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Nelson, Karen and Kift, Sally and Harper, Wendy (2005) Any portal in a storm? Aligning online engagement patterns with the needs of transition students.. In *Proceedings OLT 2005, Beyond Delivery*, QUT, Brisbane, Queensland.

Accessed from:

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“ANY PORTAL IN A STORM?” ALIGNING ONLINE ENGAGEMENT PATTERNS WITH THE NEEDS OF TRANSITION STUDENTS.

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Abstract

Engaging new students in tertiary study, amidst the storm of their adjustment to university life, should harness conventional physical as well as new virtual spaces to ensure (as urged by McLinnis 2003, p.9) learning opportunities are maximised inside and outside of the classroom.

When ubiquitous information, merged technologies, blurred social-study-work boundaries, multitasking and hyperlinked online interactions epitomise generational routines (Oblinger & Oblinger, 2005); positive, rewarding interactions through virtual space “portals” may establish the mode and intensity of on- and off-campus student experience.

Conventional modes of curriculum delivery and learning support that hinge on presentation of material according to (for example) scheduled topic sessions, contact times and administrative office hours, do not necessarily fully accommodate these new social realities (James, 2002, p.81), contemporary learning practices or transition-informed curriculum design (Kift, 2005).

In this paper, quantitative data and rich qualitative information from internal and external surveys are triangulated to examine the patterns of online engagement for students at QUT. These patterns inform our ongoing project that seeks to tailor the delivery of curriculum mediated resources within a virtual space.

Keywords

First year students, transition, online learning, dot.com generation, virtual and physical spaces, information technology, educational environments.

Introduction

Successful transition into university requires institutions to provide environments where students can engage in active learning, where there is timely access to support and where students feel a sense of belonging (QUTa, QUTb, QUTc, 2002). These learning environments consist of traditional physical spaces (such as classrooms, lecture theatres and laboratories), and newer informal meeting spaces (such as the first year room in the Faculty of IT at QUT), and virtual spaces that provide seamless on and off-campus access to academic materials, administrative support services and social networks.

Virtual spaces aligned with the technology-use habits of the net or dot.com generation or millennial students (these terms are used interchangeably) also provide opportunities for “bridging

the gaps between academic, administrative and support programs” (McInnis 2003, p.13). These learning spaces should allow many of the virtual interactions between students and their institution to be tailored and seamless. Well designed virtual spaces support the achievement of the second of our two transition goals (to coordinate and align all student facing activities performed by academic, administrative and support programs with student needs and integrate them into the curriculum as much as possible) articulated earlier (Kift & Nelson, 2005).

The purpose of this paper is to provide an overview of the online learning engagement patterns of students at QUT, to inform our project which aims to deliver an integrated, curriculum mediated virtual space for students in transition. The simple conceptual framework we have used to construct our understanding of these patterns and “the increasing gap between the institutional IT environment and the technology environments Net Geners have created for themselves” (Hartman, Moskai & Dziuban, 2005, p.6.5) is illustrated below.

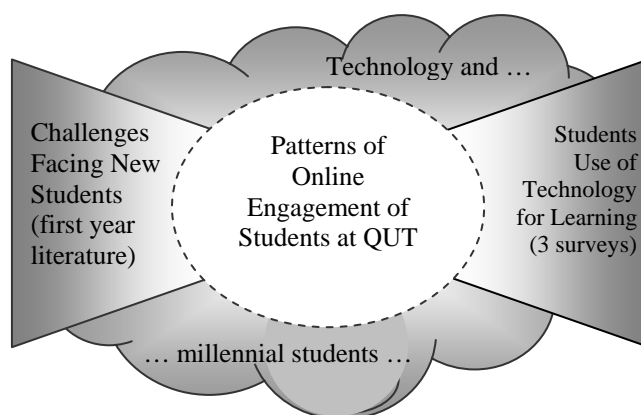


Figure 1: Paper Concepts

Firstly, we summarise the challenges facing students in transition. Then we describe how new students’ engage with existing online environments by examining quantitative and qualitative survey data from three sources. Finally three issues that emerge from the patterns of online engagement are interpreted in the discussion, informed by the technology perceptions and practices of millennial students.

Challenges Facing New Students

In transitioning into the university environment, students are tossed about in a storm of demands that are unique to the student-in-transition experience (Kift, 2003). New undergraduate and postgraduate students arrive at university with varied expectations about, as well as different levels of, preparation for university life. Some have completely ill-informed preconceptions with what might be encountered in the course of their choice. Environmental, social and cognitive factors combine in a catalytic process and affect students’ abilities to engage in the learning process. These factors are well discussed and reported in the literature (for example see: James, 2003; McInnis, 2003; Tinto, 2002). We have previously discussed this body of knowledge (Kift & Nelson, 2005) which for brevity are only summarised here and include factors such as:

- Dealing with conflicting priorities (paid employment and family responsibilities).
- Motivation to attend university is “external” (e.g., parental wishes).
- Uncertainty about their choice of course.
- Not the course or institution of their first choice, including when they seek to improve their tertiary entrance score.
- Large classes, high staff-student ratios and increasing casualisation make informal interaction between staff and students more difficult.
- Advanced technology delivers flexible online learning and decreases time spent on campus and/or where students coming on campus solely for classes have greater difficulty forming peer and study groups; these technologies may also effectively buffer personal contact between teacher and learner.

- Peer interaction in the learning community (in terms of both its nature and extent) is absent or minimal.
- The quality of teaching staff in the first year, which is deemed critical to student engagement is not guaranteed.
- Information overload early in the transition process increases the sense of disassociation and alienation.

While early access to support services helps students cope and minimises the likelihood of dissatisfaction and withdrawal from university, it is how commencing students meet their challenges and adopt positive learning skills that shapes their entire learning experience. Our institution has enacted a first year philosophy based on these two beliefs (Kift, 2003): namely that

1. *Students in their first year have special learning needs arising from the social and academic transition they are experiencing.* From multiple starting points, all students are on a journey to becoming self-managing or self-directed learners; the first-year curriculum and the learning environment must be constructed with these needs in mind.
2. *Students must be engaged primarily as learners if they are to have a successful university experience.* As Tinto (2002, p.4) has said “least we forget the purpose of higher education is not merely that students are retained, but that they are educated”. So while the “informal curriculum” of social and community interactions and external commitments such as work and family need to be acknowledged, incorporated and supported, it is within the formal or academic curriculum that students must find their places, be inspired and excited, and work towards mastery of their chosen area to the best of their ability.

Extrapolating then, it seems that learning environments where both course & curriculum learning occurs and the coordination of academic and administrative support activities that support learning should be integrated within a constructivist view. Therefore our aim is to establish learning spaces, whether physical or virtual, which allow students in transition to make sense of their learning. To achieve this aim, we need to appreciate how students use current online facilities.

Students’ Use of Technology for Learning

In this section, quantitative data and rich qualitative information from three internal and external surveys conducted in 2004 are examined to reveal patterns of online engagement for students at QUT. Issues emerging from these patterns, contextualised with knowledge about the complexity of the first year experience, will then be discussed informed by the characteristics of millennial students and their expectations of technology.

QUT TILS Survey

The largest of the three surveys was administered online to students by QUT’s Division of Technology Information and Learning Support (TILS) during August 2004. The total number of responses were more than 7700, however small numbers of students (<1%) did not respond to some questions or the data they provided was invalid.

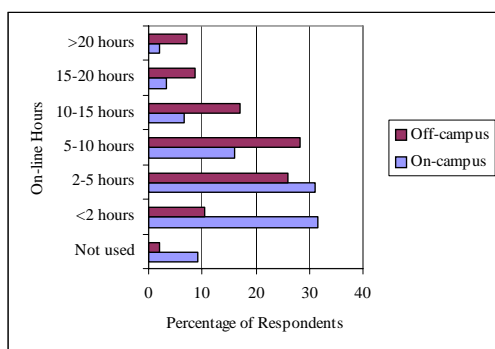


Figure 2: Time Spent Online

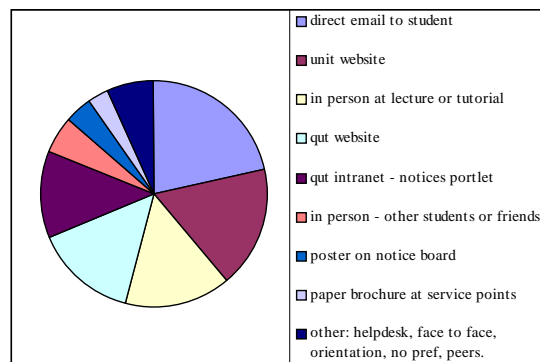


Figure 3: Preferred Communication Mode

The quantitative data collected showed similar patterns for time spent on line while on-campus and online while off-campus access (see figure 2). Most students spent 2-5 hours online while on-campus doing university related activities, while they spent 2-10 hours online while off-campus. Approximately 63% of all respondents reported spending 5 hours or less online while on-campus while approximately 65% of respondents reported using online resources while off campus for 10 hours or less. Five modes of communication stood out as being preferred by students for obtaining information about new or upgraded services. In decreasing order of popularity these were: direct email to student, from a unit website, at lectures or tutorials, QUT website, and QUT intranet (QV) message portlet (see figure 3).

Qualitative data collected in this survey was analysed to identify comments that related specifically to first year or transition issues. This analysis resulted in three descriptive categories of responses. These were: clarity of administrative and support processes (clarity of processes), ease of technology and systems use for administrative and learning purposes (ease of technology use), and the degree of satisfaction with online access & technologies (satisfaction with systems).

Comments received about clarity of processes often related to unclear instructions or assumed knowledge about university processes, for example “*A checklist of some sort that tells you exactly what I need to confirm your enrolment as a new student I was unaware of how EXACTLY enrol in the subjects I eventually worked it out but ...*”. Similarity comments falling into the descriptive category of ease of technology use often related to unclear instructions or assumptions about how the technology should be used, for instance: “*There was little support for new students with little computer experience. I had no idea how to use the system and requested help from a number of people who could not/would not help me.*” The third category contained indications of both negative and positive satisfaction with online technologies and systems, often qualified with some advice or request. The following comment typifies these responses: “*It is already of quite a good standard, maybe have a introductory section which shows new student the most important sections of online information and how to use them*”.

ATN Online Learning Survey

QUT staff and students, along with staff and students from the four other ATN Universities participated in a survey in October 2004, which had as one of its aims to increase understanding of the way online learning is used and the implications of usage patterns (Platts, 2004). The survey was administered online, collected both quantitative and qualitative data, and consisted of three main sections: demographic details (including faculty enrolment and computer access); online learning experiences; and the benefits of using online learning. The analysed QUT sample consisted of 5,903 respondents. Of particular interest to this paper are the findings relating to the profiles of students and their level of participation and interaction with various online resources at QUT; these findings are summarised below.

Of the total sample, 85% were undergraduates, 81% were enrolled full-time, 57% were female, and 70% were under 25 years old (referred to elsewhere as the dot.com generation). At home computer access was reported by 92% of respondents and of these slightly more (52%) had broadband access. Most (77%) were satisfied with access to computers at university and reported they had “*worked out how to use it myself*” as the most frequent way of learning how to use online learning resources. QUT students spent an average of 6-10 hours each week doing online activities, which was not influenced by level of study or faculty and was reflected by a frequency of at least daily online access.

Exploratory factor analysis of online learning experiences responses revealed four primary factors: (1) access to material and content – e.g. makes study easy, (2) personal benefits – convenience & time management (particularly favoured by part-time students), (3) learning connections – enabling interactions and collaborative activities (more so by female students), (4) disadvantages - isolation (from other students & staff), inadequate access, time required. Three key reasons for using online learning were also indicated using exploratory factor analysis. These were (1) for access and information - unit materials and information such as announcements, (2) assessment -

viewing results, submitting assignments, (3) participation with students and staff – discussions and collaboration.

Qualitative data collected in this survey was analysed and reported separately. For Brown & Carrington (2005) the key finding was flexibility of access, which consisted of three separate elements: functionality and reliability of the online environment; ease of access to the online environment and, the learning outcomes associated with flexible access.

Functionally the system was seen as providing wider access to information and content, being convenient, and facilitating improved time management, e.g. *“greater access off-campus means that I have a more flexible timetable”*. Some suggestions were made about functionality needing attention, such as file sizes and download times (bandwidth) and the need for a real-time discussion forum / chat room to replace asynchronous “notice board” functionalities. Students were generally satisfied with the reliability of the online system and the quality of the contents provided through it. However, suggestions were made that a standardised interface would be preferable for information organisation. The authors reported that most of the qualitative responses were focused on positive experiences including the ease of access to online course materials and information, as well as with other online resources such as library databases. These responses included comments such as: *“immediate access to course materials”*, *“access lecture materials and tutorial questions electronically”*, *“access to library databases”*, *“can do research without having to attend the uni or go to the library”*. Perceived benefits of access to online learning included support for group work, online collaboration and the ability to discuss issues or raise questions outside or scheduled class time. Students were also positive about the convenience of administrative aspects of the online system, such as access to emails, unit and course notices, contact details, and assessment schedules. The best learning outcomes associated with flexible online access were the support for effective study. Examples of the comments made were for example: preparation for classes, review of materials (particularly useful if audio or video streaming was available), and the ability to facilitate out of class collaborative work. Benefits associated with assessment included access to guidelines, due dates, marking criteria, feedback, supporting materials, past papers and library resources. These learning outcomes all indicate online flexibility to cater for different learning styles and approaches and extending the time and place of learning.

Overall the results of the findings of survey indicated that QUT students value the current online environment as a mechanism for delivery of content as well as a way to access information and related services. However, it appears the online system is not a particularly effective facilitator of active learning or interactivity, although this aspect appears to be accepted by the respondents as a functional limitation of current online systems.

CSHE - First Year Experience Survey

The third and smallest (280 QUT respondents) of the three sources of survey data is the study of First Year Experience conducted by the Centre for the Study of Higher Education (CSHE) at the University of Melbourne during 2004. Although the findings from this study are yet to be fully interpreted, the raw data has been released allowing profiles of new QUT students and their online experiences to be presented here.

All respondents were first year undergraduate students the vast majority were full-time (94%), clear about their reasons for coming to uni (87%), school leavers (73%), female (70%) and “really wanted to go to uni” during their final high school year (74%). Most knew the type of occupation they wanted (67%) and were in their first preference course (65%). Issues rated as important or very important in deciding to come to university included studying in their field of interest (94%), improving job prospects (87%), training for a specific job (73%) and developing talents (72%).

A breakdown of the emerging study habits of these first year students reveals more than 90% spent 3 or more days or evenings on campus. Typical weekly routines comprise 15.3 hours of course contact time, 10.5 hours of paid work, 15.4 hours of private study (10.1 off-line and 5.3 online) and 4.4 hours of online recreation. Not surprisingly 90% of respondents sometimes or frequently

feel overwhelmed by all they had to do although the university experience was generally reported in a positive light. For example many had made one or two close friends (79%), really like being a uni student (75%), agreed or strongly agreed that they enjoying their course (70%), and were satisfied overall with their course (69%). Disturbingly 2/3 of students undertaking paid work (nearly half the respondents or 128 students – identified paid work as their only or main source of income) report that it interferes moderately to severely with their academic performance.

In terms of their online experience, 92% said they had satisfactory access to computers at university and 94% report that their home access was satisfactory. Nearly all (99%) used the web for study purposes, with 86% accessing the web at least weekly for course content, resources and information. Nearly all users found the resources available online useful or very useful (91%), used email (88%) to contact lecturers and found it useful or very useful (79% lecturers and 73% for other students). In contrast nearly half (46%) of the students reported never having had an online discussion with other students and a further 34% said they used online discussions infrequently, reflecting the low numbers of students (74/280) that found online discussions with other students useful. Online access to tutors was also infrequently used (60% never used it), however it's not clear how many of the units undertaken offered this facility. Although 65% reported that online resources allowed them to learn at their own pace, the survey responses showed that students were generally undecided about wanting more online learning resources.

Although drawn from a much smaller population the sample data of the profiles of first year students and their online activities shows similar patterns to the two larger surveys reported on earlier and reveal the challenges facing students. A discussion of these patterns arising from these three sources of data follows below before drawing out recommendations for further action.

Patterns of Online Engagement

The data collected from the large internal and two externally administered national surveys of online teaching, reveal similar patterns in the profile and online interactions of students at QUT. A scan of the quantitative data discussed in the sections above shows similar patterns of access, satisfaction and time spent online. However for us, the most interesting findings revealed in these surveys relate to the perceived benefits and existing constraints of online systems and the uses of the systems by millennial students. These findings have implications for the design of virtual environments to support learning. Three emerging issues that have particular relevance to our ongoing project, that seeks to tailor the delivery of curriculum mediated resources within a virtual space, are discussed below.

Students Prefer Balanced Learning Environments.

The first issue is that the QUT, ATN and CSHE surveys all indicate student preferences for balanced on-line and face to face contact. On-line access to course materials, information and other resources (particularly digital library resources) as well as administrative types of information were positively regarded. The ATN survey revealed students to be digital natives (self taught users) (Prensky, 2001; Hoffman and Vance, 2005) in their online environment. However their usage focuses on obtaining or exchanging information outside of class time with other students and with staff, or obtaining information to support their academic activities. These impressions align well with views that current learning support systems are limited in terms of cross-institutional purposes and do not allow for vicarious learning (Neely et al, 2004). Overall, we can say that online systems are convenient, efficient, useful and effective information repositories that students use extensively to extend and complement face to face learning contact. However it may be, as suggested by Hirt & Limayem (2005), that we should examine students' technology behaviours through the lenses of IT use and adoption models such as structuration theory, critical mass theory and social information processing models, to gain a better understanding about how and why students adopt and use technologies for learning.

Use of Real-time Online Discussion Forums

In light of these assumptions it is particularly interesting to examine the data relating to online discussions which emerges as our second issue. In all three surveys examined for this paper (QUT, ATN and CSHE) this functionality (although possibly limited in current implementations and possibly equally limited in application by academic time constraints) was not considered, by new millennial-dot.com students, to be at all well-harnessed. This realisation needs to be considered in terms of a generation locally characterised as electronic nomads (Russell & Holmes, 1996) for whom IM (instant messaging) and SMS (short message service) and email, (often accompanied by expectations of immediate responses and dislikes for anything slow) are not considered to be new technology. Additionally it may be that current online environments do not accommodate different individual preferences for technology mediated communications and collaboration (Parker, Chignell and Ruppenthal, 2005) and these too should be considered.

Even so, it is worthwhile to discuss some of the practicalities. It is possible that the design or content of some units does lend them to utilising synchronous real-time out of class online discussions. On the other hand, typical IM use for ad-hoc social interaction (with sub-sets of individuals from a pre-determined network), or at implicitly agreed times (such as weekdays at 7.30pm for some typical Australian teenagers we know), or at set times following another event (such as used by current affairs in the media) often idiomatically encoded, may not transfer readily to an academic environment. Some possible applications may include: complementing existing face to face student consultation hours, continuing lecture or tutorial discussions once the scheduled time has elapsed or replacing other forms of electronic communication e.g. group emails. However, it seems that these types of interactions would require teaching staff to be in control of their online availability which is at odds with the unrestrained interactions offered by these virtual spaces. The role of the teaching staff member may also need to be agreed prior to establishing a presence in one of these spaces; for instance teacher as facilitator of discussion (following constructive principles) or teacher as information provider (for efficiency and to meet the needs of students for immediate responses). It might be assumed that the tenets of constructivism and active learning would be better employed in a peer to peer network (where there are no assumptions that one individual is the holder of the knowledge) and where the exchanges are peer based and highly interactive, for instance in group work situations. On balance, it seems such functionality may well be suited to online learning where it is designed into curriculum activities rather than as a bolt-on technology used to support more traditional approaches to learning.

Providing a Holistic View

The third issue of interest to us came out strongly in the qualitative information collected in the QUT and ATN surveys related to clarity of administrative and support processes and the ease of use of the system. Data in these categories seem to indicate a reasonable degree of unfamiliarity or *not-knowing-about* the administrative and academic processes underpinning the online systems; the unfamiliarity, *not-knowing-what* administrative support was enabled online or *not-knowing-how* to use the online system to get the needed support or information. This should not be surprising given the size of some of our institutions and the requirements on students to interact with many different academic, administrative and professional structures during their courses. Contemporary students have increasing levels of computer literacy (Stein & Craig, 2000) and teach themselves how to learn new technologies (Hoffman and Vance, 2005); however these surveys indicate that unconformity of information organisation, different interfaces and varied utilisations of online functionality create uncertainty in students use of technology to access services or information.

Conclusion

The three issues revealed in this paper are of particular interest to us when considering how best to design integrated flexible virtual spaces that engage students in their learning, give timely access to support and provide a sense of belonging. For the dot.com student these spaces need to cater for a digital savvy generation whose environment is characterised by universal technology ownership, blurred social-study-work boundaries, ubiquitous information, multitasking and hypertext interactions (see Oblinger & Oblinger, 2005). We propose that an integrated

information architecture is necessary to provide a holistic view of the university experience for students. This architecture will be implemented for transition students at QUT as a single online entry point, thus removing confusion about *knowing where* to and *knowing how* to access on-line services and information. This portal will also allow both academic and administrative resources to be mediated through a curriculum-focused personalised interface. Importantly our portal will also allow students to customise their interface and its contents to meet their individual content and technology-communication preferences.

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