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Résumé de l'article

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Abstract

The University of South Australia's (UniSA) approach to converting its distance education programs to online delivery is to manage it as a part of establishing an online teaching and learning environment for all of its programs. UniSA's move to online teaching and learning derives from a clear vision of its future, is informed and directed by a comprehensive framework for teaching and learning, and enabled by appropriate structures, processes and resources. The institution has chosen to develop a relatively low-cost, easy to use online teaching and learning environment that has facilitated large-scale conversion to the online mode for all teaching and learning, including traditional distance education.

Introduction

Brief description of UniSA

The University of South Australia was established as the newest university in the State of South Australia in 1991. It was formed from the then South Australian Institute of Technology and parts of the SA College of Advanced Education, each of which was also the product of a number of antecedent institutions, some of which were established early in the State's colonial history. In defining itself as a University, UniSA has, in the 10 years since foundation, taken a managed approach to establishing its vision, policies and priorities.

Some features of the institution are that it:

- operates from six campuses – five metropolitan and one regional
- has around 25,000 students, making it the largest in the state

- has 2,000 staff
- has an annual budget of more than \$AUS200 million.

UniSA is a dual mode institution, with both distance and on-campus provision generally taught by the same academic staff with parity of content, expectations of student outcomes, and esteem between the modes. Management of all elements of program delivery rests with four teaching divisions under a common senior management structure. Distance education students are also supported by a central administrative unit that works closely with academic and administrative staff in the divisions. The enrolment pattern of distance students as a component of overall intake is similar to the national profile – that is, around 13% of UniSA students are fully involved in external programs. As well as fully on-campus and fully distance education modes, about 2,000 students mix enrolments across the modes, studying predominantly on-campus, but taking one or more courses as distance students when this suits their personal circumstances. The University also teaches programs offshore, mainly in Eastern and South-East Asian countries.

Distance mode programs tend to be concentrated in particular disciplines and professional areas, notably education, nursing, Aboriginal and Islander studies, humanities, social sciences, and business. Engineering, information technology, allied health, art, and architecture and design tend to have limited experience in distance education, although they have been quick to move to augment programs with online delivery options.

Where programs are available in distance mode, any student may elect to study as a distance student, whether or not they are physically remote from the institution. Indeed, many elect to study in this mode because it offers the flexibility they desire to balance employment, family or personal priorities with study. The University regards enrolment in either mode as a matter of student choice.

Overview of efforts to convert educational programs from non-online to online delivery

The University has been engaged since 1993 in a planned process of achieving what it visualised as its future learning environment, to be fully realised by 2003. This included: (a) recognition of the significance of information and communications technologies in supporting student access and learning; (b) the formulation of an overarching teaching and learning framework that informs and directs the development of online learning; and (c) the resourcing of equipment, systems and infrastructure to support widespread use of these technologies in program delivery.

The Academic Board of UniSA is committed to developing programs that foster

an agreed set of attributes in graduates through a teaching and learning environment that is student-centred and flexible. This policy directive and associated academic planning involves identifying how university resources are to be used to achieve these ends. Online delivery mechanisms allow greater flexibility for students and consequently the move to supplement on-campus and distance programs with online forms is supported. In this light, the conversion of distance programs to online forms is seen as a relatively rapid and straightforward means of improving flexibility.

The conversion of distance education programs for online delivery is only one aspect of the University's move to online delivery for all its programs. In many ways, distance teaching and learning resources, being largely print-based, present the least technical challenge for wholesale conversion to online forms of delivery through the WWW. Production of print resources at the University had used highly standardised document templates in a common word processing package. Such standardisation has permitted the application of rule-based conversion programs to order the digitised text appropriately for online display. In fact, as we shall detail later in this case study, such templates have suggested ways of approaching the online teaching and learning environment.

Likewise, our general experience in distance education and commitment to the professional development of academic authors as literate contributors to asynchronous, resource-based learning have also contributed to our emerging model of flexible delivery.

Problems and/or issues encountered

Moves to online modes of delivery raise a number of issues that can be grouped as follows:

- *Concepts and paradigms.* There has always been potential for tension in Australia between the paradigms of on- and off-campus (distance) delivery. The former tends to employ highly synchronous, face-to-face transmission or interactive group delivery forms. The latter favours asynchronous, print and other tangible resources delivered to individuals (Gillard, 1993). *Flexibility* (Nunan, 2000) and *online* as interpreted through each of these paradigms results in further confusion. Similarly there is lack of clarity about online learning as supplement, complement or replacement for other modes.
- *Capabilities of staff and students* to use online modes of teaching and learning effectively.
- *Resources* for online teaching and learning including access to appropriate equipment and networks, training, development and support.

- *The ‘objects’ that need to be available* to students and staff to facilitate online authoring of, and interaction with, teaching and learning resources.
- *Managing the implementation and maintenance of online modes*, including, for example, planning processes, changing work practices and reskilling of staff, and changing organisational structures.

These issues together impact upon the rate and areas of take-up and are elaborated below.

UniSA’s approach to resolving problems and/or issues

Because of the nature and history of the institution, UniSA’s approach to these issues has tended to be on a whole-of-institution basis and highly integrated within policies and structures.

Concepts and paradigms

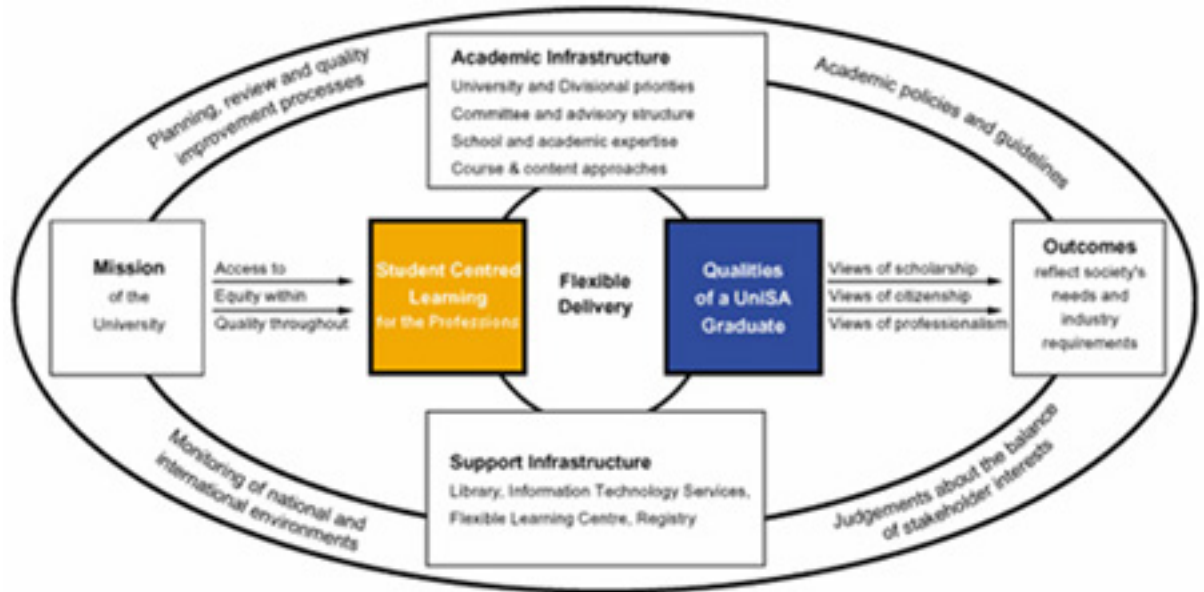
The University has addressed the conceptual tensions between the different delivery modes by developing an overarching teaching and learning framework. There are three key elements around which this framework is constructed. Two of these are conceptual: student-centred learning for the professions and a statement of agreed qualities to be fostered in University of South Australia graduates. The third element is enabling: that is, these conceptual commitments will be realised through the flexible delivery of programs. Our understanding of flexible delivery can be summarised as the provision of learning resources and the application of technologies to create, store and distribute course content, enrich communication, and provide support and services to enable more effective management of learning by the learner. In particular, the concept involves a view of learning in which a teacher does not predominantly mediate the student’s experience (King, 1999, p. 271).

This policy position informs and directs teaching, learning and assessment within all of the University’s programs.

Online teaching and learning is regarded as a means of increasing flexibility of delivery to provide for greater student access to, and control over, their learning whether they are studying on-campus or in distance mode, or offshore.

The University has dealt with the potential confusion between on-campus teaching, distance education, flexible delivery and online developments by replacing existing models and metaphors with a simple but conceptually powerful teaching and learning framework that features systems and processes rather than modes or student cohorts. This is critical, as it enables the identification of equivalent pedagogical elements of a teaching and learning environment across modes. The model is represented diagrammatically as follows (Figure 1).

Figure 1: Systems and processes model of teaching and learning



This framework, which distances itself from traditional concepts or categories, suggests a realignment and reevaluation of current practices. In this way, it supports change and legitimates online flexible approaches that supplement, complement or replace aspects of the existing teaching and learning environment.

Capabilities of staff and students

The conversion to online delivery necessarily is dependent upon enabling teachers and learners to operate effectively in the new environment. Teaching staff need to be familiar with the University's common delivery platform and to be able to use it as a production tool in a way similar to the way they would use a word processing application to prepare lecture or tutorial handouts. This needs to be matched with knowledge of how the communications capacities, sometimes described as shared workspace and private workspace, of the platform can be used.

Students need to be able to participate in online delivery from the moment they enrol, to be inducted into more sophisticated use of the environment during the initial orientation to their program of study, and to continue developing online literacy within their chosen professional or discipline area for the duration of that program.

Resources

The effectiveness of an online teaching and learning environment is heavily dependent on the availability and reliability of hardware, software and networks. The University made two critical decisions that have enabled it to provide an effective environment within its limited financial means. First, the decision was taken to standardise its information technology provision. All staff and on-campus student facilities share a common PC desktop environment equipped with the Microsoft suite of products. Hardware is obtained through a limited number of preferred suppliers, and software upgrades are taken on an institution-wide basis as a result of central decisions. Distance education students are supported in the use of University online services by making all provision available through a simple web browser. The second crucial decision was to restructure the University's budget profile to fund developments of technology and the library through staff reductions. In 1997, the University changed its model of income allocation to make savings of the order of \$AUS18 million within a government operating grant of \$AUS147 million – a 12% saving (University of South Australia, 1997). These savings would be applied to increased expenditure on information technology and maintaining library capital expenditure. Expenditure on information technology is expected to increase by some 30% over the period 2001-2003 (University of South Australia, 1999).

Support for the online environment, which is common to all staff and students, is coordinated through University-wide service units operating within a senior management portfolio grouping. The portfolio includes the Information Technology Services Unit (which manages and supports the infrastructure), the Library (which provides training for staff in PC applications), and the Flexible Learning Centre (FLC) (which is developing and supporting the online teaching and learning environment, UniSAnet, and providing professional development and support for academics in relation to online teaching and learning). The FLC provides support in a number of ways: (a) through person-to-person induction to the capabilities of UniSAnet; (b) through provision of helpdesk support, by means of WWW-based information; (c) through group based staff development sessions; and (d) through input from editorial staff on optimising text based communication and structuring for online presentation. UniSAnet, the online platform developed by the University, has similar features to commercial products such as WebCT and Blackboard, but is highly integrated with university core database systems such as student records, and human resource, finance and other administrative data. WWW pages are dynamically generated using Active Server Page technology and students can access all resources through a single logon.

The 'objects' that need to be available

Online teaching and learning had developed haphazardly within the University through the efforts of individual academic enthusiasts with technological skills. Some provided services for on-campus students, others directed their efforts

to distance students, and many made no distinction between potential student users. But the critical issue was that these had been individual – even idiosyncratic – in their approach, and reflected no coordinated use of software. Any technical platform would therefore need to satisfy the enthusiast and more advanced user by add-ons to the basic environment, as well as presenting a simple and easy to use interface for the non-technical (and even technophobic) majority of teaching staff. The development of UniSAnet is discussed in detail in King (in press).

Student satisfaction with teaching and learning is not simply a matter of the course content, but depends on their perceptions of the total teaching and learning environment they experience. It has therefore been important to develop an online teaching and learning platform that integrates administrative and service capabilities as well as teaching delivery. That is, converting the content and methodologies of educational programs to online delivery must also address issues about how students access services such as enrolment, fee payment, library services, learning and language support, health and welfare information, careers information and services and so on. A significant step in this direction has been to establish *Learning Connection*, a program of coordinated student services made available through physical offices on each campus, and, more importantly, as online services in a wide variety of support areas for both students (whether on- or off-campus) and academic staff. It is accessible 24 hours every day, again requiring only a standard web browser for access.

Managing implementation and maintenance

Conversion to online delivery cannot be predicated on the acquiescence of staff or students. Resources also need to be applied over time to promotion, encouragement and support for using the platform, and the removal of bottlenecks and obstacles to uptake.

To promote strategic conversion to online delivery within the academic divisions of the University, access to corporate resources to develop programs online is linked to the annual academic planning process. That is, where professional support is needed to add to the efforts of teachers in moving to or developing online educational programs, corporate resources are provided only to those programs that have been formally accorded priority by the academic divisions. The level of support is then negotiated between the divisions and the Flexible Learning Centre and becomes the basis of a service contract.

Moving to online delivery also challenges existing structures, work practices and skill sets in professional, technical and administrative areas of support units. It also requires significant coordination between units. The commitment to customer-service notions underpinning such coordination also requires new structures, work practices and skill sets.

As indicated above, coordination of activity in service areas has been facilitated

structurally by the establishment of a portfolio of service areas under the direction of a pro-vice chancellor (deputy president). Such a structure facilitates necessary integration between the use of converging technologies and customer service approaches to the delivery of programs. At the unit level, the Flexible Learning Centre is continually engaged in restructuring the work arrangements of its staff so that they can operate in ways that add value to the activities that teaching academics undertake using the UniSAnet platform. This is no simple matter. It requires the FLC staff to reshape the way they conceive their role. What was once a technical contribution to production is now a consultancy service to support learning.

How conversion is influenced by UniSA's structure, culture and processes

The University of South Australia was formed by merger of two much older institutions ten years ago. The circumstances surrounding the creation of the new university have led to distinctive approaches to online teaching and learning. First, the emergence of a new institution out of different organisational cultures meant it had some scope and a political imperative to establish a unique identity and locate itself relative to the two existing universities in the State of South Australia. Second, the merger was planned and managed such that neither component dominated the form of the new organisation, but rather each component took part in defining and building the structures, processes and culture of a new institution. In this way, much former practice was shed and the institution was enabled to imagine its future more freely than might have been the case for a large and established older institution. Government also intervened and created certain conditions for achievement of university status by the new institution, one of which was a mandate to make special provision for indigenous and disadvantaged groups within the community. This fed into the need to consider, in particular, the approaches adopted as part of the teaching and learning ethos we wished to foster.

From the outset, the university benefited from a strong central leadership that forged a blueprint for institutional development. The institution identified a learning environment it aspired to achieve over a 10 year period, and the means of achieving it were set in train. Academic and service structures were all closely examined and restructured (and continue to be restructured) to align with the mission and goals the institution had set for itself. This process was also intended to enable the institution to adapt to changing external forces impacting upon the sector in general, and the institution in particular. These extra-institutional factors are discussed later in this article. Institutional planning, review, and comprehensive quality assurance and improvement processes were central to the strategy adopted by management to forge the nature of the

new institution.

Thus UniSA can be seen as being characterised as strongly led by policy and institutionally managed approaches to whole of institution change. This has made possible, amongst other things, large-scale online development during a period when the institutional funding base has had to accommodate major shifts from almost total reliance on government funds to pursuing much less certain earnings from other sources.

As in any large and evolving institution, continuing tensions exist within and between institutional subcultures. These revolve about notions of academic autonomy and managerialism, of central and devolved management models, as well as pedagogical debates about teaching and learning. While considerable commitment to the new mission and approach of the University has been achieved, there are still pockets of resistance. It is not surprising that the movement to online teaching and learning, as a focal point for change in an area that many academics regard as both discipline-determined and relatively unproblematic, is sometimes a site where resistance is played out.

However, there are other forces operating that support engagement with the benefits of conversion to online teaching and learning. These are closely tied to institutional and local planning and associated resource allocation processes. Academic planning is linked to the level of access to corporate resources consequently available to schools and divisions. Course development and delivery decisions are considered and reviewed at school and division level and when their budgets are under strain, decisions about program viability and variable costs per student are brought into sharp focus. Such a focus encourages strategic decision-making and a concern for cost-effectiveness that has been strongly conducive to the movement to online delivery. This is not to say that the University believes that moving to online teaching and learning will lead to cost savings. Rather, it is understood that greater quality and added value is likely for a similar outlay of resources and that, strategically employed, online approaches have the capacity to foster a significantly improved customer focus in program delivery. In short, rather than believing online teaching and learning enables us to do more with less, we believe that, strategically applied, we can do better with present resource levels.

The conversion process has been facilitated by the construction of an online teaching and learning environment (UniSAnet) as a corporate resource that reflects a number of principles articulated by the University community. There were expectations that UniSAnet would:

- establish an online presence in the teaching and learning of subjects that would readily accessible by all staff and students of the institution and scalable to any level of likely growth,
- be simple enough so that staff and students with the lowest likely levels

of information technology skills would be able to use it successfully, but capable also of accommodating innovative online teaching and learning resources already developed by innovative individual academic staff, and

- have a standard set of authoring and communication tools that would be adopted across the University and form the basis of putting materials on line such that UniSAnet would become the masthead for all online dimensions of the University's teaching and learning program.

With UniSAnet, moving to online is more than a conversion process; the technology also enables the transformation of the distance teaching and learning environment. Critically, it is a significant force for the development of increasingly flexible approaches to teaching and learning. The conversion process is a combination of transposing existing distance education resources to online materials and of upgrading them by utilising other capabilities and capacities encompassed within UniSAnet.

Rapid conversion of print-based distance education materials was facilitated by the development, by the FLC, of rule-based conversion programs (macros) that could take structured distance education documents (administrative information booklets and study guides) and automatically convert the text to WWW-based forms.

UniSA has had a particular approach to distance education that has influenced its construction of UniSAnet. Where other distance education institutions have followed a model where instructional designers construct learning materials using content authored by academic staff, UniSA adopted a philosophy of encouraging and supporting its academic staff to become literate distance educators. This has been achieved through formal professional development programs and also by way of the production of templates for authoring print materials that have, embedded within them, elements of instructional design.

Similarly, UniSAnet has, for the novice online teacher, developed wizards that encourage authors to make appropriate pedagogical decisions in constructing teaching and learning resources. For example, staff entrée to UniSAnet is through an automatically generated personal home page. This provides an attractive layout, with basic contact information compiled from information held on University databases. Capacity then exists for staff to organise and build the teaching and learning components of the site, using minimal information technology skills. Staff home pages are then linked to their basic subject page (also automatically generated). This site uses a wizard to construct and organise the teaching and learning arrangements and resources for the site. The subject page, in turn, is also linked to program information compiled from database materials held by the university Registry.

Conversion to online teaching and learning is facilitated by providing a structured repository for existing teaching and learning materials as well as an op-

portunity to add a range of new teaching and learning tools using the capacities of the platform. For example, UniSAnet makes automatic links to resources and services to enhance student learning – library, language and learning support, health and welfare, administration, bookshop – within the learning materials provided to students. In this way staff and students are well served by the platform, and features can be built-in to provide for student choice and control. Thus conversion from distance to online delivery goes beyond the individual design decisions that a particular staff member might make to include features of the program in which the subject is located and to incorporate the generic service framework of the University.

UniSAnet is thus constructed with features that are consistent with and which promote an institutional culture that places the learner and learning at the centre of academic and support infrastructures.

Influence of extra-institutional factors

Australian universities have been facing something of a crisis in recent times and consequently so has open and distance provision. Elements of the crisis are common internationally, but many would see the situation exacerbated by recent Australian government policy. There is some measure of agreement on the forces that are combining to generate new demands on universities. The Vice Chancellor of the University of South Australia, Professor Denise Bradley (University of South Australia, 1997) identifies:

- globalisation of economic systems,
- rapid development of communications technologies which are revolutionising both the way we do things and our contact with people across the globe,
- changing patterns of work and employment, and
- growing economic and social inequalities within and between nations.

Another Australian Vice Chancellor, Professor Jan Reid (1997) mirrors some of these and adds:

- the political economy of higher education,
- the reconfiguration of knowledge within and between traditional fields of scholarship,
- the increasingly interventionist tendencies of government, the professions and employers,

- the funding and deregulation of higher education, and
- competition for the potential client base for universities.

Possibly the most significant factor for UniSA has been the desire to differentiate the University from local state and national universities in order to compete for potential students. The major means of differentiation is the provision of better teaching and learning opportunities for our students through more flexible, student-centred learning. The university sought to become a national leader in:

- applying information and communications technologies to the management, administration, teaching and learning within programs, and
- developing infrastructure and tools to extend its existing teaching and learning resources to online forms.

Such developments would open the way for possible income generation from program delivery, short course delivery, offshore activity and through commercialisation of UniSAnet itself. Indeed, the UniSAnet platform has been successfully taken up by other providers and is now commercialised through a wholly owned University company, *KnowledgeSouth*.

Most influential institutional environmental demands

One of the most fundamental institutional issues in managing moves to online delivery has been how to rethink the deeply ingrained notions and metaphors held by academic staff that are associated with on-campus forms of teaching and learning and traditional distance education.

The latter has been closely associated with “production house” metaphors. Quality of program delivery was closely associated with the quality of the main teaching artefacts – the study guide and supplementary print materials. On-campus education has often been associated with teacher performance and interaction with students in the lecture and seminar group. Moves to online delivery have been perceived as either electronic book production (distance education model) or a denaturing of the performance and interaction modes of on-campus by “reducing” it to text-based forms.

Online delivery provides both a means of production of resources and a means of communication and interaction. Further, students can explore different layers of information within the online approach. They are able to map the boundaries of their program and determine the extent of their involvement in the ancillary services and resources that have been integrated into the program delivery.

Online delivery requires new metaphors that are based not in the simple transposition of study guides to electronic forms, but based in mutual involvement of teachers and learners in learning. The literature about online delivery (e.g., Chong & Sakauchi, 2000; Cox, Clark, Heath & Plumpton, 2000; Klockner, 2000) has a focus upon conversation – conference space, shared workspace, *threading* and *weaving* – to capture meaning from online conversations. Yet, at the same time, it also acknowledges that workspace contains other dynamic products or resources. Such resources provide information that awaits translation by the learner through conversational frameworks into meaningful learning resources. Typically, resources include hot-linked information, databases, guides to study, multimedia products, and so on. Online learners work within and experience a learning milieu or space that contains, but is not controlled by, teacher intentions. Different metaphors operate within this space. For learners operating in shared workspace, their metaphor is “conversation”. For teachers, the closest metaphor to traditional practice is the “tutorial handout” as this is commonly a sketch map or resource aimed at stimulating conversation. Online learning is at the centre of a process of replacing “teaching” with “learning” metaphors. Thus conversion to online is the pivot upon which whole of institution cultural change turns in this critical area of university core business.

Three further critical institutional environmental issues that address the institution’s need to differentiate and thus compete are:

- responsiveness – that is, the rate and extent of conversion of programs to online
- quality assurance of online teaching and learning programs within a total teaching and learning environment, and
- restructuring of academic and support staff infrastructures to address on-line teaching and learning.

In relation to institutional (corporate) concerns, both responsiveness and quality assurance are issues that are central to meeting the institutional goal of differentiation from competitor institutions. That is, how responsive we are to conversion will determine both the rate and extent of UniSA’s differentiation. At the same time, the institution would wish to ensure that the quality of its online teaching and learning is the highest possible.

Issues about restructuring are largely concerned at University level with changing academic and support arrangements to address the online environment. It could be argued that there are fundamental changes necessary within academic teaching structures to move from a teaching to a learning focus, because teaching is such an individually constructed activity. Conversion at this level necessarily involves the decision-taking processes of the school or division that will entail consideration of issues such as program planning, resourcing and workload.

Such structures can be much more resistant to change as they are seen to embody collegial values that many academics see as central to university governance and management.

Critical incidents in conversion to online delivery

The University's efforts in converting educational programs to online modes need to be appreciated as part of a long term planning process that encompasses a number of critical events summarised below, some of which have already been touched on.

First, the University articulated its vision of its future learning environment to the year 2003 in 1993. Among other features, this environment would be characterised by flexible teaching strategies emphasising student management of learning, and communications technologies applied appropriately to teaching and learning. An informal future learning environment working party later became a more formal group with responsibility to recommend specific changes to create electronic access to teaching and learning.

The second critical event was the reshaping of support for flexible learning, achieved by the creation of a Flexible Learning Centre (FLC). This involved merging the Distance Education Centre (containing staff experienced in production processes and academic staff development for external teaching and learning) and the Centre for University Teaching and Learning (a group of teaching and learning support professionals with a primarily on-campus focus). The FLC's role was to bring about changes in staff development and student support to facilitate institutional moves to electronically mediated learning.

The third critical event was a substantial whole of institution budget restructuring that provided the means to put in place the computing and communications infrastructure necessary to support wide scale online teaching and learning. Two elements of this were strengthening the electronic network between campuses and creating a common e-mail environment for all staff and students, using Microsoft Exchange.

The fourth critical event was the funding of a project to establish a common platform and tools that would be the institutional mechanism for developing online programs. Such a mechanism would have the following features: it would be scalable, and it would form a baseline system able to be used without specialised training by non-technical teaching staff from their desktops, involve no specialist software or plug-ins, and without requiring technical production interventions. This project resulted in UniSAnet, the University's masthead for online teaching and learning.

Conversion of educational programs to online modes at the University thus oc-

curs within an overarching teaching and learning framework, facilitated by the provision of appropriate structures, processes and infrastructure. The purposes of conversion are to improve, for students, access to and control over learning opportunities to develop as graduates with a distinctive set of qualities or attributes. Conversion is seen as a series of teaching rather than production decisions.

UniSAnet, as a vehicle for online teaching and learning, has been shaped by conscious decisions to eliminate staff dependence on expert production processes. A range of tools and wizards make developing guides to study, authoring quizzes, or constructing student evaluation instruments a simple process requiring no more skill than basic ability to use the average word processing software. Academic staff development resources are thus able to focus on pedagogical issues about online learning rather than on technical skills. Professional development for academic staff focuses on structuring content for online learning, using communications capacities within online learning, using virtual groups for learning, obtaining online feedback to improve learning and so on.

Intended and unintended consequences of conversion efforts

Learning/teaching system

The intended consequence was to introduce an online presence into all subjects taught by the University of South Australia. At August 2000, 17 months after UniSAnet was launched, there are 411 courses with online study guides, 90 of which have a range of self-assessment quizzes and automatic feedback for students, and 264 offer between 1 and 22 discussion groups. A complete online student support service, *Learning Connection*, is available on a 24 hour, 7 days a week basis. There is a similar level of technology backup for the system with sufficient access, storage and communications capacities. The success of the conversion has meant that hard copy materials to support teaching and learning will now be produced from the online materials.

Unintended consequences include a passing of print costs to students (at a distance) and to the Information Technology Services Unit (on-campus), as it runs the computer pools students use. The latter has been substantial and some academic staff seem to be putting materials on the WWW to avoid developing handouts for face-to-face classes as a cost-saving measure. Of course, costs are simply being internally displaced.

Institutional level operational systems

The capacity of the domestic bandwidth over which material has to be delivered to distance students is a problem in Australia. Connectivity and delivery speed are becoming something of a problem. An interim solution of eschewing graphics and animations, which require wide bandwidth, has been adopted.

There has been a minor problem in a limited area of the University in that teachers in Computing and Information Systems are frustrated by the common reliance on Microsoft-based products. UniSAnet technicians have worked to provide solutions to their specific teaching problems, but there are strong attitudinal barriers yet to be overcome.

Demand for other areas of the University's operations to be more accessible online has been generated. This ranges from e-business dimensions to specific educational features such as the online submission and return of assignments and a growing requirement for administrative functions to be fully accessible. The UniSAnet team has had significant success in leading edge innovations, including the developing of online survey instruments, and a tool for the recording of success against the University's agreed graduate attributes. Rollout has also been more rapid than we anticipated. There is also the interesting challenge of commercialising a product that is in demand from other institutions while aspects are still being beta-tested within our own University.

One unintended consequence has been that the success of the conversion has pointed to the limitations of the wizard that is used to guide the structuring and shaping of the resources that are being imported into the online platform. This points to the need for a more flexible wizard(s) that cover a wider range of teaching and learning situations (including the development of resources and services for face-to-face teaching) and provide a more extensive range of guidance to staff who are involved in delivery and transformation decisions.

Course development management system

The course approvals process within the university has recognised the connection between changes in delivery arrangements or moving from modes (internal to external) and has recently specified procedures that make decisions about delivery an issue within course approvals. Also, changes to delivery are often linked to strategic purposes as well as increasing flexibility (e.g., the marketing of course delivery offshore) and these need to be addressed within the wider University planning processes.

A necessary consequence of the approach we have taken is to pass responsibility for the quality of learning resource production back to academic staff. In the past, the administrative arm of the distance education operation exercised con-

siderable influence in setting standards and, partly, realising them through the production services we offered. Now, quality is a matter of divisional systems and the performance management process, which makes it a reactive rather than pre-emptive system.

Course delivery system

The intended consequence has been to raise issues about the appropriate technology for the learning task and the platform has provided a vehicle for this. The production and communications capacities of the system provide viable options to conventional delivery mechanisms that in turn raise issues about the choice of appropriate delivery techniques.

An unwanted consequence has been to increase the costs of course delivery. This has been because threaded discussion groups and recourse to e-mail for communication between staff and students has increased student access to academic staff, who are the costliest component of course delivery in Australia.

UniSA in general

A whole of institution development such as UniSAnet is only possible where the policy framework and resources are made available. The success of UniSAnet is driven by student acceptance and use of the capacities that are contained in the platform. This has been assisted by student uptake of an electronic environment that is integrated into the physical structures of our campuses. For example, all students have e-mail and there is access to computing facilities in purpose-built pools, stand-up sites in cafeterias and corridors, with similar provision in the library and administrative areas. This leads to an expectation that the capacities of information and communications technologies will be exploited to deliver subjects and courses.

Implications of the experience

UniSA in general

There are three obvious implications: (a) an increase in institutional competitiveness in the recruitment of offshore international students, (b) an increase in morale and institutional pride as staff see the quality and customer-service dimensions of the system realised, and (c) a clear adding of value to both academic staff and students in the development and delivery of programs.

Implications for Administration

Staffing for the development of UniSAnet has had to take precedence over other areas of need. There has also been a challenge to staff formerly involved in the production of print and other tangible resources to redeploy their skills into the online environment, and some have found this difficult. Management has had to seek solutions that allow for staff satisfaction both within and beyond involvement in the new online system.

One dimension of this has been that the basic assumptions of work practices for some staff within the Flexible Learning Centre have been seriously challenged. This has been discussed above in relation to the movement from production models of resource production to support for learning, that is, staff have moved from being technical professionals to consultants and advisers.

UniSAnet has also challenged systems development protocols and without strong collaboration between the Flexible Learning Centre (responsible for UniSAnet) and the Information Technology Services Unit (responsible for maintaining the IT network and standards of the University) difficulties may well have arisen that slowed development. This required conscious effort by the two managers and involved setting up regular meetings for consultation and information exchange.

Online delivery has been the means of a significant immediate improvement to conventional distance education by eliminating logistical delays of printing, packaging and postage in the preparation of learning resources intended for distribution to students.

Implications for Academics

The UniSAnet approach has been directed to allowing academics to concentrate on the preparation of content rather than having to acquire information technology sophistication or focus on the production aspects of moving online. The celerity with which so many have moved courses into the UniSAnet system is a measure of the success achieved. Further, electronic media enable more information to be gathered about processes, facilitating the necessary information base for greater reflection on practice.

Implications for Learners

While the inhouse system requires the lowest level of information technology competence on the part of students, it is nonetheless the case that many benefit from computer literacy programs run during the Orientation Week of the first academic year. In the last two years, one hour programs have been run continuously throughout that week, using senior students who have undergone a

specialist train-the-trainer program. In each year, 48% of all first year students have participated in the program. There are, of course, issues about distance students getting similar support. Print versions of materials have been made available and online tutorials that deal with all standard University software are available.

There are, however, still problems of access. Genuinely remote students require costly long-distance connections to Internet Service Providers and the capacity to download materials is constrained by the capacities of the local telephone network. In part, this is offset by the immediate availability of materials on enrolment and 24 hour a day WWW-based support services.

Implications for institutions converting from traditional to online distance education

The University of South Australia's experience is one version of the Australian approach to online delivery. It has clearly been facilitated by former institutional involvement in distance education – experience and infrastructure in resource production, an ethos supporting the non-traditional student, and a commitment to systemic forms of support. Most institutions have not adopted our approach of developing their own teaching and learning environment, but there are similar opportunities for those adopting whole-of-institution commitment to commercial authoring and communications packages.

At base, we believe that our successful conversion from conventional distance delivery to online provision that includes services for on-campus students involves central planning, a commitment to a student-centred view of teaching and learning, and adequate resourcing, both for necessary infrastructural development and subsequent professional development.

Conclusions

The University of South Australia has sought to use distance education expertise and value commitments as the underpinning of its move from distance education to online delivery. In addition, it has developed a theoretical rationale, embedded in its planning and quality assurance processes, that posits a particular view of outcomes-oriented, student-centred learning at the core of its teaching and learning framework. This view can only be implemented through flexible delivery approaches that embody the technological dimension of online learning.

The success of the institution in developing its own approaches has been achieved at relatively low cost. At the macro level, the budget reprofiling exercise freed

resources to fund the infrastructure development that is a prerequisite to large-scale change, and funded the development of a platform appropriate to the needs of the institution. At a micro level, programming and conversion resources have come from a reprioritisation of roles and responsibilities and reskilling in relevant areas rather than the application of significant new resources. Change has involved an institution-wide reworking of roles, responsibilities and resource distribution that is pervasive, and so difficult to quantify with any precision. What is certain is that whatever the internal costs have been, successful and large-scale conversion to online is a move the University could not afford *not* to take.

Success has also come through predicating developments on the need for minimal information technology skills on the part of both staff and students, and access capability that requires no specialist software other than a web browser.

This movement, however, has involved a recasting of the assumptions and dominant paradigms shaping distance education practice, with consequent implications for the work of some technical experts, support staff, and academics. Conversion of non-online programs to online is not merely a process made easier or more difficult by the nature of systems and materials – it provides a pivot and opportunity for rethinking and reworking approaches to teaching and learning. It is about organisational change, and thus is subject to all the complexities and issues that such change entails.

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