

Margaret Small outside the National Technological University, Fort Collins, Colorado

number of educational institutions in the United States of America and in British Columbia, Canada, supported by the ALIA 1996 Study Grant and by a grant from Open Learning Australia. My quest was to investigate the role which libraries will play in virtual universities. While the term 'virtual university' is coming to mean a university which teaches electronically, I cast my net a little wider, and visited both traditional

universities and non-traditional institutions which used various ways of teaching, including electronic and televised (cable and satellite) course delivery.

Many mainstream North American universities are vigorously investigating the 'virtual university' concept: for instance, Simon Fraser University at Burnaby, BC has a well-advanced Virtual-U program which is already offering some fifty on-line courses, and the University of California at Berkeley through its Center for Media and Independent Learning, offers a number of courses through America Online (a commercial Internet provider).

In traditional universities, 'virtual university' programs are generally an extension of their existing distance education activities, and therefore the framework of student support is already in place. There are, however, a growing number of new institutions which do not teach on-campus students, and therefore do not have this framework; their approaches to student support, including the provision of a library service, are extremely interesting. One of these institutions is the National Technological University (NTU) in Fort Collins, Colorado. NTU is a consortium of universities and industry which provides masters programs in engineering, computing and management. Lectures are broadcast by satellite from classrooms around the country to sites in students' workplaces. NTU awards its own degrees, but all course development, teaching and assessment is conducted by the participating universities, which include the University of California at Berkeley and Davis, and Columbia and Cornell Universities. Industry partners include AT&T, IBM, Boeing, US Department of Energy and 3M. NTU provides no library support, instead expecting that either the teaching institution or students employers will provide support as required.

An innovative institution which combines on-campus teaching with a virtual campus is the University of Phoenix which has forty-seven campuses, including an Online Campus (UPO) located in the heart of San Francisco's financial district. UPO offers bachelors and masters programs in business management to some 1500 students both in USA and overseas. All teaching is conducted on-line, with each unit being taught over five or ten weeks. The Learning Resource Centre, located in Phoenix, Arizona services all campuses, none of which have their own libraries. The Centre does not have a collection of books or journals but rather provides access to bibliographic databases for staff, students and alumni, and an associated document

delivery service using fax and mail is provided (for which a charge is levied). The Centre will conduct subject searches on behalf of students. A comprehensive world wide web site provides links to other services and resources.

We should not overlook Australia's own virtual university, Open Learning Australia. Open Learning Australia is, like the National Technological University, an educational broker, contracting with consortium members to offer units in specific fields. Unlike the National Technological University, it does not award its own degrees, instead facilitating the transfer of credit for the completion of Open Learning Australia courses to programs offered by mainstream universities by distance or on-campus teaching. More than half of Australia's universities are involved in some way in offering units. The libraries of consortium members have to date provided both distance and in-person library services for OLA students, but this will change in 1997, with the appointment of the University of South Australia as the preferred library service.

Of interest and concern to librarians will be the common lack of the provision of a traditional university-style library service within virtual universities. Students need material beyond that supplied directly to them, and universities have an obligation to support its students. The traditional role of the university library, however, goes beyond the provision of specific books, journal articles and other materials to students enrolled in courses being taught currently. University libraries collect materials in subject areas in which their institutions might be expected to teach in the future; materials to support the development of courses; and materials to support research by academic staff and higher degree students. In Australia the collections of the universities form the backbone of the Distributed National Collection. Virtual universities will not develop library collections in this way. While the wide range of electronic databases which is now available allows electronic libraries to readily provide bibliographic information to their staff and students, by necessity they must rely heavily on conventional libraries for the supply of books and journals. While the range of full-text electronic material will increase rapidly in the near future, there remain unresolved issues of access, and as well the vast majority of material already in print is unlikely to be converted to electronic form.

There is no doubt that virtual universities will continue to develop. They challenge the traditional model of university organisation and teaching and will no doubt influence that model profoundly. The challenge for librarians is to ensure that we continue to play a central role in university life, as professionals with expertise which is essential if excellent teaching and research are to occur, as advocates on behalf of our students and academic staff in information matters and as custodians and disseminators of knowledge.