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STAFF DEVELOPMENT RESPONSES TO THE DEMAND FOR ONLINE TEACHING AND LEARNING

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ABSTRACT

Australian universities are coming under increasing demand to deliver online courses. This demand is driven by four main factors; 1) the increasing availability of multimedia capable computers, fast modems and Internet access; 2) the emergence of online technologies such as the WWW that provides a cross-platform, non-proprietary multimedia delivery system; 3) the promise of enhancements to the quality of the teaching and learning experience; and 4) being part of the global education market.

The academic who teaches successfully online now needs a knowledge of both pedagogy as it applies to the online environment and a knowledge of current appropriate software, hardware and network technology. Since the traditional skills of most university staff don't fit them for these new demands, staff development has a critical role to play in the success of online teaching and learning within the university environment.

To explore how this staff development need is being catered for, a Web-based survey was distributed to the Head of the Staff Development Unit or equivalent in each Australian university. 20 responses (48%) were received and analysed, and a follow up phone survey conducted of non-respondents.

Staff development activities undertaken during 1997 and those planned for 1998 were reported by respondents from a range of metropolitan and regional universities. Results show that most training is delivered by traditional methods such as classroom presentations, demonstrations and half day tutorials while online methods of delivering training are less frequently used. The content of training courses covers a broad range of topics with the most popular being, pedagogical issues in online course design, Web page design, and course authoring systems. Staff undertaking training tended to be from a cross section of academic levels.

Staff development activities of this nature are not exclusively provided by the Staff Development Unit but tend to be carried out by a range of internal and external providers. Phone interviews of non-respondents further revealed aspects of organisational change.

KEYWORDS

Training for online teaching, university staff development, organisational change.

1. UNIVERSITIES AND TECHNOLOGICAL CHANGE

Significant changes have occurred in modern industrialised societies as a result of the exponential growth of knowledge, the development of increasingly complex and sophisticated technology and the impact of globalisation (Sheehan, 1996). For the university sector these changes demand that academic programs need to be designed to facilitate the acquisition of skills such as the retrieval, analysis and synthesis of information, differentiating fact from opinion, collaboration and the development of higher-order thinking skills. Staff need to be competent to do this (Kings, 1995).

This information revolution has also brought with it tools that allow the delivery of external or distance education programs in new ways. The Internet, the World Wide Web and associated audio and video technologies allow what Shein (1997) terms "anywhere, anytime" learning. She describes the spread of Web-based distance education courses in US colleges and universities and concludes that courses will not succeed "unless users are Web-savvy". Pilgrim and Creek (1997) believe that a global education market will be created as universities move to develop an online capability and they consider the late 1990s as a significant make-or-break time for many higher education institutions.

The Department of Employment, Education, Training and Youth Affairs (DEETYA) has recently put out an Evaluation and Investigation Program (EIP) tender for the compilation of an inventory of computer-based courses and support materials. This consultancy, to completed in the second half of 1998, will provide a snap shot of these activities and existing content in Australian universities.

2. ACADEMIC STAFF DEVELOPMENT UNITS

Historically, the role of Academic Staff Development Units (ASDU's) in supporting staff development for technology-based teaching has been a varied one. Since the establishment in 1957 of the first ASDU at Melbourne University, similar units were founded elsewhere and at this point almost all Australian universities continue to support ASDU's (Johnson, 1982). Commonly these units advise on improving teaching, provide induction courses for new staff, conduct institutional research and make policy. However, in the area of overseeing technology based services, greater variation in levels of responsibility has been evident across institutions.

Some ASDU's have always held the responsibility for training and supporting staff in the use of audio, video and, more recently, computer based technologies in their teaching and assessment. This is particularly the case where there has been a long history of open and distance education. Other universities have historically allocated responsibility for technology based initiatives to the library, IT departments and in some cases to multimedia departments. With the growth of the Internet, we have seen course development responsibilities expand to a point where individual academic staff are no longer expected to 'cover all bases' in course development. We now see Rogers' (1983) model of innovation and diffusion being acted out as early adopters, regardless of their position in the university, influence the early majority. It is within this context of rapid change in graduate skill sets and staff knowledge of technology based teaching and learning that this survey was conducted.

3. LITERATURE REVIEW

A review of the online literature conducted mainly through searches on AUSTROM databases such as Australian Education Index, Business Australia, R&D Management, Scanfile, AIMAT, Indust. Rel., Worklit, OMNRES, and Ovid databases including Current Contents, ABI Inform, Social Science Index, revealed that reports on staff development and technology training are in the context of libraries and the training of librarians and library users (eg Ryan and Leith, 1995). While there are reports on academic staff development they do not deal with technology training or training for teaching and learning in an online environment.

A scan of recent national conference proceedings was more productive. In her keynote presentation Harasim (1995) argued that new communications technologies such as computer networks enable new approaches to, and new opportunities for, teaching and learning and that

such networks can be used to enhance face-to-face classroom activities as well as to support entirely online course delivery. She sees both student and staff working in new ways. McNaught (1995) emphasised that the key to using upgraded computer and communications infrastructure facilities for the enhancement of teaching and learning is effective staff development.

Pennell (1996) considers that with increasing participation rates in tertiary education academic staff, who may have done their learning through "face-to-face discussion or solitary burrowing through the stacks of a library", will need to be trained to deliver and manage in the online learning environment. He goes on to discuss the issue and illustrate some specific software tools that are being developed to address this need. While Godfrey (1996) outlines his early adoption of the Web as a tool for teaching, he is forthright in saying that "technological excitement should not dominate over pedagogical issues". It should be noted that Godfrey and many other early adopters of online technologies, tend to come from faculties or departments of computing, mathematics or information technology. If the uptake of online technologies is to occur in a broad range of discipline areas and if it is to occur relatively rapidly it is clear that a substantial program of staff development will need to be provided.

Wills et. al. (1997) in talking about the convergence of distance and on campus teaching made possible by recent technological developments consider that; "If there is to be a paradigm shift in the way educational institutions deliver education, there will need to be a paradigm shift in staff development". She and her colleagues see staff development being provided on an "anywhere, anytime" basis, that is, staff need to experience a similar online learning environment to their students. In other words in order to mainstream online experiences for students they need to be mainstreamed for staff development. Pilgrim and Creek (1997) report their university's response to the development of an online capability as being via a systematic and strategic development project involving both infrastructure upgrading as well as staff development and training. The latter involved an incentive scheme including attendance at a relevant conference and the exploration of a follow-up coaching/mentoring scheme.

A range of Web-based training tools can be found in the growing literature about networked learning that exists online (see Corderoy & Lefoe, 1997: 140, for hypertext references). These tools can be adopted for development of courses as well as teaching, learning and staff development. Changing work practices will further enable flexibility for staff (and students) and a rationalisation of work load. New Zealand research reported at the 1998 HERDSA conference cited "assistance with redesigning my subject to incorporate more IT methods" as the second most desired support for transforming teaching and learning through staff development. The most requested support was "advice on what is available" in terms of technology for teaching and learning (Hunt, 1998: draft paper).

4. AIMS OF THIS STUDY

The aims of this study were to conduct a national survey to obtain a snap shot of staff development activities in online teaching and learning undertaken in 1997 and an indication of activities planned for 1998. It was intended that the survey investigate both the extent and nature of the provision. These data will serve as a baseline for future studies in this area of organisational change within universities. It is recognised that additional surveys of individual academics or central administrations could provide other perspectives.

5. METHODOLOGY

The study used a standard survey technique approach. A Web-based form consisting of 26 questions was developed. The questions were arranged in four sections: (1) identifying information (confidential), (2) profile of the institution and the coordinator of staff development in online technology, (3) details of completed and proposed training activities, and (4) profile of participants. Response fields for individual questions were one of four types: (1) 'check the box', (2) 'press to select' (a set of predefined answers), (3) 'type in a text line' (where a single word or a few words were required), and, (4) a 'type in scrolling text box' for questions that required an open-ended response.

An email pointer to the Web-based form was distributed to Heads of ASDUs or equivalents in each of Australia's public and private universities (N=42). Reminder emails were sent and in several cases these ended up being directed to other staff who were identified as appropriate contact people during the course of the study. Follow-up phone calls were made to those universities that did not respond with a view to determining a reason for the non-response. Often this required talking to more than one person. Data collection, including notes of phone conversations, was completed in May.

Data from the Web-based form was transferred to a spreadsheet for preliminary analysis. Those who completed the form were pointed to a preliminary summary of the data with specific confidential identifying information removed (section 1). Detailed analyses were carried out using an SPSS software package. Results were summarised in a set of tables and percentage responses to certain questions. Additional information from a final open-ended question (Q26: "Are there any important issues not covered by the above questions?") and telephone interviews was compiled from spreadsheet and notes.

6. RESULTS AND DISCUSSION

Survey data were received from 20 universities representing a response rate of 48%. This rate is well above the normal rate expected for questionnaire type surveys (usually below 20%). The high success rate is attributed to the relative ease of completing a Web-based form with 'press to select' response fields being used where ever possible and the fact that it cannot be mislaid, a common fate of paper-based surveys. In terms of the distribution of returns, responses were received from at least two universities in each size range (Table 1) with the overall distribution being reasonably close to the population distribution.

An analysis of the type of university (Table 1) again showed that a full range of types were represented and that several responses were received in each category with the largest response rate coming for metropolitan universities. Again this sample distribution is regarded as being representative of the distribution of university types in the population.

Table 1

Survey Respondents by Size and Type of Institution

Size of University	Metropolitan Ex-CAE	Metropolitan University	Regional Ex-CAE	Regional University	Total
5,000-10,000	1	3	1	1	6
10,000-15,000	1	3	1	1	6
15,000-20,000	1			1	2
20,000-25,000	3				3
25,000-30,000		3			3
Grand Total	**6**	**9**	**2**	**3**	**20**

For the purposes of further analysis three categories of universities were designated from the parameter of size i.e. Small (N=6), Medium (N=8) and Large (N=6).

Survey Question 4 related to the job title of respondents and showed that the majority were not the Directors of ASDUs but held a variety of other positions such as: Flexible Learning Advisor, Education Project Manager, Research Officer, and Staff Developer etc. Approximately one third indicated that less than half their workload was allocated to staff training in this area (Q5). Most indicated that they were classified as academics (Q6:70%) rather than administrators. Most had been in their positions for less than three years (Q8:85%) and operated with a staff of two or less (Q10:75%).

An analysis of the format of training activities (Table 2) clearly shows that traditional methods of classroom presentations and tutorials were favoured over online methods of training. The response rates for accredited activities illustrate the increasing need for formal recognition of training in an education sector that has traditionally not seen formal training in teaching skills as being necessary for satisfactory performance of teaching duties.

Table 2

Format of Traning Activities

	Yes	No	N/A
Presentation/Demo	18	1	1
1/2 Tutorial	16	3	1
Full Day Tutorial	6	13	1
Self-Paced Tutorial	7	11	2
Multi-Session Course-Face to Face	7	11	2
Multi-session course-Online	10	9	1
Accredited Short Course-Face to Face	10	9	1
Accredited Short Course-Online	3	16	1
Accredited Certificate/Diploma	3	16	1
Other	2	17	1

Information on the content of training sessions is provided in Table3. It shows a wide range of topics are being addressed. As one might expect there is a tendency for the larger universities to offer a more comprehensive spread of topics, however at least two thirds of the topics listed are offered by the small universities that responded.

Table 3

Training Topics Offered by University Size*

		Uni Size Category		
		Small	Medium	Large
Animation/Java	No	2	2	3
	Yes	4	6	3
Basic HTML markup	No	3	3	3
	Yes	3	5	3
Chat sessions eg IRC	No	3	5	3
	Yes	3	3	3
Collaborative workspaces/electronic whiteboards	No	4	4	3
	Yes	2	4	3
Course authoring systems eg WEST	No	3	3	2
	Yes	3	5	4
Designing Web pages	No	3	4	1
	Yes	3	4	5
Designing Web-based courses	No	4	6	3
	Yes	2	2	3
Developing graphics	No	6	6	2
	Yes		2	4
Interactive video eg CuSeeMe	No	6	8	5
	Yes			1
Interactive voice eg Internet Phone	No	6	7	5
	Yes		1	1
Java scripting	No	6	8	6
	Yes			
Managing an email list for teaching	No	6	4	2
	Yes		4	4
Pedagogical issues in designing on-line courses	No	5	6	6
	Yes	1	2	
Streaming audio eg RealAudio	No	5	7	5
	Yes	1	1	1
Streaming video eg RealVideo	No	6	5	5
	Yes		3	1
Using HTML editors	No	5	5	4
	Yes	1	3	2
Using search engines	No	4	8	5
	Yes	2		1

* Size categories: Small, less than 10,000 EFTSU, Medium, 10,000 to 20,000 EFTSU and Large Over 20,000 EFTSU

Which topics are in highest demand by staff? Table 4 shows that 'pedagogical issues in designing online courses' and 'designing Web pages' are the topics that rate most highly as those of primary interest. While 'pedagogical issues in designing online courses' remains popular as a second level choice, 'course authoring systems' is also highly rated. Under third choice options 'designing Web pages' has re-emerged along with 'designing Web-based courses'.

Table 4

Popularity of Course by University Size

		Uni Size Category		
		Small	**Medium**	**Large**
1st choice	Basic HTML markup	1	1	
	Course authoring systems		2	
	Designing web-based courses	1		1
	Designing Web pages		4	1
	Pedagogical issues in designing online courses	1	1	4
	Using search engines	1		
	Other	1		
	NA	1		
2nd choice	Basic HTML markup		2	
	Course authoring systems	2	2	
	Designing Web-based courses			2
	Designing Web pages	1		1
	Electronic whiteboard		1	
	Interactive video		1	
	Pedagogical issues in designing online courses		1	3
	Using HTML editors	1		
	Other		1	1
	NA	1		
3rd choice	Chat sessions			1
	Designing Web-based courses	1	3	1
	Designing Web pages	3	1	1
	Email list for teaching		2	1
	Pedagogical issues in designing online courses		1	
	Using HTML editors			1
	Using search engines			1
	NA	1	1	1

In summary these selections indicate that staff are primarily interested in both the pedagogical issues of online delivery and the skills necessary to design Web pages, these being the most visible elements of the current generation of online courses. The strongest secondary interest is clearly course authoring systems. This could be interpreted as pointing to a desire to be efficient in the process of course development by adopting a tried and tested approach to course structure and student interaction.

In Question 13, 80% of respondents indicated that they provided training as a result of requests from individual staff and 95% indicated that in addition they provided project based assistance.

Question 18 asked respondents to report attendance patterns at training sessions in terms of academic level. Table 5 shows that a mixture of senior and junior staff was the predominant pattern of attendance (79%). Where attendance is predominantly by one academic level (21%) it is not restricted to any particular university size.

TABLE 5

Type of Staff Attending Course by University Size

	Uni Size Category		
	Small	**Medium**	**Large**
Junior		1	1
Senior	1		1
Mixed	5	6	4
NA		1	

In response to Question 20 "Within the available resources to what extent do you feel the 1997 program of activities met the needs of staff?", only around one third of respondents believed that all needs were being met. This leaves a considerable unmet gap in the provision of training and staff development. For 1998 (Q:21)17% reported their provision would be reduced while 22% indicated would remain the same and 61% indicated it would increase. These changes are not confined to any particular university size. Additional comments from phone interviews portrayed a picture of devolved responsibility for training in online teaching. It may be that local unreported activities are meeting some additional needs.

Cooperation and resource sharing are a feature of provision in all but one of the responding universities (Q11). Where responsibilities were shared, contributions in addition to those provided by the Academic Staff Development Unit came from the library, IT and Computing Departments, Multimedia Departments, external consultants or structured at the School or Faculty level.

Question 26, the open-ended item at the end of the survey reported that several universities were progressing towards a coordinated approach to online teaching and learning and the concomitant staff development, some being more advanced in implementation than others. The cost of staff development and a perceived lack of funds added to the difficulties of implementing training programs. Where organisational change was well underway, "planning the roll-out order" was cited as an issue to be addressed.

As well as the intra-university cooperation, Questions 16 and 22 (Table 6) show that in 1997 over half the universities in the sample were involved in cooperative staff development activities including the use of resources developed by other institutions. In 1998 a similar percentage intend to be involved in the same type of activities. Both past and future cooperative activities are common to all sizes of universities.

Table 6

Cooperation Current and Planned by University Size

		Uni Size Category		
		Small	Medium	Large
Cooperation Current	Yes	3	3	4
	No	2	4	2
	NA	1	1	
Cooperation Planned	Yes	3	2	5
	No	2	5	1
	NA	1	1	

Table7 shows the various sources of training provision in 1997 and the relative weighting in percentage terms of each source for each university that responded. As expected ASDU's are major provider however it is interesting to note that the range of provision covers the entire percentage scale. Other university service units such as computing centres and libraries also provide a major proportion of the provision though not more than 50 percent. Minor provision came from structured activities within faculties and schools while external consultants were least called upon.

Table 7

Sources of Traning Provision 1997

	External consultants	Computer Centre	Library	ASDU	Structur activities
0%	10	6	3	1	4
10%	7	2	6	2	10
30%	1	4	3	1	1
50%	1	4	5	3	2
40%		2	1	4	1
50%		1		2	1
60%				4	
70%				1	
100%				1	
Total	19	19	18	19	19

Phone calls to non-responding institutions located a number of individuals with an interest in the survey, but who could not align their experience with the perspective of the questionnaire. In these cases, the pace of change within their environment was cited as the key factor that made it difficult for them to respond to the survey questions. In several universities there had been a change in emphasis from general training to a project based approach to staff development. In one case an organisational review had effectively 'frozen' provision, while in another case a split between the 'techies' and the academics had fragmented activities so that no one individual was able to provide an overall picture.

7. CONCLUSIONS

The survey has provided some key baseline data on the provision of staff development responses to the demand for online teaching and learning. The established ASDU's while being almost universally involved in the provision of training were frequently not the major provider of the training. This is a reversal of their traditional role as the direct service provider and has involved the development of a model of shared responsibility and tailored responsiveness. This encompasses cooperation and collaboration with other service units such as computing centres and libraries as well as external experts. The project-based elements of the model involve the provision of direct training and support in order to achieve a defined goal.

When structured training is provided the most commonly used delivery formats were the traditional classroom presentation, demonstration or short tutorial session while some use of multi-session online format was also reported. It is worth noting that for some courses in both formats accreditation was being offered.

In terms of the nature of the session content there was a clear preference for training in 'pedagogical issues in designing online courses', 'designing Web pages', and 'course authoring systems'. A range of specialist technical and user topics such as 'animation/Java', 'interactive video' and so forth were of low interest.

A critical issue revealed by the survey was the extent of unmet needs. Only one third of respondents believed that all needs were being met in their university. Reasons given for this situation included "almost no funds", "tension between units" and "insufficient staff".

What will the staff development scene look like in say 1, 3 or 5 years? Will there be more staff involved in online delivery? Will there be more opportunities for staff to undertake training? Will there be a greater range of delivery options, including more online options? To what extent will learning be enhanced by the use of online technologies? How quickly will ASDU's acquire expertise in pedagogy within the online environment? The answers to these questions will in part determine the level of participation that Australian universities have in the emerging global education market.

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