CHANGING TECHNOLOGIES: CHANGING PRACTICE

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Technological developments are having a significant impact on many aspects of higher education. This paper outlines some of the impact of these developments on academic learning support provision in higher education, particularly issues concerning the challenges and benefits of providing academic learning support online. The paper provides recommendations for addressing these issues in ways that help ensure the successful integration of technology and academic learning support. It also considers the potential impact of technological developments on the position and practice of learning advisers working in higher education.

The need for academic learning support online

Those of us involved in higher education are aware that our world of work is changing quickly and irrevocably. We are operating in a time of rapid political, socio-economic and technological change. Some of the distinguishing features of higher education in the current era include:

• an increasing demand for access to higher education opportunities

• a demand for more client responsive, open and flexible delivery of courses

- a growing number of learners with diverse needs, abilities and learning backgrounds

- a rapid transition from traditional delivery methods to forms of digital delivery

- an emerging expectation that digital media will enhance learning to accommodate the needs and preferences of learners in higher education.

One of the outcomes of these features is the development of technology that enables the provision of online approaches to teaching and learning. The learning challenges and opportunities presented by this development have significant implications for the design and provision of academic learning support services. It is essential that learning advisers respond by adapting existing and developing new forms of support to meet the needs of online learners. The availability of new technology offers us an opportunity to improve the nature of our teaching and extend the provision of our services. It challenges us to reflect on the implications for our students and ourselves.

Challenges of providing academic learning support online

Updating skills

The delivery of learning support to students using print-based resources and face-to- face or small group sessions is familiar work to learning advisers. However the option of using online delivery creates opportunities and challenges to work in what is, for most of us, still relatively new territory. This territory cannot simply be given over to the technical experts. Advisers need to be in the forefront of techniques and strategies coming into education rather than be seen as out-of-date and resistant to change. Furthermore the provision of support online must be based on sound learning and teaching as well as innovative technology. For this reason it is important that learning support staff learn the skills necessary to establish and maintain sites albeit with help from information technology specialists.

Playing a more influential role

Traditionally learning support has been positioned outside the 'real' academic work of tertiary institutions and was charged with 'filling the gaps' in students who came to higher education institutions without the literacy or numeracy skills required. Accordingly learning advisers have not occupied a prestigious position in higher education. Rather they were framed within a discourse of remediation. Their role was considered as remedial teaching for " students who were beyond the real pale of academic work" (Nicholson, 2000, p.4). Rather than passively accepting this remedial model of their work learning advisers need to consider developing a 'professional development' model of student support (George & O'Regan (1999). In this model, instead of simply working with students only, learning advisers share their expertise with faculty academic staff to help embed effective learning support in online courses.

In their rush to: meet demands for equity, prevent financial loss through student attrition, and attract more students in a competitive market, tertiary education providers are likely to pay more attention to the need for support services including online academic learning support. This has potential to help improve the position of learning advisers. If we participate early and effectively enough in the provision of supportive online learning environments, we may benefit from increasing recognition of the important contribution that learning advisers make to the recruitment and retention of students.

Considering time, resources and staff

The design and development of multimedia courseware is a complex and time-consuming process (Nicholson and Nagi, 1966). Cost is also likely to be an important consideration. Providing quality learning support online does not happen on the cheap! Creating and using web delivery of multi-media may be well outside the funding allocation for most learning support centre budgets.

Providing learning support online creates another potential dilemma. If sites are interactive we may find ourselves totally overwhelmed by a deluge of work from eager students expecting quick replies to their electronic communications with us.

We may not have the resources, including personnel, to meet this demand. Synchronous or real time delivery, for example, has the obvious benefit of immediate feedback, but this requires adequate and flexible staffing to be effective.

The impact of the online learning environment on students

Students studying online face all of the traditional barriers to learning and also some new ones. Successful online learning requires a complex combination of skills and knowledge including technological literacy. Hill & Hannafin (1997) suggest that the success of searching and making sense of information in hypertext environments is influenced by a complex mix of metacognitive knowledge; perceived orientation (getting one's bearings); perceived self efficacy (self confidence); system knowledge and prior knowledge of the relevant discipline.

Online study requires that students be independent learners, able to motivate themselves and to manage their time successfully. In this requirement it is not different from the skills and attitudes needed for study in traditional learning contexts. However the 'temptations' of surfing the net may be more distracting than diversions available in conventional study. Working independently away from the discipline of scheduled lectures and tutorials is a challenge that will necessitate considerable learning support for some students.

In a sense learning online means that students are learning in a new structure. The use of hypertext environments may lead to confusion, disorientation (being "lost in hyperspace") and distraction (Marchionini, 1988). When on-campus students come into a classroom they can see the teacher and the whiteboard. In other words it is obvious where to look for things. Students can hold a book in their hand and flick through it to see the main divisions and the number of pages. However in computer learning this sense of obvious structure is gone. The student may not see the progressive layout and may skip from one part of the site to another. They may pass some sections without even realising that they have missed important information. Far from assisting students to construct knowledge, hypertext can create confusion that undermines comprehension (Plowman, 1996).

Learning advisers are well aware of the benefits of teaching in workshop situations where students can learn from each other as well as the teaching staff. However learning online may decrease chances for student interaction. In particular those students who are learning wholly online (i.e. not mixed mode) are faced with the problem of working in relative isolation compared with their on- campus peers. Discussion boards and email cannot yet provide a comparable alternative for the interaction that can take place in workshop or small group sessions.

Robbins (2000) draws our attention to the fact that emotional engagement with the students is one aspect of academic skills advice that cannot easily be accommodated for in an online environment. Emotional support is an important part of our work. As well as attending to a student's academic needs, we sometimes assess that they are in need of other support such as counselling. We often need to provide encouragement as well cognitive assistance or skill advice. In an online context it may not only be very difficult to detect that a student is in need of emotional support but also difficult and, in some cases, unwise to attempt to deliver such support when we are not face-to-face with the student.

Much of our work in learning support is based on a diagnostic process as we work alongside the student on a one-to-one or small-group basis. We are able to communicate directly and engage in dialogue with the student about the process of learning. We are able to give immediate feedback. It is not possible to duplicate this immediacy and directness in an online environment. Online we will miss: "…the subtle messages of body language that can reveal a student's level of understanding, or distress, or hint of undiagnosed problems" (Robbins, 2000, p. 149).

Social and cultural contexts

Online delivery has the potential to greatly increase the cultural, social and linguistic diversity of students taking courses. Some of these students may not be familiar or comfortable with the Western academic tradition. Biggs has observed that the "learner brings an accumulation of assumptions, motives, intentions, and previous knowledge that envelopes every teaching/learning situation and determines the course and quality of learning that may take place" (1996, p. 348). Lack of alignment

between the student's assumptions, motives, intentions and knowledge and those of higher education institutions has been identified as an important factor causing students to withdraw from their studies (Tinto, 1995).

Bates pays attention to the social and cultural features which can impact on learning as well as the instructional side of learning. He emphasises the need for research into learners' response to using technologies, including what learners themselves believe are the advantages and disadvantages of such approaches to learning. He argues that it is important to determine "whether there are groups or types of learners who benefit more than others from technology –based learning" (1997, p. 20-21). For example, in the New Zealand context, the experiences and views of Maori learners concerning the use of technology in education warrant particular consideration.

The need for critical reflection

Many advocates of online education emphasise its positive aspects and pay little attention to the communicative and technical difficulties experienced by students. Hara and Kling (1999, p. 1) note that 'there are few systematic analytical studies of students who have experienced new technologies in higher education.' They describe the 'distresses' of some students using an internet-enabled distance education course. 'Distresses' is a general term used to cover students' difficulties such as frustration, anxiety, and confusion and panic (Hara and Kling, 1999, p. 2).

Uncharted territory

Much existing information about online learning relates to the provision of discipline specific courses online rather than learning support online. Learning advisers must work across all disciplines. Robbins notes that:

> Academic skills delivery differs from most university teaching in its intermittent, just in time nature and its need to operate within and respond to complex context arising from the different discipline communities, specific communication genres, and the learning history and needs of individual students. (1999, p. 145)

Benefits of providing academic learning support online

Widening access

Providing support online will widen access to academic learning support services. In the past, the majority of students in higher education were full-time students who attended a campus for their learning activities and had access to the learning support facilities provided at their learning institution. However, an increasing number of students will be studying online. Many of these students will be part-time with work and family commitments. Access to traditional on-campus learning support services will be difficult for some of them. Furthermore traditionally certain groups, including distance education and part-time students, have had limited, if any, access to the academic learning support systems provided on campus. With the development of technology and online education approaches to teaching and learning, there are opportunities to increase access to learning support provision for all students, including the above groups, whether they are studying in online or traditional contexts (Thompson, 2000).

Improving access to resources and teaching tools

Online learning environments can do much more than just broaden access to learning resources in time and space. The most obvious benefit of interactive multimedia is that "a virtually limitless array of resources can be incorporated into the lesson plan, providing learning experiences that otherwise would be unavailable to students" (Lamb, 1992, p.33).

Online teaching and learning provides the opportunity for learning advisers to make use of some unique features of the web. Mason (2001) alerts us to the following features:

- Hyperlinking rather than linear conception of content

- Links to resources, both internal and external

- Communicative potential

- Multimedia potential: webcasting, simulations, video/audio clips for specialist purposes

- Potential for quick and easy up-dating of materials

There are a number of new opportunities and challenges in teaching students using online resources. Hypertext environments, for example, can be used to help students acquire and construct knowledge (Carver et al, 1992) and also to give them an overview of the structure of a knowledge domain (Jonassen & Wang, 1993).

Fostering student centred learning

Most learning advisers are aware of the need to allow the learner to take control of their learning activities rather than having support provided in a manner that makes them a passive receptor rather than an active participant. Interactive multimedia can be used to offer support in a way that allows the student some independence. Hypertext links provide flexibility of use by allowing learners "to explore by self determined linkages" (Barker and Tucker, 1990, p.16). Students should be able to select program sections in the order of their choice, rather than simply work through a pre-determined course of study.

Overlock (1995), Whitnall et al (1994), and Jones and Smith (1992) outline the possibilities for improving the quality of the online learning experience for students. The traditional communication settings are the tutorial, the lecture, and the seminar.

Lambert-Gardiner (1993) argues that the hypermedia setting is educationally superior to these because it simulates the real life situation of the student and just as in the real life situation, students are dealing with information from many sources. "Multimedia... provides educators with the tools to bring learning alive" (Lamb, 1992, p. 33).

A well-designed learning support site can enable learners to tailor the material to their requirements, both in terms of depth and pace. An online support environment using multimedia would be able to utilise these desirable educational characteristics: learning is individualised, self paced, experiential, and active.

Improving quality

As Gunn (2000, p.6) points out, expansion into online learning has " put quality issues at the top of the agenda". Online learning offers a new set of pedagogical opportunities that may function to raise the quality of learning support. In many cases it has raised the quality of instructional design, resulting in very well designed teaching materials. (Inglis et al. 1999).

Responding to diversity

Despite our encouragement, some students do not respond well to the demands of collaborative learning. For a variety of reasons such as shyness and language difficulties, they are reluctant to participate in face-to-face group discussions. The possibility of communicating through discussion boards or other online services may help to meet the needs of such students. Others, for a variety of reasons, may be reluctant to visit a learning support centre on campus. The provision of learning advice online may help us to establish contact with these students who may not otherwise use our services.

Recommendations - addressing the Issues

Adopting a flexible approach

Our response to the challenges requires careful thought about the relationship between pedagogy and the provision of online learning support. Rather than simply using print based skills advice, or indeed face- to- face advice and directly transferring it to the web-based medium, learning advisers will need to experiment with the technology.

Roblyer and Edwards point out that a flexible rather than doctrinaire approach is required:

> Technology using teachers must recognise that integration strategies differ according to which instructional model is followed. Effective strategies are the result of analysing which kind of instructional approach is needed (directed, constructivist, single subject, interdisciplinary) for each learning situation and

using appropriate technology resources and integration strategies that help carry out the approach. (1997, p.23)

While we should be flexible, overall there is evidence of a need for sites that provide a constructivist learning environment.   Research suggests that a constructivist learning environment enables learners to gain knowledge more effectively than an instructivist one (Sims, 2000; Pham, 1998; Wilson, 1996). Ambron reminds us that interactive learning is learner centred learning. He argues that "people find it easier to learn and remember knowledge visually, and that information will stick in a person's memory longer if it is obtained by the learner actively reaching out for and manipulating it rather than being fed passively". (1990a, p.17-18)

Creating dialogue

Simply placing existing written resources on a learning support site will only encourage the transmission mode of education. Laurillard (1993) provides an outline for a much more effective use of technology. She argues that teaching materials, audio, audiovisual multimedia and print must be used as integral parts of the teaching process rather than as supplements to it. Laurillard argues that "there is no room for mere telling, nor practice without description, nor experimentation without reflection, nor student action without feedback" (Laurillard, 1993, p 85). To make effective use of technology in education it is vital to devise ways of exploiting the potential of online learning to develop effective discussion. Learning advisers need to design forms of support that will ensure collaborative and meaningful dialogue between participants. Simply encouraging e-mail and bulletin or discussion boards may not be enough. These may simply create large amounts of information which become time consuming and unproductive. Such activities are devoid of any explicit learning opportunity and tend to be included as a complementary rather than an integral form of learning activity. Learning advisers need to create a support site that encourages students to share information related to the learning tasks.

Providing discipline specific learning support

All too often study skills are taught out of the context of the subject area in which the student is studying. Hicks and Leask (2000) point to the need for embedding learning

support in the subject area in which the student is learning. Chalmers and Fuller (1996) argue that integrated programs have been found to be more effective than separate learning strategies programs in affecting student learning outcomes. This is especially true in higher level thinking skills such as analysis and critical thinking. Tait and Entwistle (1996) criticise study skills advice that is taught separately from course content because of the difficulty experienced by students in transferring the skills into their own course context.

Working with faculty academic staff

Tinto's research (1987, 1995) shows that, regardless of the type of institution or the type of students, integration with faculty is a key factor in academic success. Nightingale (1988) also argues for a close relationship between faculty and learning support staff. While there are generic resources that can apply across a range of subject areas some skills are more deeply embedded in a field or discipline, and should be developed in conjunction with the discipline or the field, not apart from it.

Developing a learning support site in stages

Hicks and Leask (2000) argue that it is important to supply a range of resources so that students can access support that is both appropriate to their level of development as students and related to the requirements of the tasks they must complete. To begin with, it may be wise for learning advisers to be selective in going online with learning support. Advisers can place some resources on line for students to access and then move on to the next stage of making the site interactive. It would also be possible to target specific sections of the student population that require more intensive assistance in understanding academic culture.

Hicks, Reid and George (1999) have outlined a range of online approaches to the provision of learning support for students studying in online learning environments at the University of South Australia. Essentially they have developed three forms of online support for students: generic stand alone resources; parallel and adjunct resources closely aligned with the subject/course requirements; and integrated support developed as a result of close collaboration between academic and support staff.

Researching our assumptions

Although there are many online academic learning support sites there is very little literature detailing how these sites have been planned and constructed. While many higher education providers have placed learning support resources online it is also difficult to find any literature which contains evidence of a thorough and systematic evaluation of the effectiveness of such sites.

There are many opportunities for research to investigate the provision of learning support online. Two of the most important questions to ask are: how can we utilise the technology to do things that we could not do before and how can we use it to improve learning outcomes for students? To date there have been relatively few studies that have explicitly focused on how to adapt learning support to the changing learning environment in higher education. There have been even fewer studies that have dealt specifically with the development and delivery of online learning support for students studying in an online learning environment. There is a need for research to develop and guide new models of learning support provision that encompass this area of online learning.

Conclusion

The provision of academic learning support online creates some benefits and many challenges. The existing limited capabilities of the online medium and the considerable time and cost requirements of establishing an effective interactive site are considerable obstacles to the development of comprehensive sites. Despite these obstacles, learning advisers cannot simply wring their hands and say the challenge is too great! There is a danger of technology being used to merely strengthen the one way transmission mode of teaching. Learning advisers can help to prevent this by contributing their skills and knowledge to influence the design of supportive online learning environments.

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