

# **Enhancing online teaching: designing responsive learning environments**

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*Higher education is undergoing major changes in the development and delivery of courses. These changes arise from a range of social, economic and technical factors operating across the higher education sector. One of the responses to these pressures is the development of online approaches to teaching and learning. The changed learning experiences and opportunities have particular implications for the ways in which students are supported in online learning environments.*

*This paper considers the ways in which the wider trends in education impact upon online learning environments and the implications of this for professionals involved in the development and delivery of the courses. Particular consideration will be given to the range of approaches of support in online delivery which include stand alone resources and generic support, parallel or adjunct learning opportunities, and integrated strategies. It examines these in relation to the characteristics of pedagogically defensible teaching activity and proposes ways of conceptualising the work practices of professional staff involved in student support, professional development, discipline-based teaching and resource development. Each approach will be discussed in terms of its pedagogical potential and will be illustrated with examples.*

## **Introduction**

Over the years there have been different ways of conceptualising student learning support in Australian universities. There have also been differences in approaches to supporting students studying in face-to-face contexts and distance modes. In face-to-face contexts the approach developed out of counselling models with an emphasis on equity and access concerns (George and O'Regan, 1998; Quintrell, 1985). Support was generally delivered to students by specialist staff in separate units. Even though this approach was independent to the mainstream teaching the aim was to complement this teaching. Over the last few years there has been a move towards the integration of support into the subjects that are being taught (Hicks and George, 1998; Skillen, Merten, Trivett and Percy, 1998). In distance education contexts, support has generally been considered to have a much wider developmental focus. It has been conceived as integral to mainstream teaching and the responsibility of the teaching staff, often in conjunction with instructional designers or course developers. Learning support in this context is integrated through the development of materials and other learning opportunities (Morgan, Dingsday and Saenger, 1998; Inglis, 1996). With the development of online technologies and the increasing use of online methods in mainstream teaching these modes of delivery have converged. As mainstream approaches to teaching and learning increasingly include online forms of delivery for all students (Reid, 1999), it is critical that support strategies and techniques respond by developing new forms of support consistent with the opportunities and demands made available by the technology and within the resource constraints of the current climate. As a result of these changes it has been necessary to rethink the ways in which effective student support can be offered in all modes of delivery (Hicks and George, 1998).

There has also been a range of social and economic factors that have resulted in major changes in higher education and have contributed to the current educational climate (Campion, 1995; Edwards, 1995; Marginson, 1996; Organization for Economic Cooperation and Development, 1993; Reid, 1996). These changes have challenged

universities to introduce teaching and learning strategies which cater for different client groups using forms of delivery which increase access to learning opportunities. In particular, there are demands for the university sector to provide for a larger and more diverse cross-section of the population, to cater for emerging patterns of educational involvement which facilitate lifelong learning and to include technology-based practices in the curriculum (Renner, 1995). Online delivery is seen as one solution to these demands and as a result has been embraced by universities world-wide as a mode of delivery. The issue for those involved in student support is how to provide appropriate and timely services which reach the range of students (equity groups, continuing education, re-trainees, mature age, school leavers, and international students) studying in significantly different contexts (on campus, distance, off shore, workplace) in a large number of courses using online technologies.

In this paper a framework for the consideration of online student support which is applicable to all forms of delivery is provided. It identifies a number of characteristics of online learning environments which are critical in conceptualising online student support. On the basis of this discussion, it presents a matrix using the notions of embeddedness and consistency for analysing online student support. Using this matrix, three examples of three types of student support at the University of South Australia are discussed – generic, parallel or adjunct and integrated.

### **Characteristics of the online learning environment**

Online learning, as with any mode of learning, is judged on its effectiveness to provide quality learning experiences to the target student group (Kirkwood, 1998; Bates 1997). As Renner (1995) points out, the role of technology in learning is to provide a flexible learning environment which supports student learning rather than the transmission of ideas for passive use in a highly deterministic educational regime. Although there are significant issues about the technologies themselves particularly in terms of access (Bates, 1997), it is this constructivist approach to teaching and learning which is the critical feature of all successful learning environments. Technology then, of itself, is not seen to provide quality learning; rather quality depends on the way technology is used to provide access to relevant learning opportunities at the optimum time.

Ramsden (1992, pp 96–103) has identified six key principles by which effectiveness of teaching in higher education can be judged. These include: interest and explanation, concern and respect for students and student learning, appropriate assessment and feedback, clear goals and intellectual challenge, independence, control and active engagement, and learning from students.

Based on Ramsden's research, it can be seen that teaching is concerned as much with the process involved as with the content. That is, teaching is not just structured around the content (for example, logic, sequence of presentation, relationships between topics) but also must take into account the personal dimensions students bring to the learning experience (for example, previous experience in the topic, gender, culture, age). It is the interaction between these two foci that gives rise to appropriate teaching and learning opportunities which facilitate students in the construction of their own understandings and conceptualisation.

With these understandings in mind, it is clear that online contexts have the potential to provide greater opportunities as well as to make much greater demands on students. Online learning changes the educational process in fundamental ways and where issues

of distance are involved there is an added level of complexity (Bates, 1997). It provides new and possibly better opportunities than face-to-face teaching. The characteristics of the online learning environment are summarised in Table 1.

**Table 1: Characteristics, learning opportunities and learning demands of online delivery**

| <b>Characteristic of the online environment</b>   | <b>Learning opportunities</b>  | <b>Learning demands</b>  |
|---|--|--|
| computer-mediation  | <ul style="list-style-type: none"> <li>enhanced capacity for using digital technologies</li> </ul>   | <ul style="list-style-type: none"> <li>computer literacy skills including some technical capacity</li> </ul>   |
| potential for accessing large amounts of dynamic information through WWW                              | <ul style="list-style-type: none"> <li>availability of enriched, dynamic information</li> <li>development of transferable critical literacy skills</li> </ul>  | <ul style="list-style-type: none"> <li>information literacy skills particularly evaluation of information</li> </ul>   |
| use of hypertext and working with materials in non-linear way   | <ul style="list-style-type: none"> <li>flexibility and freedom of learning paths</li> </ul>  | <ul style="list-style-type: none"> <li>ability to navigate and remain focussed on task</li> </ul>  |
| access to real-world contexts via Internet  | <ul style="list-style-type: none"> <li>'real-world' learning</li> </ul>  | <ul style="list-style-type: none"> <li>netiquette and apprenticeship skills</li> </ul>   |
| capacity to communicate via email and other electronic technologies with lecturers and other students | <ul style="list-style-type: none"> <li>increased quantity and quality of interactions</li> <li>increased potential for independent and 'democratic' interaction</li> <li>flexibility in time and place of learning</li> <li>increased personal reflection</li> <li>collaborative and group learning</li> </ul> | <ul style="list-style-type: none"> <li>management of time</li> <li>comfort with capabilities of technologies</li> <li>appropriate personal use of technologies</li> <li>group dynamics in democratically based forms of interaction including dealing with potential for flaming, harassment and illegal activity</li> </ul> |
| new methods for administration of learning eg. submitting assignments, getting results                | <ul style="list-style-type: none"> <li>cost/time effectiveness and flexibility</li> </ul>  | <ul style="list-style-type: none"> <li>computer literacy</li> </ul>  |
| networking  | <ul style="list-style-type: none"> <li>new and wider discourses</li> </ul>   | <ul style="list-style-type: none"> <li>identifying appropriate contacts</li> <li>strategic use of contacts</li> </ul>  |
| internationalising the curriculum   | <ul style="list-style-type: none"> <li>learning in and for an international context (students, content, processes)</li> </ul>  | <ul style="list-style-type: none"> <li>cross-cultural communication</li> <li>cross/inter-cultural issues such as religion, globalisation and imperialism</li> </ul>  |

## Conceptualising online student support

The characteristics of the online learning environment and the consequent opportunities and demands raise issues about forms of student support. The role of student support is to assist students to maximise the opportunities of the environment they are learning in. As Alexander points out:

‘While we should certainly explore the features of new media as part of an on-going process of being aware of the capabilities of various media, we should also spend equal amounts of time thinking about what our students need to learn, what we know about helping them to learn and then and only then, develop strategies to make it possible for them to learn’ (Alexander, 1995 p4)

As with all educational design, these pedagogical issues are deeply embedded in the discourse of the field of study and also require a range of strategies which are appropriate to the political and institutional structures. At the University of South Australia, a number of the learning demands have been at the institutional level and have been identified through University-wide strategies in computer literacy (McCausland, Wache and Berk, 1999) and graduate qualities (<http://www.unisa.edu.au/usainfo/quality.htm>). The graduate qualities initiative has curriculum design and delivery implications which focus on tailoring student learning in particular subjects and courses in terms of agreed outcomes.

Given the current economic climate in higher education and the need to maintain pedagogically sound practices, student support has been reconceptualised at the University of South Australia (Hicks and George, 1998). In particular, there is the need to consider learning within a developmental framework (Laurillard, 1993) which has lifelong learning as a major outcome.

With this in mind, the design and development of online support mechanisms can be understood in terms of two important dimensions: embeddedness and consistency.

### Two external dimensions: embeddedness and consistency

In order to conceptualise the interaction of student support with this complex learning environment, we introduce two concepts: embeddedness and consistency. Both these dimensions are concerned with links to other online materials. Embeddedness is concerned with the electronic links between the support materials and the immediate point of interest—the subject, or aspect of the subject to which it relates; consistency is the extent to which support materials reflect, or are shaped by, the subject to which they relate.

If embeddedness and consistency are seen as two axes of a matrix, it is possible to map any kind of support mechanism in terms of both dimensions (See Figure 1). One end of the *embeddedness axis* has generic, stand alone materials that have no immediate relationship to the primary delivery of a subject. They may be on a home page or a web page belonging to another part of the organisation, or even at another institution. At the other end of the axis, are materials which make an electronic link into the materials at the point of student need in a way which is seamless to the student. The *consistency axis* ranges from support mechanisms that have no relationship to the process and content of the subject, to those where the mechanism is integrated into the primary learning experience, using the terms, concepts and other learning experiences of the subject in fundamental ways.

An example of support that is low in embeddedness and low in consistency might be a stand-alone website on essay writing that is mounted independently of the online learning that students undertake. This generic support can be more embedded by simply placing links to it from appropriate places within the learning resources of a subject, such as in the description of an essay writing task. If this resource was customised to use the particular essay question as a starting point, or used the particular processes and conventions (eg referencing methods, writing genres, etc) required in the particular subject, then the support becomes more consistent with the subject for which it is to be used. Stand-alone customised support is also possible. Although its distance from the locus of instruction makes it somewhat problematic, it is certainly possible for learning support to be constructed, outside the subject, while still attempting to mirror the particular learning requirements of the subject. This is an example of support that is highly consistent but low in embeddedness.

### Embeddedness

|                      |  |  |
|----------------------|--|--|
| <p>High</p> <p>↑</p> | <p><b>Generic support within a subject</b><br/>For example, essay writing information provided in conjunction with assessment information.</p> | <p><b>Customised support within subject</b><br/>For example, essay writing assistance that is specifically related to the discourse learning processes of a particular subject.</p>        |
| <p>Low</p>           | <p><b>Stand alone support generic support</b><br/>For example: essay writing information on a home page</p>                                    | <p><b>Stand-alone customised support</b><br/>For example, essay writing information that is highly related to the assignment but is not available to the student at the point of need.</p> |
|                      | <p>←</p> <p>Low</p>  | <p>→</p> <p>High</p>   |
|                      | <p>Consistency</p>   |  |

**Figure 1: Embeddedness vs consistency of online support**

The above matrix enables the analysis of support mechanisms in order to provide effective means of reaching the maximum number of students with the most appropriate support. Although we would want to contend that learning support that is highly embedded and highly consistent is most effective, we understand that the realities of working in higher education contexts do not always make that achievable. By providing resources ranging from support which has high embeddedness and high consistency to

that which has low embeddedness and low consistency, it is possible to meet the varying needs of students.

In the next section we outline the approaches to online student support and apply the above framework in their consideration.

### **Approaches to providing student support in an online learning environment**

Over time many different approaches and orientations to supporting student learning have been developed in universities. These have been influenced by a range of local, national and international factors. Seven approaches to supporting student learning (for on and off campus students) at the University of South Australia have been identified and critically examined in relation to their strategic contribution to the University (Hicks and George, 1998). These seven approaches have been considered in the context of online delivery at the University of South Australia and they have been reconceptualised into three forms of online support: generic; parallel and adjunct; and integrated. Unlike other modes of delivery (face-to-face and distance) the degree of integration varies more widely due to the potential of the medium. A summary of these approaches has been given in Table 4.

The support can take the form of downloadable text-based documents or interactive online workshops. Downloadable documents are valuable as references for students wanting information about learning requirements. Interactive online workshops, however, provide a much richer learning experience where the focus is on the processes of learning and the students' engagement with this. These workshops are designed to replicate the cognitive steps involved in these processes and are usually associated with assessment requirements because it has long been recognised that assessment is a significant motivational factor in engaging students in learning (Thorpe, 1998; Ramsden, 1992; Rowntree, 1987).

#### *Generic resources*

The term generic refers to the general applicability of the support resources and is related to the notion of consistency. Resources are developed which are generic to a range of learning strategies or assessment requirements. These may be available to students in the following contexts: cross-disciplinary, cross-institutional, cross-faculty and discipline specific. In Table 2 examples of both downloadable text-based documents and interactive online workshops have been given.

These materials are not designed specifically to reflect the content and processes of the subject, although they have generic application to subjects. Indeed, they are usually written in ways that give them appeal across a range of courses and subjects. In terms of the matrix above, the extent of consistency with a subject is low. However, it is possible to embed the resources within a subject at the point where a student needs to know how to undertake a particular activity such as give a presentation, write a report or give a seminar. While some students can apply the skills/strategies developed in such resources to a wide range of subjects/topics, many students find this transfer of skills difficult and the level of generality too broad.

**Table 2: Generic resources**

| Form                | Example                  | Type of resource | Website  |
|---------------------|--------------------------|------------------|--|
| Cross-disciplinary  | Referencing leaflet      | downloadable     | <a href="http://www.unisa.edu.au/flc/sls/publicitns/flc-ref/index.asp">http://www.unisa.edu.au/flc/sls/publicitns/flc-ref/index.asp</a> (FLCa, 1998)                   |
|                     | Essay writing            | workshop         | <a href="http://www.unisanet.unisa.edu.au/essaywriting/">http://www.unisanet.unisa.edu.au/essaywriting/</a> (Kokkinn & O'Regan, 1999)                                  |
|                     | Transition to university | workshop         | <a href="http://www.unisanet.unisa.edu.au/transition/">http://www.unisanet.unisa.edu.au/transition/</a> (Frangiosa, 1999)  |
| Cross-institutional | Range of resources       | downloadable     | <a href="http://www.macarthur.uws.edu.au/assa/Unilearning/welcome.html">http://www.macarthur.uws.edu.au/assa/Unilearning/welcome.html</a> (Unilearning, 1999)          |
| Cross-faculty       | Health Sciences          | downloadable     | <a href="http://www.unisa.edu.au/flc/sls/publicitns/researchwrite/welcome.htm">http://www.unisa.edu.au/flc/sls/publicitns/researchwrite/welcome.htm</a> (McLean, 1998) |
| Discipline specific | Engineering report       | downloadable     | <a href="http://www.unisa.edu.au/flc/sls/publicitns/wreports/">http://www.unisa.edu.au/flc/sls/publicitns/wreports/</a> (FLCb, 1998)                                   |

*Parallel and adjunct resources*

These online programs are more closely aligned with the content and process of the subject and are usually developed and delivered in parallel with the primary delivery of the subject. In terms of the matrix above, these support materials have some degree of consistency and can be either embedded or not. Parallel and adjunct programs can be available within traditional programs or online delivery, and focussed on courses, subjects and particular target groups. In Table 3 are examples of both downloadable text-based documents and interactive online workshops.

**Table 3: Parallel and adjunct resources**

| Form          | Example                           | Type of resource | Website  |
|---------------|-----------------------------------|------------------|--|
| Courses       | Research skills                   | downloadable     | <a href="http://www.roma.unisa.edu.au/flc/sls/publicitns/researchwrite/welcome.htm">http://www.roma.unisa.edu.au/flc/sls/publicitns/researchwrite/welcome.htm</a> (McLean, 1998) |
| Subjects      | Reflective journal summary        | workshop         | <a href="http://www.unisanet.unisa.edu.au/12152a/">http://www.unisanet.unisa.edu.au/12152a/</a> (Kokkinn, 1999).   |
|               | Oral history                      | workshop         | <a href="http://www.unisanet.unisa.edu.au/oralhistory/">http://www.unisanet.unisa.edu.au/oralhistory/</a> (O'Regan, 1999)  |
|               | Engineering management case study | workshop         | <a href="http://www.roma.unisa.edu.au/10769/">http://www.roma.unisa.edu.au/10769/</a> (Berk, 1999)   |
|               | Online nursing 'study room'       | workshop         | <a href="http://www.unisanet.unisa.edu.au/12152/info.htm">http://www.unisanet.unisa.edu.au/12152/info.htm</a> (Smith, 1999)  |
| Target groups | NESB nursing                      | workshop         | <a href="Http://www.roma.unisa.edu.au/clinical/">Http://www.roma.unisa.edu.au/clinical/</a> (Hussin, 1999)   |

These resources have a range of features of consistency or integration. Some of the skills may be quite generic and others discipline-specific. The critical point here is that the basic program is generic with modifications for the subject/course/group targeted. Even though materials of this nature are more closely related to the context of the subject and the needs of the students there is still some distance between the materials and the context. However the online learning medium allows greater flexibility and embeddedness of these materials than other mediums of delivery.

### *Integrated resources*

In this approach professional development staff and learning advisers work closely with teaching staff at the curriculum development level to ensure that the skills and processes needed by students to successfully complete a subject, or part of a subject, offered online are integrated into all facets of subject design. The aim here is to make the support both embedded and consistent in terms of the above matrix. The value of this approach is that the responsibility for the support rests with the faculty-based academic staff member and the aim is to support the staff member to design pedagogically defensible learning experiences. It is a very labour intensive task initially and requires a high degree of maintenance and, therefore, best undertaken where there are large numbers of students who can take advantage of the effort involved.

Table 4 is a summary of the characteristics of the three forms of online support with the advantages and disadvantages outlined.

**Table 4: Summary of approaches to student learning support in an online learning environment**

| <b>Approach</b>  | <b>Characteristics</b>  | <b>Advantages</b>   | <b>Disadvantages</b>   |
|------------------|---|---|--|
| Generic          | <ul style="list-style-type: none"> <li>stand alone</li> <li>cross and inter-institutional applicability</li> </ul>                                    | <ul style="list-style-type: none"> <li>can be used by students from a range of universities</li> <li>can be applied on a more institutional wide basis</li> <li>can be embedded at point of need</li> <li>little maintenance</li> </ul> | <ul style="list-style-type: none"> <li>not consistent with content and processes of subject</li> <li>often too general without specific detail required</li> </ul>                             |
| Parallel/Adjunct | <ul style="list-style-type: none"> <li>closely aligned with the subject/course</li> <li>developed in parallel</li> </ul>                              | <ul style="list-style-type: none"> <li>specifically focuses on particular groups of students, subjects and /or courses</li> <li>can be embedded at point of need</li> </ul>   | <ul style="list-style-type: none"> <li>only useful if task is generic</li> <li>may be misleading if terms and ideas used in highly specific ways</li> <li>some maintenance required</li> </ul> |
| Integrated       | <ul style="list-style-type: none"> <li>close collaboration between teaching staff and support staff</li> <li>totally seamless with subject</li> </ul> | <ul style="list-style-type: none"> <li>fully contextualised</li> <li>seamless for student</li> <li>staff member engages in developmental processes</li> </ul>   | <ul style="list-style-type: none"> <li>relies on collaboration between teaching staff and support staff</li> <li>labour intensive</li> <li>significant maintenance required</li> </ul>         |

## Conclusion

Online learning support provides significant opportunities for all modes of educational delivery. At the University of South Australia, one of the significant initiatives in this respect has been the development of three forms of online support for students. The development of these forms has taken into account the need for support to be both developmental and timely. That is, students need to be supported in ways which are appropriate to their stage of development as students, as well as the particular learning requirements of the assessment. When the learning needs are conceptualised in this way it is possible to consider any support mechanism in terms of a matrix of embeddedness and consistency. Support which is both highly embedded in the primary delivery of the subject and highly consistent with the content and processes of the subject, provides quality learning opportunities. Other less embedded or less consistent kinds of support can also contribute significantly to the learning experiences of students particularly when they are related to the assessment.

At the University of South Australia, three forms of student learning support—generic, parallel or adjunct and integrated—have been developed. This paper has analysed these forms of support in terms of their embeddedness and consistency and has provided examples of the different forms from both within the University of South Australia and in the wider university context. It concludes that the most useful and pragmatic approach is to provide a smorgasbord of options so that both students and academic staff are able to access the support available to improve student learning.

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