the logistics factor. This factor ratessecond in importance for all students' initialand current choices about study mode. Distance as well as open and online offerings can provide the flexibility to deal with the logistics of access, cost and travel(Bates, 2005), explaining the high mean scores registered for this factor by distance and open and online students when compared with on-campus students. Our results reveal that when comparing initial and current modes, there was an overall increase in distance enrolments from 5.4% to 10.5% and at the same time there was a fall in internal mode from 57.4% to 51.2% as well as in open and online from 22.5% to 18.6%. The changes to distance and on-campus enrolment likely indicate the usage of the distance mode as a strategy to balance competing demands on time. This is facilitated by the ease of enrolment in either mode for internally enrolled Macquarie students. The drop in open and online enrolments suggests that some students may use OUA as an avenue into other higher education programs, although further research is required to map such practices.

The implications of these findings can be approached from two perspectives. The first is that given the universal importance of the teaching and learning, logistics andsupport factors,information about these factors should be transparent to students from the outset of their studies. This would have an impact on the style and content of marketing campaigns and also the advice given to students at orientation and enrolment sessions. Alternatively it could mean that a 'lived experience' is necessary before students are in a position to fully understand their preferred learning mode, as well as the support, environmental and logistical factors impacting their University studies(Dobozy and Ifenthaler, 2014). If this is the case then the implicationis for universities to enable students the flexibility to move more easily between different modes as they mature as learners and/or their circumstances change. Indeed 33% of participants expressed a desire for more flexibility in this area.

This paper has reported onfindings examining the factors influencing students' initial and subsequent decisions about study modes. The general trends are evident and provide useful insights that can be used by universities to attract, support and retain students in a competitive environment. Further analysis of data is currently being undertaken into the different elements within the six factors to provide a more nuanced understanding of the choices being made by students, as well as the impact of demographic characteristics on these decisions.In addition, the survey is limited by its quantitative nature and further qualitative research is planned to provide further interpretation of the trends that have emerged. Extending the research beyond a single degree program in one faculty will also provide a more comprehensive understanding of students and the choices they make.

ACKNOWLEDGEMENTS

Research conducted for this article was generously funded by Macquarie University under its Learning and Teaching Competitive Grans Scheme, 2013.

REFERENCES

Allen IE and Seaman J. (2006) Growing by degrees: Online education in the United States. Needham: The Sloan Consortium.

Anderson T. (2003) Getting the mix right again: An updated and theoretical rationale for interaction. *The International Review of Research in Open and Distance Learning and Instruction* 4.

Aspden L and Helm P. (2004) Making the connection in a blended learning environment. *Educational Media International* 41: 245-252.

Australian Vice-Chancellor's Committee.(2007) Australian university student finances 2006.

Bates AW. (2005) *Technology, e-Learning and distance education,* London: Routledge.

Booth A. (1997) Listening to students: Experiences and expectations in the transition to a history degree. *Studies in Higher Education* 22: 205-220.

Bornholt L, Gientzotis J and Cooney G. (2004) Understanding choice behaviours: Pathways from school to university with changing aspirations and opportunities. *Social Psychology of Education* 7: 211-228.

Bradley D. (2008) Review of Australian higher education: Final report.

Cebula RJ and Lopes J. (1982) Determinants of student choice of undergraduate major field.*American Educational Research Journal* 19: 303-312.

Chapman DW. (1981) A model of student college choice.*Journal of Higher Education* 52: 490-505.

Cohen V. (2003) A model for assessing distance learning instruction. *Journal of Computing in Higher Education* 14: 98-120.

Colorado J and Eberle J. (2010) Student demographics and success in online learning environments.*Emporia State Research Studies* 46: 4-10.

Currie J. (2002) Australian Universities as Enterprise Universities: Transformed Players on a Global Stage.

deZilwa D. (2010) *Academic Units in a complex, changing world. Adaptation and Resistance,* Heidelberg: Springer.

Dobozy E and Ifenthaler D. (2014) Initial teacher education by open and distance modes: A snapshot of e-competency experiences in Australia. *eLearning Papers* 38: 43-54.

Gosper M, Malfroy J and McKenzie J. (2013) Students' experiences and expectations of technologies: an Australian study designed to inform planning and development decisions. *Australasian Journal of Educational Technology* 29: 268-282.

Greenland SJ and Moore C. (2014) Patterns of student enrolment and attrition in Australian open access online education: A preliminary case study. *Open Praxis* 6: 45-54.

Harkera D, Sladea P and Harkera M. (2001) Exploring the decision process of school leavers' and 'mature students' in university choice. *Journal of Marketing for Higher Education* 11: 1-20.

Hayes TJ. (1989) How students choose a college. *Journal of Marketing for Higher Education* 2: 19-28.

Hrastinski S and Jaldemark J. (2012) How and why do students of higher education participate in online seminars? *Education and Information Technologies* 17: 253-271.

James R. (2000) How school-leavers choose a preferred university course and possible effects on the quality of the school-university transition.*Journal of Institutional Research* 9: 78-88.

James R, Wyn J, Baldwin G, et al. (1999) Rural and isolated students and their higher education choices: A re-examination of student location, socio-economic background, and educational advantage and disadvantage. Canberra, ACT: Australian Government Publishing Service.

Johnson R, Stewart C and Bachman C. (2013) What drives students to complete online courses? What drives faculty to teach online? Validating a measure of motivation orientation in university students and faculty. *Interactive Learning Environments*: 1-16.

Lefoe G and Albury R. (2004) Editorial.*Educational Media International* 41: 181-182.

Lefoe G and Hedberg J. (2006) Blending on and off campus: A tale of two cities. In: Bonk C and Graham CR (eds) *Handbook of blended learning environments: Global perspectives, local designs.* San Francisco: Pfeiffer, 325–337.

McInnis C, & and Hartley R. (2002) Managing Study and Work: The impact of full-time study and paid work on the undergraduate experience in Australian universities. . *Department of Education, Science and Training, Commonwealth of Australia.*

Moore MG and Kearskey G. (2005) *Distance education: A systems view,* Belmont: Wadsworth Publishing.

Price L. (2006) Gender differences and similarities in online courses: Challenging stereotypicel views of women. *Journal of Computer Assisted Learning* 6: 367-379.

Sugahara S, Boland G and Cilloni A. (2008) Factors Influencing students' choice of an Accounting major in Australia. *Accounting Education* 17: 37-54.

Tsay MH, Morgan G and Quick D. (2000) predicting students' ratings of the importance of strategies to facilitate self-directed distance learning in Taiwan. *Distance Education* 21: 49-65.

Woo K, Gosper M, McNeill M, et al. (2008) Web-based lecture technologies: blurring the boundaries between face-to-face and distance learning. *Research in Learning Technology* 16: 81-93.

Ziguras C and McBurnie G. (2011) Transnational higher education in the Asia-Pacific region: From distance education to the branch campus. In: Marginson S, Kaur S and Sawir E (eds) *Higher education in the Asia-Pacific.* Amsterdam: Springer, 105-122.