

e-Learning guidelines

Survey of support and guidance for e-learning
in New Zealand tertiary institutions

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for e-learning in New Zealand tertiary
institutions**

Report of findings

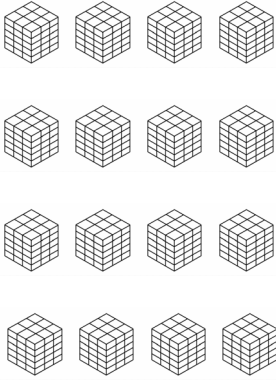
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A. EXECUTIVE SUMMARY

- The survey reviewed the range of support and guidance for e-learning that twelve tertiary institutions in New Zealand are currently providing. It asked questions about e-learning strategy, support for staff and students, e-learning tools, teaching and learning, institutional change and funding.
- Twelve respondents representing each of the twelve institutions were selected for their expertise and knowledge of the subject matter. They completed an online survey questionnaire and took part in a follow-up telephone interview. The following is an overview of the findings from both:
 1. The development of a strategy for e-learning is still a new area for most of the surveyed institutions, which range from those that have yet to develop a strategy to those that have a specific e-learning strategy in place.
 2. The institutions perceive staff development and support as a key challenge in the development of e-learning.
 3. A combination of approaches is considered most useful for staff development. This involves both course-based training and just-in-time training with individual academics. Other elements considered ideal are: online delivery of staff development, staff guidelines (existing guidelines are generally very informal) and the sharing of ideas and practice among teaching staff.
 4. An accessible and effective helpdesk facility in the institutions is considered central to providing support for students to e-learning.
 5. Current institutional approaches to pedagogy are a balance of devolved course creation and content development (academic autonomy) with some centralised quality assurance mechanisms. The survey touched only briefly on aspects of effective pedagogy in practice, and this is an important area for further research.
 6. Two institutional impacts of e-learning are the increasing availability of web-enhanced and web-supported papers, and slight increases in the number of general staff employed to support e-learning.
 7. e-Learning tools and technology issues focus on the development of institution-wide student portal systems, including improved interoperability, accessibility and usability for staff, and especially for students.
 8. The institutions surveyed considered the feasibility of e-learning to be a major theme of institutional change. The key mechanisms that have been put in place to manage this

change are strategic development and institutional leadership, the development of technical infrastructure capability and staff development.

9. The experts considered the key challenges for the wider sector to be centred on funding, capability, collaboration and technology.
 - On the basis of the survey findings it is possible to outline some implications for the development of a framework of e-learning guidelines. These implications are detailed in Section E of this report and are reflected in the following recommendations.

A New Zealand framework of e-learning standards and guidelines should address the following key priority areas:

Institutional commitment for quality and sustainable e-learning through:

- Developing a strategy in each institution that gives management and academic staff a mandate to lead the improvement of e-learning at the institution.
- Ongoing maintenance of the strategy to integrate it well with the institution's teaching and learning goals.
- Providing appropriate targeted resources for e-learning to achieve stated goals in e-learning.

Support for staff providing quality e-learning environments to include:

- Staff development that is based on identified needs and has outcomes monitored for effectiveness.
- Offering staff opportunities to learn online so they experience e-learning from a learner's perspective.
- Providing staff with guidelines for good practice that they can adapt for their own work.

Quality processes for teaching and learning in e-learning with:

- Learning design that has a student focus, takes the diversity of students and learning contexts in e-learning into account, and supports different learning needs.
- Research informing models of best practice pedagogy to support e-learning in the New Zealand context, including constructivism and kaupapa Māori research.
- Systems for monitoring the quality of study material, including review and redevelopment.

Evaluations of the impact of e-learning in teaching and learning to ensure:

- e-Learning is effective in delivering student learning outcomes that are equivalent to versions of a course delivered by other

modes or from other sites.

- e-Learning outcomes are in alignment with the institution's priorities and educational objectives.
- Formative evaluation of student needs, goals and desired learning outcomes is undertaken.
- Summative evaluation of student satisfaction and achievement of personal learning goals is undertaken through methodologies that specifically reflect the e-learning context.

Reliable IT infrastructure exists that:

- Is secure and reliable.
- Is user-friendly and accessible for academic staff and students.
- Supports students through, for example, excellent helpdesk services.
- Provides staff with excellent IT support for developing and delivering e-learning.



B. INTRODUCTION

Background

The survey of support and guidance for e-learning in New Zealand tertiary institutions was a mixed method study undertaken between December 2004 and March 2005. The participants were twelve e-learning advisors representing six universities and six polytechnics. The survey was the initial stage of research in the NZ e-Learning Standards and Guidelines project. The aim of the wider project was to produce a set of quality standards and guidelines on the educational aspects of e-learning for the national tertiary sector. It was funded by the Tertiary Education Commission (TEC) through the e-Learning Collaborative Development Fund (eCDF). The project partners were Massey University, Victoria University of Wellington, Auckland University, Auckland University of Technology, Waikato University, Lincoln University and the Open Polytechnic of New Zealand.

Aims

The survey aimed to review the support and guidance for e-learning that tertiary institutions in New Zealand currently provide. More specifically, the objectives were to:

- Provide a context for the development of the proposed framework, by surveying the current situation of a group of national tertiary institutions.
- Assist with framework development by highlighting key issues of support and guidance that the framework might address.
- Identify current examples of effective practice in e-learning in the national context for inclusion in the framework.

More generally it was expected that the survey would highlight issues in relation to e-learning, contribute to the general understanding of the subject matter, and indicate areas for further research.

Report structure

Section C (research design) outlines the rationale for the mixed method approach taken in this study. Following the rationale is a description of the methods of data collection and analysis.

In Section D the findings from the interviews with the e-learning experts are compiled and discussed under the following main headings:

1. e-Learning strategy
2. Support for staff and students
3. Teaching and learning
4. The impact of e-learning and its challenges
5. e-Learning tools and technical systems
6. Issues of institutional change and funding

The findings and discussion are presented within each of the above sections. First the findings from the descriptive statistics (with relevant counts in brackets) are outlined first, and are followed by the qualitative findings. After each set of findings (questionnaire findings then interview findings) is a brief discussion of possible implications for the development of a national framework of e-learning standards and guidelines.

Lastly, Section E sets out the implications of the findings for the development of a national framework of e-learning standards and guidelines for the tertiary sector.



C. METHODOLOGY

Research design

The research was a mixed method design with two phases. An initial paper questionnaire was used to collect information on a range of closed- and open-ended questions. After piloting, the survey was redeveloped: quantitative questions were reformatted in an online questionnaire and the qualitative questions included in an interview guide for telephone interviews. Using two collection methods consecutively was appropriate for the different question styles and had the advantage of increasing the validity of data. Online survey data returns that were anomalous and blank, for example, were able to be verified during telephone interviews.

Sample

Respondents were a purposive sample of twelve e-learning experts selected from the consortium of seven institutions managing the project (University of Auckland, Auckland University of Technology, University of Waikato, Lincoln University, Victoria University of Wellington, The Open Polytechnic of New Zealand and Massey University) and also from the Universal College of Learning (UCOL), Southern Institute of Technology, Christchurch Polytechnic Institute of Technology, Northland Polytechnic and Tairāwhiti Polytechnic. These institutions were selected because they were considered to provide a good representation of current e-learning in New Zealand.

In considering the survey findings it is important to note that responses reflect the personal knowledge and perspectives of the e-learning experts, and not necessarily the official policy of the institutions they represent.

Phase one – online questionnaire

A survey questionnaire was developed with a focus on the support and guidance that institutions in the tertiary sector are providing for e-learning. The survey structure and content drew on relevant sections of the OECD Survey of E-learning in Post-secondary

Education and Training.¹ Existing questions were redeveloped to fit the objectives of the present project and the New Zealand context. The initial paper questionnaire was piloted face to face and by telephone with several participants. Following the decision to combine mixed methods, the remaining participants were sent a link to an online survey.

Phase two – telephone interviews

Questions raised by the online data returns and a number of pre-selected open-ended questions formed the basis of a semi-structured interview guide for follow-up telephone interviews. Interviews were conducted with the 12 representatives of the participating institutions. The interviews were taped and transcribed and transcripts were sent to participants for verification.

Data analysis

Owing to the small and purposive sample used in this survey, the online questionnaire data required basic descriptive analysis only. The findings are presented as simple descriptive statistics in Section D and are set out in full in Appendix 1.

The interview data were managed by using the qualitative data analysis software, QSR N6. Analysis took a general inductive approach and focused on establishing themes and exploring thematic relationships in the data. Transcripts were coded in N6 to produce short text summaries for both prompted and unprompted themes. This information was intended to provide rich description and examples to complement the numeric data.

There was some analysis by institution type to look for any patterns or difference between the polytechnic and university data. It was expected that there might be some divergence, given the slightly different organisational structures and foci of the two types of institution. However no notable differences emerged in either the quantitative or the qualitative analysis.

¹ OECD, *E-Learning Case Studies in Post-Secondary Education & Training*, 2004. Full version of survey questionnaire available at <http://www.oecd.org/dataoecd/61/19/31824388.doc>

Limitations of the data

Some participants found it difficult to answer some questions in the online survey. This was because wording was perceived as having limited application to their institution. For example, the questions on strategic documentation on e-learning assumed that strategy would be both formalised and written, which in many cases did not reflect the situation of the institutions surveyed. The information asked for in other questions was either difficult for participants to access, or they felt the answer would vary depending on specific circumstances. Overall, it was possible to discuss conceptual and wording issues during the telephone interviews and this allowed data limitations to be mitigated.



D. FINDINGS AND DISCUSSION

1.0 e-Learning strategy

1.1 Strategic documentation

The questionnaire data indicated that nearly all of the institutions surveyed have some form of strategic documentation on e-learning, from drafts currently under development to formally approved documents. The earliest strategy was written in 1998 (and is still in draft) while the majority were written between 2003 and 2004. Most of these strategies are centralised at the Charter or Profile level, with only one institution having them at the department or faculty level. About half of the institutions have formal procedures for reporting progress towards their e-learning strategies. The survey participants were the primary managers responsible for overseeing e-learning strategy and development in the twelve institutions. Only two report directly to their Vice-Chancellor (in the case of universities) or CEO (polytechnics).

Only three of the twelve e-learning experts reported that their institution has a formally approved, e-learning specific strategy (one university, two polytechnics). Those three experts described what they saw as important aspects of their strategies. One strategy was depicted as a 'living document rather than something that is set in stone'. Another was a central strategy that co-exists alongside other faculty strategies. The third had involved 'staff members across the institution in the process of the strategy development'.

One university and three polytechnics have Charter and Profile documentation that makes reference to e-learning at their institution. The remaining four universities and one polytechnic have an e-learning strategy either in draft or under development. One expert from this last group described the institutional implications of having no formal e-learning specific strategy:

We've had to...soldier on without the support of strategy behind us and just try and drive things that are obviously

necessary for the institution rather than the things that are strategically necessary for the institution.

1.2 Integration with strategic directions and goals

Overall, the experts considered e-learning strategy to be well integrated into the institutions' strategic direction and goals. In most cases it is formalised through reference to e-learning (or flexible and distance learning) in high level institutional strategy. The experts mentioned links between their institution's direction and e-learning. These links were described as 'the promotion of flexible and distance learning', 'engaging as many people as possible in education through e-learning tools or different methods of delivery', and 'trying to create an interactive environment for its students'. One participant highlighted the advantage of having an institutional strategic direction for e-learning:

It gives people who want to do [e-learning] the hook to do it. In other words, the heads of departments or heads of schools can't turn around and say, "No, it's not the university's direction".

1.3 Integration with teaching and learning

E-Learning strategy, including approved or developing strategies, and references to e-learning in Charters and Profiles, was also generally considered well integrated with institutional approaches to teaching and learning. The experts mentioned links such as having institutional 'vision' for e-learning, having a focus on staff development, prompting staff reflection on wider teaching and learning issues, and having interaction as a core component of teaching. It was reported that one institution is currently in the process of establishing a direct link between its e-learning strategy and its teaching and learning plan. Other comments suggested some of the experts perceived challenges to this level of integration. One example is that in several of the institutions, official teaching and learning strategies are currently under development. Another comment alluded to a wider challenge:

e-Learning offers the potential for a whole new perspective of how you approach [teaching]...Now obviously this means tutors need to think...about how they go about teaching...I

see e-learning as a way to free them up from the constraints of the classroom so they can look at alternative education.

1.4 Discussion

The findings above indicate that developing and approving an institutional strategy for e-learning is a new area and a work in progress for most of the institutions surveyed. Strategic documentation on e-learning exists largely at the Charter and Profile level. Few of the institutions surveyed have a dedicated strategy, and few e-learning managers report directly to the chief executive officer or vice-chancellor. Yet participants clearly emphasised the importance of both a 'strategic vision' for e-learning development at the level of the institution and an e-learning strategy that is well integrated with the institution's strategic direction and goals and its teaching and learning plan.

This raises the question: how important is it to have a formal strategy specific to e-learning? An e-learning strategy is likely to confer benefits that include communicating clearly with both staff and management about their institution's direction. An e-learning strategy will clarify any difference between e-learning and other modes of teaching and learning. The experts spoken with appear to have suggested that, ideally, such a strategy would be developed in consultation with staff, it should be able to co-exist with other devolved strategies, and it needs to be flexible enough to allow for iterative revision.

2.0 Support for staff and students

2.1 Staff support

The questionnaire data suggest that for academic staff providing e-learning at the institutions surveyed, the most common forms of support were staff development (11), technical support (11), mentoring (10) and guidelines (8). Less common forms of support were funding to enable staff to buy out some of their teaching time (6), funding to enable staff to buy software, hardware and resources (6), and 'other' support (2), described as international visits/sabbaticals or hiring consultants.

While most of the institutions surveyed have some form of staff guidelines available, less than half (5) of them provide staff with formal guidelines on aspects of e-learning. Where formal guidelines exist, they relate mainly to instructional design, active learning and interactivity, and assessment activities. Other less common aspects are motivating the students (4), feedback that guides students as they learn (3), identifying what the student knows before the learning occurs (3), and student to student discussion about learning (3). Some further aspects of e-learning on which staff are guided were also noted. These are learner assessment of learning, professional development and project teams, and lastly, learning management system use and operation. Of the seven institutions that do not currently offer staff guidelines, all but one reported that these were under development.

Three institutions with existing formal guidelines were developing further guidelines relating not only to the aspects outlined above, but also to others, including:

- Change management for online pedagogy
- Guidelines specific to Māori students
- Intellectual property policy
- Use of other IC infrastructure
- Academic regulations
- Ethics
- Codes of conduct
- Relationships with face to face course delivery

2.2 Staff development

The survey found that most (9) of the institutions offer staff development programmes aimed at assisting faculty to use e-learning that focuses on instructional design. Survey respondents estimated that 21% of staff had attended staff development on e-learning at their institution during the last year.² The most common approaches to staff development reported are face to face courses and support for individual staff members. Survey responses also highlighted other approaches including:

² The mean of estimates provided in the survey.

- Cross sector professional development
- Master classes
- Telephone support
- Online courses and documentation
- Flexible learning
- A blend of the above

The interviews provided further detail about the nature and delivery of staff development in e-learning in the institutions surveyed. Overall, staff development is being undertaken in a holistic way. It is happening on a range of levels – formal and informal, central and devolved, by both general and academic staff. Formal training on e-learning is being led by central staff development units. It includes induction or foundation courses (delivered face to face, online or blended), teaching and learning certificates (specific to e-learning or with online segments), issues-based workshops and one-to-one staff support and consultancy. Staff development is also happening informally through the advice and support of general staff (such as flexible or e-learning advisors or IT professionals) and through ‘champion’ academics.

The e-learning experts had different views on the best model for staff development. Several felt strongly that development in context was the best way to develop staff capability in e-learning. One noted for example:

Staff development is really a distributed process of different areas all working together. I think the old sort of model of having a staff development centre is just not effective for many reasons. What is more effective is to actually build up capacity with individuals and programme areas to integrate e-learning into their day to day processes of curriculum and teaching and learning development. [This] doesn’t happen in a centre, it happens within the actual context.

However, another participant noted a limitation of this approach:

We’ve also taken the line of working with individual academics to upgrade courses. But the problem is...unless it’s a shared

project owned by their school, when that academic leaves, the project dies. So you're basically wasting resources.

Overall, descriptions of the nature of existing training courses and workshops suggested that the main focus is on training staff to use learning management system software, rather than on training in instructional design or pedagogical issues. Yet one participant suggested training on these two facets is linked, even if not obviously, within their institution:

[Our courses] are mostly geared around the learning management system we have. In terms of getting people started with that and using some of the features appropriately. We talk about pedagogical design issues, assessment issues and just the mechanics of using the system with people...But the goal basically is [staff] need to focus their energy on teaching and learning and not on being experts with computers.

2.3 Evaluation of staff development

Of the nine institutions providing staff development, most (7) also reported that this is evaluated. Evaluation is primarily carried out using questionnaires at the end of training sessions. One institution reported using an external evaluator. Interview data lend further support to the idea that staff development is generally evaluated through basic, post-training questionnaires.

During the interviews the experts offered a number of conclusions about 'what works' in staff development, based more on personal insights than on evaluation findings. Again, the importance of development in context was emphasised:

Generally people just want support and training that is immediately relevant to them, a sort of 'just in time' approach.

Several other experts described a similar approach, for example:

Seminars where people, for ten, fifteen or twenty minutes, present examples of things they have done [online]... Because

staff want to come along, find two or three good ideas that they can go away [with and] modify and implement in their own class.

The same person thought another method was also effective:

Targeting people whom I think are going to be really successful as they move into online teaching. I know the kind of profile I am looking for. If I target and put lots of energy in them then they will pass that on via the 'contamination' technique... Because the 'spray and pray' [method] doesn't work.

Other comments indicated staff attitudes towards their own development are influenced by perceptions of the time that is required for e-learning development. One expert noted:

A consistent issue is basically just time... [This] basically means if [staff] have a particular issue or something they need to address immediately, they want training and/or support on that.

On the same issue, another suggested the solution is 'to fund some time release for... "e-champions" around the institution.' Another suggestion was to consult staff about what kinds of support they would find most useful.

Other key factors considered important for effective staff development included empathy, engagement, interaction and responsive delivery. Finally, online delivery of training was seen as appropriate, both as a means of providing staff with practical experience as an online learner and to provide hands-on use of the relevant learning management system.

2.4 Facilitating staff cooperation in e-learning

A related topic discussed was the facilitation of cooperation among staff in e-learning. The experts described a multitude of ways that cooperation was being facilitated in their institutions. Among academic staff these included encouraging team-based course development, sharing information through informal networks and

groupings, peer mentoring by institutional e-learning champions, lunch-box sessions, online forums and news-groups, and supporting departmental or school leadership in e-learning.

Facilitating cooperation between academic and general staff was reported as equally important as the above, but fewer examples were provided as to how this was being achieved. The main example given was the team development process. This included the development of cross-departmental and cross-disciplinary courses, and situations where general staff were physically located within faculties to work with academic staff on e-learning.

2.5 Student support

The questionnaire responses showed that the chief forms of support for students among the twelve institutions are helpdesk facilities (9), centralised guidance with e-learning (6) and guidance with e-learning on specific courses (6).

Several more detailed comments were made on this subject during the interviews. For example, aspects of student support considered important included learner/teacher interactivity, timely teacher responsiveness, motivation of learners, study skills and helpdesk support. On this last aspect, it was suggested that ideal helpdesk support would be a central support telephone number, with calls transferred to technical or course experts depending on the nature of the query. Availability 24 hours a day, 7 days a week and specialised support for Māori students were also recommended. One participant commented on the importance of the specific institutional context in providing student support:

Most of the students [at this institution] come from families who have no background in tertiary study, so there are a lot of support systems.

2.6 Discussion

The e-learning experts held different opinions about the best approach to staff development in e-learning for the tertiary sector. Some thought programme-based training with as many staff as possible was important, others thought 'just-in-time' training with individual staff members in their own context as most effective.

Both approaches have strengths. The first approach could mean taking e-learning to the mainstream and the second approach focuses staff development on relevant individual learning needs. However both approaches have weaknesses. The programme-based training may not necessarily increase overall staff capability in e-learning, and the second approach is resource intensive and would reach fewer staff. The different strengths and weaknesses of the methods appear to be recognised by the institutions, given that most of the institutions in this survey are using a variety of approaches in their staff development.

The experts considered elements of good practice in staff development to include consultation with staff, empathy, responsiveness and online delivery. Moreover, facilitating cooperation and information-sharing among both academic and general staff was seen as having a further positive reinforcement role. Evaluation of staff development programmes currently takes place at a basic level only. More sophisticated methods are likely to offer useful formative insights for improvement of current programmes.

Some institutional guidelines are currently available to support staff in e-learning, but these guidelines are largely informal. This signals a priority for institutions to develop formal guidelines for supporting staff.

The survey also identified the importance of support for students. The central role of the helpdesk in providing student support for e-learning was emphasised. More refined evaluation of this form of student support would be valuable for institutions in their assessment of student needs in online learning in their specific context.

3.0 Teaching and learning

3.1 Institutional approaches to pedagogy

The questionnaire findings are that just over half (7) of the institutions have centralised approaches to the pedagogy of e-learning. In the remaining five, pedagogy is devolved to faculties or departments. Other approaches were noted, including:

- Quality control for flexible learning developments
- Matrix-based decision making at the team level
- A Māori pedagogy incorporating aspects of kaupapa Māori education and constructivist principles, as an over-arching approach, and freedom to apply this depending on course context

Comments during the interviews underscored the belief that thinking about pedagogy was both philosophically and practically a key issue for e-learning. Notably though, the expert participants pointed out that thinking about pedagogy is equally relevant for both e-learning and traditional face-to-face teaching and learning. The following comment illustrates these ideas:

e-Learning can only really be effective when people start conceptually shifting away from the traditional 'transmission' model to constructivist and other forms of teaching, learning and cognition. It's a parallel process of trying to achieve the shift in teaching and learning culture, and at the same time develop the skills and capacity to do e-learning.

More specifically, the same expert pointed to the value of thinking about different approaches to pedagogy in the New Zealand context:

Constructivist ideas, resource based learning, kaupapa Māori education...are the exciting alternatives that have been offered...and there's quite a high level of synchronicity between those things.

All the institutions surveyed had element of devolved and centralised approaches to pedagogy. The most common situation

was devolved pedagogy and an observance of traditional academic autonomy, namely staff responsibility for the development and delivery of course content. It was noted that the approach taken in any course situation would also depend on the subject discipline or department. One expert commented, 'within each school there is a very different culture and/or approach'. Similarly, another explained, 'it really depends on the subject matter [and] the level of material [in any course]'. In general, quality assurance for the content and delivery of e-learning was largely centralised, with central units promoting quality through staff development and consultancy, and encouraging best practice. One polytechnic appeared to have more centralised involvement in course development than most of the other institutions, as follows:

We have a department that is large and central...A faculty member...or department will say, "We need to have a particular course". Then [the course] goes through financial and...academic [approval processes]...then it will be viewed in light of the portfolio of [this organisation] and where we want to be going. When it gets through that stage, it goes to a learning design process and basically the course is pre-designed and then it is moderated [via] an external moderation process.

Participants were then invited to discuss their perceptions of the advantages and disadvantages of either individual management or central management of course creation, content, and delivery.

A number of advantages were suggested for a more decentralised balance. The prevalent view was that retaining control and ownership of e-learning at the level of the individual academic was most 'pragmatic' and that it would not be justifiable or financially viable to do things differently. Mirroring the comments of several others, one expert thought this was important to ensure 'academics feel a strong sense of ownership and...engagement with their teaching'. Too much centralised 'control' was seen as having the potential to disenfranchise academic staff from their own teaching. It was also suggested that it is more financially prudent to have staff members update and maintain their own content.

On the other hand, some aspects of staff control and ownership of e-learning were viewed less favourably. It was suggested that a decentralised balance might have 'serious implications for the workload of the academic'. Another issue raised was that the individualism of knowledge and teaching practice inherent in having staff develop resources is synonymous with less 'equitable' and 'collaborative' approaches. For instance, one expert suggested a consequence of non-generic practice in e-learning would be:

There's the concern about the use of particular tools and ways. Students get used to effective use of the discussion forum, then the next course doesn't use it at all and they get disgruntled.

Overall, comments reflected the view that some degree of centralised management of e-learning was important and various benefits were cited for this. Centralised aspects described included an automated course database process at one institution, and at another, the project management of new or revised e-learning courses. The former was viewed as providing technical regularity and therefore ease of use for both staff and students. One expert summed up the key advantages of centralisation as 'efficiency and quality assurance'. Another explained further this might involve working through a process to optimise content and delivery of e-learning and tune it specifically to the institution's teaching and learning goals. This process was seen as 'cost effective because you come up with the teaching strategy, rather than content and [staff] lay content over it'. Another person expressed a similar idea:

What I would aim for is clarity and simplicity in course materials...and then emphasise the role of the teacher in using dialogue and discussion and demonstration...in their choice of what educational materials they use...Teachers have at their disposal a broad bank of different types of multimedia or online materials [with] discretion in how and where [they] use them.

Conversely, one expert acknowledged the staff required and suggested a potential limitation of centralised management is

'resourcing it [or else] you end up with, "We really want to do this and we must do that", but not actually getting to it'. Several others felt strongly that centralisation would need to be balanced so as not to stifle academic flexibility and innovation. One expert commented that the benefits of centralised management might not be realised without relevant course content:

If a faculty member relies too heavily upon the instructional design process, the materials they work with can be quite dated if they don't take the initiative.

A similar point was raised by the participant who described automated course creation at their institution:

If you are a beginner or you are not very confident, or you haven't got any time to do any web work, then your [course] web page is going to look pretty much like every other [course] web page and it's not going to look very exciting.

3.2 Learning objects

While four institutions in the survey have a repository of re-usable learning objects, only two reported having a strategy to support the development of learning objects. The experts pointed out that the concept of 'learning object' might include 'any digitised chunk of learning context or learning experience' or 'a whole programme'. It was also noted that the meaning of the term is changeable, 'depending on whether you are...looking at it from a technical...or a pedagogical point of view'. The range of opinion on this topic was wide and there was no consensus about whether to develop learning object strategy as a current priority for e-learning in New Zealand. Several experts, for example, thought the issue of learning objects was essentially a metadata or library issue, or 'the concern of publishers'.

While none of the institutions surveyed currently have a learning object strategy, several of the experts indicated that their institution had made a commitment to develop documentation in the future. The key drivers reported for developing institutional strategies were the sharing of resources for financial and pedagogical benefits. The following comment illustrates this:

The whole idea of creating materials at an appropriate level that can be identified by tagging is a major issue for us because we would like to be able to catalogue materials for searching...Wouldn't it be interesting to investigate a creative commons licence for the materials we have with other institutions that are also interested in sharing material?...We have an enormous repository of materials that are invaluable in some ways. [There is] the economic value but also the intellectual value, capturing peoples' ideas.

3.3 Targeting students

Over half of the experts surveyed (7) reported that their institutions target specific categories of students for e-learning. The predominant categories are: campus based students who attend mainly face to face courses (6), distance students (6), postgraduates (5), mature students (5), less academically prepared students (4) and undergraduates (4).

3.4 Discussion

The main issue discussed in relation to teaching and learning is the extent to which e-learning development should be led centrally or by academics themselves. Currently, the predominant practice among the twelve institutions is for devolved management of course creation and content in e-learning, with pedagogy strongly determined at the level of the individual academic. The rationale given is that this is the most practical approach and is in keeping with staff ownership and engagement in their teaching. In the context of e-learning though, might this approach also have the potential to increase both development costs and individual staff workload?

Current institutional structures indicate an overall preference for some form of centralised quality assurance. Whether this should extend to the development of a strategy for 'learning objects' is a moot point among the e-learning experts, with no consensus about whether this is something for institutions to pursue now. However, there is some agreement about the possible financial and pedagogical benefits in exploring this area further in the future. In conclusion, the balance of 'control' in determining online pedagogy in teaching and learning in any institution is contentious and

requires careful consideration of the specific institutional context and strategic priorities.

The research revealed fewer details about the actual practice of pedagogy in e-learning on a daily basis. Perhaps this reflects the earlier mentioned findings (Section D 3.1 & 2.1) relating to academic autonomy in teaching and learning and also the general lack of formal staff guidelines for e-learning. What are the consequences of this gap for the development of effective pedagogical practice? Further research on pedagogical approaches in e-learning is recommended to provide a better foundation of knowledge about how things are currently being done and what works in the New Zealand context.

4.0 The impact of e-learning and its challenges

4.1 Impact of e-learning on staff numbers

The survey indicated that none of the respondents thought the adoption of e-learning had influenced the number of teaching staff employed at their institution. However, two respondents noted that e-learning skills are targeted when employing new teaching staff. With respect to general staff, five respondents reported that the number of general staff had been increased since the adoption of e-learning at their institution.

Most of the twelve institutions (9) employ instructional designers or web specialists to support teaching staff who provide e-learning courses. A similar number (8) also reported that e-learning software specialists or other specialists are employed. Other specialists listed included the following:

- Virtual facilities manager
- Multimedia producer/designer
- Project manager
- Educational web designer (web and instructional design)
- e-Learning administrator
- Graphic designers
- Web designers
- Staff development trainers

- e-Learning consultant
- AV technicians/video editors
- e-Learning coordinator

4.2 Impact of e-learning on courses

The survey asked respondents to estimate the percentage of papers offered at their institution under different categories of e-learning, for the years 2001, 2004 and 2007. It used the following e-learning categories from the Ministry of Education³:

- **No access** is where no part of the paper or course is accessible online.
- **Web-supported** is where a paper or course gives students access to limited online materials and resources. Access is optional, as online participation is likely to be a minor component of study.
- **Web-enhanced** is where a paper or course expects students to access online materials and resources. Access is expected, as online participation is likely to make a major contribution to study.
- **Web-based** is where a paper or course requires students to access the accompanying online materials and resources. Access is required, as online participation is required.

Internet use	% 2001 (mean)	% 2004 (mean)	% 2007 (mean)	% students 2004 (Ministry of Education)
No access	87	36	18	51
Web-supported	11	39	35	32
Web-enhanced	2	23	38	13
Web-based	0	2	9	4
Total	100	100	100	100

Figure 1: Comparison of survey estimates of papers by e-learning type with data on student internet use in tertiary courses by students⁴

³ Ministry of Education, N. Z. (2004). *Single data return. A Manual for Tertiary Education Providers and Student Management System Developers. Specifications of the Ministry of Education Data Requirements for the Single Data Return for 2005 Academic Year*. Retrieved 14 December, 2004, from <http://cms.steo.govt.nz/NR/rdonlyres/6D3255BE-9ACB-4566-8D43-9CB0D5B045F6/0/SDRManual2004v70DRAFTpdf.zip>

Figure 1 displays the averages of the estimates from the eight institutions (four polytechnics and four universities) for which these data were provided.

The mean estimates above suggest a steady increase in the provision of e-learning as a proportion of all course offerings among the twelve institutions between 2001 and 2004. The estimates also reflect a strong expectation by e-learning experts that this trend will continue over the next three years, with a movement away from no access courses to web-supported and web-enhanced courses. A comparison of the 2004 data (in the shaded third and fifth columns) shows that the survey results are broadly similar to the single data return statistics from the Ministry of Education.

4.3 Evaluation of the impact of e-learning

The questionnaire data shows that just over half of the institutions (5 universities and 2 polytechnics) evaluate the impact of e-learning in teaching and learning. Five of the experts noted that e-learning has changed approaches to teaching at their institutions. Numerous examples were given, including:

- Availability of more tools to bring learners together (facilitating and managing networks; easier to invite guest speakers)
- Has made people think more about their teaching
- Increased availability of and access to papers, use of online results recording, integration of CD-ROMs; greater emphasis on discussion in some papers
- Has supported distance and flexible approaches not previously undertaken
- Allowed flexibility of time and place
- Some staff are teaching solely online in a mixed media programme (other staff teaching face-to-face blended with online), staff are more aware of what 'interactive' means and are more aware of how to use media

⁴ NZCER, *Critical Success Factors and Effective Pedagogy for e-learning in Tertiary Education. Background paper for ITPNZ*. Wellington: New Zealand Council for Educational Research, 2004, p.9.

The survey asked the twelve experts to rate the impact of e-learning at their institution on student satisfaction, retention and attainment. Overall they found this question difficult to answer well. Notably however, none of the experts thought there was a decrease in any of the three as a result of e-learning. Five thought student satisfaction had increased, two thought student retention had been improved and one reported improved student attainment.

The interview data clarified a common institutional approach to evaluating the impact of e-learning in teaching and learning (to use the same methods and processes as for evaluating face-to-face teaching and learning, with only minor modifications if necessary). At one university teachers may include an 'optional' block of questions for any online course component. Two institutions have carried out additional staff and student surveys with a focus on the evaluation of learning technology. The findings of a university survey led one participant to conclude that:

Students are by and large quite satisfied. They're looking for online delivery...and they seem to be looking for an online component in their papers and some support online. Those that are getting it seem to be reasonably happy that it's there.

One expert mentioned that a staff member had elected to conduct their own research project which had produced some useful evaluative data.

A number of the experts reported that their institution had plans to develop evaluation methodologies specific to e-learning, however the overall feeling was that evaluation of e-learning was an issue yet to be addressed. It was acknowledged that current information about student satisfaction, attainment and retention in e-learning vis-à-vis traditional learning is largely based on anecdotal evidence. One expert made the following point:

We have anecdotal evidence that students are actively looking for papers and programmes that they can complete online or have a significant chunk of online component simply because the nature of the students being as it is at the moment

[means] that many of them are working considerable numbers of hours and are unable to get to lectures so they want to do this paper.

4.4 Institutional e-learning challenges

Overall, the following challenges were selected as the most common facing e-learning at the institutions:

- Staff development is needed to provide skills and understanding in educational aspects of e-learning (11)
- Staff do not have time to evaluate, develop, and deliver e-learning (11)
- E-learning is not a high priority for teaching staff (10)
- Staff development is needed to provide technical skills for software, etc (10)
- Departmental policy is not focused on e-learning (9)
- Staff lack support in developing and delivering e-learning (8)
- Students do not have the study skills required for e-learning (8)
- Staff do not get recognition for providing e-learning (7)

Participants thought their institutions were currently addressing many of these challenges. They noted a number of “other” challenges to integrating e-learning at their institutions: some that were currently being addressed and others likely to be addressed in the future. Figure 2 below presents these two groups of issues.

Current issues
<ul style="list-style-type: none"> □ In-house technology issues, cultural/environmental issues □ Competitive model □ Required organisational transformation □ Funding, staffing, resourcing □ The level of pedagogical change is underestimated □ PBRF and research focus of staff and management □ Separating e-learning from a particular platform □ Integrating all aspects of e-learning with other IC portals □ Ambiguity of who is responsible for delivery of platform/service

Future issues
<ul style="list-style-type: none"> □ Next-generation technologies □ Role of university in research □ Use of more than one learning management system □ Staff development under-resourced □ Lack of funding □ Regional issues □ Student access

Figure 2. Current and future challenges to the integration of e-learning

4.5 Key e-learning challenges

The prevalent issues in Figure 2 above were consistently discussed throughout the interviews and appear to be key challenges facing the development and delivery of e-learning within the tertiary education sector. These issues can be grouped into four broad categories: capability and resource, collaboration, the research-focused funding context and technical issues.

Several experts, for example, suggested that national resource and capability are key issues for development and delivery of e-learning. Two experts noted the importance of planning and access to adequate e-learning resource to support staff in e-learning development and delivery. This is reflected in the following comment:

We need to explore what skills we currently have [and do some thinking about] what we may need in the short to medium term future.

Another expert thought 'achieving a balance between cost, quality and access' so that 'the adoption of e-learning [does] not at an organisational level increase cost' was a difficult challenge. Similarly another comment appeared to relate to managing student demand and expectations of e-learning:

I don't want to get overwhelmed by demand and then not be able to serve anybody's demand very well and so I start thinking of quite...gentle beginnings.

It was also highlighted that progress towards national capability might be assisted through collaboration on e-learning among tertiary providers and industry partners. Existing academic relationships cited included the Tertiary Education Alliance (TEA) and Canterbury Tertiary Alliance (CTA). The eCDF projects funded by the Tertiary Education Commission (TEC) were also considered 'a step in that direction'. One polytechnic has embarked on a 'train the trainer' programme of cross-sector professional development, predominantly with other polytechnics and institutes of technology. The participant representing that institution suggested that this might be extended to an investigation of a creative commons licence for e-learning. Another thought that collaboration extended to information sharing beyond national boundaries:

You have to keep yourself closely linked through your environment...through participation in national and international projects and discussion groups.

Yet some experts considered their existing climate of 'competitive advantage' a potential barrier to collaboration. It was thought this might see some institutions relegating goals like national shared resources into the 'too-hard basket'.

Overall, the current funding climate, with a government-led focus on research-led teaching, was considered a greater challenge for e-learning in the tertiary sector. Comments suggested that this context conveyed a message to teachers considering e-learning that there are real implications for perceptions about teaching practice and its relative value to research. A tension was highlighted between a new focus on research outputs on the one hand, and on the other, the extra time and pedagogical reflection staff require in order to develop quality e-learning. However, one comment suggested that these two goals might in fact be complementary:

So what we are going to have to do is reflect different aspects of research through the teaching, both in terms of research to inform what we are doing and also making the pedagogies they've adopted support the acquisition of research skills by students.

The remaining issues highlighted as challenges for e-learning all related to technology and its impact on institutions, staff and students. At the level of institutional infrastructure, computer security and the reliability of servers were raised as ongoing issues. Links were also drawn between the pace of change within the technological world at large and the need both for timely information gathering by tertiary institution management and for institutional collaboration. One expert thought open source systems would be the solution, although it was felt that these were some time away yet.

Usability and accessibility were also discussed and one expert thought it would be ideal to have 'fast broadband throughout the region'. The variable availability of broadband nationally was seen as having implications for both content creation by staff and for the accessibility of learning by students. The ability of staff to use computers generally for e-learning course development was noted as an issue. A similar issue thought important is the extent to which mature and other groups of students are au fait with using computers for online learning. The functionality of learning management systems and better interoperability within institutions were viewed as important both to integrate e-learning in tertiary institutions and to improve the experience of online teaching and learning for both staff and students.

4.6 Discussion

The institutional challenges in e-learning perceived by the e-learning experts related to staff: staff development and support, staff skills and staff time. This raises the question: does this mean staff need better support to gain the skills and confidence they require for effective online teaching, or is this area of development not given priority by staff themselves? In either case, staff development and support are a high priority for institutions to address as they develop an e-learning specific strategy. While there has been no change in academic staff levels as a result of e-learning, an increase was noted in overall numbers of general staff for e-learning. What are the overall cost implications for institutions of these points, given that staff and staff development are resource intensive inputs in tertiary education?

The wider tertiary sector challenges discussed – funding, capability,

collaboration and technology – are intricately interconnected. These interconnections are reflected in the current national strategic priority areas in tertiary education overall.⁵ Building sector partnerships, for example, relates strongly to the objectives of ‘strengthening system capability and quality’, and ‘strengthening research, knowledge creation and uptake for our knowledge society’.

5.0 e-Learning tools and technical systems

5.1 Technical standards

The survey data indicated that half of the institutions are currently working with technical standards with an approximately equal emphasis on metadata and systems interoperability. Nearly all (10) institutions reported planned work with both in the future.

5.2 Expected portal development

While all of the institutions surveyed have learning management systems, only a few currently have institution-wide student portal systems in operation. During the interviews, experts were asked for their thoughts on how the planned or existing student portal systems at their institution were likely to develop over the next three years. In the institutions where there is currently no institution-wide portal, establishing such technology was expected to be a key development over this period.

Desired improvements to current systems ranged from fundamental to sophisticated technical upgrades. Several experts saw the most likely developments as improving access, including administration and enrolment by ‘distance’, and moving to ‘personal portal architecture’ with a single entry point for students. Other observations related to developments at a more strategic level for system interoperability. These included better library integration, single-portal ‘primary channel policy’ and portal alignment with other tertiary and pre-tertiary institutions.

⁵ Ministry of Education, *Tertiary Education Strategy 2002/07*, Wellington, 2002.

5.3 Drivers of portal development

A number of factors were suggested as the key drivers of expected portal system developments. Portal systems are largely viewed as vehicles for wider e-learning development. This idea is reflected in the following comment:

I don't see a portal as a thing in its own right. The value of it really does depend on the commitment of the university as a whole to providing services in a way which supports online access.

The major drivers cited for portal development were the learner-centred approach, institutional infrastructure requirements and technological innovation. For example, one expert described the learner-centred concept as follows:

The idea that [tertiary institutions] need to be more than organisation[s] that can issue certificates and provide credits... The idea of being able to create communities and value.

More specifically, this was described as institutional recognition of the need for any e-learning infrastructure to respond to student needs and demand. Additionally, an institutional infrastructure was described as needing reliable and flexible systems which also support staff in teaching and learning. This would be made more feasible by harnessing technological innovations with the potential to overcome the 'limitations of legacy technologies'. Other drivers mentioned were strategic government initiatives like the tertiary e-learning portal and steps towards cross-sector collaboration.

5.4 Discussion

The reported direction of current and future work on technical systems underscores the integral role of technology and infrastructure development for the development of e-learning in the tertiary sector. Institution-wide student portal systems are considered especially critical. These are expected to develop towards online enrolment, single point access and improved interoperability – both within and between different institutions' systems. The key drivers appear to be improving accessibility,

functionality and usability for users. This suggests that institutional infrastructure is a key issue for meeting the needs of both staff and students in the development of e-learning.

6.0 Issues of institutional change and funding

6.1 Major themes of institutional change

The twelve experts were asked to outline the major themes of change in their institution in relation to e-learning, including change accomplished, change in progress or change on the horizon. The discussion largely reflected the specific context of each institution and in many cases involved politically sensitive issues. However, the discussion can be summarised within three overarching themes: pedagogical thinking, e-learning feasibility and e-learning capability (encompassing both technical development and staff development).

Three experts identified a renewed emphasis on pedagogical thinking and good practice in teaching and learning. They went on to emphasise the importance of building this thinking into institutional strategy and staff development and managing any subsequent change within their institutions. The feasibility of distance learning, flexible learning and e-learning received equal attention. They were discussed in relation to student access, equity and retention, and the research-led tertiary funding context. Four of the twelve experts discussed capability in terms of technical capability, particularly infrastructure and learning management systems. Several times this was strongly linked to staff development in e-learning. One expert thought the development of pedagogical guidelines was another important aspect of staff development.

Other issues raised included institutional (structural) change management issues, partnering and collaboration between tertiary institutions with a focus on increasing access to remote learners and subsidiary e-learning issues involving content management and copyright.

6.2 Management of institutional change

The means by which each institution was managing the major issues of institutional change identified above were discussed, and can be summarised as: strategic development, institutional management, e-learning capability and academic leadership.

Three of the experts saw the development of institutional strategy and planning as a critical mechanism for managing change. Of equal importance were: the leadership of institutional management and their commitment to resourcing e-learning, consultation among institutional stakeholders on e-learning issues, project work on pedagogical transformation, and the establishment of dedicated e-learning units and staff training areas to lead development. Efforts to develop institutional capacity through technical infrastructure were mentioned twice and a connection between this and staff development was highlighted. The leadership of academics themselves in undertaking e-learning was also considered an important mechanism.

6.3 Funding to support e-learning development

The questionnaire data revealed that, in most of the institutions, the design and delivery of e-learning is funded fairly equally through internal general teaching budgets, internal specific e-learning budgets and other external funds such as eCDF funding. Eight of the twelve institutions also have a special fund through which departments and individuals can bid for support for e-learning development.

More detailed information obtained through the interviews indicated that only a few of these 'pots' of funding are specific to e-learning development. In one institution, the availability of e-learning specific funding was further limited as follows:

The majority of funding sources described as available to staff for the development of e-learning were of a more generic-type, such as innovation, teaching excellence and staff development grants. For the most part these grants are not specific to e-learning, but rather are able to be bid for by all staff.

We have a web development grant but it's really small bucks.

That's something we need to look at because if people are going to develop sizeable chunks of e-learning then they need to have their time bought out.

6.4 Discussion

The major themes of institutional change discussed by the twelve e-learning experts are similar to the overarching issues concerning institutional and sector e-learning challenges.

A renewed emphasis on pedagogical thinking in teaching and learning has been identified as a significant issue for institutional change and e-learning. Given that new pedagogical thinking is described as being generic to teaching and learning, it would be interesting to compare its influence in the area of e-learning development with its influence on traditional modes of teaching, both face to face and distance. Another change issue was the overall feasibility of e-learning, both within the current funding environment and as a way of balancing the combined issues of student access, quality and cost in tertiary education. These issues were linked primarily to capability and an acknowledgement that building e-learning capability will require focused investment in the areas of staff resource and development, technology and infrastructure.

The key mechanisms identified as having been put into place to address these institutional changes fall into the categories of strategy and institutional leadership, technology and infrastructure, and staff development. All of these areas require investment and therefore prioritisation as to how best to spread investment to support e-learning development. Only a few of the institutions in this survey reported dedicated funding to support academic staff in e-learning development, and most additional funding available is not e-learning specific. What message does this send to academic staff about the importance of e-learning development? Would a more visible commitment to supporting staff development of e-learning, such as funding for staff to buy out time, result in better support for stated strategic directions and give more encouragement to staff who wish to move in this direction?

Sector collaboration is also likely to be an efficient way to assist growth in capability across the board, and so institutions might identify how they can build effective partnerships with other providers, with a particular emphasis on organisational processes.



E. IMPLICATIONS FOR THE DEVELOPMENT OF e-LEARNING GUIDELINES

This survey suggests that the development and approval of e-learning specific strategies is a priority for tertiary institutions in this country. Further strategic development is necessary to provide clear direction and a mandate for both management and staff to develop capability within their institution. While a national set of guidelines for e-learning will not address how an institution might prioritise its development of an e-learning strategy, it will highlight the importance of the institution's commitment to continued development in e-learning. For institutions still developing an e-learning strategy the guidelines offer a structured set of ideas to consider during that process. For institutions with existing strategies, the guidelines offer a useful tool for the future evaluation and ongoing improvement of their practice.

The survey reinforced the central issue of pedagogy in relation to e-learning, the value of thinking about alternative approaches to teaching and learning, and the need to get this right at the institutional level. Furthermore, comments underscored the importance of some form of central quality assurance within the institution to develop optimal content and delivery that are tuned to the institution's specific teaching and learning goals. Extending this to the development of a strategy for learning objects is generally not considered a current priority for e-learning development in this country, although there might be financial and pedagogical benefits in thinking about this in the future.

Current practice in institutions suggests that to maintain academic innovation and interest, centralised quality assurance aspects need to be well balanced, with traditional academic flexibility and autonomy regarding course creation and content.

No particular category of students is being targeted for e-learning more than any other, which suggests that institutions currently view e-learning as being as relevant to students undertaking face to face courses as to those studying by distance.

An e-learning framework would outline some key ideas for good practice in e-learning that are relevant to the current range of e-learning being undertaken in tertiary institutions. A generic (not e-learning specific) set of ideas would provide staff with guidance, would provide students with an idea of what they might expect from this mode and would provide management with possible benchmarks for evaluating practice at their institution. At the same time guidelines on pedagogy must be flexible enough to accommodate alternative approaches and different institutional priorities and not be so rigid as to stifle academic innovation and endeavour.

The findings highlight that support for staff and students is also considered a key aspect of institutional development in e-learning. Good practice in staff development is flexible, uses the strengths of various approaches, is based on consultation with staff about their needs and is therefore tailored to the development needs in the institution. For institutions to move beyond the 'early adopters' stage, it seems important that they provide course-based learning, which ideally would be delivered either partially or fully online. Equally important, not least to accommodate different staff skill levels, is just-in-time staff training with efficient technical support. Such training would happen in the daily academic context and could focus on issues that staff themselves identify as priorities as they arise. Staff guidelines need to be developed, approved and updated within institutions, and staff cooperation facilitated to reinforce both strands of staff development. Thorough monitoring of development programmes is also needed if they are to be evaluated for ongoing relevance and progress.

Another key point from the survey is the need for institutions to provide a reliable IT infrastructure for the development of e-learning. While the e-learning guidelines framework is not intended to address technical standards specifically, it would highlight how important it is that institutions address this issue separately. The framework would need to emphasise the critical role of an accessible and user-friendly IT infrastructure to support staff and students in e-learning, and the importance of development - particularly in the areas of interoperability and portal development.

The survey findings also drew attention to the importance of support for students in e-learning. While issues of course-specific support were not dealt with here, the findings did highlight the importance of helpdesk services that are accessible, efficient and well targeted to the specific needs of the students at individual institutions.

The expected increase in the number of e-learning papers offered at tertiary institutions in this country means the lack of e-learning specific evaluation is likely to become increasingly conspicuous. While general teaching and learning aspects covered in the evaluation of face to face or distance learning may well be equally relevant for e-learning, it is likely there are other pedagogical or quality aspects more relevant to e-learning specifically. Strategic development of evaluation methodologies specific to e-learning would provide more rigorous information about student satisfaction, attainment and retention in e-learning than anecdotal evidence can provide. In outlining benchmarks for quality e-learning both generically and on aspects specific to e-learning, the framework can provide a structure for improving the e-learning evaluation methodology.

The themes of institutional change and change management raised in this survey are too broad for the framework to address as specific issues. However, in outlining guidelines and ideas for pedagogical and institutional good practice, it can support both management and academic staff in their progress towards improved strategic development and capability in e-learning. More specifically, for institutions making a commitment to e-learning, the guidelines can identify major issues that they need to consider regarding quality and sustained e-learning, including targeted resource allocation and budgeting.

By setting guidelines for good practice, the framework can emphasise areas for institutions to consider in their planning and resource allocation. This framework can also highlight the key role of commitment by the institutions to the development of provider capability, sector collaboration and technical infrastructure for e-learning. These issues also touch on questions of staff support and

development and, as mentioned earlier, these are key areas for the framework to address.



Appendices

Appendix 1: Summary of online survey data

1.0 Strategy for e-Learning

1.1 First, does your institution have any existing strategic documentation on e-learning (including any strategy under development)?

N = 12

Yes	10
No. Go to 2.0	2

1.1.2 Does your institution have a central e-learning strategy?

N = 10

Yes	9
No	1

1.1.3 Do any faculties or departments have their own e-learning strategies?

N = 10

Yes	9
No	1

1.2 If your institution has only one e-learning strategy, go to 1.2.1. Which e-learning strategy will you be referring to?

N = 9

Central e-learning strategy	8
Departmental strategy	0
Other strategy (Name):	1 (Flexible Learning Strategy)

1.2.1 In which year was the strategy written?

N = 9

1998	1
1999	0
2000	1
2001	0
2002	1
2003	4
2004	3

1.2.2 Has it been revised since?

N = 10

Yes	6
No	4
Date(s) revised:	2000, 2004, 2004, 2004, 2004, 2004

1.2.3 What is the job title of the manager responsible for implementing the strategy?

N = 10

E-learning Director; Director CDFL; Director TDU; e-Campus Manager; e-Learning Coordinator; e-Learning Leader; Director e-Learning; Chairperson Education Committee; Head of Faculty – New Media and the Arts; Flexible Learning Manager
--

1.2.4 Does this person report directly to the Vice Chancellor or CEO?

N = 10

Yes	3
No	7

1.2.5 Is there a formal procedure for reporting progress towards the e-learning strategy?

N = 10

Yes	6
No	4
Explain procedure:	Business Plan.
	Through line management to VC's office & centralised advisory board
	Learning technology advisory committee and Pro-vice Chancellor, Teaching and Learning.
	(2 blank)

2.0 Support for Staff and Students

2.1 Are staff currently provided with formal guidelines for e-learning by your institution?

N = 12

Yes	5
No. Go to 2.1.3	7

2.1.1 Do the guidelines guide staff on the following aspects of e-learning? Select as many as apply to your institution.

N = 5

	Totals (multiple answers)
Instructional design	5
Active learning and interactivity	5
Assessment activities	5
Feedback that guides the students as they learn	4
Motivating the students	4
Identifying what the student knows before the learning occurs	2
Student to student discussion about learning?	4

2.1.2 Are staff provided with formal guidelines for any other aspects of e-learning?

N = 5

Yes	5
No	0
Enter other aspects:	Learner assessment of learning; Professional development programmes, Project teams; Use and operation of the Learning Management System; E-learning is not different in its performance from other aspects of learning and teaching; (1 blank)

2.1.3 Are any other staff guidelines for e-learning currently under development?

N = 12

Yes	10
No. Go to 2.2	2

2.1.4 Do the guidelines being developed relate to the following? Select as many as apply.

N = 10

	Totals (multiple answers)
Instructional design	9
Active learning and interactivity	9
Assessment activities	9
Feedback that guides the students as they learn	8
Motivating the students	7
Identifying what the student knows before the learning occurs	8
Student to student discussion about learning?	8

2.1.5 Are staff guidelines under development for any other aspects of e-learning?

N = 10

Yes	4
No	6
Enter other aspects:	Updating existing material and focussing more on change management for online pedagogy; Guidelines specific to Māori students; Intellectual Property Policy; Use of other IC (IT?) infrastructure, academic regulations, ethics, codes of conduct, relationships with face-to-face course delivery

2.2 Are staff development programmes offered to assist faculty to utilise e-learning which focuses on instructional design?

N = 12

Yes	9
No. Go to 2.6	3

2.3.2 Which of the following approaches are taken for staff development?

N = 9

	Totals (multiple answers)
Face to face courses	8
Online courses	5
Support for individuals	7
Other	6
List other approach(es):	Cross sector professional development; 'train the trainer' training in ITP sector; Master classes, telephone support; online documentation; a blended approach of the above is under development; Flexible Learning, Advisor Support (online course being developed for delivery in 2006);

2.3.3 Approximately what percentage of teaching staff attended staff development on e-learning over the last year?

N = 9

30-90% (fluctuates); DK; 5-10%; 30%; 20%; 10%; DK; 10%; 10%

2.4 Is staff development in e-learning evaluated?

N = 9

Yes	7
No. Go to 2.6	2

2.5 Which of the following methods are used to evaluate staff development in e-learning?

N = 7

	Totals (multiple answers)
Questionnaires at the end of each session.	5
Evaluation carried out by an external evaluator.	1
Other	2
Print other evaluation method(s):	Post-implementation review; Only some are assessed.

2.6 Would you say the adoption of e-learning has affected the number of teaching staff at your institution?

N = 12

More teaching staff?	0
Less teaching staff?	0
No change in numbers of teaching staff?	12

2.7 Would you say the adoption of e-learning has affected the number of general staff at your institution?

N = 12

More teaching staff?	5
Less teaching staff?	0
No change in numbers of teaching staff?	7

2.7.2 Are e-learning skills targeted when employing new teaching staff?

N = 12

Yes	2
No	9
DK	1

2.7.4 Does your institution employ the following staff to support teaching staff who provide e-learning courses? Select all that apply.

N=12

	Totals (multiple answers)
Instructional designers	9
Web specialists	9
e-learning software specialists	8
Other specialists	8
List other specialists: Virtual facilities Manager, Multimedia producers; Dedicated Project Mgr; Multimedia designer, Educational web designer (web design & instructional design), administrator, Graphic designers, web designers, Staff development trainers; e-learning consultant, AV technicians and video editing skills, E-learning coordinator, departmental champions, Much now provided by an external vendor.	

2.10 What support is there for staff who provide an e-learning environment at your institution? Select all that apply.

N=12

	Totals (multiple answers)
Staff development?	11
Guidelines?	8
Technical support?	11
Mentoring?	10
Funding so staff can buy out some of their teaching time?	6
Funding so staff can buy software, hardware or other resources?	6
Other support?	2
Enter other type(s) of support:	international visits; consulting service; recognised academic autonomy; sabbaticals; PO based mentoring;

2.11 Does your institution offer students:

N=12

	Totals (multiple answers)
Centralised guidance with e-learning?	6
Guidance with e-learning on specific e-learning courses?	6
Help desk facilities?	9

3.0 Teaching & Learning

3.1 Is your institution's approach to the pedagogy of e-learning:

N=12

	Totals
Centralised	6
Devolved to faculties/depts	4
Other	5
Explain other approach:	QC around CFL developments; centralised sign-offs; matrix-based decision-making @team level.
	Being developed, though not specifically in e-learning
	Both! We have centralised facilities but one faculty delivers and supports its own e-learning structure
	Mostly Māori students here are developing an approach we call e-ako that incorporates aspects of kaupapa Māori education and constructivist principles as an overarching approach. Within that there is considerable freedom of approach depending on course context
	Ad hoc, under development

3.2 Does your institution evaluate the impact of e-learning in teaching and learning?

N = 12

Yes	7
No	5

3.3 Has e-learning changed any approaches to teaching at your institution?

N = 12

Yes	7
Explain:	More tools available to bring learners together (facilitating & managing networks). Easier to invite 'guest speakers'.
	Has made people think about teaching, what they do.
	Through the use of online results recording, through integration of CD-ROMs, greater emphasis on discussion in some papers, availability and access to papers.
	Only marginally but it is expected that more significant pedagogical changes will occur in the future.
	Supported distance and flexible approaches not previously undertaken.
	Gradual growth through early adopters
	Allows flexibility of time and place.
	Now have staff teaching solely on-line in mixed media programme - other staff teaching face-to-face and online - staff more aware of what interactive means - more aware of how to use media.
No	5

3.4 What has been the impact of e-learning at your institution on:

N=12

	No change	Increase	Decrease	Don't know
Student satisfaction?	0	5	0	7
Student retention?	0	2	0	10
Student attainment?	1	1	0	10

3.5 Does your institution have a strategy to support the development of learning objects (either learning objects specific or part of a wider strategy)?

N = 12

Yes	2
Would you be able to send a copy to us? Or please describe strategy:	Learning Materials Design Project & another XML project.
No	10

3.5.2 Does your institution have a repository of re-usable learning objects?

N = 12

Yes	4
No	8

3.5.3 Is your institution currently working with any technical standards including metadata or systems interoperability eg, SCORM or IMS?

N = 12

Yes	6
No. Go to 3.5.5	5
Don't know. Go to 3.6	1

3.5.4 Is the technical standards work with the items below? Please select all that apply.

N = 7

	Totals (multiple answers)
Metadata?	5
Systems interoperability?	6
Don't know	1

3.5.5 Is your institution planning to work with any other metadata or systems interoperability in the future?

N = 12

Yes	10
No. Go to 3.6	0
Don't know	2

3.5.6 Is that planned work with:

N = 10

	Totals (multiple answers)
Metadata?	7
Systems interoperability?	8
Don't know	3

3.6 Does your institution target any specific categories of students for e-learning?

N = 12

Yes	7
No. Go to 4.	5
Don't know. Go to 4.	0

3.7 Are the following categories of students targeted?

N = 7

	Totals (multiple answers)
Campus based students who attend mainly face to face courses.	6
Distance students	6
Undergraduates	4
Postgraduates	5
Mature students	5
Less academically prepared students	4
Full fee paying students	3
Other.	2
List other categories of students:	International students, national students offshore (EFTs funding applies).
	Accessibility; impaired.

4.0 Impact of E-Learning and Its Challenges

4.1 Included with this survey is a sheet which lists four categories of e-learning (Ministry of Education, 2004).

No Access is where no part of the paper or course is accessible online.

Web-Supported is where a paper or course provides students access to limited online materials and resources. Access is optional, as online participation is likely to be a minor component of study.

Web-Enhanced is where a paper or course expects students to access online materials and resources. Access is expected, as online participation is likely to make a major contribution to study.

Web-Based is where a paper or course requires students to access the accompanying online materials and resources. Access is required, as online participation is required.

Using the Ministry definitions, please estimate the percentage of papers offered by your institution for each category for 2001, now in 2004, and in three years time in 2007.

N = 8*

	2001	2004	2007
No Access	87 %	36%	18%
Web-Supported	11%	39%	35%
Web-Enhanced	2%	24%	38%
Web-Based	0%	2%	9%
	100%	100%	100%

* Each cell contains the average of 8 responses where estimates were given. One respondent refused (Rf) to answer and another was unable to answer (Dk) the question. Other respondents were unsure for some cells.

4.2 Please indicate whether the statements below are currently challenges facing your institution overall. Are any relevant challenges currently being addressed at your institution?

N = 12

Issue	Y	N	DK	Challenge currently being addressed	Challenged will be addressed in future
The institutional strategy hasn't emphasised e-learning.	4	8	1	4	0
The institution's strategy on e-learning isn't clear.	6	6	1	6	0
E-learning isn't a high priority for teaching staff	10	2	0	9	1
Departmental policy isn't focused on e-learning.	9	2	1	7	2
Staff development is needed to provide skills and understanding in educational aspects of e-learning.	11	1	0	9	2
Staff development is needed to provide technical (software etc) skills.	10	2	0	7	3
Staff lack support in developing and delivering e-learning.	8	3	1	6	2
Staff don't have time to evaluate, develop and deliver e-learning.	11	1	0	8	3

Issue	Y	N	DK	Challenge currently being addressed	Challenged will be addressed in future
Students don't have technical skills required for e-learning.	5	5	2	3	2
Students don't have study skills required for e-learning.	8	2	2	5	3
Staff don't have recognition for providing e-learning.	7	4	0	6	1
The computers and/or network are not adequate.	4	8	0	4	0
Relevant e-learning resources (e.g. software for a particular course) are not available for students	2	10	0	1	1

4.4 Are there any other challenges to successfully integrating e-learning in your institution?

N = 12

Yes	8
No. Go to 5.0	4

4.4.1 On separate lines list other challenges. Select appropriate column for each on right:

N = 8

Other challenges (multiple answers)	Challenge is currently being addressed by institution.	Challenge will be addressed by institution in the future.
Technological issues (in-house); cultural/ environmental issues	✓	
Competitive model	✓	
Required organisational transformation	✓	
Next-generation technologies		✓
Role of university in research		✓
Funding, staffing, resourcing	✓	
Use of more than one LMS		✓
Staff development under-resourced		✓
The level of pedagogical change is underestimated	✓	
PBRF and research focus of staff and management	✓	
Separating e-learning from a particular platform	✓	
Integrating all aspects of e-learning with other IC portals	✓	
Ambiguity of who is responsible for delivery of platform/ service	✓	
Lack of funding		✓
Regional issues		✓
Student access		✓

5.0 Tools Used In E-Learning

5.1 Does your institution use a learning management system (e.g. Moodle, Blackboard, WebCT etc)?

N = 12

Yes	12
No. Go to 5.2	0

5.1.1 What is learning management system or systems used?

N = 12

Name of Learning Management System(s): (multiple answers)	Proportion (%) of staff using system(s):
Moodle	100%
CECIL	45%
LearnerLincoln	50%
WebCT	95%
Blackboard, COLTS, Moodle	30%, 2%, 2%
Blackboard, LearnOnline	90%, 10%
Moodle	30%
Blackboard	DK
Blackboard, Adore (R9??)	60%, 5%
Class Forum (Web Crossing)	30%
Blackboard	10%
Moodle	5%

	Number of institutions using system:	Average proportion of staff using across institutions:
Blackboard	5	48%
Moodle	4	34%
CECIL	1	* 34% for all others together
LearnerLincoln	1	
WebCT	1	
COLTS	1	
LearnOnline	1	
Adore (R9??)	1	
Class Forum (Web Crossing)	1	

5.2 Is the administration of the learning management systems:

N = 12

	Totals (multiple answers)
Centralised into areas such as IT support?	7
Decentralised to the teaching departments?	0
A combination of centralised and decentralised?	2
Other?	3
Describe other:	Moodle hosted offsite, the e-learning team administer site.
	Administration is central, external IT company and e-education committee.
	Managed by Flexible Learning Manager in collaboration with IT.

5.2.1 Please indicate the balance between individual staff member control and central or departmental control of e-learning in your institution. On a scale of 1 to 5, where 1 is total individual control and 5 is total central or department control, what is the balance in terms of:

N = 12

	1	2	3	4	5	Dk
Course creation?	1	5	1	2	2	1
Content creation?	4	5	1	1	0	1
Keeping the content current?	5	4	0	1	0	2

5.3 A portal is a website that acts as a doorway to the Internet or a portion of the Internet, matching a person's learning needs to the available offering (E-learning Advisory Group, 2002). Does your institution have a system or systems supporting a student portal?

N = 12

Yes	8
No. Go to 6	4

5.3.1 Does the portal provide students the following:

N = 8

	Totals (multiple answers)
Access to the library	8
Access to course information	8
Access to learning resources	8
The ability to enrol for courses	5
Access to personal file space	6
The ability to pay fees	4
Targeted messages	5
Access to course marks	5
Access to student records	4
Help desk	8
Other	1
List other aspects provided:	Academic regulations and services, financial advice, jobs, student loans, campus news, clubs.

6.0 Institutional Change and Funding

6.2 Does your institution have a special fund through which departments and individuals can bid for support for e-learning development?

N = 12

Yes	8
No	4

6.3 How is the design and delivery of e-learning funded at your institution?

N = 8

	Totals (multiple answers)
Internal general teaching budget	8
Internal specific e-learning budgets	7
External funds	7
Other funding	2
List other funding:	Central university contribution; eCDF funding Contract with external vendor to provide services - departmental funds allocated by department.

Appendix 2: Telephone interview discussion schedule

1.0 Strategy for e-learning

1.1.1	Describe the strategic documentation on e-learning at your institution? (Is it e.g. formal, written, under development etc?)
1.3	How has the strategy been integrated with the institution's approach to teaching and learning?
1.4	How does the e-learning strategy relate to your institution's general strategic direction and goals?

2.0 Support for staff and students

2.3	What staff development programmes are offered?
2.3.1	Who provides the instruction for those programmes?
2.5.1	What would you say are the key lessons from evaluations carried out so far?
2.7.3	What e-learning skills are targeted when employing new teaching staff?
2.8	How is cooperation on e-learning facilitated amongst teaching staff?
2.9	How is cooperation on e-learning facilitated between teaching and support staff?

3.0 Teaching and learning

3.1.1	Describe the overall approach of your institution to e-learning pedagogy.
3.2.1	Describe the methodology used by your institution to evaluate the impact of e-learning in teaching and learning.
3.4.4	What evidence do you have of those changes (in student satisfaction, retention and attainment)?
3.5.1	What is driving your learning object strategy?

5.0 Tools used in e-learning

5.2.2	What are the advantages of the balance between individual control and central (or departmental) control over course creation, content (and keeping it current) at your institution?
5.2.3	What are the disadvantages of this balance?
5.2.4	How is the student portal system at your institution likely to change over the next three years?
5.2.5	What is driving these changes?

6.0 Institutional change and funding

6.1	What are the major themes of institutional change relating to e-learning at your institution (including change accomplished, in progress or on the horizon)?
6.1.1	What mechanisms has your institution put in place to manage these changes?
6.2.1	Describe the fund to support e-learning development at your institution.