

Directions for organisation and management of university learning: Implications from a qualitative survey of student e-learning

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Abstract

Since 1999, RMIT has operated an e-learning portal known as the RMIT Learning Hub. In 2004, the five universities in the Australian Technology Network (ATN) jointly surveyed students and staff to assess their experience with e-learning support environments, including the RMIT Learning Hub. This paper explores the responses from RMIT student users to qualitative questions in the survey, using the framework of the university's strategy and performance targets for teaching and learning. The survey indicates that the RMIT Learning Hub was largely being used for relatively low-level support of student learning, but that students perceived benefits from this. The survey responses also indicated that students could not identify major technologies or functionality missing from the Learning Hub, and that increasing the numbers of courses made available through the Learning Hub, and achievable improvements in their quality, could enhance the student e-learning experience. The paper concludes with a discussion of the implications of the survey findings for the university organisation, management and policy around e-learning.

Keywords

e-learning, qualitative analysis, student experience, online learning survey

1. Background: E-learning at RMIT 1998–2005

The ability to support student learning using the Internet and World Wide Web technology has enabled universities to reach new off-campus students, and to better support on-campus teaching and learning. An Australian study of the first year university experience shows that in 2004, on average, around 75% of students routinely accessed online resources (Krause, Hartley, James, & McInnis, 2005). While Information and Communication Technology (ICT) has clearly entered into the university learning space, it has not transformed higher education in the ways thought possible by commentators such as Barrone (2005). Studies by the Observatory on Borderless Higher Education (Garrett & Jokivirta, 2004) and the OECD (2005) suggest that change is occurring, but slowly. Most universities have a Learning Management System (LMS) and an e-learning strategy in place, but most on-campus teaching is being carried out in traditional ways. Certainly, the routine integration or blending of appropriate ICT into all university teaching and learning in a systematic way that improves student outcomes and reduces costs in the ways shown by researchers such as Twigg (2003) is not occurring widely.

RMIT was one of the first non-distance providing universities to embrace an enterprise wide approach to e-learning support. In 1998, a major study, the IT Alignment Project (ITAP) provided direction for e-learning at RMIT, making over 100 detailed recommendations in support of the development of infrastructure, processes and policy around a significant online presence for all RMIT courses (Caldwell et al., 1998). One of the outcomes of ITAP was the development and deployment, in 1999, of a student e-learning portal, known as the RMIT Learning Hub.

A number of explicit and implicit policies were part of the implementation of the ITAP recommendations, and have guided the development and continuing operation of the RMIT Learning Hub. The implementation of the RMIT Learning hub might be termed a "best of breed" installation (Holtham & Courtney, 2005) consisting of a major and comprehensive LMS (Blackboard) and a number of specialist tools, including tools developed in-house (see Table 1).

Table 1: Major e-learning tools in the RMIT Learning Hub

Tool	Functionality	Visits in 2004
Blackboard	Proprietary LMS	3,323,768
RMIT WebLearn	In-house-developed quizzing & assessment system	189,060
WebBoard	Proprietary discussion forum tool	76,938
E-Journal	In-house-developed journalling tool	<10,000
EnactEd	In-house-developed student-directed learning tool	<10,000

The aim was to provide an online presence, covering a spectrum from supplementation of face-to-face teaching through a range of blended learning support to fully online courses, for all RMIT courses by the end of 2003. All courses were quality assured by Faculty management before “going live” to students. Considerable effort and resources were put into professional development and the support of staff who wanted to participate in online delivery.

2. E-learning: Organisation and management questions

There has been considerable debate about the implementation and use of the RMIT Learning Hub and how it can best serve the university. While there has been no widely held e-learning plan that would transform University teaching and learning, there is an expectation that the investment in e-learning should have a positive effect on University strategy and performance. The teaching and learning strategy aims to ‘identify the effective use of educational technology to support student learning’, and to ‘ensure a robust and reliable infrastructure to support e-learning’. It is university policy to conduct an annual review and adjustment of program teaching operations using key performance indicators based on three criteria: quality, as evidenced by student learning outcomes and student satisfaction; viability, as evidenced by demand from prospective students and by operating costs; and relevance, as evidenced by industry/profession accreditation and by graduates’ progression into employment.

Within this organisation and management framework, the broad questions about the implementation of e-learning can be classified, as follows:

- i. Implications for the learning experience. From the student perspective, what are useful online learning resources and activities? What is the best mix of online and face-to-face? Should notes be electronically distributed, or are they best provided in printed form? Should e-learning be mandatory, or optional?
- ii. Implications for teaching practices. Given that one-on-one instructional design and courseware development support is not possible, what can a wide range of staff do that provides useful online learning support for their students? Do they need to have their work quality assured? Can they use the available tools? Do the environments meet their needs? What professional development do they need to adopt e-learning?
- iii. Implications for technology planning. What functionality must the technology support? Is a single comprehensive LMS adequate? If not, what other tools are needed? Will an incremental approach to improving functionality be sufficient to meet student expectations?
- iv. Implications for university sustainability. What is e-learning doing for the University as a whole? Does it support the RMIT strategic direction, including its teaching and learning strategy? Is it improving the outcomes for students? Is it reducing costs or generating new revenue?

The 2004 ATN e-learning survey gave RMIT a snapshot of the current students and staff experience of e-learning, and an opportunity to explore these broad questions. Students and staff participated in the survey on a voluntary basis, so the conclusions that can be drawn are limited. The views, however, of those who participated do provide one of the few insights to the RMIT e-learning experience that is available, as well as a basis for comparison with other, similar universities.

The survey consisted of two parts, a student survey and a staff survey, and the overall results have been made available through two separate documents (Platts 2004a; 2004b) with the RMIT data being provided in two further reports (Platts 2004c; 2004d). Overall, 3,606 RMIT students (of a possible 58,000) responded to the survey. Key findings are:

- that students have had a positive, useful experience
- that access to material and content is the most widely used activity
- that access to online learning resources does help them to mix study with other responsibilities and activities.

Ninety per cent of surveyed students have access to a computer at home and most of them have access to the Internet through broadband. For RMIT, the biggest discriminator in their views of the Learning Hub is the School that manages the program in which they are enrolled.

Both student and staff surveys contained open-ended questions providing staff and students the opportunity to indicate what they liked about the RMIT Learning Hub, where they saw opportunities for improvement, and other comments. Eighteen hundred student responses to three qualitative questions were analysed manually. In some cases, student responses addressed more than one primary issue. In the remainder of this paper Section 3 will examine the responses of student to the question that addresses benefits of the RMIT Learning Hub; Section 4 will examine the responses of student to the question that addresses functionality not found in the RMIT Learning Hub; and Section 5 will examine the responses of student to the question that addresses possible improvements to the RMIT Learning Hub. Section 6 will discuss implications of these responses for the future of e-learning at RMIT, in terms of the four organisation and management questions set out above.

3. What students said: E-learning as an enabler of learning

Students were given the opportunity to describe some of the benefits of the RMIT Learning Hub in their response to Question 19.

Question 19. "What does the RMIT Learning Hub enable you to do that you couldn't do otherwise?"

The 1800 responses analysed produced 1062 useful responses, with most of the remainder being left blank. The responses were categorised into four major, sometimes overlapping, themes.

- Access, where the primary benefit was to simply acquire, download or read material that might usually be provided as hard copy. The theme here was around passive support of learning, where technology is used to deliver material, but the learning takes place off-line.
- Communication, where the benefit was in access to information in a more ad-hoc, interactive and timely way. This may indicate a more active engagement with e-learning, where the functionality is more directly connected to student learning.
- Flexibility and independence, where the benefit expresses a support for flexibility or independent study, typically allowing students to learn without attending campus, or meeting with staff.
- Other academic functionality, where the benefit is primarily a function that helps learners organise their materials and carry out tasks such as dropping off their assignments.

The overall responses for these four categories are shown in Figure 1.

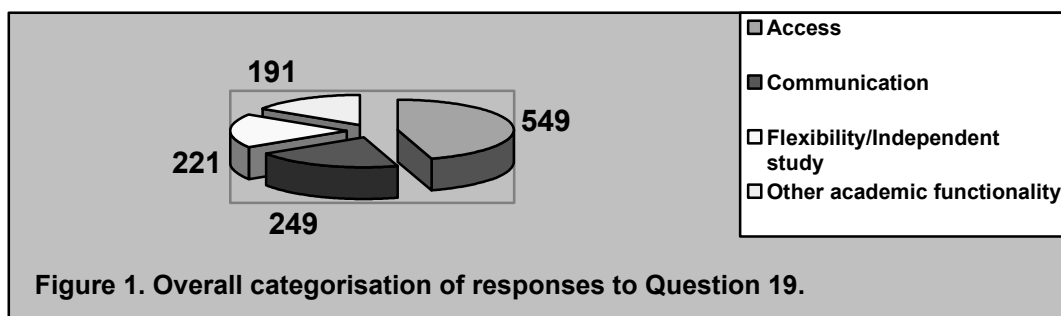


Figure 1

The count shows access as being a major benefit with 549 students indicating this as a benefit. In many cases the students qualified their response in a positive way, for example "it is great to get my notes off the web".

Access to materials

The access categories were broken up into sub-categories as shown in Figure 2.

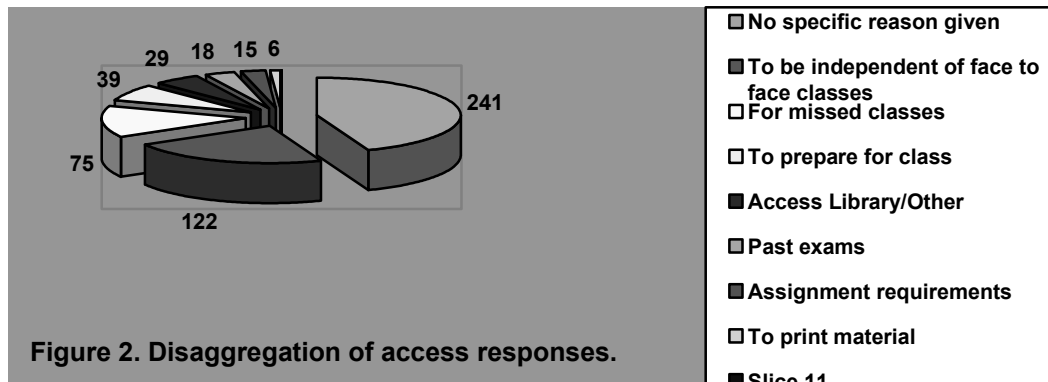


Figure 2

The largest number of student responses (241) provides no elaboration of specific benefits of access. There were 304 specific responses, including: getting notes online was a benefit because it meant that you did not have to go to face-to-face classes (122), could get material — primarily lecture notes — when a class was missed (75), could get material to prepare for classes (39), or could print notes when required (6).

Others indicated benefits from accessing other resources including course guides, other learning materials and the library (29), past exams (18), and their assignment requirements (15).

Communication

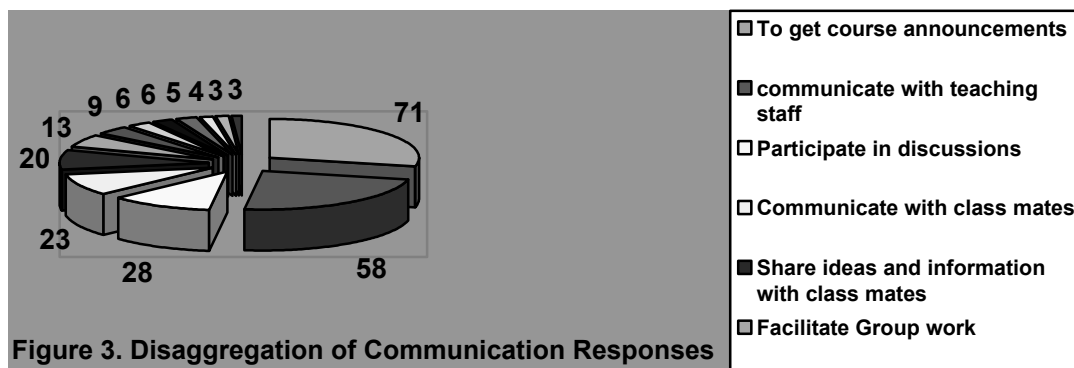


Figure 3

Of the 1062 meaningful responses, 249 related to communication. The largest category was passive receiving of announcements, notices, information and messages (71). This could have been almost classified as improved access; however, the difference is that the technology supports a more timely mode of communication. The remainder indicated more two way activity, communicating with lecturers (58), participating in online discussions (28), communicating with other class members (23), sharing ideas and information with other class members (20), facilitation of group work (13), to communicate better in general (9), to communicate more flexibly (6), to connect with their course and with RMIT better (6), getting feedback on ideas from staff and other students (5), to more easily ask a difficult question (4), to communicate about assignments (3), and communicating with students in other courses or programs (3).

Support of flexibility and independent learning

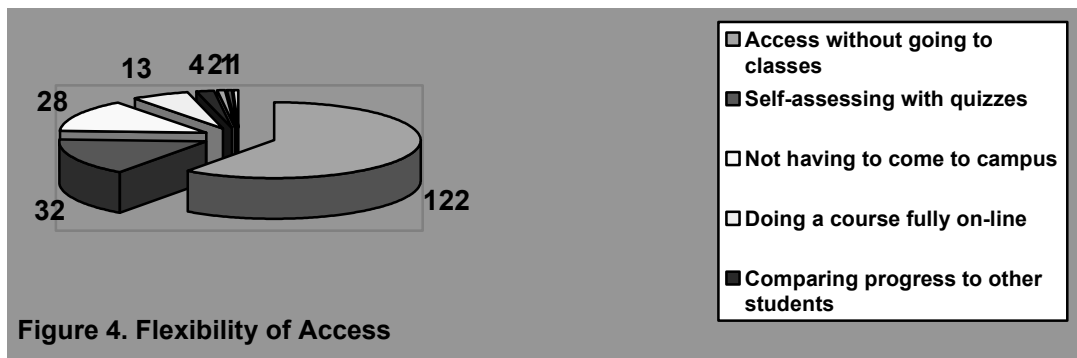


Figure 4

Overall, 221 responses indicated some direct benefit from flexible access or support for independent study. This may be an understatement and include some of the 241 students who listed access without a specific reason. The 122 who indicated the benefit of not having to attend face-to-face classes and were included under access were also included here. Students found benefit in assessing their progress with quizzes (32), saving time by not having to travel to campus (28), being able to do a course in fully online mode, when the student is not able to attend campus through work commitments or home location (13), being able to assess their progress against other students in general (4), to do self-paced study (2), to independently study difficult concepts (1), and to write and access reflections on their study (1).

Many of the response listed above as part of access or communication benefits may be in support of flexibility, however in the absence of any reference in the response, it is difficult to draw this conclusion. The modest number of specific references to direct support for independent learning may indicate a need to more fully incorporate this in learning designs. However, it may be that many of the responses for access and communication also support independent learning.

Other academic functionality

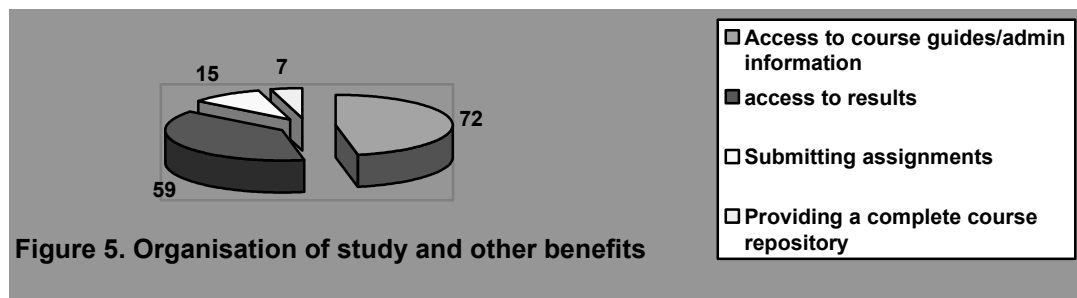


Figure 5

This category addresses the type of functionality that technology provides to support student access to information and facilities, which, though not central to their learning, can make life as a student much easier. These are functions that need not necessarily provided by the e-learning support tools. 72 students indicated that they value access to course guides/administration information, 59 used it to get assessment results, 15 to submit assignments and 7 as a repository for organising their study material.

4. What students said: E-learning as a way to learn

The following open-ended question provided students with the opportunity to indicate other functionality or support that was not incorporated into the RMIT Learning Hub.

Question 20. "Are there things that you do in the Learning Hub that would be better done in other forms? Please describe these."

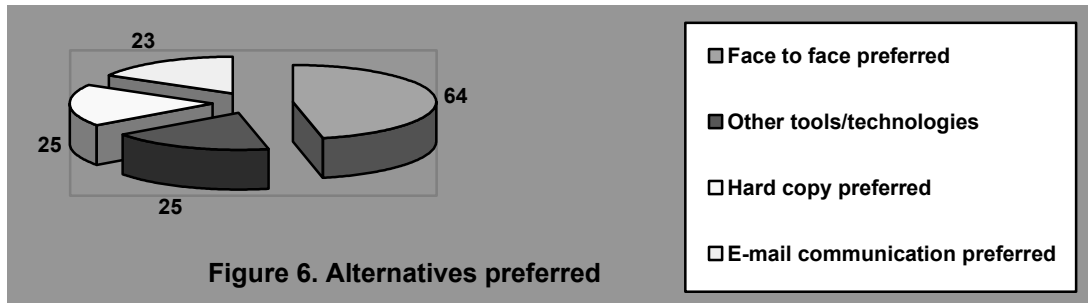


Figure 6

Less than 12% of students offered a meaningful response, an interesting result in its own right; 64 indicated a preference for face-to-face contact in classes, discussions with staff and students, and group work; 25 indicated a desire for alternative technologies and tools, such as chat; 25 indicated a preference for hard copy and 23 preferred email communication.

5. What students said: Other thoughts about e-learning

The following open-ended question gave students the opportunity to suggest improvements to the RMIT Learning Hub:

Question 21. "What other comments would you like to make about your experiences with the RMIT Learning Hub or questions that you would like addressed about the use of the Learning Hub?"

Again, responses were low, with only 35% of students providing a meaningful answer; however, those who did answer gave perhaps the most interesting perspective. The responses were divided into three categories as shown in Figure 7.

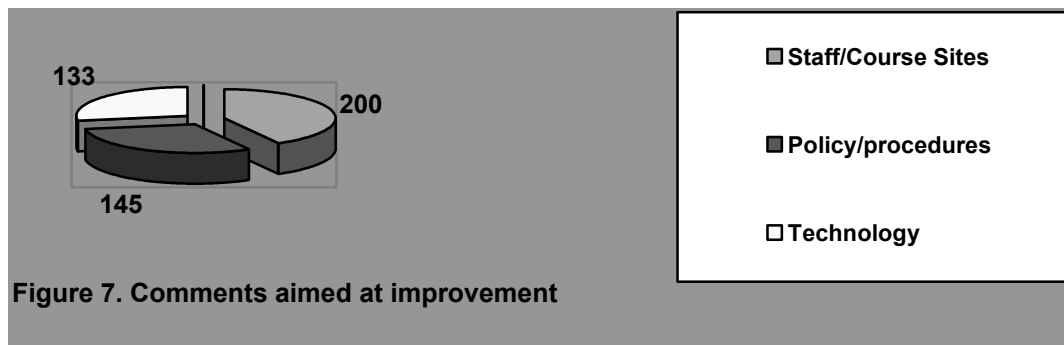


Figure 7

Improvement of course sites

Two hundred of the meaningful responses can be classified as relating to the quality of the material. Forty nine comments related to posting more material in a timely manner, 48 suggested improved use of discussion forums, 39 suggested that staff needed professional development to better use the RMIT Learning Hub, 27 indicated that functionality, such as grade book and assignment drop boxes should be more widely used, 25 suggested that sites could be more useable or of better quality, 9 indicated that more face-to-face contact was needed to support the online course sites, and only 3 indicated a need for more hard copy materials.

Usage policy and practice

The second largest category is based on usage policy and practice, and the largest response here is that there ought to be a reasonably complete presence for all courses (120). The remaining comments were aimed at improved enrolment processes (14), supporting discussion across programs (5), improved help desk support (4), and enabling access for non-enrolled students (1).

Technology/systems

With respect to the technology, some students indicated a need for more reliable, better performing systems with more on campus access (83). Thirty comments indicated that reliability could be improved, about 16 indicated that they would like more access to computers on campus, and 13 indicated that performance was an issue. In 2003, RMIT restricted access to free web-based email systems such as hotmail, yahoo and g-mail, and while students were vocal at the time of removal, only 4 students requested its reinstatement. One of the perceived issues is difficulty of workplace access due to firewall restrictions, but only 2 students reported this as a problem.

With respect to using the Learning Hub, 37 students indicated that they needed assistance to use the system, and a relatively small number, 13, suggested other that they had problems with Blackboard. Despite the fact that many of the tools do not comply with W3C accessibility standards, only 1 response addressed this.

6. Discussion

Overall, students using the RMIT Learning Hub have had a positive, useful experience. Access to material and content is the function most widely used and appreciated by students. There is considerable interest in using e-learning to support discussions, flexible access and other functions that help students in their study. There are no major areas of functionality seen to be missing, and many students would like to see more courses use the RMIT Learning Hub.

Implication 1: Keeping pace with the changing situation of tertiary students

Getting access to the learning materials, primarily lecture notes is the most common use of the RMIT Learning Hub, as well as the most commonly reported benefit for students. Much of the learning supported by the Learning Hub takes place off-line and the technology appears to be primarily about distribution of traditional learning materials. While this may not always fully exploit the capability of the technology for learning, it did appear to have a beneficial impact on the student experience, with students typically responding positively about being able to get their notes online, from home or work, anytime. The issue here is not to avoid putting notes online. Notes that embody good teaching and communication and complement other activities can be an appropriate use of the RMIT Learning Hub. Most students now have Internet access, and the obvious convenience of being able to access the latest copy of notes from home anytime is appreciated.

There has been much anecdotal evidence of reduced attendance at face-to-face lectures by students. This may be in part explained by the availability of learning material online, and when face-to-face classes do not add value, students may elect not to attend. In some cases, it may be that the student cannot attend, due to work or home commitments. The need for students to be able to work while studying has been apparent, with a rising participation in part-time work over recent years (Krause et al., 2005). Support for flexibility of access was one of the specific aims of ITAP, and students demonstrate appreciation of the ability to gain access to material and to participate in discussions when they miss classes. The fact that 39 students used online material to prepare for lectures would be perhaps surprising, and certainly welcome news for staff.

Effective support of independent learning is a way of reducing the need for on-campus attendance and infrastructure. The ability to self-assess, to see other students work and comments, and to discuss work with other students is a powerful aid to student learning. Much of the access to materials is relatively low-level support for independent learning, with few indications that the technology is being used as an integral part in the delivery of learning activities. There are few responses indicating use of the Learning Hub for self-assessment, reflection or student-directed learning.

Students appreciate face-to-face contact with staff and their peers. Some researchers (for example, Collis, 2005) have observed that many students saw face-to-face contact as an integral part of university education, and it should not be overlooked in learning designs, even if there are substantial online resources. This provides the sort of choice available in Twigg's emporium model (Twigg, 2003), where students can choose the learning environment that best meets their needs.

There would appear to be opportunities to implement learning designs that make better use of discussion forums at RMIT. Again, good use of discussion forums have the potential to shift the learning support load in a very positive manner, away from staff to students, though staff may need professional development to use online discussion appropriately, and to avoid unsustainable moderation loads. One of the top ten student concerns at RMIT has been failure to meet students across other programs, yet only five students suggested discussion forums as a mechanism for this.

Implication 2: Improving teaching quality by improving online teaching

Many staff members are daunted by the need to develop the skills needed to put courses online. The survey shows, however, that students can derive considerable benefit from basic functionality, such as posting lecture material, even slide presentation and word-processed documents, as delivered in the classroom. Specialised online pedagogy and sophisticated use of media is not essential for students to derive benefit from the RMIT Learning Hub. The technology has a major benefit to students in its utility as a distribution mechanism for resources of many types. There appears to be a clear distinction between material meant to support face-to-face classes and standalone online courses; relatively easy-to-learn and use facilities can deliver useful resources to class-based students, different to that which may be required to sustain a completely independent, off-campus experience. The pedagogy embedded in classroom notes and activities can often be usefully made available electronically, without re-development of material.

Students indicate that staff can do better in the basic conduct of the online component of their courses. The survey shows that application of the following basic guidelines would improve the student experience:

- With respect to communication, setup and monitor discussion forums for all your classes. If you are using discussion forums or announcements to inform students, also send email.
- Put complete and reasonably consistently structured material up prior to your lectures. Avoid frequent changes, and post material when you say you will. If possible provide a printer-friendly copy or version.
- Use online grade book and assignment, and other tools that make student life easier.
- Provide adequate face-to-face contact.

Even though it may be possible for staff with relatively low level ICT skills to participate effectively in online education, the data would suggest the need for some professional development or at least reminders, around basic use of the LMS and some basic instructional design skills, including good practice in distribution of material, and conducting online discussions. In particular, staff may need to be aware of the different learning designs for blended learning situations, and designs that cater for primarily face-to-face, occasional face-to-face, and fully online learning.

Implication 3: Weighing up further investment in online tools and system performance

The current implementation of the RMIT Learning Hub is based on the ITAP recommendation of a set of tools that would be continually reviewed and updated. An alternative, simpler approach might have been to use a single LMS, such as Blackboard, to provide a range of functionality including course sites, discussion forums, electronic whiteboards, chat functions, quizzing systems, assignment drop boxes and grade books. While this approach might not provide all of the available e-learning functionality, in general it provides a useable environment. On the surface, students indicated demand for very few functions that are not available through Blackboard. Certainly, the responses to Question 20 indicate that students are comfortable with the technologies and that there are no significant alternatives that they can think of. This is consistent with comments by Shimabukuro (2005) about the current stasis of online learning in educational institutions. The uptake of new technologies such as interactive video and personal mobile technologies in the community is not yet reflected in demand for these technologies to support with tertiary study.

Care needs to be taken in assuming that other tools are not needed. Ideally, we would like to implement learning designs and environments, based on cost-effective support for independent learning, such as those specified by Twigg (2003). It is these tools that provide functionality such as self-assessment, student-directed study, reflective journaling and better student-student interaction that may provide the ability to really exploit the technology to support learning.

Implication 4: Placing e-learning in context in driving organisational performance

The survey suggests that students have modest expectations that are readily achievable with systematic staff development and reliable infrastructure. An online presence in all courses, taking account of basic instructional design guidelines outlined above would improve the positive comments and reduce negative responses in this survey, possibly improving overall student satisfaction. Extension of e-learning designs that allow at least some students to learn independently can reduce need for infrastructure. Online support for independent learning is a potential win-win for the university sector, reducing costs of delivery and campus infrastructure, and if appropriately implemented, improving student learning and satisfaction.

The quantitative survey suggests that RMIT has the largest proportion of fully online courses of the five ATN universities. In some cases, material developed for on-campus programs have been re-used in offshore activity, or in fully online programs through channels such as Open University Australia. Survey findings do not point to a significant difference in student perceptions on the basis of online mode, suggesting that fully online delivery provisions can be expanded. Such an expansion may impact positively on program sustainability, as well as improve student retention and progression.

RMIT has employed a one-off quality assurance procedure for all courses before they are made available to students. This process embodies basic instructional design and digital intellectual property and accessibility checks. Other ATN members do not require quality assurance, and it seems that RMIT has not done markedly better, either in level of use, or in quality of courseware, than others. The quality assurance overheads involved in maintaining online learning are not supported by student perceptions, though they might be justified in other organisational risk management terms.

The study reveals that many RMIT students do not have an online learning experience through the RMIT Learning Hub, and most do so only through some of their courses. Despite the objective of full participation by 2003, participation in the Learning Hub has been very much optional. In the long term, it may be useful to do what some other institutions do, to routinely populate Learning Hub sites with basic course information, and functionality, as a means of encouraging staff to provide an online presence for their courses. Gearing up to this level would require a major organisational culture change, but may be justified in terms of improvements in the quality of the student experience.

7. Conclusion

If this group is representative of the overall student body, it does provide some guidance for the University in achieving its strategic teaching and learning goals. Overall, the response is positive to what is being done and suggest that the students surveyed would appreciate having online support for more courses. It tells us little about the impact of technology on student learning outcomes, but it does hint that this increased online access may improve learning indirectly, by giving students more time to learn. It also indicates that proven online learning support methods, such as collaboration and feedback, are underutilised. More consistency in quality and conformance with basic instructional design guidelines would reduce negative responses. Further, these improvements can be readily attained. Routinely providing online material, facilitating virtual groups, and using existing functionality, such as drop boxes, email and announcements better and more fully might make a significant improvement in student satisfaction, and in some cases, student learning outcomes. It would also make better use of existing learning technology and physical infrastructure.

Overall, the survey offers a realistic direction in providing better e-learning support for more students. For large primarily campus-based face-to-face universities such as RMIT the challenges of providing a sustainable, quality experience for students and courses with constrained real resources might largely be able to be met with those resources already at hand.

Acknowledgments

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