Online Learning:
A Student Perspective

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Abstract

The background of students in higher education is changing from the traditional middle class school-leaver to a complex mix of age, race, gender, ethnicity, socio-economics, and experience. With this complexity of student needs, abilities, experience and expectations comes challenges for academic staff and administration as well as for students which already had great impacts on student performance. Negotiating the steep learning curve for those unfamiliar with computer technology can involve real feelings of anxiety and stress. Coping with unfamiliar study and assessment schedules and the development of the research and writing skills necessary to successful scholarship often means juggling work and family commitments and dealing with accompanying feelings of guilt and frustration. Even those who are deemed free of 'heavy' responsibilities can find themselves seriously distracted from their goals as they learn how to cope with new social freedoms and identities. Under such pressures it is not surprising that students may find themselves struggling to cope with feelings of inadequacy and isolation. While online learning can mitigate some of the undesirable consequences of university life in the 21st century such as equity of access for distant or working students, it may also exacerbate other issues. For online learning to be a successful learning technology, its design, implementation and evaluation must involve taking into consideration those social and equity issues that affect the performance of a changing user base. Learners can then truly choose to learn and learn to choose.

Keywords

Online learning, Counselling issues, Cognitive load, Interface design, Student performance, Teaching and learning, Mental models

Introduction

The 'typical' university student is no longer a white, male, school-leaver. Age, gender, cultural differences, sexual identity, disability, distance, and skill levels all contribute to a diverse student profile. An analysis of the undergraduate student population in the USA in 1994 revealed that more than half were over 21 years of age and that 41% were over 24 years of age (National Center for Education Statistics in Magolda, Terenzini & Hutchings Year unknown) while institutions in Britain and Australia report similar findings. As older students can bring to the university environment a deeper experience of life than their younger counterparts, they can also face unique responsibilities and challenges. The burden of maintaining a balance between family life and study commitments is a pressure felt by many returning to study after a sustained break. Loss of income can mean not only that major sacrifices have to be made to support long term goals but that familiar methods of managing stress may no longer be affordable. University is for some, their first introduction to computers and many struggle with all that is involved in mastering the technologies. Younger students can also face enormous challenges. Attending university can mean isolation from the support structures offered by friends and family at a time when many are facing major life choices. Balancing study commitments and work schedules have become a reality as Government cuts to education funding have forced families to support their children through university with little or no financial assistance. Increasingly, women are taking their place at university and are faced with the need for universities to make major paradigm shifts in educational perspectives traditionally characterised by male dominance. Disability is no longer synonymous with lack of choice and a broad range of cultures brings with it different ways of knowing and the need for this to be reflected in educational practice.

Universities also, are trying to come to terms with low budgets and high demand at a time when graduates expect a real answer to the question 'was it all worth it?'. In an effort to provide efficient and effective learning experiences universities are examining the opportunities offered by online learning. There is however, a need for caution in adopting any new technology. It is important to have a clear picture of the prevailing educational environment so that the effects of innovation are evaluated in an accurate and meaningful way for both teachers and learners. Such an approach may assist in utilising

the potential benefits of technology while also mitigating the potential problems that may arise. The purpose of this paper is to assess the effect that online learning is having, and is likely to have, on students in the higher education setting, by analysing the existing pressures on students at Southern Cross University's Coffs Harbour campus. Students at this campus are having similar experiences to those at other universities as SCU seeks to maintain its competitive position through the adoption of online technologies (Prospectus 1999). The problems for which students characteristically seek formal counselling were identified by the university counsellor and were then analysed in this paper in terms of whether they were likely to be exacerbated by, or mitigated by, the implementation of online learning.

Southern Cross University

Southern Cross University is a multi-campus institution on the mid-north coast of New South Wales. In 1999, 60% of its student population of just over 9.000 were 25 years of age or older. Women students outnumbered men by some 16%. Also, 2% of students had arrived in Australia within the last 10 years and came from homes where English is not the spoken language. A similar percentage were of Aboriginal or Torres Strait Islander descent. Just over 4% of students were recorded as dealing with a disability of some kind. A similar distribution exists on the Coffs Harbour campus of SCU although the number of students aged 25 or over in the corresponding year was a little lower at 44% (Statistics Officer 1999 Southern Cross University).

The Coffs Harbour campus offers degree programs in Multimedia and Information Technology, Humanities, Business and Computing, Tourism and Hospitality, and from 2001, Psychology, as well as providing access to courses coordinated on the Lismore campus. Just under 50% of students were studying internally, while 33% and 17% studied in external and multimode respectively.

Online Learning

In any attempt to 'define' online learning one comes across a plethora of terms. 'Resource-based learning', 'distance education', 'computer-mediated communication', 'web-based training/instruction', 'internet delivery', 'flexible delivery', 'e-learning', are terms which represent approaches to the design of specific learning situations but which cannot claim homogeneity. 'Distance education' for example, is not inclusive of learners who live on a university campus or 'internal' students living off-campus, who have logged on to its intranet to access course material.

'Distance education' is not therefore, interchangeable with the term 'online learning'. Similarly, 'web-based training/instruction' ignores the fact that much learning material is delivered using an intranet which does not necessarily provide links to the World Wide Web. It is important to acknowledge then, that there is a broad variation in the design of online learning systems (Barron 1999).

Online learning, for the purposes of this paper, refers to learning delivered using an intranet that has access to the Internet. Communication processes between teacher and student, and student and student, are facilitated using email and asynchronous discussion groups. Web-based multi-user domains are not characteristically used as a communication option for learners at SCU due to the need for economical use of bandwidth.

Student Issues

Ms Margaret Waterman, Counsellor and Disabilities Liaison Officer at Southern Cross University, Coffs Harbour, identified a range of issues for which students consistently sought formal on-campus counselling over the six years from 1995 (Waterman 2000). Self-confidence, image, and self esteem issues rated the highest followed by relationship issues involving parents, children, and friends. Anxiety, depression and stress, while also reflective of the broader society, related to academic issues such as essay writing, research technique, course dissatisfaction, and use of computers. Financial pressures and resultant stress patterns rated highly. Students cited access and support issues involving staff as being particularly relevant to the delivery of online learning material. The failure of online material to recognise different learning styles was of great significance to students. As is to be expected, students also sought help in coping with trauma occasioned by such issues as life threatening illness, abortion, grief and loss.

Ms Waterman reported that these patterns are consistent with the Lismore campus, and in fact with other universities, regarding common issues and frequency of these.

Student Problems and Online Learning

Many of the problems for which students sought counselling were related to how they fitted in with the world. It is arguable that when human beings find it difficult to create congruent 'mental models', described by Norman as 'the internal representations that humans develop of themselves and the objects they interact with in the world' (1983 in Jonassen 1995:3), they experience varying levels of anxiety and stress. Whilst some stress is to be expected in the adjustment of old models to include new experiences, there were factors which significantly reduced the ability of students to successfully adapt to university life. Some of these factors resulted from the traditional learning environment while others arose as students struggled to make sense of the processes involved in online learning.

Self confidence, image, self esteem

> "Self confidence/image/self esteem is number one issue for all students … lack of assertiveness to ask tutors or /peers for help. For mature age students it is how to write an essay plus how to actually answer the question that is being asked. They can quickly develop low self esteem because they feel inferior to more skilled peers and are afraid to seem even more ignorant by asking for help" *(Waterman 2000:1).*

Many students, having made the often quantum leap to university study, are beset by the belief that everyone else knows how to write better essays, conduct research more efficiently etc. Even though all students at SCU are offered classes in the development of such skills throughout the course of their study, many continue to feel inferior. This angst could be explained in part by the fact that assessment tasks such as essays, require students to present material in what many see as a competitive environment. Learning in an online environment by contrast, often focuses on collaborative assessment tasks which encourage communication rather than competition. Difficulty in writing essays is also linked to a fear of word processing (Griswald 1994 in Todman 2000), and it is imperative that educators provide a supportive learning community in which students feel comfortable in asking for help.

For students who do not have the necessary skills in either a traditional or online learning environmnet, mentoring programs can be successful in helping students understand that they bring their own strengths to the learning environment, particularly when they are studying in non-traditional areas. Women in Information Technology (WIT) at Southern

Cross University is one such program. 'Education from someone experienced in the use of the system' explains Robyn Maish (1999), a mentor with the WIT program for two years, 'removes the time-consuming burden from the fledgling student and allows them to focus on their workload and the adjustments that the lifestyle brings to them'.

Relationships involving parents, children and friends

> "Relationship difficulties (with parents, children, partners, friends) are a major source of distress … many relationships change or end when adults become students at university" (Waterman 2000:1).

A conversation overheard by the writer of this paper two weeks into the first semester of first year: 'My husband said it's ok for me to go to university as long as nothing changes at home for him and the kids'. While this student may have kept her super-woman cape well hidden, she more than likely experienced great frustration as family life changed under the pressures of study. Family and friends can find it difficult to understand that attending lectures and tutorials, researching and word-processing assignments, and keeping track of administration details, are necessary parts of being a successful student.

While learning online can mean that some tasks such as research, accessing learning materials, and participating in discussions, are able to be accomplished asynchronously, it still requires that the student has access to the computer network. In what for many is a trade off between time spent away from the home using the campus facilities, and the convenience of a home computer, families add another financial burden to what is often an already stretched budget. On a positive note, access to a home computer can have long term beneficial effects as the family develops the email, internet and interactive multimedia skills mastered by the student, especially for those households with school-aged children

Anxiety, depression and stress

> "Stress is a major issue. It has a variety of causes but academic issues, course dissatisfaction and frustration, rate highly. Computer anxiety/phobia is a major factor. 42% of people over the age of 35 have some sort of phobia with computers. Older students tend to have much more anxiety with technologies including researching library resources online because search parameters are so precise. There is enormous anxiety at having to access course information and assignment information online" *(Waterman 2000:1).*

The stress attributed to academic issues, and course dissatisfaction and frustration, is often ameliorated by simply being heard. As long as students demonstrate respect for colleagues and educators, online discussion groups can be effective in focussing the attention of decision-makers on issues of concern. As has been the case at SCU, open acknowledgment that a particular problem exists, or that it is widespread, can bring about efficient resolution.

To participate effectively online, however, students need to have the necessary computer skills, and yet estimates of the incidence of mild computerphobia among undergraduates are as high as 50% (Todman 2000). Clearly, students need to be supported in developing computer literacy. Davis (2000) found that in a study of how students learn computer skills involving approximately 1200 undergraduate students at Cornell University, peer support rated higher than faculty support, online help, printed documentation, voluntary workshops or drop-in clinics. Only trial and error, and credited classes, were reported as being more effective in developing computer skills. The implication of this for the implementation of online learning is threefold.

Firstly, students who are studying entirely online will not have access to the kind of peer support to which Davis refers, and which can assist in making the required transition from a novice to a competent computer user (Bodker 1991). These students then, might benefit from prerequisite credit classes that would help them develop the necessary skills.

Secondly, while trial and error rated highly on the effectiveness scale, it is a time intensive methodology and one which many students, already overburdened with responsibilities, simply cannot afford. Furthermore, in view of what Lewis & Orton (2000:5) term 'trialability', students may find that they have no time to experiment with how the technology works, and under the pressure of discussion groups, email, and electronic presentations, make their lack of expertise very public. Feelings of embarrassment, low self worth, and even hostility, inevitably follow. Again, providing support in the form of structured workshops can minimise negative outcomes for students.

Thirdly, if students are uncomfortable with accessing material online, they are likely, whenever possible, to print a copy for use away from the computer. It is arguable that this practice questions the function of offering some material online and suggests that educators should focus on resourcing students in the way that is most useful to them. Keeler &

Anson (in Davis 1999:3) conclude that 'students who have high anxiety about computers show significantly better results when in a cooperative learning environment' and with careful planning and management, the online learning environment can provide such support.

Financial pressures, access, and support

> "Financial problems are right up there with the other major issues … with all that it implies" *(Waterman 2000:1).*

While the online learning environment can provide increased access to resources via an intranet or the World Wide Web, and can offer more efficient and cost-effective communication, access to a computer is for many, a major issue. Work and family commitments can severely limit the amount of time students can spend on campus using the facilities provided. Concerned that having a home computer moves the goal posts of student performance in favour of those who can afford to purchase one, students increasingly put themselves in debt to keep up. While the same can be said for the purchase of textbooks, such resources are usually less expensive, and available in other forms such as library loan or photocopy. Some courses, such as Multimedia, Information Technology, and Computing, already require such intensive and high-level computer time that a home computer with all its financial burden becomes a necessity in coping with a workload that involves online participation.

While some universities are able to provide computers which can be leased or borrowed by students in the short term (Corderoy & Lefoe 1997), this kind of support involves enormous administration issues such as the cost of maintaining software and hardware standards, and the time involved in tracking borrowing records. Educators therefore, must ensure that there is sufficient infrastructure for students to equitably participate in an online learning environment.

> "Instructions to access online material are difficult to follow and assume a certain level of knowledge including terminology, and assume competencies in students. There is an enormous range of computer competencies at entry level to courses and failure to cope causes some students to withdraw from study altogether" *(Waterman 2000:4).*

The study by Davis (1999:2) reports a unanimous agreement on the part of students that 'professors assume students have specific software skills without providing any support or training' and that this causes great frustration and stress for the students concerned. While students involved

in the study were unanimous in their lack of support for an entry level computer competency test, their testimony clearly indicates a need for reducing the stress associated with mastering new technologies and terminologies. If students constantly struggle with mentally integrating multiple sources of information in an online learning environment that presents unfamiliar terms, concepts and practices, they feel justifiably overwhelmed. This 'cognitive overload', created when working memory cannot cope with the amount of new information it has to deal with (Sweller 1999), can be reduced by employing sound design practices which include applying an understanding of the prior experience of target group users (Kristof & Satran 1995).

Ideally, the design of the interface should demonstrate congruence between the 'user's mental model' and that of 'the conceptual model of the interface as developed by the designers' (Jonassen (1995:2). Preeces' 'system model' (1993:30-32) however, explains that the design of the system also plays a major part in creating 'an intuitive, transparent and coherent interface'; novice users in particular, have a high cognitive load as they attempt to reconcile system performance with their own expectations and experience, and that of their colleagues.

Ultimately, users do not care how the system was designed; they just want it to work the way they expect it to (Raskin 2000). Designers of online learning however, do need to understand how the system works, or, at the very least, know someone who does know. The assumption that educators are proficient at designing, developing, implementing and managing, online learning (Corderoy & Lefoe 1997) is one that can only lead to continuing frustration for students and staff alike.

> "A common complaint re online learning is that lecturer/tutor support, although promised, does not eventuate. This is not the fault of the academic staff. How can they possibly meet the needs of students, return all the emails and phone calls quickly … sheer logistics. This leads to huge stresses from falling behind or not understanding prior framework/context/topics and therefore the next topic or unit loses them completely" (Waterman 2000:5).

'If a learner is failing to perform effectively' explains Boyle (in Sims 1998) 'instructional designers should look to the environment and not the learner'. Indeed, the effectiveness of the online learning environment can suffer serious erosion when the fast and efficient feedback expected of email communication does not eventuate. Educators can however, reduce the likelihood of this occurring by ensuring that they do not simply

transfer traditional learning material to the online environment without providing an infrastructure which supports communication between teacher and student, and student and student. Online learning must involve more than 'merely a modification of current teaching techniques' (Magolda et al p.6).

Learning styles

> "A critical factor is learning styles. Online learning MAJORLY disadvantages all the students who have auditory and kinesthetic styles because it caters to visual learners … The more complex the material the more critical it is that auditories and kinesthetics have hands on and verbal interaction" *(Waterman 2000:5)*

A comment often heard from those studying in internal mode using online discussion groups is that they see no advantage in posting messages online to people they see every day. While it is acknowledged that the asynchronous nature of the technology allows students more freedom in terms of when or where they make postings, students are justifiably unconvinced that online discussion is superior to face to face contact. It is arguable that the effectiveness of online learning increases when online technologies are used in conjunction with, rather than as a replacement for, proven learning strategies such as tutorial and study groups, facilitated workshops, face to face consultation, and provision of print-based reading materials.

The application of interactive computer-based multimedia to learning problems may well mitigate some of the effects felt by online learners thus far. It is important however, to heed the caution that the use of any technology for its own sake will not guarantee improved learning outcomes (Sims 1997). Again, the tendency to implement online learning as 'a new way of doing things using the same old paradigms' (Abernathy, Allerton, Barron & Salopek 1999:1) will inevitably lead to inferior teaching and learning materials.

Conclusion

The pursuit of higher education will always require that students make sense of new situations and such an adjustment will inevitably involve periods of apprehension, stress, and anxiety. Students can expect however, that such feelings are temporary, and not chronic, symptoms of university life. It is the responsibility of educators to provide students with learning environments that promote the effective and efficient acquisition of knowledge. Online learning involves changing existing educational paradigms to include as yet unproven learning strategies and while it may only be with hindsight that we can track the growth of successful technologies (Godfrey 1996), it is with planning, evaluation and management that we can anticipate the success of online learning.

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