

# **Report on the ACODE eMM Project**

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**E-Learning Maturity Model  
eMM Version 2.3 2007,2009**

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## Ethics Approval

Full human ethics approval to conduct this research was obtained from the VUW Human Ethics Committee (Approval #73/2004).

## Intellectual Property Statement

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## Introduction

This report outlines the outcomes of a pilot application of the e-Learning Maturity Model (eMM) framework (Marshall and Mitchell, 2002; 2003; 2004; 2005; 2006; 2007) to member institutions of the Australasian Council of Open and Distance Education (ACODE). The methods used are based on the theoretical work of Marshall and Mitchell (2002; 2003; 2004; 2005; 2006; 2007) and are outlined in the *Methodology* section and in Appendix One.

The information presented in the body of this report includes an analysis of a number of institutions. It should be noted that this research does not publicly identify any participating institution. The reports provided to participants are confidential to them.

Using the e-Learning Maturity Model (eMM) framework, the report provides a high level overview of e-learning capability across the institutions assessed. It is important to emphasize that the analysis presented is dependent on the materials provided by each institution. This material was supplemented by publicly available material such as websites, policies and enrolment packs, but the self-selecting nature of the projects selected for detailed examination means that some bias may be present.

This work is not an attempt to rank institutions but rather to provide guidance both at an institutional and sector-wide level for improving the quality and sustainability of e-learning. Comparisons made in this report are done in order to identify potential mechanisms for performing processes more effectively. To that end, no attempt has been made to either order the results or assign numerical values to the overall performance. Instead, each section will note in general terms the characteristics observed both in practice and at a policy level that might be said to be exemplars internationally.

This study uses the eMM version 2.3 practices and processes outlined in Marshall (2007). Further information on the development of the eMM can be found in that document and the citations therein.

The report that follows is divided into four sections:

1. brief description of the methodology used;
2. a summary of the assessments undertaken and the outcomes of the project;
3. detailed analysis of institutional capability by eMM process for those institutions assessed in the project and elsewhere for comparison;
4. Appendix One, which explains the eMM tool in detail. Reading this appendix is recommended before seeking to interpret the carpets (graphic representation of eMM capability with black and blue squares used in this report).

## Methodology

This eMM capability assessment uses the eMM version 2.3 practices and processes outlined in Marshall (2006b). Appendix One describes the tool and how it was used to conduct the assessments.

A general invitation was issued to institutional members of ACODE inviting their participation in the project. While a number indicated interest, ultimately only three provided the evidence needed to complete an assessment. In each case, the decision regarding how many slices of the institution was made in consultation with the institutional contact. A number of individual courses were approached to provide evidence for each slice. A summary of the number of assessments undertaken is provided in Table 1.

Institution	Slice	Courses
University NZ-D	A	3
	B	3
	C	1
	D	1
	E	2
	F	3
University AUS-A	A	2
	B	6
	C	2
University AUS-B	A	2
	B	2
	C	2
	D	1

**Table 1:** Summary of slices and courses for assessed institutions

The eMM tool uses a range of institutional documents and references a number of courses as evidence of the operational activities undertaken as part of e-learning. These courses were not selected as exemplars of best practice, but rather as examples of normal practice within the institution. The capability assessment is not of the quality of these examples, but rather the capability of the institution as a whole. Typically, the assessment of capability is made by identifying evidence of individual processes actually taking place within courses.

Institutional contacts from the three ACODE member institutions provided initial evidence based on a checklist and questionnaire provided by the author. Further evidence was gathered online and in response to detailed questions following an initial analysis. A draft copy of the report was provided and used to solicit final updates. This process means that a major determinant of the assessment's accuracy is the institutional contact's awareness of what evidence exists across the institution and their commitment to seeking out and providing this evidence.

It is important to emphasise that, while the eMM is based on widely accepted indicators of e-learning capability, in many cases there is a lack of empirical evidence supporting their use. Assessments of individual institutional capability in particular areas should thus be used as a guide to further investigation and planning rather than absolute measures of performance. Detailed information on the individual processes and practices, along with supporting evidence is provided in Marshall (2007).

## Project Outcomes

The objectives of the project were to pilot the eMM with a number of ACODE member institutions in order to assess the suitability of the model for wider application in Australia, and to analyse the relationship between the eMM and the ACODE Benchmarks.

### Comparison between the eMM and the ACODE Benchmarks

A detailed analysis was undertaken of the ACODE Benchmark set and its coverage compared with that of the eMM. The details of this are provided in a separate report as an attachment to this main report. Figure 1 below shows a summary of the mapping between the two models from the perspective of the eMM. A white box indicates an area addressed by the eMM that is not covered by the ACODE Benchmarks, a pink box indicates partial coverage, while a red box indicates that the eMM addresses explicitly a particular measure or measures with the given dimension of the listed process.

	ACODE			
	Delivery	Planning	Definition	Optimisation Management
<b>Learning: Processes that directly impact on pedagogical aspects of e-learning</b>				
L1. Learning objectives guide the design and implementation of courses				
L2. Students are provided with mechanisms for interaction with teaching staff and other students				
L3. Students are provided with e-learning skill development				
L4. Students are provided with expected staff response times to student communications				
L5. Students receive feedback on their performance within courses				
L6. Students are provided with support in developing research and information literacy skills				
L7. Learning designs and activities actively engage students				
L8. Assessment is designed to progressively build student competence				
L9. Student work is subject to specified timetables and deadlines				
L10. Courses are designed to support diverse learning styles and learner capabilities				
<b>Development: Processes surrounding the creation and maintenance of e-learning resources</b>				
D1. Teaching staff are provided with design and development support when engaging in e-learning				
D2. Course development, design and delivery are guided by e-learning procedures and standards				
D3. An explicit plan links e-learning technology, pedagogy and content used in courses				
D4. Courses are designed to support disabled students				
D5. All elements of the physical e-learning infrastructure are reliable, robust and sufficient				
D6. All elements of the physical e-learning infrastructure are integrated using defined standards				
D7. E-learning resources are designed and managed to maximise reuse				
<b>Support: Processes surrounding the support and management of e-learning</b>				
S1. Students are provided with technical assistance when engaging in e-learning				
S2. Students are provided with library facilities when engaging in e-learning				
S3. Student enquiries, questions and complaints are collected and managed formally				
S4. Students are provided with personal and learning support services when engaging in e-learning				
S5. Teaching staff are provided with e-learning pedagogical support and professional development				
S6. Teaching staff are provided with technical support in using digital information created by students				
<b>Evaluation: Processes surrounding the evaluation and quality control of e-learning through its entire lifecycle</b>				
E1. Students are able to provide regular feedback on the quality and effectiveness of their e-learning experience				
E2. Teaching staff are able to provide regular feedback on quality and effectiveness of their e-learning experience				
E3. Regular reviews of the e-learning aspects of courses are conducted				
<b>Organisation: Processes associated with institutional planning and management</b>				
O1. Formal criteria guide the allocation of resources for e-learning design, development and delivery				
O2. Institutional learning and teaching policy and strategy explicitly address e-learning				
O3. E-learning technology decisions are guided by an explicit plan				
O4. Digital information use is guided by an institutional information integrity plan				
O5. E-learning initiatives are guided by explicit development plans				
O6. Students are provided with information on e-learning technologies prior to starting courses				
O7. Students are provided with information on e-learning pedagogies prior to starting courses				
O8. Students are provided with administration information prior to starting courses				
O9. E-learning initiatives are guided by institutional strategies and operational plans				

	Not addressed
	Partially addressed
	Explicitly addressed

**Figure 1:** Summary of mapping between the eMM and ACODE Benchmarks

The summary is consistent with the expectation that the ACODE benchmarks would share a broad coverage of issues similarly addressed by the eMM. The white and pink areas suggest that the eMM provides a stronger coverage of learning and teaching aspects (the *Learning* process area), reuse of e-learning resources (process D7) and communication with students (processes O6, O7 and O8). The high proportion of pink in the *Development* process area also suggests wider coverage of aspects by the eMM.

This outcome is consistent with the difference in focus of the two systems. The ACODE Benchmarks are framed around a specific set of particular issues and intended to guide a form of collaborative review in the mode of external benchmarking (Camp, 1989) where areas of concern have already been identified. The eMM attempts to provide a holistic assessment so as to guide managers and leaders to those aspects of their operations that they may not realise need detailed attention and additional resources.

Additional detail regarding the comparison of the two systems can be found in the separate report (Marshall, 2009).

### **Pilot Application of the eMM**

A summary of the assessments undertaken is provided in Figures 2, 3 and 4. The three institutional assessments by slice are shown in Figure 2, while Figure 3 places the overall consensus assessments in an international context, comparing the results with those for other institutions in New Zealand, the United Kingdom and the United States of America. Detail for each process is provided in the following section.

The results in Figure 2 illustrate that all three institutions have roughly similar capability.

Examining the slices of each institution, it is clear that while there are some differences, most notably in the *Learning* process area, the slices are generally uniform. This was a result of the three institutions having a generally consistent approach to the use of e-learning in the courses assessed. All three institutions depended primarily on a single learning management system to support the delivery of courses, and all had clearly defined central support units providing staff and students with support.

Each institution has been provided with a confidential detailed report analysing their own capability and making suggestions for how it might be strengthened. These have been very positively received.

### **Recommendations for Future Application of the eMM**

The following lessons have been taken from this project and will inform future exercises in Australia:

1. The eMM provides detailed information on institutional capability in a form that is useful to managers and leaders interested in improving their institutions capability.
2. Slices can provide information when there is a diversity of approaches being adopted within an institution but when e-learning is strongly driven and supported by central units, slicing adds significantly to the cost without altering the overall analysis.
3. Collection of evidence requires the active participation of an institutional contact and is most practically undertaken by someone physically present in the institution for a brief period of time. That person needs to be experienced in the application of the eMM and aware of the range of ways e-learning is undertaken by institutions.

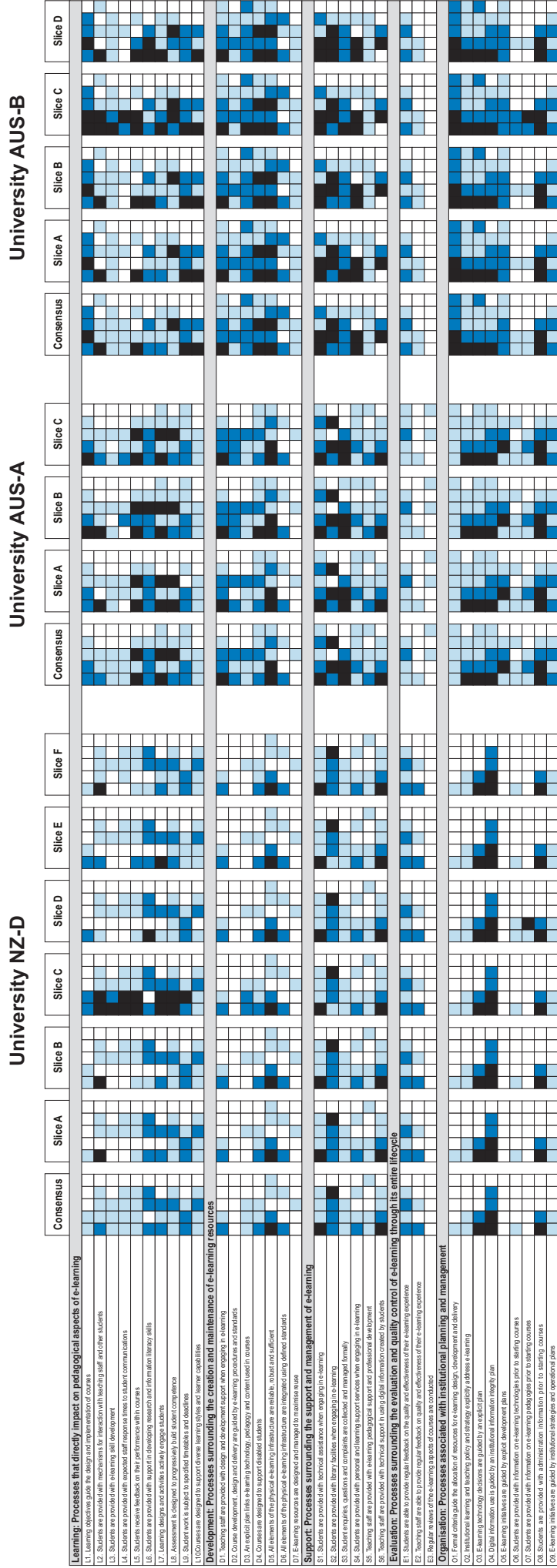


Figure 2: eMM Capability Assessments of ACOE Pilot Participants

	University NZ-A	University NZ-B	University NZ-C	University NZ-D	University NZ-E	University NZ-F	University NZ-G	University UK-A	University UK-B	University USA-A	University USA-A	University AUS-A	University AUS-B
<b>Learning: Processes that directly impact on pedagogical aspects of e-learning</b>													
L1. Learning objectives guide the design and implementation of courses													
L2. Students are provided with mechanisms for interaction with teaching staff and other students													
L3. Students are provided with e-learning skill development													
L4. Students are provided with expected staff response times to student communications													
L5. Students receive feedback on their performance within courses													
L6. Students are provided with support in developing research and information literacy skills													
L7. Learning designs and activities actively engage students													
L8. Assessment is designed to progressively build student competence													
L9. Student work is subject to specified timetables and deadlines													
L10. Courses are designed to support diverse learning styles and learner capabilities													
<b>Development: Processes surrounding the creation and maintenance of e-learning resources</b>													
D1. Teaching staff are provided with design and development support when engaging in e-learning													
D2. Course development, design and delivery are guided by e-learning procedures and standards													
D3. An explicit plan links e-learning technology, pedagogy and content used in courses													
D4. Courses are designed to support disabled students													
D5. All elements of the physical e-learning infrastructure are reliable, robust and sufficient													
D6. All elements of the physical e-learning infrastructure are integrated using defined standards													
D7. E-learning resources are designed and managed to maximise reuse													
<b>Support: Processes surrounding the support and management of e-learning</b>													
S1. Students are provided with technical assistance when engaging in e-learning													
S2. Students are provided with library facilities when engaging in e-learning													
S3. Student enquiries, questions and complaints are collected and managed formally													
S4. Students are provided with personal and learning support services when engaging in e-learning													
S5. Teaching staff are provided with e-learning pedagogical support and professional development													
S6. Teaching staff are provided with technical support in using digital information created by students													
<b>Evaluation: Processes surrounding the evaluation and quality control of e-learning through its entire lifecycle</b>													
E1. Students are able to provide regular feedback on the quality and effectiveness of their e-learning experience													
E2. Teaching staff are able to provide regular feedback on quality and effectiveness of their e-learning experience													
E3. Regular reviews of the e-learning aspects of courses are conducted													
<b>Organisation: Processes associated with institutional planning and management</b>													
O1. Formal criteria guide the allocation of resources for e-learning design, development and delivery													
O2. Institutional learning and teaching policy and strategy explicitly address e-learning													
O3. E-learning technology decisions are guided by an explicit plan													
O4. Digital information users is guided by an institutional information integrity plan													
O5. E-learning initiatives are guided by explicit development plans													
O6. Students are provided with information on e-learning technologies prior to starting courses													
O7. Students are provided with information on e-learning pedagogies prior to starting courses													
O8. Students are provided with administration information prior to starting courses													
O9. E-learning initiatives are guided by institutional strategies and operational plans													

Not practised/not adequate  
 Partially adequate  
 Largely adequate  
 Fully adequate  
 Not assessed

Figure 3: eMM Capability Assessments of International Universities





## Detailed Analysis of Institutional Capability

This section provides a detailed process by process analysis of the eMM capability findings for the pilot participants and a number of other international universities. The comments are arranged by dimension for each process and summarise observations made when conducting the assessments. The detailed reports for each institution contain a similar analysis combined with additional information on the detail of their own capability and how it might be further strengthened.

Readers interested in understanding the individual practices for any process dimension and why the eMM focuses on particular practices are strongly encouraged to consult the eMM process guide (Marshall 2006b) and the eMM website (<http://www.utdc.vuw.ac.nz/research/emm/>).

### Learning: Processes that directly impact on pedagogical aspects of e-learning

#### L1: Learning objectives guide the design and implementation of courses

Evidence of capability in this process is a statement of learning objectives that clearly and explicitly specifies both pedagogical approach, and content, of a course. These same objectives need to cover a range of cognitive outcomes and be formally and consistently linked throughout the course descriptions. Learning objectives should form the basis of planning and review activities and be integrated at the course, programme and institution levels.

L1: Learning objectives guide the design and implementation of courses					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■	■	■	■
University NZ-B	■	■	■	■	■
University NZ-C	■	■	■	■	■
University NZ-E	■	■	■	■	■
University NZ-F	■	■	■	■	■
University NZ-G	■	■	■	■	■
University UK-A	■	■	■	■	■
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■
Slice E	■	■	■	■	■
Slice F	■	■	■	■	■
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

**Figure L1-1:** Summary of process capability across the assessed institutions

#### Dimension 1: Delivery

A range of capabilities were found. Institutions that had clear, well structured statements of learning objectives tended to also have a wider range of cognitive outcomes identified, other institutions tended to have learning objectives that were stated in general and inconsistent language. There was very little evidence of learning objectives being formally linked to assessment and learning tasks even when a clear statement was provided. In general the learning objectives were not available until students had enrolled and started courses.

#### Dimension 2: Planning

Learning objectives appear to be used as a tool for structured guidance of e-learning design only in the context of formal development support, when this is not present there is no evidence that the teaching staff use learning objectives to guide their work. Institutionally this is also reflected by the

absence of any use of graduate or programme learning objectives to guide review processes assessing the effectiveness of e-learning courses. The requirement that learning objectives be included in course outlines or syllabi is common but essentially appears to be being treated as a bureaucratic requirement, and not a tool for enhancing learning.



#### *Dimension 3: Definition*

Most institutions have a policy requirement that learning objectives be provided in course outlines but generally little formal guidance provided on what this should constitute. The guidance provided in course outline templates provided is generally focused on formatting issues rather than content and linkage through to other aspects of the design or communication process. Training in creating and using learning objectives is commonly provided but is normally optional and there is no evidence of any exemplars or case studies being provided for staff to model their e-learning design and development activities on.

#### *Dimension 4: Management*

There is little evidence across the institutions of formal review processes considering the impact of learning objectives and associated structured design approaches on student learning. Stronger capability was predominantly seen in institutions with formal distance learning procedures and oversight.

#### *Dimension 5: Optimisation*

No evidence of capability in most institutions, consistent with the absence of any sense that learning objectives are seen as other than bureaucratic requirements.

### **ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions. The Australian institutions were somewhat stronger than the average for the others consistent with the relatively formal approach taken to managing and communicating course requirements to students.

## L2: Students are provided with mechanisms for interaction with teaching staff and other students

Evidence of capability in this process area is the use of a variety of communication modes or channels, with encouragement for students to engage with peers and teaching staff. It is not sufficient that tools be provided. There must also be activities designed to encourage their use, and support of effective engagement. Students should receive information on how to access and use different communication channels or modes. They should receive explanations of why the channels or modes have been included within the course, and how they will assist in achieving the learning objectives of the course. Teaching staff need support in the use of effective pedagogical strategies that take advantage of the available channels. This support should be informed by research, and feedback from students and staff on the usefulness of the different channels.

L2: Students are provided with mechanisms for interaction with teaching staff and other students					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

**Figure L2-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Generally students were provided with clear information on accessing LMS/VLE communication tools and email contact information for teaching staff. Less helpful was the provision of information for students on how to learn with these tools. Much of what was supplied focused on technical aspects of the LMS/VLE facilities and often was simply the commercially supplied documentation. Institutions with Fully Adequate capability provided clear guidance to students on how to use tools for learning. The information was structured around how the different forms of communication could assist with the course objectives and student learning and also included guidance during the course linked to individual assessment exercises and encouraging effective use of the supplied communication facilities.

### Dimension 2: Planning

Formal communication of the available communication channels was generally best in those institutions with formal design and development support teams, although this was dominated by communication of the technical aspects of the LMS/VLE tools. There was little evidence of structured interaction designs guiding the selection of tools and their integration into course activities. More capable institutions had very clear guidebook on learning online that assisted students in getting started with the online communication tools which helped provide a consistent set of expectations to staff and students.

### Dimension 3: Definition

Despite the investment in LMS/VLE facilities here is very little evidence that institutions have formally defined an expectation to staff that they engage with students through online communication channels.

There also appears to be no connection between policy statements describing expectations for quality learning and teaching and formal processes conveying the implications of these expectations to teaching staff. LMS/VLE use has resulted in the availability of a standard set of communication tools but there is little evidence that this has resulted in a formal consideration of how these tools should be used to enhance student learning in most institutions.

*Dimension 4: Management*

No real evidence of capability other than at predominantly distance institutions where formal design and development processes have had some impact with the use of structured feedback and review phases. The impact of LMS/VLE communication tools does not appear to yet be an activity attracting systematic and regular review and evaluation in most institutions.

*Dimension 5: Optimisation*

Very little evidence of capability.

### **ACODE Institution Capabilities**

Strong capability in the *Delivery* dimension, otherwise weaker capability was seen in the other dimensions, consistent with the pattern of capability seen in the other international institutions assessed.

### L3: Students are provided with e-learning skill development

Evidence of capability in this process is clear communication to students of the pedagogical strategy of courses and programmes. This should include how technological tools assist students attain the learning objectives of the course or programme. Students should understand what is expected from them as learners. They should be supported in gaining the necessary generic and specific learning skills, including competency with the associated technologies. Teaching staff should be supported in developing their own skills as learning facilitators. They should be able to engage students in effective learning, built on a foundation of practice, demonstrated competency and guided reflection.

L3: Students are provided with e-learning skill development					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■	■	■	■
University NZ-B	■	■	■	■	■
University NZ-C	■	■	■	■	■
University NZ-E	■	■	■	■	■
University NZ-F	■	■	■	■	■
University NZ-G	■	■	■	■	■
University UK-A	■	■	■	■	■
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■
Slice E	■	■	■	■	■
Slice F	■	■	■	■	■
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

**Figure L3-1:** Summary of process capability across the assessed institutions

#### Dimension 1: Delivery

The learning designs of the courses assessed generally were clear and appropriate however a consistent weakness was the absence of opportunities for students to practice tasks and activities before engaging in them for assessment purposes. Consequently capabilities are assessed as weaker than might be expected. As with process L7 it appears that courses are not being designed with the goal of encouraging independent autonomous learners. The few exceptions apparent were the result of specific systems for distance delivery or the initiative of individual staff.

#### Dimension 2: Planning

Student support services aimed at improving the students' learning skills are uniformly available across the institutions and clear information is provided to students on how to access this, although it is unclear how actively students are encouraged to use this support. The approach taken is passive, with no evidence across the institutions that student skills for learning are formally assessed and this information used to guide teachers responses. The use of staged assessment tasks to build student skills as learners was also not evident (see also Process L8).

#### Dimension 3: Definition

Institutional policy support of incremental development of student skills for learning was generally poor, what stronger capability that was noted occurred in the context of a specific emphasis on learning and teaching at the policy level. There was little evidence of strong encouragement to teaching staff that they design assessment programmes aimed at building student's learning competencies. The training and support that was provided was normally optional and attendance not encouraged.

*Dimension 4: Management*

No significant evidence of capability across the institutions. What little was seen was based on limited evaluations and assessments of courses developed with the assistance of specialist e-learning design and development staff rather than a specific institutional engagement with understanding the learning skills of students. Stronger capability was seen in institutions with formal distance learning procedures and oversight.

*Dimension 5: Optimisation*

Very little evidence of capability other than in a distance delivery context.

**ACODE Institution Capabilities**

Very weak capability, consistent with the other international institutions assessed.

## L4: Students are provided with expected staff response times to student communications

Evidence of capability in this process is a clear commitment to provide feedback and responses within a designated time period. This may include formal processes for use of the different channels and a description of how teaching staff will respond on these channels (if at all). A clear design is apparent in the selection of the range of channels, and that design integrates with course activities and the information provided to students on type and timeliness of responses. Performance is monitored to ensure that the commitments made are adhered to and resourced appropriately.

L4: Students are provided with expected staff response times to student communications					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B	■	■	■		
University NZ-C	■	■	■		
University NZ-E	■	■	■		
University NZ-F	■	■	■		
University NZ-G	■	■	■		
University UK-A				■	
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A				■	
Slice B				■	
Slice C	■	■	■	■	■
Slice D				■	
Slice E				■	
Slice F				■	
University Aus-A	■	■	■	■	■
Slice A				■	
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A				■	
Slice B				■	
Slice C	■	■	■	■	■
Slice D				■	

**Figure L4-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Generally students were provided with very little information on what they should expect from teaching staff in the way of responses to communication, either in terms of timeliness or in terms of explicit guidance as to how the different channels would be used. When stronger capability was seen it was a consequence of a formal consideration of staff and student interaction during the process of course design and development, normally in the context of distance delivery.

### Dimension 2: Planning

Planning for effective communication and feedback was strong in institutions following a formal design and development methodology that explicitly considered interaction between teaching staff and students, including the expectations for timeliness and the associated staff and student workloads. In all other institutions this dimension was weak, reflecting a general passivity and informal approach in the use of the communication tools provided through the institutional LMS/VLE facilities.

### Dimension 3: Definition

Policies governing conduct and legal aspects of communication were generally strong but there was little evidence of engagement in most institutions with the implications for student learning. In particular there was little evidence of the use of examples of effective communication and feedback strategies as a tool to guide the performance of teaching staff. There was also little evidence of support materials being created for students to use when receiving feedback from teaching staff.

### Dimension 4: Management

Little evidence of capability consistent with the generally passive use of LMS/VLE communication facilities other than at distance institutions.

### Dimension 5: Optimisation

Little evidence of capability.



## **ACODE Institution Capabilities**

Very weak capability, consistent with the other international institutions assessed.

## L5: Students receive feedback on their performance within courses

Evidence of capability in this process is the use of informal feedback through various communication channels, complemented by formal assessment feedback processes, such as, marking rubrics. Policy should require prompt and useful feedback aimed at improving student capability in related tasks, rather than just the immediate goal. Teaching staff should be provided with guidelines and assistance in the provision of more effective feedback.

L5: Students receive feedback on their performance within courses					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■	■	■	■
University NZ-B	■	■	■	■	■
University NZ-C	■	■	■	■	■
University NZ-E	■	■	■	■	■
University NZ-F	■	■	■	■	■
University NZ-G	■	■	■	■	■
University UK-A	■	■	■	■	■
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■
Slice E	■	■	■	■	■
Slice F	■	■	■	■	■
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

**Figure L5-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

The feedback approaches adopted were generally strong if dominated by assessment feedback. Best practices were seen in institutions using marking rubrics with a feedback structure clearly showing the type of feedback students could expect and which encouraged the staff marking to provide detailed information in response to student work rather than just individual marks. Weaker capability institutions showed little evidence of teaching staff using a variety of feedback channels to provide more informal formative feedback to students during non-assessed activities.

### Dimension 2: Planning

The use of structured interaction designs providing a range of feedback to students was seen when formal design and development support was provided to teaching staff. Despite this assistance there was little evidence across the institutions of the use of staged assessment tasks designed to build student skills incrementally, although formal policies commonly noted the need for such an approach. The absence of designed opportunities for students to practice tasks and gain informal feedback from teachers and peers is consistent with the poor results for process L3. This result seems to reflect the lack of teaching staff engagement in training and support for assessment design as the capability that was seen followed from formal design and development approaches being used and supported by experts.

### Dimension 3: Definition

The poor evidence of capability seen in many institutions reflected the disconnect between the policy requirements that staff provide effective feedback, which was generally strong, and the support provided to enable teaching staff in providing that feedback. Training and other support was normally available but was optional and with little evidence of systematic encouragement from institutional management. Most institutions showed little evidence of examples of effective feedback techniques derived from local experience being used to assist and guide teaching staff.

*Dimension 4: Management*

Most institutions showed little evidence of capability. Student satisfaction with feedback is commonly assessed by teaching evaluations but there appears to be little systematic and operationalised assessment of the impact of e-learning on feedback quality.

*Dimension 5: Optimisation*

Little evidence of capability.

**ACODE Institution Capabilities**

The two Australian ACODE institutions showed a stronger *Delivery* capability than the rest of the other international institutions assessed. Otherwise capability was consistent with that seen elsewhere.

## L6: Students are provided with support in developing research and information literacy skills

Evidence of capability in this process is resources on conducting research, and on finding content and other information via links to suitable databases. Students should receive instructions on where to find suitable books and support materials on information literacy skills. Assessment tasks, and the associated marking and feedback rubrics, should develop skills in identifying useful materials and more general research skills. Learning objectives should reflect information literacy and research skill development, either implicitly or explicitly. Teaching staff receive templates, examples, training and support in using the range of information resources available to support student learning. Staff and students should receive explicit guidance and support on intellectual property aspects, particularly copyright and plagiarism.

L6: Students are provided with support in developing research and information literacy skills					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■	■	■	■
University NZ-B	■	■	■	■	■
University NZ-C	■	■	■	■	■
University NZ-E	■	■	■	■	■
University NZ-F	■	■	■	■	■
University NZ-G	■	■	■	■	■
University UK-A	■	■	■	■	■
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■
Slice E	■	■	■	■	■
Slice F	■	■	■	■	■
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

**Figure L6-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

The focus on research that characterises universities does not appear to have yet resulted in the explicit development of student information literacy and research skills during courses for all institutions. Basic information on available resources was generally provided although in many cases this was little more than a link to the library webpages, more detailed information on using the resources for learning was, however, usually absent or limited in scope. Best practice was seen in those institutions that provided a page for each course or discipline containing a customised set of starting points for further research and investigation by students along with direct links to support resources and library staff who could assist the students either on-line or in person.

### Dimension 2: Planning

Most institutions showed little evidence of the use of formal tutorials or sessions on information literacy. The importance of research was not commonly reflected in the assessment task marking criteria and rubrics used in the institutions, although the need to properly cite material and avoid plagiarism was generally strongly conveyed. Stronger capability noted for some institutions was a consequence of resources developed and provided by libraries, as also seen in process S2.

### Dimension 3: Definition

Research skill development by students as a formal policy objective was not apparent in most institutions. It was disappointing to note that most institutions fail to provide important information such as bibliography and citation formats clearly and consistently to students.



*Dimension 4: Management*

Little evidence of capability, where stronger capability was seen it was driven by library staff rather than teaching staff.

*Dimension 5: Optimisation*

Little evidence of capability.

**ACODE Institution Capabilities**

Generally strong capability was assessed, although the gap in the *Planning* dimension for two institutions suggests that while the intent and delivery are strong, the support systems need further development.

## L7: Learning designs and activities actively engage students

Evidence of capability in this process is course and programme designs that provide students with authentic and personally relevant contexts for their learning. E-learning technologies and pedagogies should be flexibly designed to incorporate student experience and knowledge. Activities should encourage analysis and reflection, rather than recall and information retrieval. Teaching staff should be supported to develop the skills to facilitate e-learning approaches that build engagement through active learning pedagogies, rather than replicating passive, traditional learning environments.

L7: Learning designs and activities actively engage students					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

**Figure L7-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Consistent with the observations in processes L1 and L8, the formal provision of assistance in course design to teaching staff clearly results in both a better use of staged activities and assessment tasks and a clearer overall communication to students of how the course is designed to support their learning. It was notable that the majority of courses made minimal attempts to explicitly connect assessment tasks with other course activities.

### Dimension 2: Planning

There were very few examples of any attempt to explain to students how the activities and the course design were assisting them in achieving the goals and objectives of the courses. The use of a formal e-learning design and development methodology clearly helped, with those institutions clearly communicating to students the underlying learning design rationale used to guide the selection and development of the course resources and activities.

### Dimension 3: Definition

Weak capability evident across most institutions as a consequence of optional training and support for teaching staff combined with little in the way of incentives, support or encouragement to invest the necessary time and effort. There was also little evidence of policy guidance or direction that courses actively engage students. The institutions with *Fully Adequate* capability had comprehensive resources for staff, although the weaker capabilities in the *Planning* dimensions seen in some reflected the challenge facing institutions wanting those resources to be used systematically.

### Dimension 4: Management

No significant evidence of systematic measurement of the ability of e-learning to engage students was evident in most institutions other than those engaged in distance delivery.



*Dimension 5: Optimisation*

No evidence of capability.

**ACODE Institution Capabilities**

Generally strong capability was assessed, although as with process L6 the gap in the *Planning* dimension for two institutions suggests that while the intent and delivery are strong, the support systems need further development.

## L8: Assessment is designed to progressively build student competence

Evidence of capability in this process is the use of assessment programmes designed to support students in achieving the learning objectives. Designs should build capability progressively with opportunities for feedback and reflection. Policy and guidelines should encourage a mix of assessment techniques throughout the course and encourage the use of challenging tasks to motivate performance and learning.

L8: Assessment is designed to progressively build student competence					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

**Figure L8-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Most institutions showed little evidence of the use of structured assessment tasks designed to build student capability progressively. In general, assessment tasks used throughout the institutions were limited in type and isolated from other tasks and the activities of the course. There were few examples of innovative assessment tasks building on the technologies available. Students were normally provided with timely formal feedback on assessment outcomes, however support for their practicing the tasks first and getting informal feedback from other students and teaching staff before attempting assessment was much less evident.

### Dimension 2: Planning

The communication of assessment tasks and their requirements was strong as would be expected, however most institutions provided little information to students on the linkages between assessment tasks and with the other course activities and objectives. The notable exceptions were when a formal e-learning design and development methodology was used. Most institutions are now making use of automatic plagiarism detection systems.

### Dimension 3: Definition

As with process L7 weak capability evident across most institutions following from limited use of incentives, support or encouragement for teaching staff to engage in the optional training and support provided. There was very little evidence of policy guidance and systematic direction within most institutions ensuring that courses have clearly structured and staged assessment designs.

### Dimension 4: Management

Little evidence of capability with no evidence of systematic collection of feedback from teaching staff or evaluation of the impact of particular assessment strategies on student learning. Stronger capability was seen in institutions with formal distance learning procedures and oversight.

### Dimension 5: Optimisation

Little evidence of capability.





## **ACODE Institution Capabilities**

The strong capability evident in the *Definition* dimension suggests that the institutions have clearly expressed their intentions for assessment however the weaker performance in the *Delivery* and *Planning* dimension suggest that the systems and staff activities with regard to assessment need further development.

## L9: Student work is subject to specified timetables and deadlines

Evidence of capability in this process is the provision of a clear timetable that relates all of the elements of a course together. This should communicate the logic underlying the design of the various activities. Particularly in online courses, there should be frequent pointers and reminders to students as to where they should be. They should know where to focus their energies and be aware of upcoming deadlines. Design of materials should explicitly consider student and staff workload expectations, and the impact these have on the timing of course elements.

L9: Student work is subject to specified timetables and deadlines					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■	■	■	■
University NZ-B	■	■	■	■	■
University NZ-C	■	■	■	■	■
University NZ-E	■	■	■	■	■
University NZ-F	■	■	■	■	■
University NZ-G	■	■	■	■	■
University UK-A	■	■	■	■	■
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■
Slice E	■	■	■	■	■
Slice F	■	■	■	■	■
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

**Figure L9-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Some form of standard timetable and description of the workload associated with a particular course is routinely supplied by every institution. The clarity and availability of this information varied dramatically however and detailed timetables were not normally available until after enrolment. Timetable information was normally supplied in conjunction with assessment deadlines but was often not conveyed in a way that communicated the relationship between tasks and activities. In many cases the information was not repeated in multiple locations to remind students.

### Dimension 2: Planning

Clear timetables using a common template were normally apparent in course outlines, however it was often not clear how the workloads for the timetabled tasks were being determined or how students could negotiate variances to assessment deadlines. The structured relationships between the timing of different elements of the courses was not conveyed well to students in many cases. There was no evidence of students being encouraged to plan their own workloads and prepare in advance for periods of intensive work prior to particular deadlines and little evidence of their being encouraged to seek support and training in effective time management strategies..

### Dimension 3: Definition

While the use of timetables is commonly a standard requirement in policy and course templates there is little evidence of formal assessment of student workloads or the coordination of workloads across courses and programmes. While most institutions had a standard means of relating expected workload to courses this was not normally conveyed to students explicitly. Little use of examples of effective course workload planning and communication strategies as tools for teaching staff development and support was apparent.

*Dimension 4: Management*

Other than in distance institutions there was little evidence of systematic measurement of student workloads and the impact of different e-learning technologies and pedagogies on student and staff work patterns.

*Dimension 5: Optimisation*

Little evidence of capability.

**ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions.

## L10: Courses are designed to support diverse learning styles and learner capabilities

Evidence of capability in this area is course design and implementation practices that use a variety of complementary pedagogical approaches to support student learning. These should include a variety of media, assessment types and communication channels. Teaching staff should be enabled and supported in their use of flexible teaching and learning methods. They should be able to support and encourage students to negotiate or use alternative learning approaches that are better suited to their personal circumstances. Policies and guidelines for courses should explicitly expect diverse learning styles and learner capabilities. Policies and guidelines should promote proactive support of diversity, rather than responding to student complaints.

L10: Courses are designed to support diverse learning styles and learner capabilities					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

**Figure L10-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

The avoidance of bias and stereotypes was uniformly strong reflecting legislative requirements in all countries studied, but the use of a variety of media and learning tasks was not as strong in many institutions.

### Dimension 2: Planning

Generally poor support across the institutions for students with a diversity of learning needs falling outside of mainstream expectations. Little information is formally supplied to students on how courses are designed to support a range of learning styles and approaches reflecting the essentially rigid and reactive designs implemented. There was no evidence that the available technologies were being used creatively and flexibly, rather a passive adoption of standard LMS/VLE features was the norm.

### Dimension 3: Definition

Policy statements requiring the support of diversity and the absence of bias were clearly apparent as are the expectation that courses and teachers support a range of student capabilities to learn. There was, however, little evidence of structured approaches being adopted to support teaching staff in developing the necessary skills or of examples or templates being used to assist teaching staff in so doing.

### Dimension 4: Management

Very little evidence of capability. Normally students can provide feedback as part of overall teaching feedback, but it is generally not collected or used in a structured way.

### Dimension 5: Optimisation

Very little evidence of capability, most institutions showed no evidence of using diversity requirements when selecting technologies for use.

### **ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions. Two of the ACODE institutions were strong in the *Definition* dimension reflecting an awareness of the need to support diverse student capabilities. The weak capability in the *Planning* dimension suggests that, as with the other institutions, there is a lack of formal systems supporting the intentions outlined in policy and support activities.

## Development: Processes surrounding the creation and maintenance of e-learning resources

D1

### D1: Teaching staff are provided with design and development support when engaging in e-learning

Evidence of capability in this process is technical assistance and staff development for the full range of technologies that are provided as standard in the institution. Teaching staff receive expert assistance in the design of pedagogical approaches for courses. Institutions should manage access to this support to ensure efficient and equitable use of time, and the achievement of strategic goals as well as short-term requirements. Training for teaching staff and institutional standards include examples, case studies, and guidelines customized for the institution. These are based on approaches which have been shown to be effective.

D1: Teaching staff are provided with design and development support when engaging in e-learning					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	█	█	█	█	█
University NZ-B	█	█	█	█	█
University NZ-C	█	█	█	█	█
University NZ-E	█	█	█	█	█
University NZ-F	█	█	█	█	█
University NZ-G	█	█	█	█	█
University UK-A	█	█	█	█	█
University UK-B	█	█	█	█	█
University USA-A	█	█	█	█	█
University NZ-D	█	█	█	█	█
Slice A	█	█	█	█	█
Slice B	█	█	█	█	█
Slice C	█	█	█	█	█
Slice D	█	█	█	█	█
Slice E	█	█	█	█	█
Slice F	█	█	█	█	█
University Aus-A	█	█	█	█	█
Slice A	█	█	█	█	█
Slice B	█	█	█	█	█
Slice C	█	█	█	█	█
University Aus-B	█	█	█	█	█
Slice A	█	█	█	█	█
Slice B	█	█	█	█	█
Slice C	█	█	█	█	█
Slice D	█	█	█	█	█

**Figure D1-1:** Summary of process capability across the assessed institutions

#### Dimension 1: Delivery

Capability essentially depended on whether or not the institution had invested in a formal e-learning design and development support team. Most of those who did had the resources to provide support to teaching staff designing and developing e-learning courses and projects, otherwise very little support was possible.

#### Dimension 2: Planning

As with the *Delivery* dimension, capability depended on whether or not an investment in a formal e-learning design and development support team had been made. Irrespective of any investment in formal design and development support there was little evidence of risk assessments being undertaken as part of the design and development of e-learning initiatives.

#### Dimension 3: Definition

There was little evidence in most institutions of teaching staff being provided with the tools to effectively run e-learning design and development projects themselves. Very little training was provided and there was little evidence of formally developed standards, guidelines and templates being used to support teaching staff. There is some evidence of the use of formal standards in those institutions with some type of formalised design and development support but this was limited to their use by expert staff rather than as a tool for promulgating good practice more widely within the institution.

*Dimension 4: Management*

Little evidence of capability. Some evidence seen of quality assurance and the use of feedback from teaching staff regarding the effectiveness of the support provided but this was very informally collected and not particularly strongly followed through with planning and resourcing activities.

*Dimension 5: Optimisation*

Little evidence of capability.

**ACODE Institution Capabilities**

The Australian institutions were relatively strong in this process reflecting the significant investment in e-learning support apparent in the sector, particularly compared with the New Zealand institutions. The challenge, reflected in the weak *Management* and *Optimisation* assessments, is demonstrating the strategic benefit of this investment and further driving targeted investment and improvement in a systematic manner.

## D2: Course development, design and delivery are guided by e-learning procedures and standards

Evidence of capability in this area is the use of consistent, documented practice that reuses previous experience within the institution to build capability. Where available, formal standards inform and guide practice and ensure quality and reusability of materials. These standards and guidelines are communicated widely within the institution to encourage wider adoption by teaching staff.

D2: Course development, design and delivery are guided by e-learning procedures and standards					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■	■	■	■
University NZ-B	■	■	■	■	■
University NZ-C	■	■	■	■	■
University NZ-E	■	■	■	■	■
University NZ-F	■	■	■	■	■
University NZ-G	■	■	■	■	■
University UK-A	■	■	■	■	■
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■
Slice E	■	■	■	■	■
Slice F	■	■	■	■	■
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

**Figure D2-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Very weak capability noted across most institutions with little investment in developing materials for the independent use of teaching staff in e-learning design and development as noted in process D1. A few institutions have clearly defined and described design and development methodologies provided and supported in a fashion intended to promote adoption by teaching staff. There was no evidence of formally defined external e-learning standards or guidelines being used to inform e-learning design and development outside of dedicated e-learning design and development teams employed by a few institutions.

### Dimension 2: Planning

Capability tracked with the investment by institutions in formal design and development support. There was little evidence across the institutions of any systematic programme of rewards and incentives to encourage teaching staff engagement with formal e-learning design and development.

### Dimension 3: Definition

As with the *Planning* dimension, capability tracked with investment in formal design and development support. Procedures and standards were used somewhat by the dedicated e-learning staff and there was a limited amount of optional training and support provided to teaching staff, although it was notable that very little in the way of quality assurance support was provided to teaching staff. Generally expertise in e-learning design and development, including project management and quality assurance, is residing with experts rather than being communicated in a structured way to teaching staff to use themselves.

### Dimension 4: Management

Very little evidence of capability. There was very little evidence that the costs and benefits of e-learning development were being systematically assessed even in those institutions with a formal investment in design and development support.



*Dimension 5: Optimisation*

Little evidence of capability.

**ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions.

### D3: An explicit plan links e-learning technology, pedagogy and content used in courses

Evidence of capability in this area is use of explicit design processes and plans that link technology decisions with defined student learning outcomes and graduate attributes. This should also make the underlying design rationale and pedagogy apparent to students when they are introduced to how technology will be used in a particular course. Templates, examples, training and support enable teaching staff to use the range of technologies available. Staff can, therefore, support student learning in a range of contexts and disciplines.

D3: An explicit plan links e-learning technology, pedagogy and content used in courses					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

**Figure D3-1:** Summary of process capability across the assessed institutions

#### Dimension 1: Delivery

Capability in this process in most institutions was very weak, reflecting the relatively limited use of structured and formalised design and development methodologies. Institutions with a dedicated e-learning support team clearly conveyed to students how the elements of the course and the supporting technologies were integrated and designed to support their learning. In other cases there was little or no evidence of formal design playing a part in the creation of e-learning courses.

#### Dimension 2: Planning

There was almost no evidence of planning in the implementation of learning designs, other than in the institutions with dedicated e-learning design and development support teams. Consistent with the observations made in process L1 there was little evidence of learning objectives being used formally to guide the selection and development of e-learning technologies and pedagogies. There was also little evidence of students being involved in the planning of e-learning projects and initiatives.

#### Dimension 3: Definition

Very little evidence of formal engagement by most institutions in the structured design of learning. Tools such as learning objectives or formal design plans are not being used to guide technical and pedagogical decisions and while limited training is provided by some institutions, it is optional and not supported by encouragement, opportunities or incentives for teaching staff to invest their time.

#### Dimension 4: Management

Very little evidence that the institutions are formally reviewing the linkages between the use of e-learning technologies and pedagogies and the impact on student learning outcomes.

*Dimension 5: Optimisation*

Little evidence of capability, the exceptions being institutions that have made the use of e-learning a key strategic activity.

**ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions.

## D4: Courses are designed to support disabled students

Evidence of capability in this area is design and implementation practices that use a variety of complementary approaches to support student learning. These include using a variety of media. Accessibility should be explicitly considered during the design process. Standards, such as those provided by the W3C (<http://www.w3c.org/WAI/>), should be used to ensure compliance. Institutions should conduct regular, formal reviews of courses and the supporting standards, templates and staff development materials. The reviews should involve students as key stakeholders.

D4: Courses are designed to support disabled students					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■	■	■	■
University NZ-B	■	■	■	■	■
University NZ-C	■	■	■	■	■
University NZ-E	■	■	■	■	■
University NZ-F	■	■	■	■	■
University NZ-G	■	■	■	■	■
University UK-A	■	■	■	■	■
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■
Slice E	■	■	■	■	■
Slice F	■	■	■	■	■
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

Figure D4-1: Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Despite the legislative requirement that all courses be accessible to disabled students, capability was disappointingly weak in many institutions. The use of alternative media and learning activities is somewhat apparent but it is clear that little consideration is given formally to the needs of disabled students when courses are being designed and developed. What little support that is provided appears to be a consequence of other decisions, such as use of a particular LMS, rather than a planned decision to meet the full range of potential student requirements. Very little communication to students is evident regarding what steps have been taken to ensure accessibility.

### Dimension 2: Planning

A noticeable feature of this process is the gap in capability arising at in the *Planning* dimension compared with the *Delivery* and *Definition* dimensions. This reflects the existence of reasonable policies and teaching approaches with little formal or systematic planning to ensure that delivery is sustainable and fully effective. There was very little evidence that disability access is planned or that courses are tested with students to identify potential issues prior to delivery. All institutions had a means for students to self identify if they had a disability but this appears to result simply in a post-facto remediation approach being adopted, something that would be very problematic with some designs. This also fails to address the issue of students being reluctant to identify themselves as disabled, a problem aggravated by the poor communication of the contents and expectations of courses prior to commencement (processes O6 and O7).

### Dimension 3: Definition

Generally institutions provide a support service for disabled students and institutional policies require that this be provided and that disabled students are accordingly able to participate equally in most if not all courses. Across the institutions this is often not complemented by detailed information for

students on the range of support options available in particular courses or by assistance to teaching staff in ensuring that their courses are accessible to disabled students. The approach taken by institutions supporting disabled students can be characterised as reactive, rather than proactive, responding only when students complain of problems.

*Dimension 4: Management*

Very little evidence of capability.

*Dimension 5: Optimisation*

Little evidence of capability.

**ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions. The weak capability in the *Planning* dimension suggests that, as with the other institutions, there is a lack of formal systems supporting the intentions outlined in policy and support activities.

## D5: All elements of the physical e-learning infrastructure are reliable, robust and sufficient

Evidence of capability in this process is the creation and use of an integrated infrastructure. Staff and students should be able to easily access hardware, software and teaching facilities. When choosing technology, design processes should include explicit consideration of reliability aspects. Whenever possible, this decision should be based on evidence of reliability collected in the institutional context. Course designs should consider alternatives to be used by teaching staff when technology fails. Support procedures should be in place to deal with potential failures. Standards and guidelines should communicate which technologies have been proven reliable. Regular monitoring and reporting is used to prove and sustain reliability. In selecting new technologies, the institution refers to formal standards and formally considers how to integrate them within the existing infrastructure.

D5: All elements of the physical e-learning infrastructure are reliable, robust and sufficient					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■	■	■	■
University NZ-B	■	■	■	■	■
University NZ-C	■	■	■	■	■
University NZ-E	■	■	■	■	■
University NZ-F	■	■	■	■	■
University NZ-G	■	■	■	■	■
University UK-A	■	■	■	■	■
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■
Slice E	■	■	■	■	■
Slice F	■	■	■	■	■
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

**Figure D5-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Capability in this process was generally strong, dominated by the dependence on the standard services provided by central IS groups in the different institutions. As well as maintenance of the central LMS/VLE this also included related systems and facilities such as networks, specialist servers for video and similar technology. Exceptions were noted where a single LMS/VLE did not dominate delivery and the alternatives used were not formally managed.

### Dimension 2: Planning

The growth in dependence on LMS/VLE facilities has been rapid across the institutions and there is a now a need for explicit consideration of issues of redundancy and reliability as substantial amounts of student and course information are now stored in these systems. The varied results here suggest that there is room for improvement in a number of institutions. Those with a stronger capability were using either a formal outsourcing arrangement or had a dedicated e-learning design and development support team ensuring that the core systems were robust and reliable, there was however little evidence of formal risk assessments guiding decisions at most institutions.

### Dimension 3: Definition

Performance was generally poor reflecting the relatively rare use of service level agreements as tools to manage internal IT service provision. There was also little evidence of a research base or the use

of formally defined external standards informing the selection, use and maintenance of e-learning technologies.

*Dimension 4: Management*

A mix of capability was seen, consistent with the observations in the Planning dimension. Despite the dependence of most institutions on e-learning as part of their core business some institutions had very little evidence of systematic and formal reporting and monitoring of the performance, reliability and robustness of e-learning systems and infrastructure.

*Dimension 5: Optimisation*

A mix of capability. Stronger institutions benefitting from a very structured IT environment with a culture of regular review and improvement.

**ACODE Institution Capabilities**

The ACODE institutions were somewhat stronger than the average for the international institutions in this process, reflecting the investment all had made in core e-learning infrastructure.

## D6: All elements of the physical e-learning infrastructure are integrated using defined standards

Evidence of capability in this area is use of consistent, documented practice that reuses previous experience within the institution to build capability. Institutions use formal standards, where available, to inform and guide practice and ensure quality and reusability of materials. The institution communicates these standards and guidelines to encourage wider adoption by teaching staff.

D6: All elements of the physical e-learning infrastructure are integrated using defined standards					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

**Figure D6-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

The weak capability identified at dimension one of this process in many institutions is a consequence of the need for LMS/VLE facilities and other e-learning infrastructure to interoperate with existing systems for student administration and general IT services. There is otherwise, essentially no evidence that external standards are having any impact on e-learning design and development decisions across the institutions.

### Dimension 2: Planning

No evidence of capability.

### Dimension 3: Definition

Little evidence of capability.

### Dimension 4: Management

Little evidence of capability in most institutions. The exceptions were limited to infrastructure rather than wider use of standards by teaching staff.

### Dimension 5: Optimisation

Little evidence of capability.



### **ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions and consistent with the weak assessment for process D2 suggesting that formal use of standards is not yet driving activities in the e-learning space.

## D7: E-learning resources are designed and managed to maximise reuse

Evidence of capability in this process is creation of metadata standards and templates, and repositories for storing and accessing course resources for reuse. Teaching staff should be trained and supported to create and reuse resources. The institution should offer incentives to create reusable resources, and to encourage reuse. Policies and employment contracts should explicitly address intellectual property aspects of resource creation and use. All staff involved in the design, (re)development and delivery of courses should be trained and supported in understanding the implications of intellectual property in their work. Ongoing design and development of the physical e-learning infrastructure should be done with an awareness of reuse, as well as an appreciation of the rapid pace of change and development in this area.

D7: Resources created are designed and managed to maximise reuse					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

**Figure D7-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Evidence of capability in this process was only seen in those institutions that employed dedicated staff for e-learning design and development. In those institutions it was clear that the intention was to ensure that this investment was maximised through reuse, although it was notable that reuse was generally limited to reuse by expert staff rather than general use by the teaching staff of the institution.

### Dimension 2: Planning

There was little evidence of institutional strategies or initiatives supporting or encouraging reuse of e-learning resources, including rewards or incentives to staff reusing or creating reusable materials. The capability observed was the consequence of dedicated design and development support staff ensuring their work was maintainable, reusable and cost-effective although no specific learning object repositories had been established to support wider access to the resources created.

### Dimension 3: Definition

No evidence of was seen across the institutions of institutional policies regarding archiving and long term storage of course information and e-learning resources for reuse. There was also no evidence of the use of content management systems or repositories across the institutions, LMS/VLE facilities are fulfilling aspects of this function by default but not in a managed or sustainable way. The very weak process capability noted is a consequence of employment contracts defining default positions for intellectual property ownership in those institutions with dedicated e-learning development staff and in the polytechnics, the situation was more ambiguous in the universities where academics commonly retain ownership of traditional teaching materials. There was little evidence that institutions are formally

considering intellectual property issues in the context of e-learning design and development, raising the risk of either incorrect use of copyright materials or unclear ownership of resources created.

*Dimension 4: Management*

Very little evidence of capability.

*Dimension 5: Optimisation*

No evidence of capability.

D7

**ACODE Institution Capabilities**

Very weak capabilities, much as were seen in the other institutions. Formal reuse systems do not seem to have had a significant impact in any institution despite the rational appeal and the extensive literature outlining the potential benefits.

## Support: Processes surrounding the support and operational management of e-learning

### S1: Students are provided with technical assistance when engaging in e-learning

Evidence of capability in this process is the provision to students of clear information on how to get assistance with technology. They should receive contact information for both telephone and email support as well as self-help facilities such as web pages and documentation. This should convey how student requests will be treated and the timeframe within which they can expect assistance. Course specific information should be supplied when non-standard technologies are used. Policies and guidelines should communicate the extent of support available and the timeframes within which support is provided. Support staff should be provided with templates, examples, training and support in using the range of resources available to assist students.

S1: Students are provided with technical assistance when engaging in e-learning					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	█	█			
University NZ-B	█	█			
University NZ-C	█	█			
University NZ-E	█	█			
University NZ-F	█	█			
University NZ-G	█	█			
University UK-A	█	█	█	█	
University UK-B	█	█	█	█	
University USA-A	█	█	█	█	
University NZ-D	█	█	█	█	
Slice A	█	█	█	█	
Slice B	█	█	█	█	
Slice C	█	█	█	█	
Slice D	█	█	█	█	
Slice E	█	█	█	█	
Slice F	█	█	█	█	
University Aus-A	█	█	█	█	
Slice A	█	█	█	█	
Slice B	█	█	█	█	
Slice C	█	█	█	█	
University Aus-B	█	█	█	█	
Slice A	█	█	█	█	
Slice B	█	█	█	█	
Slice C	█	█	█	█	
Slice D	█	█	█	█	

Figure S1-1: Summary of process capability across the assessed institutions

#### Dimension 1: Delivery

Capability was mixed, dependent primarily on the teaching staff delivering courses and on the support provided for LMS/VLE facilities through web pages. Substantive support for students appears to be built upon services designed to support on-campus facilities such as computing laboratories, rather than being designed specifically to meet the needs of students engaged in e-learning. Little information and support was provided to students through online communication channels other than email, although some institutions provide limited synchronous chat facilities during business hours. It was clearly apparent that in most cases student technical support was designed around a model of face-to-face delivery rather than a planned support of e-learning from off-campus. Stronger capability was seen in distance institutions consistent with requirements of that mode of delivery.

#### Dimension 2: Planning

There is little evidence in many institutions of a systematic attempt to address the e-learning technical support needs of students. In most cases support was limited to a set of web pages of varied quality and usefulness and a help desk available via email and telephone during normal business hours. Stronger capability was seen in distance institutions consistent with requirements of that mode of delivery.

#### Dimension 3: Definition

Capability was essentially absent across the institutions that were not formally engaging in distance delivery.

*Dimension 4: Management*

Little evidence of capability in most institutions. The exceptions were limited to institutions with a significant investment in e-learning support services.

*Dimension 5: Optimisation*

Little evidence of capability.

**ACODE Institution Capabilities**

The ACODE institutions were uniformly strong in the *Delivery* dimension for this process consistent with the emphasis placed on the technical aspects of the e-learning infrastructure seen in process D5. The Australian institutions also had strong capability in the *Management* dimension suggesting that these systems are valued and carefully monitored by the institutions, unlike in most other cases.

## S2: Students are provided with library facilities when engaging in e-learning

Evidence of capability in this process is provision of a full range of library facilities and associated support to assist students with their use. The central library website and course material should communicate information on using these services. Within courses, the information should be customized to reflect the needs of the particular discipline and learning outcomes.

S2: Students are provided with library facilities when engaging in e-learning					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■	■	■	■
University NZ-B	■	■	■	■	■
University NZ-C	■	■	■	■	■
University NZ-E	■	■	■	■	■
University NZ-F	■	■	■	■	■
University NZ-G	■	■	■	■	■
University UK-A	■	■	■	■	■
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■
Slice E	■	■	■	■	■
Slice F	■	■	■	■	■
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

Figure S2-1: Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Generally, the services provided by institutional libraries are comprehensive and include help and support designed for students. The weakness apparent in the institutions is that individual courses are not guiding and assisting students in making use of the library services, normally students are simply provided with a link to the library from the LMS, rather than the individual courses. As noted in process L6, the services provided by the libraries are generally strong but there is little encouragement provided from within courses to assist the students in learning how to make effective use of the library. There is a presumption that students know how to access the library and will know when to do so.

### Dimension 2: Planning

The institutional libraries generally provided a range of services and support that were designed to meet the needs of students engaged in e-learning. There is little evidence of these being acknowledged and explicitly linked from individual courses. The expectation appears to be that students will use a general library link and find the information and services for themselves. Best practice was seen in those institutions where students were provided with a very useful set of pages through their library for each course or discipline. These pages contain a customized set of starting points for further research and investigation by students along with direct links to support resources and library staff who could assist the students either on-line or in person.

### Dimension 3: Definition

Very weak, with little evidence in general that institutions are defining minimum standards for access to library services irrespective of the mode of delivery. Exceptions were institutions with a strong commitment to distance delivery or e-learning use as a strategic goal.

### Dimension 4: Management

Little evidence of capability, where stronger capability was seen it was driven by library staff rather than teaching staff.

*Dimension 5: Optimisation*

Little evidence of capability, where stronger capability was seen it was driven by library staff rather than teaching staff.

**ACODE Institution Capabilities**

Strong capability apparent in all of the ACODE institutions.

### S3: Student enquiries, questions and complaints are collected and managed formally

Evidence of capability in this process is instructions to students in all courses on where to communicate concerns they might have about any aspect of their learning. This should either be a single student help desk or a clear list that provides alternatives. A list should indicate how the alternatives are to be used, such as particular contacts for technical issues and others for learning concerns or complaints. Policy should require the provision of this information in a standard way. Teaching staff should have guidelines on how to handle student communications, including timeframes and record-keeping. Teaching and support staff should receive templates, examples, and training and support in handling student complaints.



S3: Student enquiries, questions and complaints are collected and managed formally					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	█	█	█	█	█
University NZ-B	█	█	█	█	█
University NZ-C	█	█	█	█	█
University NZ-E	█	█	█	█	█
University NZ-F	█	█	█	█	█
University NZ-G	█	█	█	█	█
University UK-A	█	█	█	█	█
University UK-B	█	█	█	█	█
University USA-A	█	█	█	█	█
University NZ-D	█	█	█	█	█
Slice A	█	█	█	█	█
Slice B	█	█	█	█	█
Slice C	█	█	█	█	█
Slice D	█	█	█	█	█
Slice E	█	█	█	█	█
Slice F	█	█	█	█	█
University Aus-A	█	█	█	█	█
Slice A	█	█	█	█	█
Slice B	█	█	█	█	█
Slice C	█	█	█	█	█
University Aus-B	█	█	█	█	█
Slice A	█	█	█	█	█
Slice B	█	█	█	█	█
Slice C	█	█	█	█	█
Slice D	█	█	█	█	█

**Figure S3-1:** Summary of process capability across the assessed institutions

*Dimension 1: Delivery*

Capability in this process was mixed, reflecting the use in some institutions of pre-existing formal disputes procedures without consideration of the impact that the move to e-learning is having on systems and procedures. Most institutions did not provide students with information on who to contact in regard to specific issues, and there appears to be a lack of awareness that students might have the need to raise issues with the staff or the institution that require formal treatment and tracking. The existing formal grievance procedures are generally adequate but in day to day use would normally be excessive or inappropriate and they do not usually consider the implications of e-learning approaches, particularly the possibility that the students might never attend the physical campus. It was also notable that generally teaching staff are not provided with support or resources in handling student concerns appropriately or effectively.

*Dimension 2: Planning*

There was little evidence of formal and systematic planning to manage student issues in many institutions. Best practice was seen at those institutions that provided clear and formal contact points, resolution procedures and managed the collection of student concerns. There was little evidence of formal risk assessments concerning the handling of student issues and concerns being conducted within the institutions.

*Dimension 3: Definition*

Most institutions lacked any evidence of formal management and standards for addressing concerns and issues raised by students engaged in e-learning. There was a limited amount of information provided to teaching staff on effective feedback, but this was clearly insufficient.



*Dimension 4: Management*

The only institutions that showed any evidence of regular monitoring and reporting of student issues and concerns resulting from e-learning were those engaged in distance delivery.

*Dimension 5: Optimisation*

Little evidence of capability.

**ACODE Institution Capabilities**

A range of capabilities were assessed. The Australian ACODE institutions were clearly stronger than the New Zealand institutions, but consistent with other international institutions' assessments.

## S4: Students are provided with personal and learning support services when engaging in e-learning

Evidence of capability in the process is clear documentation, complying with a consistent institutional template, which informs students how to access all available student services. Policy should require that this information be accurate, regularly reviewed and provided to students in advance of enrolment. Templates should be provided to ensure consistent structure and content. Elements that are standard to all courses should use wording prescribed by policy.

S4

S4: Students are provided with personal and learning support services when engaging in e-learning					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■	■	■	■
University NZ-B	■	■	■	■	■
University NZ-C	■	■	■	■	■
University NZ-E	■	■	■	■	■
University NZ-F	■	■	■	■	■
University NZ-G	■	■	■	■	■
University UK-A	■	■	■	■	■
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■
Slice E	■	■	■	■	■
Slice F	■	■	■	■	■
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

**Figure S4-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Information on the range of student support services provided by institutions is generally clear and available from enrolment materials, websites and course outlines in a consistent fashion. This information is, however, usually separated from the rest of the course outline into its own section and there is no evidence of courses linking relevant support directly to individual activities and assessment tasks. An additional limitation is that in many cases personal and learning support is either not available to students engaged in e-learning or that it fails to address e-learning specific aspects of student learning.

### Dimension 2: Planning

Course outlines/syllabi generally include a set of standard information on the available personal and learning support services using a clear and consistent language and providing explicit information on how to access the services. There is little evidence in many institutions that the support queries are managed and tracked formally. There is also little evidence that support aspects are being considered when e-learning projects are being designed and developed.

### Dimension 3: Definition

Generally institutions define a range of personal and learning support services for students which are communicated in the enrolment materials, websites and course outlines but these are not usually adapted for support of e-learning. There is no evidence of this support being subject to formally defined service level agreements. It is also notable that teaching staff are not formally involved in mediating student access to support and there is very little evidence of encouragement to link courses to student support facilities other than through general statements.

*Dimension 4: Management*

Little evidence of capability in institutions not formally engaging in distance delivery.

*Dimension 5: Optimisation*

Little evidence of capability in institutions not formally engaging in distance delivery.

**ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions.

## S5: Teaching staff are provided with e-learning pedagogical support and professional development

Evidence of capability in this process is formal assessments of staff capability, during training and e-learning design and development projects. Evidence from these assessments should determine additional support and training allocations. Design and development plans should include formal processes for ongoing support of teaching staff and courses. Policy and guidelines should mandate staff capability assessments and require their use in ongoing staff development. Regular overview reports of capability should inform strategies for ongoing resourcing and development of e-learning.

S5

S5: Teaching staff are provided with e-learning pedagogical support and professional development					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■			
University NZ-B	■	■			
University NZ-C	■	■			
University NZ-E	■	■	■		
University NZ-F	■	■			
University NZ-G	■	■			
University UK-A	■	■	■		
University UK-B	■	■	■	■	
University USA-A	■	■	■	■	
University NZ-D	■	■			
Slice A	■	■			
Slice B	■	■			
Slice C	■	■			
Slice D	■	■			
Slice E	■	■			
Slice F	■	■			
University Aus-A	■	■	■		
Slice A	■	■	■		
Slice B	■	■	■		
Slice C	■	■	■		
University Aus-B	■	■	■		
Slice A	■	■	■		
Slice B	■	■	■		
Slice C	■	■	■		
Slice D	■	■	■		

Figure S5-1: Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Capability in this process was very weak. While most institutions provide some form of professional development and training for teaching staff this is generally optional and not explicitly linked with the use of particular e-learning technologies or pedagogies. It was also noted that little consideration is given to enabling teaching staff in their supporting students using e-learning pedagogies and technologies effectively.

### Dimension 2: Planning

There was very little evidence of formally planned support in e-learning pedagogies being provided when teaching staff are involved with e-learning courses. What structured support that was available was generally limited to technical aspects of major systems such as LMS/VLE facilities and there was little evidence of support being based on an examination of the needs arising from technology use in particular courses. There was little evidence of rewards or incentives being used to encourage staff engaging in innovative e-learning projects or initiatives. Nor was there evidence of the use of research into local e-learning initiatives as a tool for improving e-learning design, delivery and support.

### Dimension 3: Definition

Very little evidence of capability, in particular there is little evidence that the abilities of teaching staff to engage in e-learning are formally assessed and responded to in a systematic way. Much of the training and support provided is optional and teaching staff are not provided with incentives or rewards for engaging with it. Even in the institutions that provided formal e-learning design and development there was little evidence of examples, templates and case studies being used to assist teaching staff in being more effective.

*Dimension 4: Management*

Very little evidence of capability.

*Dimension 5: Optimisation*

Very little evidence of capability.

**ACODE Institution Capabilities**

Weak capability, consistent with that seen in the other institutions.

## S6: Teaching staff are provided with technical support in using digital information created by students

Evidence of capability in this process is facilities and support during the design and development of projects. Staff should receive documentation, training, and templates and other materials to use with students. Policy and guidelines should require and support this. Student attainment of skills in this area should be part of the overall learning objectives, in line with their acquisition of research and information literacy skills.

S6

S6: Teaching staff are provided with technical support in using digital information created by students					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■			
University NZ-B	■	■			
University NZ-C	■	■			
University NZ-E	■	■			
University NZ-F	■	■			
University NZ-G	■	■			
University UK-A	■	■	■	■	■
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■
Slice E	■	■	■	■	■
Slice F	■	■	■	■	■
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

**Figure S6-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

The generally poor capability seen across the institutions is consistent with the absence of formal and systematic response to the use of e-learning by institutions not primarily engaged in distance delivery. Most institutional systems and support appears to be designed and maintained unchanged from traditional paper-based information handling despite the widespread use of electronic document creation and delivery tools by staff and students. Most institutions and staff are struggling with the implications of students submitting assessed work electronically and responses are normally limited to the use of standard LMS/VLE facilities to collect material which is then commonly printed out and returned in hard copy to students.

### Dimension 2: Planning

The capability observed here is essentially a consequence of the use of systems such as LMSs and plagiarism detection services rather than explicit or formal consideration of information use by students. There is little evidence in most institutions of e-learning design and development activities systematically addressing the creation and use of electronic materials by students. Worryingly, despite the large amount of student information being stored in LMS/VLE facilities there was little evidence in most institutions of formal and systematic auditing and risk assessments being undertaken to ensure that the information was securely and appropriately stored.

### Dimension 3: Definition

There was very little evidence of a formal consideration of the needs of teaching staff supporting information use by students other than at distance institutions. Some training is usually available, usually from libraries, but its use is generally optional and not encouraged by institutional policies or strategies. The use of electronic delivery is growing but there are significant issues with the statutory

copyright licenses and electronic delivery that are not evident in institutional policy and strategy and which are likely to cause significant disruption in the future.

*Dimension 4: Management*

Very little evidence of any systematic attempt to identify the operational impact of increased electronic information use by institutions.

*Dimension 5: Optimisation*

Little evidence of capability.

**ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions. The unusual gap in *Delivery* capability evident in some institutions including one of the ACODE institutions reflected the absence of support for teaching staff working with students using digital tools. The technical systems and support are in place but not directed at supporting staff in this way.

## Evaluation: Processes surrounding the evaluation and quality control of e-learning through its entire lifecycle

### E1: Students are able to provide regular feedback on the quality and effectiveness of their e-learning experience

Evidence of capability in this process is a formal student evaluation plan in the design, development and delivery of projects and courses. This plan should address e-learning explicitly. Institutions should conduct multiple formal evaluations, both summative and formative, in a standard way. This allows comparison of results between projects and over time. Students should receive information on how the evaluation results are being used to improve the quality and effectiveness of their learning. Policy and guidelines should require that student evaluations are conducted independently and provide standard evaluation forms. The results of the evaluations should be used to inform ongoing and new development, and to support resources and strategy. Teaching staff are provided with templates, examples, training and support in using the range of evaluation resources available to better support student learning.

E1: Students are able to provide regular feedback on the quality and effectiveness of their e-learning experience					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	█				
University NZ-B	█				
University NZ-C	█				
University NZ-E	█				
University NZ-F	█				
University NZ-G	█				
University UK-A	█				
University UK-B	█				
University USA-A	█				
University NZ-D	█				
Slice A	█				
Slice B	█				
Slice C	█				
Slice D	█				
Slice E	█				
Slice F	█				
University Aus-A	█				
Slice A	█				
Slice B	█				
Slice C	█				
University Aus-B	█				
Slice A	█				
Slice B	█				
Slice C	█				
Slice D	█				

Figure E1-1: Summary of process capability across the assessed institutions

#### Dimension 1: Delivery

Performance in this process can be characterised as the use of traditional evaluation procedures applied without consideration of the use of e-learning technologies or pedagogies. The evaluation methodologies are essentially sound but are struggling to address the requirements of e-learning delivery, particularly the issue of students not attending on-campus sessions and poor response rates from postal or online surveys. A particular challenge is found when conducting formative evaluations with students engaged in e-learning at a distance and it is likely that institutional evaluation and review processes will need to be modified to take advantage of e-learning approaches themselves if they are to be representative of the student population.

#### Dimension 2: Planning

Very weak capability was observed across the institutions. Those institutions with formal e-learning design and development methodologies benefited from the quality assurance and review procedures adopted. A common weakness was that the information collected is normally kept confidential to individual courses and projects, there was little evidence of systematic comparisons within an institution or any reporting back to students. There was also almost no evidence that student requirements



for e-learning are formally collected before engaging in most e-learning design and development initiatives.

*Dimension 3: Definition*

Institutions are generally required by accrediting bodies to evaluate their teaching regularly, and this is apparent with respect to traditional delivery. Planning and systematic consideration of the impact of e-learning is essentially non-existent in most institutions, the exceptions being those heavily engaging in e-learning or distance delivery. The facilities and support for individual staff evaluating e-learning initiatives generally exist but the outcomes are disconnected from institutional strategy and planning activities.

*Dimension 4: Management*

Little evidence of capability.

*Dimension 5: Optimisation*

Little evidence of capability.

### **ACODE Institution Capabilities**

A somewhat weak capability was assessed, consistent with the other international institutions. The clear gap in *Planning* capability reflected the lack of formal requirements gathering from students and the lack of systematic use of evaluation information.

## E2: Teaching staff are able to provide regular feedback on quality and effectiveness of their e-learning experience

Evidence of capability in this process is a formal staff evaluation plan in the design and development of projects and courses. Institutions should conduct multiple formal evaluations, both summative and formative, in a standard way. This allows comparison of results between projects and over time. Staff should receive information on how the evaluation results are being used to improve the quality and effectiveness of their work. Policy and guidelines should require that staff evaluations are conducted independently and provide standard evaluation forms. The results of the evaluations should be used to inform ongoing and new development, and to support resources and strategy.

E2

E2: Teaching staff are able to provide regular feedback on the quality and effectiveness of their e-learning experience					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

Figure E2-1: Summary of process capability across the assessed institutions

### Dimension 1: Delivery

There is almost no evidence across the institutions of systematic and regular feedback being collected from teaching staff engaged in e-learning initiatives. The little that is being done is essentially isolated and often not reported in a way that allows for systematic analysis.

### Dimension 2: Planning

Consistent with dimension one there was very little evidence of capability, with few institutions having a process of formal testing and evaluation involving staff. There was also little evidence of teaching staff being rewarded and encouraged in their adoption of e-learning pedagogies and technologies.

### Dimension 3: Definition

Almost no evidence of teaching staff being formally invited to provide regular feedback information on their experiences of e-learning. There was also little support for teaching staff researching and reflecting on their own experiences of e-learning.

### Dimension 4: Management

Very little evidence of capability.

### Dimension 5: Optimisation

Very little evidence of capability.

## **ACODE Institution Capabilities**

Weak capability, much as was seen in the other institutions.

### E3: Regular reviews of the e-learning aspects of courses are conducted

Evidence of capability in this process is formal data collection processes that are incorporated into design and development. These should allow for regular reporting and analysis of the effectiveness of the technologies used. These processes should be standards based and designed to support comparisons over time, and between courses and projects. Policy should require the collection and reporting of this information, and use of the results to inform ongoing and new development, support resources and strategy. Formal content and materials review plans should be used during the design and development of projects and courses. Policy and guidelines should require these reviews be conducted formally, and provide guidance on what aspects require checking.



E3: Regular reviews of the e-learning aspects of courses are conducted					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

**Figure E3-1:** Summary of process capability across the assessed institutions

**Dimension 1: Delivery**

The prevalence of informal measures and anecdotes in measuring the effectiveness of e-learning and the absence of detailed analysis is clearly apparent in the capability assessed for this process for most institutions. There is very little evidence of the systematic use of readily available summative data from the central LMS/VLE facilities and similar tools in formally assessing the effectiveness of e-learning projects and courses.

**Dimension 2: Planning**

Little evidence was seen of planned reviews during e-learning design and development reflecting the generally ad-hoc approach taken. Reviews, if any, are informal and anecdotal rather than empirical in design and independently conducted. Some institutions made use of self reports from teaching staff involved in particular e-learning initiatives but these had little value as strategic planning documents as they were not validated or evidence based.

**Dimension 3: Definition**

Little evidence of systematic reviews of e-learning being undertaken regularly across most institutions. The review approaches in use were clearly based on traditional delivery and have yet to explicitly address the use of e-learning technologies and pedagogies.

**Dimension 4: Management**

Little evidence of capability.

**Dimension 5: Optimisation**

Little evidence of capability.

### **ACODE Institution Capabilities**

Almost no capability evident, much as were seen in the other institutions.

## Organisation: Processes associated with institutional planning and management

### O1: Formal criteria guide the allocation of resources for e-learning design, development and delivery

Evidence of capability in this process is formal funding and resourcing criteria and guidelines, mandated by policy. These should provide consistency and clarity in allocating resources. These criteria should manage access to support, to ensure efficient and equitable use of time, and the achievement of strategic goals as well as short term requirements. Institutions should communicate effective approaches in the local context through examples, case studies, standards and guidelines. These should be customised for the institution, and demonstrate the benefits of the criteria used.

O1

O1: Formal criteria guide the allocation of resources for e-learning design, development and delivery					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■	■	■	■
University NZ-B	■	■	■	■	■
University NZ-C	■	■	■	■	■
University NZ-E	■	■	■	■	■
University NZ-F	■	■	■	■	■
University NZ-G	■	■	■	■	■
University UK-A	■	■	■	■	■
University UK-B	■	■	■	■	■
University USA-A	■	■	■	■	■
University NZ-D	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■
Slice E	■	■	■	■	■
Slice F	■	■	■	■	■
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

Figure O1-1: Summary of process capability across the assessed institutions

#### Dimension 1: Delivery

In the absence of an investment in dedicated e-learning support facilities, capability in this process was essentially non-existent. Best practice is seen where access to support and development resources were controlled through a competitive process that involved clear criteria, independent assessment of proposals and an overall strategic focus.

#### Dimension 2: Planning

As with the delivery dimension, capability in this process correlated with the investment in dedicated e-learning support staff who clearly positioned their work to ensure that it integrated well with the e-learning infrastructure of the institution and was able to be maintained.

#### Dimension 3: Definition

Those institutions with formal design and development support generally had criteria defined for how this was accessed, usually involving a formal application process and project selection criteria linked to strategic outcomes at the programme and institution level. There was, however, little support provided for staff in making these applications and no evidence of applications being stored and made available for reuse when projects were successful or being analysed when projects failed.

*Dimension 4: Management*

Most institutions with formal design and development support demonstrated some evidence of reviews and quality assurance but these were usually informal rather than part of a systematic and formal consideration of effectiveness of e-learning.

*Dimension 5: Optimisation*

Only two universities used evidence from e-learning project outcomes to explicitly inform strategic decision making and investment, otherwise there was no evidence that e-learning has impacted on institutional governance activities across most institutions.

**ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions. Institutions varied dramatically in how resources for e-learning were allocated. A common model is the reactive “first come, first served” approach where support and assistance are provided without detailed planning and control. The problematic nature of this approach when intensive e-learning activities are undertaken is a likely explanation for the much stronger capability seen in some of the institutions.

## O2: Institutional learning and teaching policy and strategy explicitly address e-learning

Evidence of capability in this process is a complete and redeveloped set of institutional strategies and policies. These should incorporate a thoughtful and strategic assessment of the contribution e-learning can make to the institution, disciplines, staff and students. Staff involved in e-learning initiatives should receive support and guidance in effectively applying the revised policies and strategies. Ideally, they, along with students, should be involved in developing the policies and strategies.

O2: Institutional learning and teaching policy and strategy explicitly address e-learning					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	■	■			
University NZ-B	■	■			
University NZ-C	■	■			
University NZ-E	■	■			
University NZ-F	■	■			
University NZ-G	■	■			
University UK-A	■	■			
University UK-B	■	■	■	■	■
University USA-A	■	■			
University NZ-D	■	■			
Slice A	■	■			
Slice B	■	■			
Slice C	■	■			
Slice D	■	■			
Slice E	■	■			
Slice F	■	■			
University Aus-A	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
University Aus-B	■	■	■	■	■
Slice A	■	■	■	■	■
Slice B	■	■	■	■	■
Slice C	■	■	■	■	■
Slice D	■	■	■	■	■

**Figure O2-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

The evidence of capability in this process was very weak, there appears to be a significant disconnect across the institutions between learning and teaching policy generally and the consideration of e-learning, which appears to be dominated by technology aspects rather than pedagogical concerns. Even when there was a consideration of e-learning to achieving the learning and teaching goals of the institution there was little communication of this to staff and students, further reducing the likelihood of any systematic and sustained benefit arising from e-learning projects and initiatives.

### Dimension 2: Planning

Linkages between e-learning and learning and teaching strategy correlated with the existence of dedicated e-learning design and development support staff. It is unclear whether the existence of this investment was a result of strategic focus on e-learning or if it was a consequence of having staff who can engage effectively with the issues and influence policy. There was no evidence across the institutions that students are actively and formally involved in ensuring their needs are being met through strategic consideration of e-learning.

### Dimension 3: Definition

Very little evidence of capability.

### Dimension 4: Management

University UK-B demonstrated some evidence of staff and student feedback being used to guide strategy development, but in most cases consideration of e-learning issues was informal rather than part of a systematic and formal consideration of the contribution of e-learning to the institutions learning and teaching goals.



*Dimension 5: Optimisation*

University UK-B was notable in showing one of the few examples of using evidence from e-learning project outcomes to explicitly inform strategic decision making and investment, otherwise there was little evidence that e-learning has impacted on institutional governance activities across the institutions.

**ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions. The Australian institutions were clearly guiding their e-learning activities in a more strategic manner than most other institutions.

### O3: E-learning technology decisions are guided by an explicit plan

Evidence of capability in this process is a formally documented technology plan. This is used to guide the selection of technologies appropriate to the local context. Formal institutional standards are used where available to inform and guide the plan. This should include existing technologies that are defined as standard by the institution. There is evidence of effectiveness and ability to be supported. The plan, along with the associated standards and guidelines, is communicated widely to encourage wider adoption and compliance throughout the institution. Policy should mandate compliance with the technology plan. Explicit reference to it should be made in processes for the resourcing and development of e-learning resources.

O3: E-learning technology decisions are guided by an explicit plan					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

**Figure O3-1:** Summary of process capability across the assessed institutions

*Dimension 1: Delivery*

The absence of documented technology plans informing e-learning projects and initiatives is clearly apparent across most institutions. Most institutions had a defined set of standard technologies, such as an LMS, that were used by a central group to support e-learning development but the processes used to select, develop and maintain these technologies were not documented.

*Dimension 2: Planning*

In general e-learning technology decisions are being made as a consequence of the LMS/VLE facility and the requirements of interoperability with other systems such as student records and core IT. The rationale and constraints linking these decisions are not normally formally documented, instead depending on the knowledge and skills of the IT staff involved.

*Dimension 3: Definition*

There is little evidence across the institutions of formal integration between IT planning and the learning and teaching goals of the institution. There is no evidence that teaching staff and students are actively and systematically involved in ensuring the systems meet their learning and teaching needs and also no evidence of decisions being informed by a researched evidence base or risk assessment.

*Dimension 4: Management*

Very little evidence of capability.

*Dimension 5: Optimisation*

Very little evidence of capability.

### **ACODE Institution Capabilities**

The ACODE institutions were clearly stronger than most others, reflecting the focus and investment on e-learning, particularly at the technical level, seen in other processes such as D5.

## O4: Digital information use is guided by an institutional integrity plan

Evidence of capability in this process is a formally documented technology plan considering information integrity and reliability. This should include assessments of the security of information from intentional and unintentional loss, and protection of privacy and of student information. It should also include version control and consistency with other systems such as student records or enrolments. The plan should include information provided by the institution, teaching staff and students. It should explicitly consider copyright implications, including the rights of students, and the reporting required by licences. Policy and procedures should deal with potential failures or compromises. Standards and guidelines should be used to communicate which technologies have been proven reliable. Regular monitoring and reporting should be used to prove reliability and identify potential problems. Teaching staff are provided with templates, examples, training and support in maintaining course information to ensure its validity and reliability.

O4

O4: Digital information use is guided by an institutional information integrity plan					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

Figure O4-1: Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Despite the adoption and investment in LMS/VLE facilities and the substantial growth in the amount of student and course information stored in these systems there appears to be little formal and systematic consideration of the integrity of information storage and retrieval. Much of the information in these systems is essential to the business and vulnerable to both intentional and unintentional loss or corruption but there appears to be no evidence of formal testing or validation being undertaken. It is important to note that institutional LMS/VLE facilities are managed in line with other institutional systems but in many cases growth in usage appears to have overtaken risk management systems. There is also the issue that many individual e-learning initiatives use systems that are not formally managed and this is a substantial business risk in those institutions.

### Dimension 2: Planning

Capability was very weak across most institutions with a clear dependence on LMS/VLE authentication and backup facilities without formal assessment of risks or consideration of strategies to cope with failures. Individual e-learning initiatives showed no evidence of systematic consideration of the issues.

### Dimension 3: Definition

Very weak across most institutions reflecting the dependence on the feature sets of LMSs without formal consideration of information integrity and validity issues. No evidence of auditing or the use of content management and reporting systems.

*Dimension 4: Management*

Very little evidence of capability.

*Dimension 5: Optimisation*

Very little evidence of capability.

**ACODE Institution Capabilities**

The ACODE institutions were clearly stronger than most others, reflecting the focus and investment on e-learning infrastructure also reflected in the assessments for process D5.

## O5: E-learning initiatives are guided by explicit development plans

Evidence of capability in this process is definition and use of an explicit course or programme e-learning development plan. This plan should be formally developed and endorsed by the institutional leadership. The plan should align with institutional strategies and plans and consider business issues such as risk assessments and quality assurance. Teaching staff should be supported in both the development of plans and how to apply them in specific contexts.

O5: E-learning initiatives are guided by explicit development plans					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

**Figure O5-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Selection of technologies to support e-learning design, development and delivery is being driven in a coherent and planned way at institutions with dedicated e-learning staff. In other institutions, decisions seem to be made on an ad-hoc basis reflecting the personal preferences and experience of teaching staff rather than on the basis of a programme or institutional plan.

### Dimension 2: Planning

While many institutions had some evidence of systematic planning of technology deployments, across the institutions there was no evidence of student involvement in planning for their needs or of institutional leadership providing oversight and approval of e-learning technology choices.

### Dimension 3: Definition

Very little evidence of capability.

### Dimension 4: Management

Very little evidence of formal planning for e-learning evident across the institutions limited to those with dedicated e-learning staff.

### Dimension 5: Optimisation

Very little evidence of capability.

### **ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions. The primary driver for capability in this process was the formality with which e-learning is managed and consequently capability generally matches the pattern seen in process O1.

## O6: Students are provided with information on e-learning technologies prior to starting courses

Evidence of capability in this process is clear statements describing the use of various media and technologies and the requirements this will impose on students. This description should also provide access to support information or documentation. All of this information should be provided for students in public course listings or catalogues prior to enrolment, and in enrolment packs. Policy should require that this information be provided and maintained. Institutional guidelines should set in place how teaching and administrative staff communicate standard technologies and media used in courses. Instructions for use, minimum requirements, and support of standard technologies should be provided and maintained through a central repository linked to the course requirements statement.

06

O6: Students are provided with information on e-learning technologies prior to starting courses					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

Figure O6-1: Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Performance of this process was very poor at most institutions. Students are provided with very little information in advance on technology and other requirements e-learning course. What little information that is provided is generally limited to basic information about LMS/VLE facilities and requirements without any specific linkages to the activities undertaken in particular courses. Best practice was having a clear statement in a consistent format on technology use and requirements that was available through the institutional website to all interested students prior to enrolment. Similar information was provided in the enrolment materials along with minimum requirements for access to computers and specifications for equipment when appropriate.

### Dimension 2: Planning

In most cases detailed information on e-learning technologies was provided to students only after they have enrolled in courses and can access the course outlines. Despite this, there was little evidence of students being provided with organised opportunities to prepare themselves to use technology effectively as part of courses.

### Dimension 3: Definition

Most institutions lacked formal plans and processes for ensuring that students were informed of technology requirements prior to enrolment. As well, there was little evidence of structure in the information provided.



*Dimension 4: Management*

Very little evidence of capability.

*Dimension 5: Optimisation*

Very little evidence of capability.

**ACODE Institution Capabilities**

Very weak capability, much as was seen in the other institutions.

## O7: Students are provided with information on e-learning pedagogies prior to starting courses

Evidence of capability in this process is clear statements describing the use of various learning approaches and technologies and the requirements that this will impose on students. This description should also provide access to any support information or documentation. All of this should be provided publicly for students prior to enrolment, and, preferably, in enrolment packs. Policy should require that this information be provided and maintained. Institutional guidelines should demonstrate how to communicate information on the standard technologies and learning approaches used in courses. Instructions for the use and support of standard technologies and learning approaches should be provided and maintained through a central repository.

10

O7: Students are provided with information on e-learning pedagogies prior to starting courses					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

**Figure O7-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

Consistent with the limited use of learning objectives (process L1), there was little evidence across most institutions of explicit communication of the pedagogical designs and rationales underpinning individual courses.

### Dimension 2: Planning

Limited information on pedagogical rationales was provided in most course outlines once students enrolled but otherwise there was little capability evident. There was little evidence in most institutions of systematic attempts to convey the linkages between technologies and pedagogies.

### Dimension 3: Definition

There was very little systematic consideration evident of how and why technology was being used in courses and programmes. Across the institutions there was little strategic or policy guidance ensuring that the linkages with the pedagogical approach and learning outcomes were explicitly communicated to students.

### Dimension 4: Management

Very little evidence of capability.

### Dimension 5: Optimisation

Very little evidence of capability.

## **ACODE Institution Capabilities**

Very weak capability, much as was seen in the other institutions.

## O8: Students are provided with administration information prior to starting courses

Evidence of capability in the process is clear documentation, complying with a consistent institutional template, setting out the course and institution administrative information. Policy should require that this information is accurate, regularly reviewed and provided to students in advance of enrolment. Templates should be provided to ensure a consistent structure and content. Elements that are standard to all courses should use wording prescribed by policy.

O8: Students are provided with administration information prior to starting courses					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A	█	█	█	█	█
University NZ-B	█	█	█	█	█
University NZ-C	█	█	█	█	█
University NZ-E	█	█	█	█	█
University NZ-F	█	█	█	█	█
University NZ-G	█	█	█	█	█
University UK-A	█	█	█	█	█
University UK-B	█	█	█	█	█
University USA-A	█	█	█	█	█
University NZ-D	█	█	█	█	█
Slice A	█	█	█	█	█
Slice B	█	█	█	█	█
Slice C	█	█	█	█	█
Slice D	█	█	█	█	█
Slice E	█	█	█	█	█
Slice F	█	█	█	█	█
University Aus-A	█	█	█	█	█
Slice A	█	█	█	█	█
Slice B	█	█	█	█	█
Slice C	█	█	█	█	█
University Aus-B	█	█	█	█	█
Slice A	█	█	█	█	█
Slice B	█	█	█	█	█
Slice C	█	█	█	█	█
Slice D	█	█	█	█	█

**Figure O8-1:** Summary of process capability across the assessed institutions

### Dimension 1: Delivery

The uniformly strong result found across the institutions for this process reflects the use of standard enrolment processes and information packs for all courses. Information was provided clearly and consistently via websites, enrolment materials and course documentation.

### Dimension 2: Planning

Capability was uniformly strong building on existing administrative processes but with no evidence of consideration of the impact e-learning is having or of any risks to the institution that may arise from the use of technology. Pre-enrolment listings for courses should provide much more information than they currently do about the technology expectations that will be placed on students and how the pedagogical approach adopted may differ significantly from what they might otherwise expect.

### Dimension 3: Definition

Generally administrative information is well supplied via websites, enrolment materials and course documentation, these are normally supplied via defined templates and use relatively consistent language. There is however, little evidence that teaching staff are provided with formal assistance in ensuring they can support students with administrative issues or of systematic consideration of changes in procedures that are necessary once courses are delivered using e-learning technologies and pedagogies.

### Dimension 4: Management

Comparatively little evidence of capability, perhaps reflecting the sense that problems will drive improvement directly, rather than requiring specific feedback processes.

### Dimension 5: Optimisation

Very little evidence of capability.

## **ACODE Institution Capabilities**

Strong capability, much as was seen in the other institutions.

## O9: E-learning initiatives are guided by institutional strategies and operational plans

Evidence of capability in the process is the alignment of e-learning investments with institutionally developed and endorsed e-learning strategies and technology plans. Important elements include a formal business development plan, and a detailed risk assessment and mitigation strategy. All staff involved in the design, (re)development and delivery of e-learning projects and initiatives should be involved in the development of these plans and strategies and fully aware of the implications for their own work. The plans and strategies need to be dynamic documents building on a growing evidence base of locally relevant initiatives and projects. Also, they should link with formal reviews, evaluations and quality assurance outcomes.

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O9: E-learning initiatives are guided by institutional strategies and operational plans					
	Delivery	Planning	Definition	Management	Optimisation
University NZ-A					
University NZ-B					
University NZ-C					
University NZ-E					
University NZ-F					
University NZ-G					
University UK-A					
University UK-B					
University USA-A					
University NZ-D					
Slice A					
Slice B					
Slice C					
Slice D					
Slice E					
Slice F					
University Aus-A					
Slice A					
Slice B					
Slice C					
University Aus-B					
Slice A					
Slice B					
Slice C					
Slice D					

Figure O9-1: Summary of process capability across the assessed institutions

### Dimension 1: Delivery

The business impact and engagement of the institutional leadership in how e-learning is changing learning and teaching is not very strong. A few institutions show evidence of engagement by senior managers but in the other institutions it is clear that e-learning is not yet seen as a key aspect of the institutions business direction. Correlation analysis of eMM assessments has shown that capability in this dimension of this process is a critical determinant of capability across the entire process set, particularly the Definition dimension and in the provision of resources for dedicated e-learning design and development support.

### Dimension 2: Planning

Linkages between e-learning and learning and teaching strategy correlated with the existence of dedicated e-learning design and development support staff. It is unclear whether the existence of this investment was a result of strategic and business focus on e-learning or if it was a consequence of having staff who can engage effectively with the issues and influence policy and business planning activities. There was no evidence across the institutions that students are actively and formally involved in ensuring their needs are being met through the use of e-learning.

### Dimension 3: Definition

Very weak capability seen in most institutions with little evidence of e-learning having an impact on governance and business planning activities or incorporation of e-learning into formal planning and reviews.

*Dimension 4: Management*

Little evidence of reporting on the financial and operational impact of e-learning investment but no evidence that most institutions were engaging in a systematic collection of evidence to inform investment in e-learning.

*Dimension 5: Optimisation*

Very little evidence of capability.

**ACODE Institution Capabilities**

A range of capabilities were assessed, much as were seen in the other institutions. The Australian ACODE institutions showed a gap in capability in the *Planning* dimension suggesting that while they have clear strategic intentions for e-learning, which are communicated to staff directly and through policy and support activities, there is less evidence that students and staff are being given the opportunity to be involved in defining the strategic direction for e-learning.

## References

- Camp, R.C. (1989). *Benchmarking: The Search for Industry Best Practices That Lead to Superior Performance*. Milwaukee, Wisconsin, USA: ASQC Quality Press.
- Chickering, A. & Gamson, Z.F. (1987) Seven principles for good practice in undergraduate education. *AAHE Bulletin*, 39(7), 3-7.
- Ciber (2008) Information behaviour of the researcher of the future. Ciber briefing paper commissioned by JISC and the British Library, January 2008. Available from [http://www.jisc.ac.uk/media/documents/programmes/reppres/gg\\_final\\_keynote\\_11012008.pdf](http://www.jisc.ac.uk/media/documents/programmes/reppres/gg_final_keynote_11012008.pdf)
- El Emam, K. Drouin, J-N. and Melo, W. (1998) *SPICE: The Theory and Practice of Software Process Improvement and Capability Determination*, California: IEEE Computer Society.
- Fullan, M. (2001) *The New Meaning of Educational Change* (third edition). Teachers College Press, NY,USA.
- IHEP (2000) *QUALITY ON THE LINE: Benchmarks for Success in Internet-Based Distance Education*. The Institute For Higher Education Policy <http://www.ihep.com/Pubs/PDF/Quality.pdf> Accessed 20 Aug 2003
- Marshall, S (2005) *Determination of New Zealand Tertiary Institution E-Learning Capability: An Application of an E-Learning Maturity Model: Report on the E-Learning Maturity Model Evaluation of the New Zealand Tertiary Sector*, Report to the New Zealand Ministry of Education. 132pp. Retrieved January 10, 2006, from <http://www.utdc.vuw.ac.nz/research/emm/documents/SectorReport.pdf>.
- Marshall, S (2006a), *Zealand Tertiary Institution E-Learning Capability: Informing and Guiding E-Learning Architectural Change and Development*, Report to the New Zealand Ministry of Education. 118pp. Retrieved September 19, 2006, from <http://www.utdc.vuw.ac.nz/research/emm/>.
- Marshall, S (2006b) *eMM Version Two Process Guide*, Wellington: Victoria University of Wellington.
- Marshall, S, (2006c) *eMM Version Two Process Assessment Workbook*, Wellington: Victoria University of Wellington.
- Marshall, S. (2009) 'ACODE Benchmarks - eMM Version 2.3 Concordance,' Wellington: Victoria University of Wellington.
- Marshall, S & Mitchell, G (2002) 'An E-Learning Maturity Model?', *Proceedings of the 19th Annual Conference of the Australian Society for Computers in Learning in Tertiary Education* (Auckland, 2002), Australian Society for Computers in Learning in Tertiary Education. Retrieved January 10, 2006, from <http://www.unitec.ac.nz/ascilite/proceedings/papers/173.pdf>.
- Marshall, S & Mitchell, G (2003) 'Potential Indicators of e-Learning Process Capability', *Proceedings of EDUCAUSE in Australasia 2003* (Adelaide, May 6-9, 2003), EDUCAUSE. Retrieved January 10, 2006, from <http://www.utdc.vuw.ac.nz/research/emm/documents/1009anav.pdf>.
- Marshall, S & Mitchell, G (2004) 'Applying SPICE to e-Learning: An E-Learning Maturity Model?', *Proceedings of the Sixth Australasian Computing Education Conference* (Dunedin, January, 2004). Retrieved January 10, 2006, from [http://portal.acm.org/ft\\_gateway.cfm?id=979993&type=pdf&coll=GUIDE&dl=GUIDE&CFID=62903527&CFTOKEN=3085292](http://portal.acm.org/ft_gateway.cfm?id=979993&type=pdf&coll=GUIDE&dl=GUIDE&CFID=62903527&CFTOKEN=3085292).
- Marshall, S & Mitchell, G (2005) 'E-Learning Process Maturity in the New Zealand Tertiary Sector', Paper presented at the *EDUCAUSE in Australasia 2005 Conference* (Auckland, April 5-8, 2005). Retrieved January 10, 2006, from <http://www.utdc.vuw.ac.nz/research/emm/documents/E-LearningProcessMaturity.pdf>.
- Marshall, S & Mitchell, G (2006) 'Assessing sector e-learning capability with an e-learning maturity model', *Proceedings of the Association for Learning Technologies Conference*, 2006, Edinburgh, UK.
- Marshall, S.J. and Mitchell, G. (2007) *Benchmarking International E-learning Capability with the E-Learning Maturity Model*. In *Proceedings of EDUCAUSE in Australasia 2007*, 29 April - 2 May 2007, Melbourne, Australia. Retrieved January 8, 2008, from [http://www.caudit.edu.au/educauseaustralasia07/authors\\_papers/Marshall-103.pdf](http://www.caudit.edu.au/educauseaustralasia07/authors_papers/Marshall-103.pdf)



Marshall, S. (2009) ACOE Benchmarks - eMM version 2.3 Concordance. Report to the Australasian Council of Open and Distance Education. Wellington, NZ, Victoria University of Wellington. Paulk, M., Curtis, B. et al. (1993) Capability Maturity Model, Version 1.1. IEEE Software 10(4): pp18-27. Sherry, A.C. (2003) Quality and its Measurement in Distance Education. In Moore, M.G. and Anderson, W.G. (Eds) Handbook of Distance Education. Lawrence Erlbaum Associates, London, UK: 435-459. SPICE Software Process Assessment version 1.00: <http://www-sqi.cit.gu.edu/spice/> Accessed 18 Dec 2002

## Appendix One: The eMM explained

The e-Learning Maturity Model (eMM, Marshall and Mitchell 2002; <http://www.utdc.vuw.ac.nz/research/emm/>) provides a quality improvement framework by which institutions can assess and compare their capability to sustainably develop, deploy and support e-learning. The eMM is based on the Capability Maturity Model (CMM, Paulk et al., 1993) and SPICE (Software Process Improvement and Capability dEtermination, El Emam et al., 1998; SPICE, 2002). The underlying idea is that the ability of an institution to be effective in a particular area of work is dependent on their capability to engage in high quality processes that are reproducible and able to be sustained and built upon. The characteristics of an institution that enable high quality processes are to some extent able to be separated from the details that will vary depending on particular circumstances. This separation means that an e-learning capability analysis can be done independently of the technologies selected and pedagogies applied.

Maturity models like the eMM have been shown to assist organisations that want answers to questions like:

- Is the organisation successful at learning from past mistakes?
- Is it clear that the organisation is spending limited resources effectively?
- Does everyone agree which problems within the organisation are the highest priorities?
- Does the organisation have a clear picture of how it will improve its processes?

A key aspect of the eMM is that it does not rank institutions, but rather acknowledges the reality that all institutions will have aspects of strength and weakness that can be learnt from and improved. The rapid growth in the technologies being used, the ways that they are being applied across an ever widening group of academic disciplines, and the evolving skills and experience of teachers and students, means that e-learning is a moving target. Any benchmarking approach that presumes particular e-learning technologies or pedagogies is unlikely to meaningfully assess a range of institutions within a single country, let alone allow for useful international collaboration and comparison, particularly over an extended period of time.

As a consequence of the desire for the eMM to support technological and organisational change, the meaning of e-learning implicit in the eMM is broadly defined. At the heart lies the impact of computers and related communication technologies on the range of activities traditionally undertaken by teachers and learners. However, as the eMM is institutionally focused, the model considers the wider implications of the use of digital technology, most particularly the systems and resources needed to ensure that the use of technology by students and teachers is efficient, effective, and can be sustained operationally and strategically. As noted by Fullan:

“The answer to large-scale reform is not to try to emulate the characteristics of the minority who are getting somewhere under present conditions ... Rather, we must change existing conditions so that it is normal and possible for a majority of people to move forward”  
(Fullan 2001, page 268)

### Key Concepts of the eMM

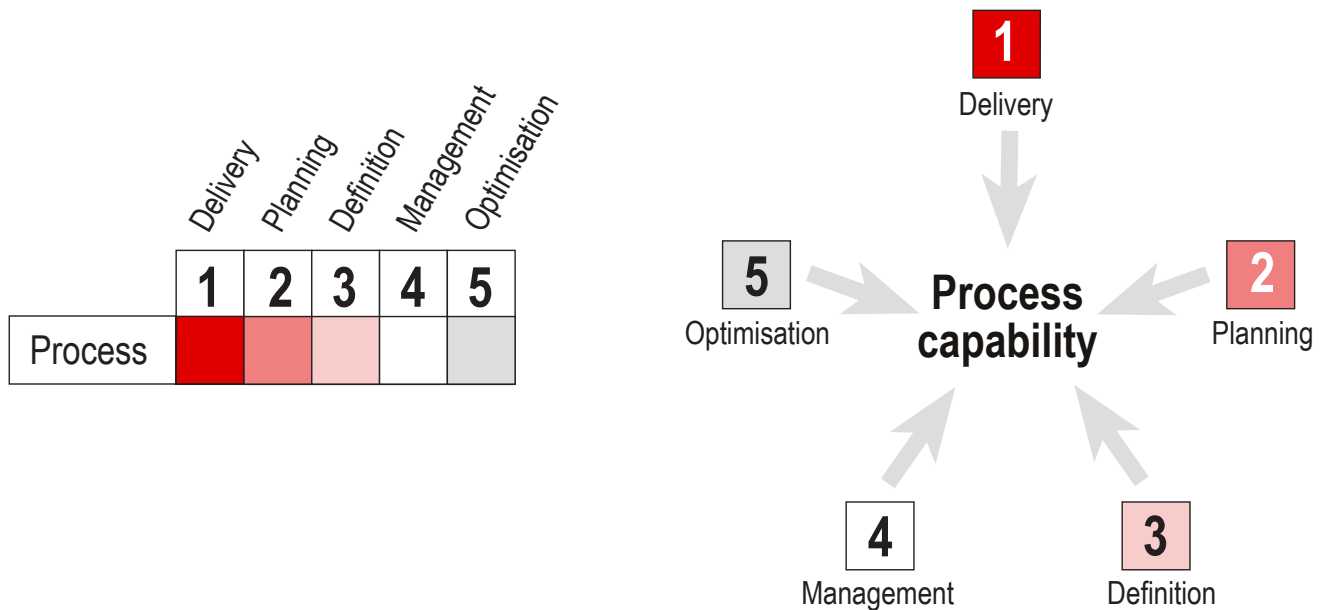
#### *Capability*

Capability describes the ability of an institution to ensure that e-learning design, development and deployment is meeting the needs of the students, staff and institution. Critically, capability includes the ability of an institution to sustain e-learning delivery and the support of learning and teaching as demand grows and staff change. Given the large investments made in e-learning, both by students and institutions, it is essential that delivery be robust and reliable. Delivery also needs to be able to cope with changes in the personnel involved, growth in the number of students, changes in technology requirements and skills, and the increasingly hostile and challenging digital communications environment.

### Dimensions of capability

The eMM assesses capability on five dimensions (Marshall and Mitchell, 2006). Rather than levels, which imply a hierarchical model of process improvement where capability is assessed and built in a layered and progressive manner, the concept underlying the eMM's use of dimensions is holistic capability. Each process is assessed from the synergistic perspectives of Delivery, Planning, Definition, Management and Optimisation.

In thinking about the relationship between these five dimensions it is helpful to consider them arranged as in Figure A1-1. The row of boxes used on the left to display summaries of process capabilities is helpful when performing comparisons within or between assessments, but it can imply a hierarchical relationship that is misleading when interpreting individual process capability results.



**Figure A1-1:** eMM Process Dimensions

The *Delivery* dimension is concerned with the creation and provision of process outcomes. Assessments of this dimension are aimed at determining the extent to which the process is seen to operate within the institution.

The *Planning* dimension assesses the use of predefined objectives and plans in conducting the work of the process. The use of predefined plans potentially makes processes more able to be managed effectively and reproduced if successful.

The *Definition* dimension covers the use of institutionally defined and documented standards, guidelines, templates and policies during the process implementation. An institution operating effectively within this dimension has clearly defined how a given process should be performed. This does not mean that the staff of the institution follows this guidance.

The *Management* dimension is concerned with how the institution manages the process implementation and ensures the quality of the outcomes. Capability within this dimension reflects the measurement and control of process outcomes.

The *Optimisation* dimension captures the extent an institution is using formal approaches to improve the activities of the process. Capability of this dimension reflects a culture of continuous improvement.

An organisation that has developed capability in all dimensions for all processes will be more capable than one that has not. Strong capability in particular dimensions that is not supported by capability in the other dimensions will not deliver the desired process outcomes. Capability in the *Delivery* and *Planning* dimensions that is not supported by capability in the other dimensions will be ad-hoc, unsustainable

and unresponsive to changing organisational and learner needs. Capability in the *Management* and *Optimisation* dimensions that is not complemented with similar strength at in the others will be unable to meet the process goals and liable to fail.

### Processes

The eMM divides the capability of institutions to sustain and deliver e-learning into five major categories or process areas (Table A1-1) that indicate clusters of strongly related processes. It should be noted however, that all of the processes are interrelated to some degree, particularly through shared practices and the perspectives of the five dimensions.

Process category	Brief description
Learning	Processes that directly impact on pedagogical aspects of e-learning
Development	Processes surrounding the creation and maintenance of e-learning resources
Support	Processes surrounding the oversight and management of e-learning
Evaluation	Processes surrounding the evaluation and quality control of e-learning through its entire lifecycle.
Organisation	Processes associated with institutional planning and management

**Table A1-1:** eMM version 2.3 process categories (revised from Marshall and Mitchell, 2003)

The processes used in version one of the eMM were developed from the ‘Seven Principles’ of Chickering and Gamson (1987) and ‘Quality on the Line’ benchmarks (IHEP 2000) as outlined in Marshall and Mitchell (2004). These had the advantage of being widely accepted as guidelines or benchmarks for e-learning delivery (Sherry 2003). However, experience in using them during the initial capability assessment of nine New Zealand institutions reported in Marshall (2005) identified some significant limitations.

Applying the recommendations from the evaluation of the first version of the eMM resulted in a reduced set of thirty four processes that were then subjected to further review through a series of workshops conducted in Australia and the UK (Marshall, 2006a). The processes listed below in Table A1-2 constitute the current version of the eMM (version 2.3).

Many of the processes in Table A1-2 apply to any form of learning and teaching. This is not unexpected, as e-learning is a particular form of learning, not a subset. The focus of these common processes in the context of the eMM is on their contribution to e-learning effectiveness and sustainability. Undoubtedly, this will relate strongly to wider learning and teaching activities, but this is not the focus of the eMM.

There are also some specific concepts, technologies or activities that may appear to be absent when reading this list of processes, for example, the commonly stated requirement that an institution have an e-learning strategy. In this case, the desired outcome is that an institution guides its investment and energies systematically and in line with defined learning and teaching goals that are clearly communicated to its staff and students. This is reflected in processes O1, O2 and O9. An e-learning strategy is a convenient and sometimes effective means to achieving this end.

There are no quantitative metrics apparent in these processes. The need for measurement of process outcomes by an institution is reflected in the eMM, particularly in the higher dimensions of *Management* and *Optimisation*. This enables the model to support the use of whatever metrics are sensible in the specific institutional context, while still assessing how effective the institution is at collecting and using such information.

### Practices

Each process in the eMM is broken down within each dimension into practices that define how the process outcomes might be achieved by institutions. The practices are intended to capture the key essences of the different dimensions of the processes as a series of items that can be assessed easily in a given institutional context. As an example, Table A1-3 lists the practices for the *Delivery* dimension of one process, L1.

<b>Learning: Processes that directly impact on pedagogical aspects of e-learning</b>	
L1.	Learning objectives guide the design and implementation of courses
L2.	Students are provided with mechanisms for interaction with teaching staff and other students
L3.	Students are provided with e-learning skill development
L4.	Students are provided with expected staff response times to student communications
L5.	Students receive feedback on their performance within courses
L6.	Students are provided with support in developing research and information literacy skills
L7.	Learning designs and activities actively engage students
L8.	Assessment is designed to progressively build student competence
L9.	Student work is subject to specified timetables and deadlines
L10.	Courses are designed to support diverse learning styles and learner capabilities
<b>Development: Processes surrounding the creation and maintenance of e-learning resources</b>	
D1.	Teaching staff are provided with design and development support when engaging in e-learning
D2.	Course development, design and delivery are guided by e-learning procedures and standards
D3.	An explicit plan links e-learning technology, pedagogy and content used in courses
D4.	Courses are designed to support disabled students
D5.	All elements of the physical e-learning infrastructure are reliable, robust and sufficient
D6.	All elements of the physical e-learning infrastructure are integrated using defined standards
D7.	E-learning resources are designed and managed to maximise reuse
<b>Support: Processes surrounding the support and operational management of e-learning</b>	
S1.	Students are provided with technical assistance when engaging in e-learning
S2.	Students are provided with library facilities when engaging in e-learning
S3.	Student enquiries, questions and complaints are collected and managed formally
S4.	Students are provided with personal and learning support services when engaging in e-learning
S5.	Teaching staff are provided with e-learning pedagogical support and professional development
S6.	Teaching staff are provided with technical support in using digital information created by students
<b>Evaluation: Processes surrounding the evaluation and quality control of e-learning through its entire lifecycle</b>	
E1.	Students are able to provide regular feedback on the quality and effectiveness of their e-learning experience
E2.	Teaching staff are able to provide regular feedback on quality and effectiveness of their e-learning experience
E3.	Regular reviews of the e-learning aspects of courses are conducted
<b>Organisation: Processes associated with institutional planning and management</b>	
O1.	Formal criteria guide the allocation of resources for e-learning design, development and delivery
O2.	Institutional learning and teaching policy and strategy explicitly address e-learning
O3.	E-learning technology decisions are guided by an explicit plan
O4.	Digital information use is guided by an institutional information integrity plan
O5.	E-learning initiatives are guided by explicit development plans
O6.	Students are provided with information on e-learning technologies prior to starting courses
O7.	Students are provided with information on e-learning pedagogies prior to starting courses
O8.	Students are provided with administration information prior to starting courses
O9.	E-learning initiatives are guided by institutional strategies and operational plans

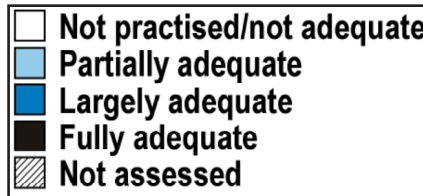
**Table A1-2:** eMM Version 2.3 Processes (revised from Marshall 2006b)

<b>Delivery</b>
Course documentation includes a clear statement of learning objectives.
Learning objectives are linked explicitly throughout learning and assessment activities using consistent language. See also: L8(1), D3(2) & O7(1)

**Table A1-3:** eMM Version 2.3 Process L1 Delivery dimension practices (Marshall, 2006b)

**Capability assessment criteria**

Each practice is rated for performance during an assessment from *Not Adequate* to *Fully Adequate* (Figure A1-2) by an external assessor (as is the case with the DFE assessment) or a self-assessor.



**Figure A1-2:** eMM capability assessment ratings (based on Marshall and Mitchell, 2003)

Each assessor refers to a representative description of the four levels of adequacy for each practice statement. Table A1-4 lists the four adequacy statements for the first practice in Table A1-3.

<b>Delivery</b>
Course documentation includes a clear statement of learning objectives.
<input type="checkbox"/> No formally stated learning objectives apparent in the course information supplied to students.. <input type="checkbox"/> Formally stated learning objectives provided to a limited extent, either as narrative descriptions of the course outcomes or only in documentation provided after enrolment. <input type="checkbox"/> Formally stated learning objectives normally provided in course documentation available prior to enrolment but are missing in some cases or inconsistently provided in the range of course documents. <input type="checkbox"/> Formal statement of course learning objectives clearly and consistently provided in course documents, including those available prior to enrolment, individual objectives clearly distinguished from general course description and information..

**Table A1-4:** eMM Version 2.3 Process L1, four adequacy statements for first *Delivery* practice (Marshall, 2007)

The ratings at each dimension are done on the basis of the evidence collected from the institution and are a combination of whether or not the practice is performed, how well it appears to be functioning, and how prevalent it appears to be.

Once each practice has been assessed, the results (for between one and four practices for each process dimension) are averaged and rounded down to give the rating for the given dimension of the process. This average is what appears in the carpet. In the example shown in Figure A1-3, the overall assessment for dimension one would be *Partially Adequate*.

<b>Process L1: Learning objectives are apparent in the design and implementation of courses (Dimension 1)</b>		
	<b>Assessment</b>	<b>Practices</b>
1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Course documentation includes a clear statement of learning objectives. Learning objectives are linked explicitly throughout learning and assessment activities using consistent language.

**Figure A1-3:** Example eMM practice capability assessment

### Assessment example

Once the assessment of capability is undertaken, the results can be interpreted. Figure A1-4 demonstrates some typical results showing a single process capability as assessed for five different sample institutions.

Process description	1	2	3	4	5
Institution A					
Institution B					
Institution C					
Institution D					

**Figure A1-4:** eMM capability assessment example

Looking at the summary assessments in Figure A1-4, it can be seen that **institution A** is not performing the process well with only evidence of ad-hoc attempts shown by the *Partially Adequate* rating supplied for the *Delivery* dimension and the absence of any capability in the other dimensions.

**Institution B** is significantly more capable in the process than either institutions A or C with evidence that the process is mostly performed well (the *Largely Adequate* rating at the *Delivery* dimension) and in a planned fashion (the *Largely Adequate* rating of the *Planning* dimension). Note that despite there being evidence of planning, this appears to be done without any attempt for consistency throughout the institution as no capability is shown within the *Definition* dimension.

**Institution C** on the other hand, while not as capable in the performance of this process as institution B, shows evidence of having defined standards or guidelines for performing the process (the *Definition* dimension). These appear not to be having an impact on actual e-learning projects as shown by the lower assessments for the *Delivery* and *Planning* dimensions.

**Institution D** shows a pattern of very good performance of the process (*Fully Adequate* rating for the *Delivery* dimension), supported by *Largely Adequate Planning* dimension capability and an initial set of standards or guidelines (*Partially Adequate* rating in the *Definition* dimension). This is the expected pattern of capability development, building from a base of process application behaviours that are becoming more standardised as the institution gains more experience.

Further analysis of these example results suggests that institution C will provide potential examples of useful standards, guidelines and policies, while institution D (and to some extent B) will provide individual examples of how to perform the process well. This type of analysis can be used across a number of processes and institutions within a sector to identify potentially useful approaches that are successful in the shared context and which can be adopted by all institutions seeking to build e-learning capability. Systemic weaknesses, where no good practice can be identified in the assessed institutions, present opportunities for potential research or investment within institutions as well as collaborative work within the sector and with regulatory or accrediting bodies.

Examination of process areas provides an institution with the ability to identify areas of related weakness that can be addressed strategically. Priorities can be easily identified by either comparison with other institutions, or by comparing process ratings within an institution.



