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In the current era of eLearning with everything, distance education students have to not only master the intricacies of their discipline but also master sufficient information technology skills to access and use the eLearning environment. This article outlines some technology-related problems that such students have to overcome in order to meet the online requirements of their studies.

Deakin University is recognized as a leading Australian provider of distance education (DE). It has adopted new technologies to support DE students as they have become available. In the early 1980s the technology was a mix of remote login, FTP and email; now it is web-mediated eLearning solutions.

Historically, the introduction of ICT to support DE students was initially targeted at Computer Science students. This was not unexpected as these students required access to the technology to enable them to learn about the technology. This led to them very rapidly learning sufficient IT skills to use the technology efficiently and effectively to support their learning. However, the introduction of Deakin Studies Online (DSO) - Deakin University's eLearning solution - has impacted on the whole student population. All students, regardless of discipline or background, are expected to use DSO to access, at the very least, unit outlines as well as study guides, assignment specifications and so on. At the other end of the scale students are also expected to complete a fully online unit, one where the pedagogy takes advantage of the opportunities the technologies afford beyond traditional DE technologies. Examples of this are the ability to use multi-way communication and collaboration and for students to work together on exercises, tutorials and projects in a similar way that on-campus students do, but without geographical boundaries or temporal restrictions.

The difference from a DE student's perspective is the change in emphasis on the type of learning and participation expected. What was once a static learning environment, consisting of study guides, text books and other paper-based resources, has been enhanced to a dynamic one which now includes interaction and collaboration. The increased pedagogical flexibility afforded by eLearning solutions is undoubtedly of benefit, but there are costs to students associated with the technology, which should not be overlooked or their effect underestimated.

There are several problems which DE students in particular (but not exclusively) have to overcome. These include:

1. **access to technological infrastructure** - a large proportion of DE students have access to computer technology and the Internet through their workplace or at home. For those that do not, the cost of providing the infrastructure could be a major deterrent to continuing their education. For those that do have access, corporate limitations placed on their use of work computers can have a significant impact on their ability to access online learning systems. Even Internet access from home may have significant limitations.

2. **gaining appropriate IT literacy skills** - although a large proportion of the student population have sufficient computer literacy skills before they commence their studies, there are still a significant minority who do not know how to use a computer or how to access the Internet. For these students having the infrastructure is of no benefit unless they can gain access to IT literacy training. The difficulty here is that as DE students the means of gaining IT literacy is generally through accessing training courses online.

3. **lack of bandwidth** - even if students have the infrastructure and skills to access and use DSO successfully their efforts may be frustrated by bandwidth limitations. The communications industry is making every effort to provide telecommunications infrastructure to as much of the Australian population as possible, but the high
bandwidth facilities are generally centred around high population centres — geographically a very small proportion of the Australian continent. There are still suburbs in and around Geelong for example that do not have access to broadband — and Geelong is Victoria’s second largest city!

4. accessibility — even at home, there may be constraints placed on students’ Internet access, such as other members of the family requiring Internet access to complete homework! Access to the Internet may be via public access sites such as public libraries, Internet cafés etc. These may be fine for accessing static resources but are not ideal when more interactive online participation is required. For a very small minority of students accessibility is a significant problem, so much so that staff have to be prepared to provide materials by alternative means. These students may, for example, be incarcerated at the government’s pleasure (they may not be allowed to have Internet access) or be a member of the defence forces on active duty (Internet access is not normally available in war zones or from a submerged submarine!), as well as those who have a physical disability that impacts on web accessibility.

5. eLearning skills — DE students, by their very nature are self motivated, able to organise their study schedule and are able to juggle work, family and study successfully. However, the advent of eLearning has had a considerable impact on the way they are expected to complete their studies. Instead of being able to take a reading with them on their daily bus ride to work, they may be expected to participate in an online tutorial. Further, for some DE students, the requirement to interact with others, discuss issues and participate in other forms of collaborative learning is very difficult. These activities tend to be more time consuming than the traditional lone-learner activities associated with distance education.

So what can be done to help DE students manage the technology required in the eLearning world? Deakin University is considering various options including:

1. Scholarships to assist students in remote areas meet the high cost of Internet access;
2. Direct access to the Deakin University modem banks for students in remote rural areas via an 1800 number (a free call);
3. IT literacy training via CD-ROM;
4. Comprehensive support programmes to assist students not only with managing the technology but also with gaining the skills needed to be effective learners in the online environment.

However, Deakin University has accepted that for the majority of DE students, provision of information technology infrastructure to support their learning is in the same class as provision of paper, writing implements, text books etc. — in the hands and out the pocket of the student!

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