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## Hunters and Gatherers: Strategies for Curriculum Mapping and Data Collection for Assuring Learning (SP10 - 1862) - Final Report 2013

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## Hunters and Gatherers: Strategies for Curriculum Mapping and Data Collection for Assuring Learning (SP10 - 1862) - Final Report 2013

### Abstract

Assurance of learning (AoL) is an important process in educational settings. It evaluates how well an institution accomplishes the educational aims at the core of its activities, while assisting the faculty members to manage and improve programs and courses. Universities use the AoL process to provide both qualitative and quantitative indicators of performance of teaching and learning for the assessment of the quality of award courses (Chalmers, 2008). These indicators of performance guide the strategic directions, priorities, quality assurance and enhancement processes for teaching and learning. In addition to individual curriculum development, AoL can provide valid evidence to external constituents that the education provider is meeting its goals and has built-in strategies for improvement in the area of student learning outcomes.

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# Hunters and Gatherers: Strategies for Curriculum Mapping and Data Collection for Assuring Learning

(SP10-1862)



## Final Report 2013

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## List of Acronyms used

AACSB	The Association to Advance Collegiate Schools of Business
AAC&U	Association of American Colleges and Universities (see also VALUE)
ADTL	Associate Dean of Teaching and Learning
AHELO	Assessment of Higher Education Learning Outcome
ALTC	Australian Learning and Teaching Council
AoL	Assurance of Learning
AQF	Australian Qualifications Framework
AQHE	Assessing Quality in Higher Education
CLO	Course Learning Outcomes
CLA	Collegiate Learning Assessment
DEEWR	Department of Education, Employment and Workplace Relations
EQF	European Qualifications Framework
EQUIS	European Quality Improvement System
GA	Graduate Attribute
GQS	Graduate Qualities Scale
GTS	Good Teaching Scale
GSS	Generic Skills Scale
LTAS	Learning and Teaching Academic Standards
Leximancer	Qualitative data analysis software
NILOA	National Institute for Learning Outcomes Assessment
Nvivo	Qualitative data analysis software
OECD	Organisation for Economic Co-operation and Development
OLT	Office for Learning and Teaching – formerly ALTC
QAA	Quality Assurance Agency for Higher Education
ReView	Online marking software
SOS	Subject Overview Spreadsheet
SPARKPlus	Self and Peer Assessment Review Kit software
TEQSA	Tertiary Education Quality and Standards Organisation
TLO	Threshold Learning Outcomes
VALUE	Valid Assessment of Learning in Undergraduate Education

## Executive Summary

Assurance of Learning (AoL) is an important process in educational settings. It evaluates how well an institution accomplishes the educational aims at the core of its activities, while assisting the faculty members to manage and improve programs and courses. Universities use the AoL process to provide both qualitative and quantitative indicators of performance of teaching and learning for the assessment of the quality of award courses (Chalmers, 2008). These indicators of performance guide the strategic directions, priorities, quality assurance and enhancement processes for teaching and learning. In addition to individual curriculum development, AoL can provide valid evidence to external constituents that the education provider is meeting its goals and has built-in strategies for improvement in the area of student learning outcomes.

This project concentrated on two elements of the AoL process:

**Mapping** program learning objectives;

**Collecting data** on student performance in relation to each learning objective.

These two critical elements were investigated through a sector-wide audit of Australian universities. The initial data collection phase was conducted in the Business education sector through an interview process with 25 of the 39 Associate Deans Teaching and Learning (ADTL), with eight follow-up focus groups with institutions that exhibited good practice. For the second phase of data collection a Delphi methodology was adopted. Experts in law, pharmacy, nursing and engineering were interviewed. An online survey was undertaken with the wider field of providers and the findings were collated and returned to the key personnel for comment. The factors considered in the audit were the range of approaches for mapping and collecting AoL data adopted by Australian universities; identification of standard approaches as well as contrasting approaches; common challenges in assuring Graduate Attributes (GAs); good practice strategies; and opportunities for innovative practice and change management.

Based on the audit, a range of good practice strategies were developed for curriculum mapping and data collection in assuring GAs. These recommended strategies include the following:

- **Holistic** – A ‘whole of program’ approach was important to ensure students’ progress in a way that ensures they have the opportunity to be introduced to and then further develop GAs before they are asked to demonstrate the standards expected to have been achieved by graduation.
- **Integrated** – In order for GAs to be valued by academic teaching staff and students, they had to be embedded in the curriculum and linked to assessment.
- **Collaborative** – The process had to be developed in conjunction with the academic teaching staff in an inclusive rather than top-down approach, so that staff engaged in and recognised the importance of the process.
- **Maintainable** – Any process that is implemented has to be sustainable to ensure it is not

reliant on individuals or resources.

Leadership techniques which were found to be effective in implementing these strategies were documented. The approaches identified could be categorised under Kotter and Cohen's (2002) cultural change strategies:

- **Get the vision right** – Establish a simple vision and strategy focusing on aspects necessary to drive service and efficiency;
- **Executive support** – Strong senior management commitment and leadership demonstrating a constant and high-level drive for staff engagement until AoL becomes an institutional norm;
- **Build a guiding team** – Developing leadership and champions among unit and program level staff, to share practices and promote the benefits that come from engaging in the process;
- **Training** – Providing professional development opportunities to discuss and resolve difficulties and tensions around AoL;
- **Reward and recognise** – Demonstrating success and effectiveness by convincing staff on the evidence that AoL makes a difference;
- **Empowerment** – Making the process inclusive by academics collaborating in the development and implementation of the process;
- **Communication** – For buy-in.

In addition, an independent review of existing tools to improve efficiency in mapping and data collection of AoL and practical strategies has been undertaken to improve current practice. The project team has disseminated this tool review, strategic leadership recommendations and the project outcomes at national and international conferences; through journal papers; invite-only addresses; consultations; and other dissemination events across five states catering for over 170 participants. A series of additional resources were developed and these can be found on the project website at [www.assuringlearning.com](http://www.assuringlearning.com).

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# Chapter 1 Project Overview

## Project Brief

AoL is a quality enhancement and quality assurance process used in higher education. It involves determining program learning outcomes and standards, and systematically gathering evidence to measure student performance in these. The systematic assessment of whole of program goals provides a basis for curriculum development, continuous improvement and accreditation.

The key stages in assuring learning involve:

1. Establishing graduate attributes and measurable learning objectives for the program;
2. Mapping learning objectives to suitable units of study in the program (where possible allowing for introduction, further development and then assurance of the objectives);
3. Aligning relevant assessment tasks to assure learning objectives;
4. Communicating learning objectives to students;
5. Collecting data to show student performance for each learning objective;
6. Reporting student performance in the learning objectives;
7. Reviewing reports to identify areas for program development ('Closing the Loop').

(AACSB White Paper, 2007)<sup>1</sup>

External agencies can be an important consideration for discipline areas in universities. Traditionally, the Australian University Quality Agency (AUQA) was the principal national quality assurance agency in higher education with responsibility for providing public assurance of the quality of Australia's universities and other institutions of higher education, and assisting in enhancing the academic quality of these institutions. The Australian Government established a new national regulatory and quality agency for higher education, the Tertiary Education Quality and Standards Agency (TEQSA), to operate from January 2012. In line with the establishment of TESQA, the Australian Learning and Teaching Council (ALTC) commissioned a Learning and Teaching Academic Standards Project (LTASP; 2010) to develop discipline-specific threshold benchmark standards that would be applied across the tertiary sector. The LTASP recognised the challenges of aligning the proposed benchmarks with the curriculum and the need for provision of evidence of student achievement, including archiving student work for external peer review purposes (Freeman, 2010). The need for efficiency in the AoL process was also identified and it was suggested that existing tools such as ReView and SPARK<sup>PLUS</sup> be used to streamline the process.

The Hunters & Gatherers project builds on an earlier ALTC project: 'Facilitating staff and

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<sup>1</sup> Association to Advance Collegiate Schools of Business (AACSB) is a significant accreditation agency for business schools in Australian universities.

student engagement with graduate attribute development, assessment and standards in Business faculties' (2009). The aim of the 2009 project was to promote and support strategic change in advancing GA development through the engagement of staff and students with learning and assessment processes that embed GA development throughout the curriculum. An online assessment system, ReView, which allowed staff to engage with the GAs by developing criteria that assessed GAs within the set assignments, was implemented in the participating business schools. Students were encouraged to engage with these attributes through self-evaluation of their performance for each criterion. A reported outcome was an increase in staff awareness of GAs, as academic staff developed assessment criteria writing skills and established feedback mechanisms that aligned with GAs. Student survey results demonstrated that student awareness of GAs and understanding of assessment criteria improved as a result of the implementation of this process.

In allied work, the ALTC-funded 'B Factor' Project (Radloff et al., 2009) found that academic staff beliefs, and low levels of confidence and willingness to teach and assess GAs, must be acknowledged if universities are to ensure that graduates are equipped for the workplace. The current project considered staff perspectives in examining existing practices for AoL and when making recommendations for effective practices.

## Project Objectives

This project concentrated on two elements of the AoL process (related to points ii and v from the AACSB 2007 white paper):

- **Mapping learning objectives** that relate to GAs;
- **Collecting data** on student performance in relation to each learning objective.

The emphasis was on informing strategy in a way that supports efficient and manageable assurance mechanisms for academic staff. The elements were considered through a sector-wide audit which included:

- Institutional, national and international experiences of mapping and data collection for AoL;
- Mechanisms employed to capture AoL data;
- The impact of mapping on the curriculum and on teaching practice, addressing issues of balance between content and GAs;
- Identifying individual responses from teaching academics and from an administration level through focus group discussions, in order to capture data that highlights areas of good practice and areas for development.

The audit examined not only the regulatory practice of mapping and data collection but also provided a platform for gathering information that highlighted innovation and change principles.

The audit data were critically analysed to identify:

- The range of approaches for mapping and collecting AoL data adopted by Australian universities, identifying standard as well as differing approaches;
- Opportunities for innovative practice and change management.

Finally, a series of resources and existing tools were collated and reviewed with a view to

providing resources and information on various means of increasing efficiency in mapping and data collection of AoL information. Practical strategies for improving current practice and examples of good practice are also included.

## Structure of the Report

Chapter 1 provides an overview of the Hunters & Gatherers project. Chapter 2 presents an outline of the methods used to address the project aims along with a discussion of project stages and key stakeholders. Chapter 3 is a review of literature and empirical findings. Chapter 4 describes the project outcomes and deliverables, and includes good practice principles for curriculum mapping and data collection for assuring learning. Chapters 5 and 6 respectively are a discussion of the implications of the project for future practice and engagement, and an overview of the dissemination of the project outcomes.

# Chapter 2 Methodology

## Project Stages

The key guiding questions for the project were:

- What is the current practice of mapping GAs in the curriculum within the higher education sector (addressed through the audit stage of the project)?;
- What is the current practice of collecting GA data in the higher education sector (addressed through the audit stage of the project)?;
- What are the main challenges faced by the sector in mapping and collecting GA data (addressed through analyses of the audit data)?;
- Is there a set of identifiable good practice principles that could inform the sector of mapping and data collection mechanisms (addressed through analyses of the audit data)?;
- What are the tools currently being used to support the AoL process (addressed through the development stage of the project)?

The project was undertaken in three stages, each of which contained dissemination processes to share findings as the project progressed:

1. A survey of all Australian universities collected data on *approaches to summative assessment of program-level learning outcomes that have validity in the context of academic quality assurance*. A survey of all Australian universities was complemented by interviews and focus groups to identify how these institutions were: mapping learning outcomes throughout the curriculum and into specific, relevant assessment tasks; and collecting AoL data. The survey was piloted in business faculties initially with assistant/associate deans of teaching and learning. Data were also collected through focus groups with teachers and non-teaching support staff. These groups were initially used to refine the survey instrument and secondly to collect data. The revised survey was distributed to other discipline groups (Law, Pharmacy, Engineering, and Nursing). A Delphi approach (see page 16) was taken within each discipline to explore both current practice and recognised problems with mapping and data collection methods. This involved interviews with key stakeholders in academe and academic leaders. The focus groups and interviews also acted as a form of dissemination during the early stages of the project, as the project objectives were widely discussed among the study participants.
2. An evaluation was conducted to *provide analysis and critical review* of the Stage 1 survey to identify challenges and good practice. The information collected in the interviews and focus groups was considered within and across disciplines to look for similarities and differences, good practice principles, and issues and areas of concern. The findings from this extensive audit were translated into strategies that were documented and made available for dissemination purposes.
3. A set of resources was developed to support institutions in their efforts to design and undertake AoL, including a review of online tools to improve efficient practice. An online resource kit was developed to support educators on effective practice in mapping learning outcomes and collecting AoL data, based on the analysis of the audit. These online

resources contain a review and recommendations of appropriate tools that can be utilised to make the process more efficient.

**Table 2.1 Brief Project Timeline**

Timeline	Key Tasks
<b>Planning and preparation</b>	
Feb–Apr 2011	<p>Establishment and refinement of project:</p> <ul style="list-style-type: none"> <li>• Develop detailed project management plan;</li> <li>• Employ project manager and establish reference group;</li> <li>• Develop and submit ethics application;</li> <li>• Project manager to develop and implement a project team communication strategy including records, meetings, repositories, reporting, etc.;</li> <li>• Develop auditing tool;</li> <li>• Confirm external evaluator and develop evaluation framework;</li> <li>• Project team to reflect on and document learning from Stage 1 of the Project.</li> </ul>
<b>Stage 1: Auditing</b>	
May–Aug 2011	<p><i>Phase 1:</i> Collect audit data on mapping and data collection of AoL in the business sector:</p> <ul style="list-style-type: none"> <li>• Survey administered to key AoL administrators across all Australian Universities providing business education;</li> <li>• Focus group with a selection of key stakeholders to discuss initial findings and to refine audit tool;</li> <li>• Formative evaluation by project team and document learning from Phase 1;</li> <li>• Report progress to the Project Reference Group;</li> <li>• Dissemination of project learning by ‘workshopping’ the findings at biannual T&amp;L Network meeting.</li> </ul>
Sep 2011–Feb 2012 <b>Objective 1</b>	<p><i>Phase 2:</i> Collect audit data on mapping and data collection of AoL in the disciplines of law, engineering, pharmacy, and nursing:</p> <ul style="list-style-type: none"> <li>• Survey administered to key AoL administrators across all Australian Universities providing the relevant education for each sector;</li> <li>• Focus group with selection of key stakeholders to discuss findings and their implications;</li> <li>• Formative evaluation by project team and documentation of learning from Phase 2;</li> <li>• Report progress to the Project Reference Group.</li> </ul>
Mar–Jul 2012 <b>Objectives 2 &amp; 3</b> <b>Deliverables 1 &amp; 2</b>	<p><i>Phase 3:</i> Critical review of audit findings:</p> <ul style="list-style-type: none"> <li>• Analyse audit data;</li> <li>• Business;</li> <li>• Other Disciplines;</li> <li>• Compare findings with International Bodies (e.g. QAA, AACSB);</li> <li>• Prepare Strategic Paper;</li> <li>• Formative evaluation by project team and reflection on learning from Phase 3;</li> </ul>

	<ul style="list-style-type: none"> <li>• Year 1 report submitted to the ALTC and Project Reference Group.</li> </ul>
<p>Aug–Nov 2012</p> <p><b>Objectives</b> 4, 5 &amp; 6</p> <p><b>Deliverables</b> 3 &amp; 4</p>	<p><i>Phase 4: Online Resources (with review of online tools)</i></p> <ul style="list-style-type: none"> <li>• Develop online resources to support mapping and data collection for assuring learning;</li> <li>• Review and recommend tools to make mapping and data collection more efficient (including adapting existing tools to suit the purpose);</li> <li>• Dissemination workshops (one in each of the five mainland states) to showcase and disseminate the strategic paper and resources;</li> <li>• Academic conferences and publications;</li> <li>• Formative evaluation by project team and reflection on learning from Phase 4.</li> </ul>
<b>Review and Reporting</b>	
<p>Dec 2012– Feb 2013</p> <p><b>Objective</b> 7</p> <p><b>Deliverable</b> 4</p>	<ul style="list-style-type: none"> <li>• Evaluation report by external evaluator;</li> <li>• Final report submitted to ALTC and Reference Group.</li> </ul>

## Project Methods

### Ethics Approval

The project obtained UTS Human Research Ethics Committee (HREC) approval (UTS HREC 2011-145A). This UTS approval was forwarded to all partner institutions where their ethics committees used the original application to sanction the project within each participating university.

### Pilot Study – Business Interviews

Due to the limited empirical evidence and literature on AoL practice in Australian universities, we used exploratory interviews to examine the phenomenon and advance our knowledge in the area. We engaged the Australian Business Deans' Council (ABDC) to assist us in the recruitment of ADTLs, or equivalent, in Australian business schools. ADTLs are responsible for the strategic implementation of the school's curriculum and teaching and learning processes, and are able to articulate the strategic development of AoL, as well as the implementation of these processes. They provided not only a good entry point into the higher education institution but also access to the management perspective of developing the processes of assuring learning. For schools where an ADTL position did not exist, a person with equivalent knowledge of institutional teaching and learning processes was sought. Email contact was made with the 39 ADTLs across all Australian business schools and 25 indicated they would be happy to proceed with an interview, resulting in a response rate of 64 per cent.

An analysis of the respondent sample found that participants were from a range of institutions in terms of state, AACSB accreditation status and network affiliation (Group of



Eight (older established institutions); Australian Technology Network; Regional Universities Network; and Innovative Research Network) (see Table 2.2 below). It was particularly important that externally accredited schools were not over-represented ( $z = -0.68, p > 0.05$ ).

**Table 2.2 Characteristics of Sample Compared to all Australian Business Schools in the ABDC**

State	NSW	VIC	QLD	WA	SA	TAS	ACT
Sample	7(28%)	6(24%)	6(24%)	3(12%)	1(4%)	1(4%)	1(4%)
Pop.	10(26%)	9(23%)	9(23%)	4(10%)	3(8%)	1(5%)	4(5%)
External Accreditation Status		Accredited			Not Accredited		
Sample		8(20%)			20(80%)		
Pop.		9(23%)			29(77%)		
Network Affil.	Go8	ATN	RUN	IRU	Other		
Sample	6(24%)	4(16%)	4(16%)	1(2%)	10(44%)		
Pop.	8(20%)	5(12%)	6(15%)	7(17%)	13(33%)		

A semi-structured telephone interview survey (Appendix A) was developed drawing on existing literature, and moderated by advisors to the research project. Effort was made to keep the interview informal and conversational to allow each participant the opportunity to explain the processes and events in their own terms, with the interviewer responsible for the structure and purpose of the dialogue (Bryman & Bell, 2007). Each interview lasted approximately 45 minutes and was recorded and transcribed verbatim. Participation was voluntary, responses were treated as anonymous and results confidential.

### Pilot Study – Business Focus Groups

The individual interviews were complemented with focus group interviews with participants from four institutions that were identified through the initial interview process as having expertise in embedding AoL into their educational processes (Appendix B). The focus groups consisted of four groups of senior management (one from each of the four institutions) who reported on the leadership strategies for AoL and four groups of teaching academics (one from each of the four institutions) who reported on the implementation of these strategies in practice. An important factor for this study was to ensure that each focus group was relatively homogeneous to ensure people felt comfortable interacting with one another. Esterberg (2002) suggests that this format encourages participants to express their opinions freely. All participation in the focus groups was voluntary and responses were treated as anonymous.

**Table 2.3 Characteristics of Business Focus Groups Conducted**

Type of University							
Research Focused	Technology Focused	Regional	Other	Total			
0	6	2	0	8			
Location of University							
Australian Capital Territory	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Total
0	2	2	4	0	0	0	8

The focus groups were conducted to discuss issues that arose from the initial interviews with senior faculty leaders (Lawson et al., 2011). The objective of the follow-up focus groups was to explore: the key elements of understanding required in building group processes in AoL; the challenges faced and the impact of AoL on continuous improvement, teaching and learning; and organisational culture.

### Law, Pharmacy, Engineering and Nursing Disciplines – Delphi Approach

The project set out to undertake an extensive audit of AoL practices across four additional disciplines (law, engineering, pharmacy, and nursing) following the business school pilot study. A brief review of each discipline was compiled including ALTC discipline scholars, key informants and consideration of relevant accreditation bodies' requirements on the demonstration of student competencies. A Delphi approach was used to work with key stakeholders and refine the data and outcomes. The Delphi approach is where experts are used to generate then confirm data, which reduces the number of participants required (Rescher, 1998). This approach was used in conjunction with an Australia-wide online survey to gain data additional to that gathered from the experts.

The extension of the audit to the law, pharmacy, engineering, and nursing disciplines began with a process of consultation with ADTLs (or equivalent) from each discipline. This included an informal discussion about the role of GAs, and mapping and measurement practices within the discipline. These experts were also able to give a general view of mapping and data collection in the discipline and provide key informants with whom to follow up. It was also used as an opportunity to obtain feedback on the appropriateness of the existing interview schedule and survey. Feedback on the interview and survey suggested that both would be fit for purpose, and would be well understood by the ADTLs across universities in their discipline.

Following the completion of seven interviews and ten survey responses in the law discipline, together with consultations with accreditation and deans' associations across the second stage disciplines, it became clear that AoL was significantly less developed in these disciplines compared to the business discipline. While mapping was fairly common, particularly in disciplines with well subscribed external accreditation processes (e.g. engineering), very few ADTLs said that they had anything like the data collection processes described in business. As we found limited examples of current practices, and limited good practice principles to draw from, the project team decided that the aims of the project could be best pursued through a different approach.

Instead of attempting to include all universities with schools/faculties in the discipline, the approach focused on contacting a number of key people within specific disciplines, primarily heads of deans' associations and ALTC discipline scholars. These discipline experts were asked to suggest a number of key informants that represented schools/faculties with good or innovative practice in teaching and learning within that discipline relative to AoL. These key informants were then offered an interview, following a shortened version of the original interview schedule. The information from the interviews and the surveys were compiled into a summary report broken down into the following categories that corresponded with the questions in the interview schedule (philosophy, motivators, mapping, data collection, closing the loop, challenges/solutions). Within these categories the information provided by participants was paraphrased (although direct quotes were sometimes used to illustrate a point) and summarised.

The summary reports (collated from both interviews and surveys) were forwarded to the key informants who were asked to provide confidential feedback. This Delphi-like approach helped to improve the external validity of the data collected, as well as serve as a form of member-checking among the participants (Landeta, 2006).

**Table 2.4 Summary of Participation Form in the Law, Pharmacy, Engineering, and Nursing Disciplines**

	Engineering	Law	Nursing	Pharmacy
Interviews	3	7	4	4
Survey Responses	3	10	0	2

### Law, Pharmacy, Engineering and Nursing Disciplines – Online Survey

Recognising the significant cost involved in undertaking and transcribing interviews across the different disciplines, the project team developed an online survey from the interview questionnaire to use within the other disciplines. Most of the questions were taken directly from the interview questionnaire, with some rephrasing to suit the format and some changes to the terminology to ensure the survey was accessible to a multi-disciplinary audience. Some questions were condensed or removed to shorten the questionnaire and to emphasise the questions about mapping and measurement processes. The questionnaire was built using the web survey tool *Qualtrics*. The length of the survey depended on the respondents having mapping and data collection processes in place, with the average completion time around six minutes.

As with the interview questionnaire, the online questionnaire survey was piloted with ADTLs or equivalents from the lead institution. Based on their advice, some of the language was simplified or explained in general terms in the survey. Overall the staff providing feedback on the survey indicated it was clear and fit for purpose across disciplines.

The relevant associations of deans were used to distribute the online survey among the broader group of ADTLs within specific disciplines by email or newsletter.

## Teaching, Assessing and Providing Feedback – Focus Groups

Responding to a key issue identified from the interviews in the first phase – namely the difficulty in teaching, assessing and providing feedback on GAs – a number of additional focus groups were planned across three institutions that were identified as having good practice working with GAs. Whereas the previous focus groups had focused on the differences in the perceptions and experiences between leaders and academics, the objective of the second round of focus groups was to workshop how these staff worked GAs into their teaching practice.

ADTLs within the project team institutions arranged the focus groups, primarily requiring the identification of staff (academic and professional) that had substantial practice in working with GAs in their teaching. The approach taken was a world café format focus group (Fouché & Light, 2010) where the group was divided into three, with each smaller group given one of the three categories for discussion: teaching GAs; assessing GAs; and providing feedback to students on GAs. Individuals then rotated to different discussion areas until they all had an opportunity to input into each category. This approach was adopted as it allowed for open discussion with different people on each of the topic areas. Participants discussed and recorded the issues for each category and then moved into a different group, with one person from each group staying behind to explain the discussion.

Data were recorded by the participants and collected in the form of mind-maps of the discussions from the three groups and a recording of the presentation of each mind-map to the greater group.

### Analysis

The analysis of the interviews was conducted in two stages: an initial automated content analysis conducted using the Leximancer 2.25 software and a separate manual content analysis using the NVIVO software. Content analysis allows the researcher to analyse large volumes of data in a systematic way, to discover and describe to the interview subjects the focal issues (Krippendorff, 2004).

Two types of reliability – stability and reproducibility – were important to our aims of identifying major issues and outcomes, and making best practice recommendations. Stability relies on the researcher consistently coding the text in the same way, over time. Reproducibility relies on human coders consistently classifying the text. The use of computer-aided textual analysis allowed for systematic, comprehensive and exhaustive analysis (Gephart, 2004). Our use of Leximancer and NVIVO programs meant that computer-aided text analysis could be reviewed; interpreted and reinterpreted by a range of our researchers. Researchers comparing the outcomes of human and computer-based coding have recommended that software represent an aid for human interpretation (Krippendorff, 2004), and as a way to reduce the amount of text needed to be examined by a human coder (Crowston, Allen & Heckman, 2011). According to Gephart (2004), a robust approach to analysis incorporates the stability and reproducibility of software-based coding while allowing for the understanding and interpretation of meaning that comes from human coding (Welsh, 2002).

Leximancer concept maps were examined for overall patterns and proximity followed by a more detailed analysis of concept content (via scrutiny of the thesaurus for each concept) and co-occurrence. A further map was generated and the concepts assessed for meaning by our researchers looking at the thesaurus behind each concept and by checking the text evidence behind each concept. We also looked for the absence of meaningful concepts, going to the list of 'frequent words' found in the concept-seed editing stage for the words that may draw out more meaningful information from the text. Once a meaningful and stable map was established, it became the starting point for further interpretation.

Drawing on Hsieh and Shannon's (2005) directed content analysis, sections of the text were coded into eight categories:

- Philosophy of AoL;
- Motivations for AoL;
- Curriculum mapping;
- Data collection;
- Timing of assuring learning;
- Closing the loop;
- Main challenges;
- Solutions to challenges;
- Sustainability.

Upon examination it was evident that these Leximancer categories could be aligned to the research areas. The text within these categories was coded through an inductive process of identifying sub-categories, in recognition of the importance of homogenous and distinct categorisations as suggested by Lincoln and Guba (1985). Over the course of the coding, the labels and definitions of the different categories often changed, reflecting the meaning brought by the additional text (Miles & Huberman, 1994). From this stage the raw text for each category was paraphrased into short summaries to provide depth to the results from the Leximancer analysis.

Complementing the exploration phase of the Leximancer automated analysis of the text, an analysis of the interviews was undertaken using NVIVO 9 software to validate the aforementioned categories. This second phase of the analysis sought to independently verify the categories produced by the Leximancer analysis, while also providing additional depth and detail. Responses were coded into nine categories covered by the interview. From here a number of sub-questions were identified that participants had responded to. The coded text was then paraphrased and condensed into a set of descriptions which were compared to the conclusions of the Leximancer analysis. When the independent human coding and the automated coding were compared for validation it was found that the key findings from each analysis supported each other (e.g. the philosophy was about providing evidence of learning and curriculum improvement; accreditation was the main motivator for AoL).

## Tool Review Approach

The tool review was undertaken in two parts: firstly through a discussion of tools in the interviews with the ADTLs and how these were used; and secondly via an independent review of tools undertaken by a professional educational consultant (Patrick Boyle). A large part of understanding the processes of AoL focused on the use of specialist software; the interviewers asked participants not only what tools they were using, but how these fitted into the processes in place for mapping GAs and the collection of data. Participants identified a wide variety of tools, including many that had been developed within their own faculties and institutions.

An appraisal of the most common tools the participants had indicated were in use (six mapping and six data collection tools) was undertaken by an independent reviewer. It was determined that an external review process was required due to the close connections of many of the project institutions to the tools under review. The criteria of this review was developed acknowledging the important elements of an effective AoL process identified from the interviews. Chiefly this review was concerned with how these tools could be used to support AoL processes (See Appendix C for review templates). The criteria are outlined below.

### Review Criteria: Curriculum Mapping Tools

- Soundness of pedagogical foundations/principles reflected by the tool;
- Facilitates articulation of learning objectives (intended learning outcomes) at most important levels (e.g. institutional, program, unit of study);
- Facilitates or encourages specification of key features of planned student learning experiences aligned with the learning objectives;
- Facilitates articulation of main assessment elements at unit-of-study level and how these are linked to provide a program-level picture of effective assessment;
- Enables whole of program overviews of curriculum elements and their relatedness and related helpful functions, such as being able to 'drill down' to examine next levels of detail and automatic real-time data updating/repopulating across tables;
- Overall comprehensiveness in terms of coverage of the main curriculum elements (as above) and provision of guidance for establishing sensible pedagogical links between these elements at program and unit-of-study levels;
- Quality of induction and explanation support encapsulated by the tool (e.g. the functional emphasis of the tool; pedagogical/conceptual soundness; clarity of explanations);
- Ease of use, without the need for much supplementary professional development;
- Overall clarity, including internal logic, lay-out design, visual presentation;
- Efficacy for enabling participation and interaction between users.

### Review Criteria: Data Collection Tools

- Soundness of pedagogical foundations/principles reflected by the tool;
- Efficacy for helping educators to record assessment results in clear and efficient ways; mainly quantitative data but also qualitative;

- Efficacy/power for deriving data, including summaries or aggregated data, and relational data sets, etc. (e.g. results across different assessments for a subject or program-level learning objective);
- Efficacy for helping educators and/or students with feedback-related matters (e.g. the effective and efficient recording and communicating of helpful feedback);
- Quality of induction and explanation support encapsulated by the tool (e.g. the functional emphasis of the tool; pedagogical/conceptual soundness; clarity of explanations);
- Ease of use, without the need for much supplementary professional development.
- Clarity of the user interface, including internal logic, overall lay-out design, visual presentation;
- Efficacy for enabling participation and interaction between users.

## International Perspective – Desktop Survey

Information regarding the context of AoL across different international jurisdictions involved a variety of sources. Primarily information came from the websites and publications of the relevant statutory body within each jurisdiction. A number of informal discussions were undertaken with these agencies in order to more quickly navigate through the information available about their role and how it related to mapping and data collection for AoL. Drawing from the AACSB website, universities with accreditation were identified in order to locate information about their processes and how they related to the requirements of demonstrating student learning outcomes in that jurisdiction. A number of journal articles and reports from international research bodies were also reviewed.

## Online Resources Evaluation

An online survey was developed (see Appendix D) using SurveyGizo to capture feedback on the online resources and website. Participation for this survey has been promoted at all dissemination events and the access is via the front page of the website. The survey is a series of short qualitative and quantitative questions requiring an open answer response or an answer using a Likert Scale, submitted anonymously and electronically. Responses to the survey have been minimal to date.

## Website Evaluation

In order to gain feedback on the website two strategies were implemented:

- i. Website survey (link embedded in front page and distributed by email to event attendees) (See Appendix E);
- ii. Google analytics – this is a tool that allows you to review the types of visitors to the site, time spent on the site and pages of highest interest.

This information was used both to evaluate and further develop the site.

## Dissemination Evaluation

Upon completion of the five dissemination events attendees were prompted to complete an evaluation survey to obtain their feedback on the event itself, the project and the impact of

the project on practice (See Appendix F). The response rate for these surveys was good with 170 attendees and 104 returns (62% response rate).

## External Evaluation

A professional approach to the evaluation of the project's processes was an integral part of the project. Accordingly, the leadership team sought appropriate expertise in evaluation of the project's planning and operations. The overall evaluation strategy was based on three main purposes: formative; summative; and learning for the future. Collectively these broad purposes enabled the achievement of two other important goals of evaluation that aspire to best practice: success optimisation for the project(s); and provision of evaluation to meet internal and external needs or purposes.

Internal needs for each institution include improvement of implementation and optimal stakeholder engagement. External needs (purposes) include the satisfaction of accountability requirements. In light of these broad purposes, the evaluation strategy aimed for development–facilitation and merit–performance assessment strands. Building on these, the evaluation strategy placed high value on:

- Ongoing systematic engagement with key project stakeholders;
- Evidence-based determination of the merit and worth of the primary intended outcomes of projects;
- Capturing and assessing the value of significant unintended outcomes;
- Assessing the efficacy of processes; both project implementation and those developed as project outcomes;
- Ensuring an information-driven reflective and improvement-focused approach to project implementation and management;
- Learning and recording learning that will help to enhance future project (or phase) design and implementation;
- Stakeholder judgments of the overall value of the projects.

(See Appendix G for Key Evaluation Questions).

An external examiner, Professor Sally Kift, was appointed and consulted regularly. Professor Kift has engaged with the project through attending project team meetings and commenting on materials as they have been developed. Professor Kift completed a first-year interim report on the project, interviewing two key stakeholders, and assisted with the evaluation of the impact of the work to date.



**Table 2.5: Overview of types of Data, Providers and Collection Methods**

Data/Evidence Collection Method	Types of Data/Evidence	Providers	KEQs Served
Document Capture & Log	Documented/Web-based outputs (e.g. resources; strategic paper; minutes; results; feedback data; publications)	PT/PO	All
EEC Interviews, Workshop Feedback & Website Survey	Perceptions of merits/judgments on project benefits/strategies	Ref/WPP	4, 5, 6 b
EEC Interviews, Workshop Feedback & Website Survey	Perceptions of merits/judgments on project resources	Ref/WPP	4, 5, 6 e
EEC Interviews	Judgments on project outcomes, strategies, merit and overall value	PT/PM	All
EEC Project Log	Perceptions of merit of project strategy and other aspects	EEC	Particularly 1, 3, 5

**Abbreviations used in Table 2.5**

- EEC: External Evaluation Consultant
- KEQs: Key Evaluation Questions
- PT/PM: Project Team/Project Manager
- PO: Project Officer
- Ref: Reference Group
- WPP: Well Placed People (not involved or less directly involved in the Project, e.g. ADTLS, Faculty management, Academics)

**Table 2.6 Project Completion Schedule by Objectives**

Objectives/Deliverables	Key Tasks	Critical Success Factors	Stakeholders	Evaluation
<b>Stage 1: Auditing</b>				
	<i>Phase 1: Collect audit data on mapping and data collection of assurance of learning in the business sector:</i> <ul style="list-style-type: none"> <li>• Survey administered to key assurance of learning administrators across all Australian Universities</li> </ul>	On time/On Budget Response % for audit interviews Response % for audit focus groups  Progress Report	ALTC  Reference Group ADTLs and	Project Management <ul style="list-style-type: none"> <li>- Timeline</li> <li>- Budget</li> <li>- Communication</li> <li>- Meeting objectives</li> <li>- Delivering</li> </ul> Review of progress Response to report from ALTC

	<p>providing business education</p> <ul style="list-style-type: none"> <li>• Focus group with selection of key stakeholders to discuss initial findings and to refine audit tool</li> <li>• Formative evaluation by project team and document learning from Phase 1</li> <li>• Report progress to the Project Reference Group.</li> <li>• Dissemination of project learning by 'workshopping the findings' at biannual T&amp;L Network meeting.</li> </ul>	<p>Reference group engagement Dissemination of project</p>	<p>Business Faculties</p>	<p>Key Evaluation Questions (ADTLs (Business))</p>
<p><b>Objective 1</b> To review current practice related to the mapping and data collection of assurance of learning across disciplines subject to accreditation in Australian universities.</p>	<p><i>Phase 2: Collect audit data on mapping and data collection of assurance of learning in the other disciplines, for example engineering, education, nursing:</i></p> <ul style="list-style-type: none"> <li>• Survey administered to key assurance of learning administrators across all Australian Universities providing the relevant education for each sector</li> <li>• Focus group with selection of key stakeholders to discuss findings and their implications</li> <li>• Formative evaluation by project team and document learning from</li> </ul>	<p>On time/On Budget Response % for audit interviews Response % for audit focus groups</p> <p>Reference group engagement Dissemination of project</p>	<p>ALTC</p> <p>Reference Group ADTLs and Business Faculties</p>	<p>Project Management</p> <ul style="list-style-type: none"> <li>- Timeline</li> <li>- Budget</li> <li>- Communication</li> <li>- Meeting objectives</li> <li>- Delivering</li> </ul> <p>Review of progress</p> <p>Key Evaluation Questions (ADTLs)</p>

	<p>Phase 2.</p> <ul style="list-style-type: none"> <li>Report progress to the Project Reference Group.</li> </ul>			
<p><b>Objective 2</b> To identify good practice principles in assurance of learning</p> <p><b>Objective 3</b> To recognise areas for development in assurance of learning practices highlighting potential innovations and change principles</p> <p><b>Deliverable 1</b> A critical review paper of the current processes used to map assurance of learning in programs and the collection of the subsequent assurance data, including comparison with International Agencies and Professional Bodies</p> <p><b>Deliverable 2</b> A strategic paper to advise on effective practices in mapping and collecting assurance of learning data.</p>	<p><i>Phase 3: Critical review of audit findings:</i></p> <ul style="list-style-type: none"> <li>Analyse audit data</li> <li>Compare findings with International Bodies (for example, QAA, AACSB)</li> <li>Prepare Strategic Paper</li> <li>Formative evaluation by project team and reflection on learning from Phase 3.</li> <li>Year 1 report submitted to the ALTC and Project Reference Group.</li> </ul>	<p>On time/On Budget</p> <p>Identify strategies</p> <p>Critical Review paper</p> <p>Strategic paper</p> <p>Year 1 Report</p>	<p>DEEWR</p> <p>International Bodies</p> <p>Discipline Scholars</p> <p>Reference group</p> <p>Academics</p> <p>Deans/DVC (A)</p> <p>Academic Standards Coalition (ASC)</p> <p>Other related ALTC projects</p>	<p>Project Management</p> <ul style="list-style-type: none"> <li>Timeline</li> <li>Budget</li> <li>Communication</li> <li>Meeting objectives</li> <li>Delivering</li> </ul> <p>Review of progress</p> <p>Deliverable 1</p> <p>Deliverable 2</p> <p>Key Evaluation Questions (Discipline Scholars/Reference Group)</p> <p>Response to report from DEEWR</p>
<p><b>Objective 4</b> To provide resources (guidelines for mapping graduate attributes across programs, advice</p>	<p><i>Phase 4: Online Resources (with review of online tools)</i></p> <ul style="list-style-type: none"> <li>Develop online resources to support mapping and data collection for assuring</li> </ul>	<p>On time/On Budget</p> <p>Website with reviewed resources</p>	<p>DEEWR</p> <p>HE Community</p> <p>Academics and</p>	<p>Project Management</p> <ul style="list-style-type: none"> <li>Timeline</li> <li>Budget</li> <li>Communication</li> <li>Meeting objectives</li> </ul>

<p>on aligning assessment tasks with learning objectives, guidelines on using data for improving assurance of learning) which will enhance practices in the assurance of learning</p> <p><b>Objective 5</b> Review and recommendations on the use of existing software systems to support assurance of learning process</p> <p><b>Objective 6</b> To promote and encourage implementation and embedding of strategies that have proven successful in mapping and collecting assurance of learning data</p> <p><b>Deliverable 3</b> An online resource kit available to practitioners involved in assurance of learning</p> <p><b>Deliverable 4</b> Project Reports, Dissemination Workshops and Conference Presentations</p>	<p>learning</p> <ul style="list-style-type: none"> <li>• Review and recommend tools to make mapping and data collection more efficient (including adapting existing tools to suit the purpose)</li> <li>• Dissemination workshops (one in each of the five mainland states) to showcase and disseminate the strategic paper and resources.</li> <li>• Presentation of Findings: ABDC, ABDC T&amp;L Network and other discipline related groups.</li> <li>• Academic conferences and publications.</li> <li>• Formative evaluation by project team and reflection on learning from Phase 4.</li> </ul>	<p>Attendance at workshops</p> <p>Presentations</p> <p>Conference presentation and papers</p>	<p>management</p>	<p>- Delivering</p> <p>Review of progress</p> <p>Deliverable 3</p> <p>Deliverable 4</p> <p>Key Evaluation Questions (Website users/ workshop attendees)</p>
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Review and Reporting				
<p><b>Objective 7</b> To disseminate the findings of Objectives 1-6 throughout Australian universities to facilitate the more efficient practice of mapping and data collection to assure learning</p> <p><b>Deliverable 4</b> Project Reports, Dissemination Workshops and Conference Presentations</p>	<ul style="list-style-type: none"> <li>• Evaluation report by external evaluator.</li> <li>• Final report submitted to ALTC and Reference Group.</li> </ul>	<p>On time/On Budget</p> <p>Evaluation from external examiner</p> <p>Final Report</p>	<p>DEEWR</p> <p>External examiner</p> <p>HE Community</p> <p>Other ALTC Projects</p>	<p>Project Management</p> <ul style="list-style-type: none"> <li>- Timeline</li> <li>- Budget</li> <li>- Communication</li> <li>- Meeting objectives</li> <li>- Delivering</li> </ul> <p>Review of impact</p> <p>Deliverable 4</p> <p>Response to report from DEEWR</p>

## Stakeholders

The project was initially a partnership between five universities in Australia (University of Technology Sydney, RMIT, Queensland University of Technology, University of Southern Queensland, and Bond University), but when one of the Project Leaders moved location a sixth university (James Cook University) was also included. The project team appointed a Project Officer to perform a range of functions critical to successful completion of the project including developing and implementing a project team communication strategy and carrying out some of the activities associated with the project.

The development and implementation of a communication and dissemination strategy with the participants from the institutional partners was an integral part of the project plan. Collaboration was also engaged with the ABDC (T&L Network), the LTASP Discipline Scholars, AACSB (and other Professional Bodies), other OLT-funded projects and the QAA.

The project emphasised the sharing of good practice and the dissemination of good practice principles of AoL among the academic community. As such this community was considered a significant stakeholder of the project. Attendance at dissemination events included staff from 28 Australian universities, along with other education institutions (7) and international universities (6) (see Table 6.3). Participants at these events were engaged in the sharing and discussion of their own practices, as well as critically discussing the findings of the project. Approximately 170 academics and professional staff attended these events. Numerous other events included in the dissemination section were also used to engage the academic community as stakeholders.

## Project Reference Group

The reference group was an important component of the project and vital to its success, particularly in the decision-making regarding approaches for taking the research further.

Primarily contact with the reference group occurred through the submission of a written update of the project sent to the group. The reference group was able to contribute to the direction of the project through providing feedback based on the written update and the progress report. In addition to this, members of the reference group were invited to attend project team meetings to provide guidance throughout the project, and in May 2012 the reference group was assembled to discuss the progress of the project and assist with the decision-making regarding the best ways to disseminate the findings.

The project reference group consisted of:

- Emeritus Professor David Boud, Senior ALTC Fellow;
- Professor Lyn Simpson, Former ABDC (T&L Network) Chair;
- Associate Professor Mark Freeman, Business Discipline Scholar, ABDC;
- Dr Keith Wiley, SPARKPLUS;
- Professor Beverly Oliver, ALTC Fellow;
- Mr Darrall Thompson, ReView.

# Chapter 3 Literature Review

## Introduction

AoL is a process that involves articulating explicit expectations of what a student will be able to do upon completion of a program of study, including but not limited to setting the criteria and standards, and systematically gathering, analysing and interpreting the evidence to determine how well the student performance matches those articulated expectations. These expectations are commonly referred to as graduate outcomes or attributes. Graduate outcomes include knowledge outcomes and generic outcomes (Oliver, 2011) and are sometimes referred to as 'soft skills' (Freeman, Hancock, Simpson & Sykes, 2008). GAs are "descriptions of the core abilities and values a university community agrees all its graduates should develop as a result of successfully completing their university studies" (Barrie, Hughes, & Smith, 2009, p. 1). These can be expressed in different levels of GAs at the university, faculty and program level. Since 1992, as a requirement of government funding of universities, all Australian universities are required to make a public statement of GAs (Barrie, Smith, Hughes & Thomson, 2009, p. 1). The terminology is often varied, particularly at the program level, where GAs are variously referred to as program learning goals, learning outcomes, and so on.

## History of Frameworks

In Europe, the United States and Australia there has been a shift towards qualifications frameworks providing reference points for student performance at different levels of qualification and benchmarks for improving learning quality. Oliver (2011, p. 13) notes that "governments, the professions, business and the wider community increasingly require assurance of outcomes contingent upon qualification levels".

In Europe, the Bologna Process was established in 1999 with the goal of improving the competitiveness and attractiveness of higher education in Europe and to foster student mobility and employability by building more "comparable, compatible and coherent" degree structures ([www.ehea.info](http://www.ehea.info)). From the Bologna Process evolved the European Higher Education Area (EHEA) that developed an overarching qualifications framework in 2005, designed to guide its 46 member countries in the development of their own national qualifications frameworks for higher education. The EHEA framework is intended to be the 'common face' for higher education in Europe and to ensure compatibility between national frameworks and facilitate movement between national systems. In a parallel development, the European Commission developed the European Qualifications Framework for Lifelong Learning (EQF) in 2008, to encourage compatibility across EU countries in all areas of education. Similarly, in Australia, the objectives of the Australian Qualifications Framework (AQF) are to increase student mobility and employability, build confidence in qualifications, support lifelong learning, and underpin quality assurance and regulation across all sectors of education (Australian Qualifications Framework Council, 2011). First introduced in 1995, the AQF was updated in 2011 and reaffirmed as the national qualifications policy. Finally, the US has seen the development of the Degree Qualifications Profile, which is the result of over a decade of debate around defining the learning outcomes that graduates need. It aims to increase transparency and comparability across universities by providing benchmarks for

higher education degrees (Adelman, Ewell, Gaston & Schneider, 2011).

Whereas qualifications frameworks provide a roadmap to the hierarchy of educational qualifications, internationally the emerging focus on quality assurance in higher education is around standards, which are covered next.

## Standards

Previous models of quality evaluation were focused on the appropriateness of policies, procedures and outcomes to a university while the emergent focus is on the standards of learning outcomes. Standards are defined as “the explicit levels of attainment required of and achieved by students and graduates, individually and collectively, in defined areas of knowledge and skills” (TEQSA, 2011, p. 3). In the US, Europe and Australia, projects are underway to develop teaching and learning standards.

The main objective of the Tuning Project 2000, which developed from the Bologna Process, was to blueprint a framework of comparable and compatible qualifications in the higher education sector of each of the signatory countries. It served as a platform for developing reference points, expressed in terms of learning outcomes and competencies at subject level, allowing for comparability, compatibility and transparency between programs of study.

The Tuning process has been adopted in the US, Latin America and Japan, and has been used as reference material for the Learning and Teaching Academic Standards Project (LTASP) established in Australia in 2009 to facilitate and coordinate discipline communities’ definitions of academic standards. Academic standards are learning outcomes described in terms of core discipline knowledge and core discipline-specific skills, and expressed as the minimum learning outcomes that a graduate of any given discipline (or program) must have achieved (Ewan, 2010). The Australian process for developing standards is still underway. As of December 2010, draft statements of standards had been published in six subject areas, using the AQF as a starting point (TEQSA, 2011). The newly established national body, TEQSA, will be responsible for regulation and quality assurance of tertiary education against the agreed standards. The standards framework in development is likely to comprise the following elements (Ewan, 2010):

- Provider standards;
- Qualification standards – AQF;
- Learning and Teaching Standards: Academic Standards, Learning outcomes;
- Research standards – ERA;
- Information standards.

Under TEQSA, the principles for AoL are that academic standards will be expressed as measurable or assessable learning outcomes. Input and process (e.g. lab hours) may support but are not substitutes for learning outcomes, and minimum learning outcomes will be defined by each discipline community for each level of AQF qualification (Ewan, 2010).



## Current Practice

The quality of business education standards in higher education has been a matter of much recent discontent and debate. Martell and Calderon (2009) cite growing public dissatisfaction with the quality of US college education, and Hall and Kro (2006) argue that the growing number of working managers returning to executive education is driving demand for better quality education. A recent UK Government White Paper, 'Students at the Heart of the System' (2011), set out the quality challenges of a changing higher education environment, recognising the need to strengthen processes, and adopt and reinforce systems to improve practice. In Australia, TEQSA has identified the need to focus on quality improvements (TEQSA, 2011).

Determining the standards of student learning and the approaches to data collection against these standards is a complex task for academics and program administrators. Indeed, Coates (2010) not only acknowledges the complexity of assessing, monitoring and enhancing academic standards, but also stresses the need for cultural change in order to better facilitate the process. There have been a number of national approaches to measuring and documenting learning outcomes. In Brazil, for example, national course examinations have been in place since 1996, providing learning outcome data across numerous disciplines (cited in Coates, 2010); in the United States, the Collegiate Learning Assessment (CAE, 2009) has been adopted by over 400 universities to collect learning outcome results; Voluntary Systems of Accountability (VSA, 2009) have been implemented in the US; and the Quality Assurance Agency (QAA) in the UK use external examiners to compare standards across institutions. However, Coates and Richardson's (2011) review of practice indicated that although there are various national approaches to assessing standards, there are few cross-country examples.

The literature emphasises an urgent need for "new, efficient and effective ways of judging and warranting" GAs (Oliver, 2011, p. 3). This project addresses this gap in the extant literature around AoL, explored next.

## Extant Literature

The pedagogical basis for AoL is in line with the student-centred learning approach. Establishing clear learning goals for a program aids the student in understanding the nature of the program. It makes the standards expected of them on completion of their degree transparent. In order to maximise student potential for achieving GAs it is crucial to align subject objectives and assessment with GAs (Bowden et al., n.d.). The subject objectives reflect the kinds and levels of understanding that we expect from students. The assessment aligns to those objectives requiring students to demonstrate the desired understanding and rewards students for doing so (Biggs, 1999). GAs commonly reflect the professional capabilities of students and so they help learners to put their academic learning into a professional context, making the educational experience more authentic. GAs are measured through intended learning objectives that are aligned to assessment tasks. This means that students are able to see the links and development of GAs across a program through these clearly stated learning objectives, and through the aligned assessment. When learning objectives in assessments are designed to be well aligned and show development over time, students can take control of their learning and progress in their learning through regular

teacher feedback and self-assessment.

In line with the objectives of this research, in this section we explore extant literature in terms of specific aspects of the AoL process, namely, curriculum mapping, embedding, data collection and developmental closing the loop.

## Curriculum Mapping

Curriculum Mapping is the process of embedding learning objectives that relate to GAs across suitable units of study in a program (where possible allowing for introduction, further development and then assurance of the objectives). For example, some law schools have “developed levels of GAs at basic, intermediate and advanced levels, with an expectation of more sophisticated skills growth occurring incrementally and progressively throughout the program” (Owen et al., 2009, p. 21).

Most Australian universities currently have some sort of strategic project underway to support the embedding of GAs in curriculum (Barrie et al., 2009, p. 6). AUQA requires this, as does the certification of professional degrees by accrediting bodies (Barrie et al., 2009). However, the literature on curriculum mapping in higher education is scant (Oliver, 2010). What literature is available makes some mention of the usefulness of curriculum mapping but is focused on the limitations and challenges of mapping, and suggestions for overcoming these barriers with specific methodology for curriculum mapping.

In theory, the usefulness of curriculum mapping is reinforced in the literature as a means of:

- Identifying gaps in a program (Freeman et al., 2008);
- “Testing how and where employability-related learning is incorporated into a course curriculum, and that this is far more effective than focusing on what occurs in individual units (subjects or modules)” (Yorke & Knight, 2006, p. 10);
- Monitoring course diversity and overlap (Biggs, 2003);
- Providing an opportunity for reflection and discourse (Biggs, 2003; Sumsion & Goodfellow, 2004);
- Reducing confusion and overlap and increasing coherence in the curriculum (Freeman et al., 2008);
- Providing equivalency of learning (Jackson et al., 2006);
- Aligning GAs, course objectives and assessment (Biggs, 2003).

However, continuing from this last point, some scholars caution that where curriculum mapping is not conducted to align assessment items with learning outcomes (as is often the case), this may lead to a compliance culture where staff do no more than “tick and flick” as evidence of learning against GAs, undermining the usefulness of curriculum mapping in the AoL process (Barrie et al., 2009; Oliver, 2010). Scholars point to various other limitations or barriers to effective curriculum mapping, in terms of:

- The focus of curriculum mapping on the ‘intended’ curriculum that is not always the same as the ‘enacted curriculum’ or the ‘experienced curriculum’ from the students’ perspective (Porter, 2004);

- Understanding, for academic staff, how to contextualise GAs within their discipline (Radloff et al., 2009);
- Staff seeing the curriculum mapping exercise as threatening in that it could be construed as a course-cutting exercise, or a criticism of the teaching material they have developed (Oliver, 2010);
- Mapping being seen as a labour-intensive exercise (Oliver, 2010);
- Staff believing that GAs should not only be mapped into a capstone course (Radloff et al., 2009).

These challenges all pose a threat to effective staff engagement with the process of curriculum mapping, significant because staff are the main agents involved in curriculum development (Radloff et al., 2009) and “the way a university enables and engages staff in efforts to foster graduate attributes contributes to implementation effectiveness” (Barrie et al., 2009, p. 2). Although, according to one study, 73% of academic staff believe that GAs should be included in the curriculum and should be an important focus for their university (Radloff et al., 2009), “there is, to some degree, a lack of ‘buy in’ by academic teaching staff in Australian universities” (Barrie et al., 2009, p. 14). According to one study, over half the staff felt that there were obstacles to them teaching and/or assessing attributes (Radloff et al., 2009). The literature suggests staff engagement with curriculum mapping could be improved with:

- The development of a conceptual framework for developing GAs (Hancock et al., 2009). A framework should include three elements: a clear statement of purpose for curriculum mapping; a tool that allows an aggregate view of a course; and a process for use of the tool. The tool may be designed around a matrix approach whereby teachers indicate where attributes are taught, practiced and assessed (Oliver, 2010);
- An “extensive audit of each subject, including interviews of teaching staff and students, to reliably map GAs. Furthermore, there needs to be some consideration of how each subject fits into a program as a whole and how this structure influences the development of graduate attributes” (Hine et al., 2008, p. 33);
- “A cyclical process which includes the design of visual representations to create a curriculum that is fluid and adaptable to the changing needs of students, employers and the discipline”(Uchiyama & Radin 2009, p. 18);
- Availability of sufficient resources; supported committee structures and processes; use of champions and energetic drivers; institutional high level backing; and an emphasis upon cooperation and collective responsibility” (Owen et al., 2009, p. 20);
- Use of alignment templates (Owen et al., 2009);
- Professional development support in teaching and assessment to help integrate and contextualise GAs (Radloff et al., 2009);
- Availability of a specialist with skill in the relevant attribute to teach that attribute (Radloff et al., 2009);
- Adoption of a whole of program approach, a focus on team co-operation and more time spent on design (Radloff et al., 2009);
- Support for staff who face bigger workloads due to their involvement (Mills et al., 2009);
- Clear linkages between graduate attribute development processes and professional development for staff (Taylor et al., 2009).

While there is an external pressure on universities to be able to assure learning, the pedagogical basis for AoL must be valid according to educational theory and research. The literature indicates a clear need for a framework and improved processes for curriculum mapping, yet extant research does not address the elements of such a framework in sufficient detail. Given the focus in the literature on difficulties engaging staff with AoL, an important issue is whether it is best to embed these processes in the work of teaching or whether stand-alone tests will be more appropriate to AoL.

## Embedding vs. Standardised Testing

The Organisation for Economic Co-operation and Development (OECD) has acknowledged the lack of reliable data on the substantive outcomes of higher learning, internationally. The few studies that do exist are recognised as nationally focused with available rankings of institutions reflecting neither the quality of teaching and learning nor the diversity of institutions (OECD, 2011). This council of 34 member countries undertook an initiative between 2010 and 2012 that assessed the feasibility of an Assessment of Higher Education Learning Outcome (AHELO) including the development and testing of a tool to measure student knowledge. The tool determines whether students at the end of their tertiary education are equipped with the skills needed for the emerging job market, and tool provides data on the relevance and quality of teaching and learning in higher education. The focus will be at the level of the institution rather than national level and participating institutions will be provided with anonymous data to allow them to benchmark their performance against that of their peer institutions. The tool, envisioned as an exit examination, aims to be internationally valid across diverse cultures, languages and different types of tertiary institutions. The AHELO generic skills project draws on the Collegiate Learning Assessment (CLA) offered by the Council for Aid to Education in the USA to explore the potential for testing of higher order thinking skills and written communication. Tests such as the CLA, and the Graduate Skills Assessment (GSA) developed by the then Department of Education, Science and Training with the assistance of ACER, are independent of institution, curriculum and discipline. The GSA, CLA and similar tests of generic skills are specifically designed for quality assurance of institutions and courses. While having limits to their scope, the results from such tests might be used as absolute scores and compared to other courses, institutions and/or external standards. Alternatively, they might be used as a measure of the learning value added by the institution through comparisons of 'before and after' data.

In the USA, the CLA is used as part of a voluntary system of institutional monitoring and reporting, in which institutions publicly report both absolute and value-added results for samples of students. The expressed primary goal for the data is diagnostic. Phase 1 of the AHELO feasibility study, including the development of tests in generic skills, economics, and engineering, was completed in June 2011, and these tests have since been piloted in 17 countries, in institutions representing diverse educational systems, cultures and languages. Testing is of students nearing the end of their bachelor degrees, or equivalent. Recent reports on this work indicate that value-added measures within disciplines might be explored in the future. Australia is a participating country in the AHELO engineering strand. However ACER is extensively involved across the various AHELO strands of work.

External testing has appeal outside institutions as a mechanism for monitoring institutional performance that has face validity. Externally designed tests, however, have some limitations and possible undesirable consequences. Criticisms of testing include the question of whether one-off written tests can adequately assess the acquisition of higher-order cognitive skills; whether external tests would lead to a tendency for universities to 'teach to the test' (TEQSA, 2011); and the potential that generic testing may lead to a form of standardisation which is concerning for many in the Australian higher education sector. The 'B Factor' Project (Radloff et al., 2009), which considered the implementation of AoL, reported that academic staff believed that the most effective method for developing GAs was by integrating them into the curriculum and delivering these attributes through a combination of the discipline teacher and, if possible, a specialist with skill in the relevant attribute. They did, however, acknowledge that not all academics are confident or willing to teach and assess GAs.

In order to adopt this more embedded approach to assuring learning, universities need to acknowledge the experience, expertise and willingness of those academics entrusted with the primary work of teaching and assessing GAs. Attempts to drive the development of GAs as part of a quality agenda focused on compliance and external accountability may alienate academic staff and thus compromise the potential student learning that should be the basis for change. There is therefore a need to highlight the criticality of focusing on engaging academics' hearts and minds rather than a compliance attitude, to ensure that embedding GAs becomes a self-sustaining aspect of the curriculum rather than an add-on.

## Data Collection for AoL

Whereas curriculum mapping relates to identifying and locating GAs in the form of learning objectives across suitable subjects in the program, data collection involves entering student performance outcomes in relation to each learning objective. The curriculum mapping process is an important initial part of AoL but in order to optimise this approach a systematic method to collect data to explore the achievement levels of students in each of the selected attributes is essential in order to inform further development of educational programs.

The challenges of collecting and providing evidence of student achievement highlighting the need for efficiency and streamlining in the AoL process have been recognised (Freeman, 2010). Radloff et al. (2009) identified that clarity and support regarding assessment of GAs were important enablers in terms of both the 'what' and the 'how', and greater management support in taking a whole of program approach was required. Carew et al. (2009), however, found that rigorous evaluation of impact on student learning of GAs is rare.

The use of assessment rubrics (formative as well as summative) has been identified as key in collecting data on students' capability (Yorke, 1998). Rubrics articulate explicit levels of criteria aligned with assessment outcomes and are intended to make expectations transparent and motivate students to extend their learning (Mansilla, Duraisingh, Wolfe & Haynes, 2009). The approach taken is important, but so is the process, as sound university education cannot be easily reduced to a 'tick list' of skills or competencies, many of which

are often ill-defined, overlapping and difficult to measure (Hager, 2006). The issue of *standardisation* is also a complex one that arises from the use of rubrics. There is a requirement to tease out a distinction between standardisation defined as homogenisation, or as the pursuit of common goals. In the context of AoL, the use of assessment rubrics has extended beyond the determination of student grades to benchmarking and comparison against standards and between universities; rubrics are being used as a tool for the assurance of content, process and outcomes across courses, particularly within accredited disciplines (Tractenberg, Umans & McCarter, 2010).

O'Donnovan, Price and Rust (2001) identified a number of problems using rubrics in assessment. These included: multiple interpretations of criteria meaning that different assessors may mark to their own interpretation; explicit articulation of knowledge, skills and attributes; and the regular application of the same criteria and levels to different academic levels. The team argues that a social constructivist approach of communicating the meaning of the criteria and the expected standards is crucial for effective AoL data collection with academics and could assist in alleviating these issues.

## Continuous Improvement or 'Closing the Loop'

The final step in the AoL process, 'closing the loop', is "not just the final step [in AoL]; it is the *raison d'être* for assessing student learning" (Martell, 2007, p. 192). According to the AACSB guidelines, by measuring learning a school can evaluate its students' success at achieving learning goals, use the measures to plan improvement efforts, and (depending on the type of measures) provide feedback and guidance for individual students (AACSB, 2007, p. 60).

A 2007 survey of 179 US business schools, both AACSB-accredited and those seeking accreditation, found these schools were most confused about how to go about closing the loop (Martell, 2007). Documentation stating that GAs are taught and assessed constitutes a document of teaching, not AoL (Martell, 2007), and integration of the assessment of learning objectives into developmental approaches in the classroom has been somewhat intangible (Taylor et al., 2009).

When AoL is not aligned to assessment, students and academics struggle to see the value of the attribute, and therefore do not engage with it from a teaching, learning or quality development perspective. This is particularly evident in the adoption of independent testing which does not embed GAs into the curriculum (Taylor et al., 2009). In a 2006 survey of 138 AACSB-accredited business schools, 43% of faculties indicated significant faculty resistance to AoL processes but also found that "when facult[ies] take ownership of this activity [they] were more likely to recognize and appreciate its benefits", particularly in terms of closing the loop (Pringle & Michel, 2007, p. 206).

## Chapter 4 Key Project Outcomes and Deliverables

**Table 4.1 Progress against Project Outcomes and Deliverables**

Objective/Deliverable	Progress
<p>Objective 1: To review current practice related to the mapping and data collection of assurance of learning across disciplines subject to accreditation in Australian universities.</p> <p>Objective 2: To identify good practice principles in assurance of learning.</p> <p>Objective 3: To recognise areas for development in assurance of learning practices highlighting potential innovations and change principles.</p>	<p>Completion of data collection and analysis (to address objectives 1–3) for business, law, engineering, pharmacy, nursing disciplines.</p> <p>Completed eight focus groups to further develop good practice examples (Objective 2) by comparing academics and leaders.</p> <p>Three focus groups on teaching, assessing and providing feedback on graduate attributes to address areas of development highlighted in Objective 3.</p>
<p>Deliverable 1: A critical review paper of the current processes used to map assurance of learning in programs and the collection of the subsequent assurance data, including comparison with International Agencies and Professional Bodies.</p> <p>Deliverable 2: A strategic paper to advise on effective practices in mapping and collecting assurance of learning data.</p>	<p>Literature review completed.</p> <p>Project Review paper presented at ATN Assessment Conference (Oct 2011) and accepted with minor revisions for HERD journal.</p> <p>Strategic effective practice papers submitted to EDULEARN, ICE and ANZAM Conferences</p>
<p>Objective 4: To provide resources (guidelines for mapping graduate attributes across programs, advice on aligning assessment tasks with learning objectives, guidelines on using data for improving assurance of learning) which will enhance practices in the assurance of learning.</p> <p>Objective 5: Review and recommendations on the use of existing software systems to support assurance of learning process.</p> <p>Objective 6: To promote and encourage implementation and embedding of strategies which have proven successful in mapping and collecting assurance of learning data.</p>	<p>Development of the website (<a href="http://www.assuringlearning.com">www.assuringlearning.com</a>) including good practice case examples on mapping, data collection, closing the loop and staff engagement; links to other related projects; and dissemination materials.</p> <p>A review of tools for assurance of learning has also been completed (to be added to the website).</p> <p>Analysis of the business discipline data has been adapted into conference papers and journal articles (listed below). These have also formed the basis of a number of presentations at prominent forums and conferences</p>

	(listed below).
Deliverable 3: An online resource kit available to practitioners involved in assurance of learning.	The website contains a comprehensive set of resources and will remain available.
Objective 7: To disseminate the findings of Objectives 1–6 throughout Australian universities to facilitate the more efficient practice of mapping and data collection to assure learning.	Project papers presented at national and international conferences. Review paper accepted with minor revisions for HERD Journal. Workshops, focus groups and the website have also been utilised to disseminate and implement good practice. Dissemination events delivered across Australia Sept–Dec 2012.
Deliverable 4: Project Reports, Dissemination Workshops and Conference Presentations.	Progress Report (Aug 2011) Year 1 Report (Feb 2012) Progress Report (Aug 2012) See Summary of Outcomes for Conference and Paper details

**Table 4.2 Summary of Notable Project Outcomes**

Summary of Outcomes	
Interviews & Focus Groups	Interviews – 42 (43 people; 33 institutions) Focus Groups – 11 (96 people; 5 institutions)
Dissemination Events	Events – 5 (170 people; 28 institutions)
Resources	<p>Website (over 700 hits): Project Overview Good Practice Strategies (with examples) for</p> <ul style="list-style-type: none"> <li>• Curriculum Mapping Process;</li> <li>• Data Collection Process;</li> <li>• Closing the Loop Process;</li> <li>• Staff Engagement;</li> <li>• Leadership for Implementation;</li> <li>• Teaching Graduate Attributes;</li> <li>• Assessing Graduate Attributes;</li> <li>• Providing Feedback for Graduate Attributes.</li> </ul> <p>Tool ReView Links to further reading/other projects Dissemination Materials (Presentations &amp; Papers) <i>The site has received over 600 hits to date.</i></p> <p>Dissemination Event Work Booklet</p>



<p>Journal Papers/Conference Proceedings</p>	<p>Journal Papers (3)</p> <p>Accepted with Minor Corrections</p> <ul style="list-style-type: none"> <li>• Lawson, R. J., Taylor, T., Fallshaw, E., French, E., Hall, C., Kinash, S. &amp; Summers, J., (in press). Hunting and gathering: new imperatives in mapping and collecting student learning data to assure quality outcomes. Higher Education Research and Development.</li> </ul> <p>Submitted</p> <ul style="list-style-type: none"> <li>• French, E., Lawson, R., Taylor, T., Herbert, J., Fallshaw, E., Hall, C., Kinash, S., &amp; Summers, J. (2012). Building sustainable and effective assurance of learning processes in a changing higher education environment. Paper presented at the ANZAM Conference 2012, Perth, Western Australia.</li> </ul> <p>In Preparation</p> <ul style="list-style-type: none"> <li>• Taylor, T., Lawson, R. J., Fallshaw, E., French, E., Hall, C., Kinash, S. &amp; Summers, J. Whole of Program Curriculum Renewal: Leading the Way. Academy of Management Learning &amp; Education.</li> </ul> <p>Conference Proceedings (4)</p> <ul style="list-style-type: none"> <li>• Kinash, S., Mathew, T., Lawson, R., Herbert, J., French, E., Taylor, T., Hall, C., Fallshaw, E. &amp; Summers, J. (2012, June). Australian higher education evaluation through assurance of learning. Full Paper Conference Proceedings for 8th International Conference on Evaluation for Practice, June 18-20, 2012. Pori, Finland. &lt;<a href="http://tampub.uta.fi/handle/10024/65313">http://tampub.uta.fi/handle/10024/65313</a>&gt;</li> <li>• Lawson, R., Taylor, T., Herbert, J., Fallshaw, E., French, E., Hall, C., Kinash, S., Summers, J. (2012). Assurance of Learning – Are Academics and Senior Management Singing from the same hymn sheet? Paper presented at the 4th EDULEARN, Barcelona, Spain.</li> <li>• Lawson, R., Taylor, T., Herbert, J., Fallshaw, E., French, E., Hall, C., Kinash, S., Summers, J. (2012). Strategies to Engage Academics in Assuring Graduate Attributes. Paper presented at the 8th International Conference on Education, Samos, Greece.</li> <li>• French, E., Lawson, R., Taylor, T., Herbert, J., Fallshaw, E., Hall, C., Kinash, S., &amp; Summers, J. (2012). Building sustainable and effective assurance of learning processes in a changing higher education environment. Paper presented at the ANZAM Conference 2012, Perth, Western Australia.</li> </ul>
<p>Conference Presentations</p>	<p>Conference Presentations (7)</p> <ul style="list-style-type: none"> <li>• Lawson, R. J., Taylor, T., Fallshaw, E., French, E., Hall, C., Kinash, S. &amp; Summers, J., (2011). Hunters &amp; Gatherers: Strategies for Curriculum Mapping and Data Collection for Assurance of Learning. Paper presented at the ATN Assessment Conference 2011, Perth, Western Australia.</li> <li>• Kinash, S., Mathew, T., Lawson, R., Herbert, J., French, E., Taylor, T., Hall, C., Fallshaw, E. &amp; Summers, J. (2012, June).</li> </ul>

	<p>Australian higher education evaluation through assurance of learning. Full Paper Conference Proceedings for 8th International Conference on Evaluation for Practice, June 18-20, 2012. Pori, Finland. &lt;<a href="http://tampub.uta.fi/handle/10024/65313">http://tampub.uta.fi/handle/10024/65313</a>&gt;</p> <ul style="list-style-type: none"> <li>• Lawson, R., Taylor, T., Herbert, J., Fallshaw, E., French, E., Hall, C., Kinash, S., Summers, J. (2012). Assurance of Learning – Are Academics and Senior Management Singing from the same hymn sheet? Paper presented at the 4th EDULEARN, Barcelona, Spain.</li> <li>• Lawson, R., Taylor, T., Herbert, J., Fallshaw, E., French, E., Hall, C., Kinash, S., Summers, J. (2012). Strategies to Engage Academics in Assuring Graduate Attributes. Paper presented at the 8th International Conference on Education, Samos, Greece.</li> <li>• French, E., Lawson, R., Taylor, T., Herbert, J., Fallshaw, E., Hall, C., Kinash, S., &amp; Summers, J. (2012). Building sustainable and effective assurance of learning processes in a changing higher education environment. Paper presented at the ANZAM Conference 2012, Perth, Western Australia.</li> <li>• Lawson, R. J., Herbert, J., Taylor, T., Fallshaw, E., French, E., Hall, C., Kinash, S. &amp; Summers, J., (2012). Hunting and Gathering Takes the Whole Tribe: Assurance of Learning Master Classes. Workshop presented at the ANZAM Conference 2012, Perth, Western Australia.</li> <li>• Lawson, R. J., Herbert, J., Taylor, T., Fallshaw, E., French, E., Hall, C., Kinash, S. &amp; Summers, J., (2012). A Comparison of Tools to Support Faculty-Wide Approaches to Assurance of Learning - Avoiding reinventing the wheel! Paper presented at the HERSLEB Conference 2012, Melbourne, Victoria.</li> </ul>
Invited Presentations	<p>Invited Addresses (4)</p> <ul style="list-style-type: none"> <li>• Summers, J. (2011). Hunters &amp; Gatherers Project Overview: Lessons Learnt to Date. AACSB Google Group Meeting. NZ.</li> <li>• Lawson, R. (2012). Hunters &amp; Gatherers: Strategies for Curriculum Mapping and Data Collection for Assurance of Learning – The Story So Far. ABDC Teaching &amp; Learning Network.</li> <li>• Lawson, R. (2011). <i>Benchmarking: An overview of current work and challenges</i>. Australasian Professional Legal Education Council Annual Conference, Sydney, Australia.</li> <li>• Taylor, T., Lawson, R., Bajada, C. &amp; Burton, C. (2013). Using Technology to Assist Assurance of Learning. AACSB Assessment Conference, Phoenix, USA (Joint Presentation with UTS).</li> </ul>
Invited Consultations	<p>Consultations (4)</p> <ul style="list-style-type: none"> <li>• Curtin Business School</li> <li>• University of Melbourne: Centre for Learning &amp; Teaching</li> <li>• AUT &amp; Otago, NZ Universities (Scheduled May 2013)</li> </ul>

# Chapter 5 Evaluation

## Most Valuable Outcomes and Deliverables

The most important outcomes of the project can be classified into four categories:

- i. Raising awareness of the process for the assurance of GAs, and highlighting the challenges this involves (Objectives 1, 2, 3, 6, 7)
- ii. Sharing strategies and authentic exemplars of good practice (Objective 6) including:
  - The assurance process (encompassing curriculum mapping and data collection);
  - Leadership principles for engaging academics.
- iii. Key factors for teaching, assessing and providing feedback
- iv. Development of resources/review of tools to support the process (Objectives 4, 5).

**Table 5.1. Project Objectives Subject to Evaluation**

<p><b>Objective 1:</b> To review current practice related to the mapping and data collection of assurance of learning across disciplines subject to accreditation in Australian universities.</p> <p><b>Objective 2:</b> To identify good practice principles in assurance of learning.</p> <p><b>Objective 3:</b> To recognise areas for development in assurance of learning practices highlighting potential innovations and change principles.</p>
<p><b>Objective 4:</b> To provide resources (guidelines for mapping graduate attributes across programs, advice on aligning assessment tasks with learning objectives, guidelines on using data for improving assurance of learning) which will enhance practices in the assurance of learning.</p> <p><b>Objective 5:</b> Review and recommendations on the use of existing software systems to support assurance of learning process.</p> <p><b>Objective 6:</b> To promote and encourage implementation and embedding of strategies that have proven successful in mapping and collecting assurance of learning data.</p>
<p><b>Objective 7:</b> To disseminate the findings of Objectives 1–6 throughout Australian universities to facilitate the more efficient practice of mapping and data collection to assure learning.</p>

### (i) Raising Awareness

The initial indication of the need to raise awareness occurred in the pilot study interviews with ADTLs in business schools across Australia, and was emphasised again in the follow-up focus groups. Although all respondents were familiar with the concept of mapping GAs in the curriculum, it was not until they were questioned about how their students *demonstrated* these GAs, that they started to realise that they had only implemented part of the assurance process, and without such evidence practice could not be continually improved.

Participants in focus groups and dissemination events commented that the project provided them with a better overview of what assurance of GAs was, how the whole process fitted together and how they fitted into it. This realisation then prompted them to keep better

informed in the future. They also acknowledged that AoL is not just about external accreditation but is a basic educational principle that all educators have a responsibility to address.

The dissemination events provided professional support for attendees, through hearing about current progress, and sharing concerns and solutions. Participants commented that they were now “confident to proceed”; “confident to advise peers”; had “courage”; felt “affirmation”; “motivated”; “inspired”; developed a “positive attitude”; and experienced “high reinforcement”. Not only was there a positive shift in perceptions but feedback also indicated an impact on future practice with attendees stating that the project provided good ideas to assist them with implementation and a stimulus to review priorities and facilitate change, both in their own frame of reference and within their institution.

## (ii) Sharing Strategies for Good Practice

### a. The Assurance Process (curriculum mapping and data collection)

Throughout the whole project, an important focus was on identifying good practice across the sector for curriculum mapping and data collection in AoL. Examples of good practice became evident from the beginning and have been collated to provide a hands-on resource kit. From reviewing examples of where institutions had demonstrated success in the processes, a set of strategies for practice was derived. These included:

- **Holistic** – A whole of program approach was important to ensure students’ progress in a way that ensures GAs can be introduced and then further developed before they are asked to demonstrate the standards expected in each graduate attribute on completion of their award;
- **Integrated** – In order for GAs to be valued by academic teaching staff and students they had to be embedded into the curriculum, and linked to assessment;
- **Collaborative** – The process had to be developed in conjunction with the academic teaching staff in an inclusive rather than top-down approach, so that staff engaged with, and recognised, the importance of the process;
- **Maintainable** – Any process that is implemented has to be sustainable to ensure it is not reliant on individuals or resources.

These factors were demonstrated throughout different stages of effective AoL processes. In curriculum mapping it was found that:

- An inclusive and participatory process brought together staff for free and frank discussion and collaborative problem-solving;
- An emphasis on getting stakeholders to take a program-wide view allowed for embedding GAs into the curriculum so that students made progress towards graduate level;
- Mapping the development of an attribute over the program allowed for introduction, development and assurance of attributes;
- Mapping by assessment tasks provided a greater level of clarity and detail in the mapping, and allowed students and teaching staff to clearly identify the alignment between relevant assessment tasks and respective GAs;

- Encouraging a sense of progression and active participation in learning promoted student awareness of attributes and their distribution across the program;
- Mapping across the program emphasised working back from the point of final assessment (often in a capstone subject), looking at the development of attributes across the program;
- Clear presentation of the distribution of attributes throughout a program is supported by the use of mapping software or analogues and provides an effective basis for constructive discussion among staff.

The following factors were identified as assisting with effective data collection and measurement of learning:

- Consistency of criteria for attributes across programs which were well-defined and meaningful allowed for benchmarking comparisons;
- Embedding measurement in the curriculum normalised this practice and encouraged valuing the process;
- External examination assisted benchmarking across institutions;
- Using multiple measures of AoL enriched the discussion and the interpretation of the data collected;
- A variety of different data collection/measurement software solutions were seen as useful.

Staff engagement was found to be at the heart of well implemented AoL systems. Principles used to foster this engagement included:

- Leveraging the acceptance (or tolerance) of AoL processes associated with external accreditation processes promoted a quality improvement agenda;
- Directly confronting perception about AoL, particularly in communicating the ease of the process;
- Engagement fostered through demonstrated success/effectiveness highlighted the benefits that can come from AoL;
- A consistent high-level commitment and leadership to institutionalise AoL;
- Good data systems and the ability to present the data in meaningful forms foster engagement through providing a clear picture of student learning;
- Development of leadership across the faculty/school can lead to academics effectively engaging in AoL processes themselves;
- Professional development around AoL processes.

Closing the loop can be seen as the culmination of the AoL process, where data and discussion turns into practical change within curriculum or teaching practice. Important principles for effectively closing the loop involve:

- Including a broad set of stakeholders, particularly staff directly involved in delivery to help make change specific and effective;
- Fostering staff engagement in the change;
- Willingness to have a critical and reflective discussion about GAs to improve the process itself;

- Starting the discussion by reviewing previous proposed actions to reinforce a commitment to change and improvement;
- Making changes once the process is established to encourage a clearer understanding of the current state of affairs, leading to more thoughtful changes;
- Focusing on improvements at the program level to encourage more systematic and considered changes taking into account the development of an attribute across the entire program;
- Demonstrating the benefits of AoL processes by keeping change manageable.

## b. Leadership Principles for engaging academics with the process

The main challenges faced by the sector in the assurance of GAs were around getting staff engaged with the process and helping them not to see it as an extra burden on their time. Some schools indicated that the process of achieving staff buy-in takes many years and needs to be accompanied by culture change within the institution. While one participant commented, “It took me six years to get staff buy-in”, most schools agreed that staff engagement was essential to the success of AoL and in improving learning outcomes for students.

The interview data from this study identified two main approaches to implementing the AoL process: a ‘top-down’ approach, with senior management controlling the process; and an ‘inclusive’ approach to the process, where academics collaborate. Those institutions which were more thorough in the processes of assuring learning and had developed processes that were fit for their purposes had predominantly taken this inclusive approach, employing a participative leadership style.

The need for managing cultural change for effective staff buy-in and adoption of the AoL process was highlighted through the findings of the focus groups. Kotter and Cohen’s (2002) strategies for culture change (get the vision right; executive support; build a guiding team; training; reward and recognise; empowerment; and communicate for buy-in) were all evident in the examples provided by universities with an extensive and fit-for-purpose process. Solutions to the challenges identified through this project were well received by participants in the Leadership Master classes, conference attendees and those who have commented on the online resource kit, and include the following seven elements:

### 1. Getting the Vision Right: Changing institutional values.

For some universities the vision was that AoL not be an additional requirement of an external process but seen as a ‘basic educational principle’ that all educators should undertake in order to strive for continuous improvement. In contrast, the institutions which focused on the accreditation aspects of AoL as their main aim found it extremely difficult to engage staff. For the most part the desired outcome of universities which aimed for institutional change was the integration of assurance processes into the normal work of unit and program coordinators, and the ongoing sustainability of this without constant reminders from ADTLs and teaching and learning staff. As one interviewee summarised, “My goal would be that it just happened as part of everyone’s natural thing and it was no fuss, seamlessly across the school.”

Universities went about this institutional change in a number of ways. Professional development and communications were in part about trying to bring about cultural and institutional change within the schools. While support from influential people in the university was important, for the most part participants emphasised organic change at the level of academics. Attempts to change institutional values included: engaging staff directly with the AoL process; putting together committees with a broad membership at all levels in the faculty; moving from working with the staff that are already engaged to working with those still disengaged; treating AoL as a change management project; and reminders through a variety of forums and mediums.

**2. Executive Support:** Strong senior management commitment and leadership demonstrating a constant and high-level drive for staff engagement until AoL becomes an institutional norm.

Participants talked about the importance of the support of key individuals. These were often people or groups senior within the organisation, with their support indicating institutional support for the approach. At one Queensland university the continuous improvement agenda was strongly driven from the most senior leaders in the university and resulted in a rigorous annual unit reporting process, and evaluation of all units and teaching every semester. At another business school, engagement began through getting approval for the process at the highest levels of the university – the executives, the dean, the deputy dean, associate deans, and heads of discipline groups. This was then followed by a drive to help build support among staff in discipline groups, preceded by high-level commitment to AoL.

**3. Building a Guiding Team:** Developing leadership and champions among unit and program-level staff, to share practices and promote the benefits that come from engaging in the process.

Using participative leadership was an important element for successfully integrating AoL in institutions. One participant described the process as, "... needing a distributed leadership model to be able to make it [AoL] to work, so it doesn't just rely on one person to be a champion. Let them sow a few seeds, and get a few other leaders around to help them spread it a bit further". One example of how this style of leadership was fostered was through a broad AoL committee that drew on a representative from each of the disciplines involved. This served not only to have staff members responsible for interpreting the results, but to have key staff members enmeshed in the process. These leaders then fostered engagement through interaction with peers, as well as ensuring the process reflected the experiences of the staff involved.

Another university's implementation was initially driven by a university-wide policy change to criterion-referenced assessment. Assessment champions were identified in each discipline to guide the implementation of criterion-referenced assessment. These assessment champions worked with representatives from discipline-based school teaching and learning committees and together formed a critical mass to support the discipline leaders in mapping learning goals and in influencing colleagues towards cultural change. The undergraduate and postgraduate program coordinators worked with the discipline leaders for each major in their program. Delegating leadership responsibilities to key people who

were able to influence colleagues created buy-in and eased the transition through interpersonal influence.

**4. Training:** Providing professional development opportunities to discuss and resolve difficulties and tensions around AoL.

The primary means of engaging staff were the use of professional development activities and strategic communication to staff about AoL. Participants emphasised the importance of setting up workshops/professional development as opposed to lectures, and setting up activities as opportunities to develop skills as well as raise concerns. This interactive setting was seen as important in addressing resistance to AoL processes. At one school, workshops were held featuring staff who had implemented AoL processes successfully within their programs/units; presenting the experience of someone who shared the perspective of staff was an effective means of fostering support.

One business school established a teaching and learning team of four teaching and learning consultants and learning designers with a coordinator and this has proved pivotal in that school to the successful implementation of AoL and ongoing staff engagement. One-on-one support was provided to individual academics to explore and improve assessment practice, develop assessment guidelines and audit assessment practice. As well as workshops and one-to-one sessions, participants discussed some of the key resources they had created in order to improve staff engagement in AoL: web-based resources; tools to support and streamline the AoL process; development of generic rubrics for undergraduate and postgraduate learning goals; inductions for new staff (including tutors and casual staff); and sponsorship for staff to attend external AoL conferences.

**5. Reward and Recognise:** Demonstrating success and effectiveness by selling staff on the evidence that AoL makes a difference.

Convincing staff of the usefulness and effectiveness of AoL was central to getting engagement; staff need to directly see the benefits in mapping, measurement and curriculum change in order for them to become committed and spend time on the process. One university used an online program that made it possible for staff to engage with the AoL data directly. Academics were able to work with the data themselves and create charts and analysis. Presenting the data as a resource as well as the basis for change and decision-making was important for staff engagement.

Participants also talked about the usefulness of taking the initial goodwill and buy-in amongst staff and building on them for assurance processes beyond those required by the external bodies, for example, "... what I'll do now is I'll take the behaviour-changer and I'll say let's find someone doing this really well and then let's promote it". One fairly innovative measure was using program and unit coordinators who had done AoL well, and having them present at seminars and engage in mentoring and peer support. By recognising these staff members and asking them to share their approach to and experience of AoL, anxiety levels about the process were reduced amongst other academics.

**6. Empowerment:** Inclusivity and making the process inclusive with academics collaborating in the development and implementation of the process.



To address the concerns about workload it was vital that academics were involved in the AoL process so that they saw how their unit fitted into the program as a whole. The emphasis on a participatory process involved sitting down with subject coordinators and having them work through how the GAs and program learning objectives fitted into their subject. One institution developed a mapping tool so that subject coordinators collaborated not only in mapping GAs across the program, but identifying and resolving issues around the distribution and gaps in the curriculum. While the teaching and learning team facilitated the process, it centred on the involvement of academic staff.

At another school of business, initial work on mapping was done through workshops where unit coordinators in program/discipline teams were asked informally to indicate which GAs were involved in their assessment tasks. Using sticky notes, they were asked to map out the distribution of the attributes across assessment tasks through a program or major, from which a number of gaps and overlaps were identified and discussed. The resulting maps from this exercise were developed by a teaching and learning team, and then presented back to the program directors and unit coordinators, who were then responsible for any changes.

## 7. Communicate for Buy-in.

Communications about AoL went hand-in-hand with professional development activities. The key messages were that AoL was a simple process that should be considered part of normal teaching and learning in fostering improvements in curriculum and student outcomes, and that it did not require significant additional work.

Acknowledging the degree of apprehension around AoL processes was important, with participants providing examples of work done in directly challenging perceptions that AoL was complex and time-consuming in order to make it less daunting. It was also seen to be important to provide reference material and regular updates on the AoL process, for example, an introduction to AoL guide/handbook, teaching and learning newsletters, websites and AoL sessions at faculty retreats/meetings. Academics were also canvassed for their feedback on the AoL process with this feedback used to further develop practice.

### (iii) Key factors for Teaching, Assessing and Providing Feedback on Graduate Attributes

Based on feedback from focus groups with academics, the project team decided to undertake additional work to try and identify principles of good practice underpinning teaching and assessing GAs. The main areas that were highlighted as important for good practice and received with appreciation in the Teaching Master Classes as part of the dissemination process for this project included:

#### Teaching

##### Design:

- Start by identifying desired outcomes in clear, authentic and contextual way;
- Adopt whole of program design to facilitate progression of GAs;

- Establish common understanding of GAs shared by both staff and students;
- Embed GA into units of study;
- Identify skills gaps amongst staff and provide professional development.

#### Facilitation:

- Provide risk free environment;
- Make GAs explicit; linking to industry, assessments, outcomes, professional body requirements;
- Emphasise value of GAs to students making the connection to practice;
- Clearly articulate criteria/standard/weightings in order to foster shared understanding.

#### Assessment:

- Design should start with desired outcomes;
- Design should draw on tasks that provide authentic evidence of these outcomes;
- Build in a reflective process to generate information about how the tasks generate evidence of learning;
- Embed assessment in the content of the units;
- Reflect whole of program view, including scaffolding of tasks.

#### Feedback:

- Incorporate peer judgment;
- Make the purpose of the feedback clear;
- Relate feedback explicitly to GAs;
- Focus on closing the gap between student and marker's perceptions of the work;
- Incorporate both positive and negative;
- Promote staff learning through providing feedback;
- Aim for value-added feedback.

#### (iv) Development of Resources

Attendees indicated that they thought the most useful aspects of the dissemination workshops were the resources and frameworks developed by the project. This included the direct project resources through the website, but also the knowledge shared about strategies and frameworks to implement AoL. The approach of unpacking effective AoL to build a more sophisticated framework was also valued. In terms of the impact on practice, participants thought that access to these resources supported their institutional approach. Feedback on the website resource kit and its impact on users' behaviour has included that the materials encourage a more systematic approach to development of AoLs across programs rather than viewing them as an issue; will be used to guide institutional strategy and tool development; and that they will be used to disseminate good practice principles amongst colleagues.

## Law, Pharmacy, Engineering, and Nursing Disciplines

As stated previously the methodology changed over time as it became clear that AoL was much less developed in the disciplines of law, pharmacy, engineering, and nursing. While most of these disciplines had limited examples of anything beyond the mapping of graduate attributes, there were a few exceptions. Moreover there was a lot of variation in awareness of AoL as an educational principle, with some ADTLs active in developing processes to engage staff. While some of these interviews required the clarification of some key terms and concepts, there was often a fruitful exchange of ideas; sharing practice in Business with these other disciplines may have had significant value. As an example, one of the discipline experts who was sent the preliminary report for that discipline for feedback reported that they had used some of the points in the report as part of an expression of interest to the OLT (Office for Learning and Teaching).

### Law

- In terms of the philosophy of their approach, participants primarily identified accountability to students and other external stakeholders in order to protect the integrity and reputation of the school. Curriculum improvement was also mentioned by some participants;
- Accountability also figured prominently in the motivators for assurance of learning, again related to the reputation of the school, but also accreditation requirements;
- From the 17 law schools represented, 14 (82%) had some formal mapping process in place to structure the development of skills and assure learning at particular points in the program. The approach to mapping involved either: (a) individuals or teaching and learning groups undertaking the process; and (b) teaching and learning staff engaging the faculty in the process; or (c) the work being delegated out to unit and program coordinators. Mapping tools were generally not used;
- Data collection was relatively uncommon amongst the schools included with only two schools (12%) undertaking the collection of student learning outcome data. Participants felt that their assurance of learning came down to the identification of assessments that represented a good test of a particular skill;
- For schools that collected data, closing the loop involved a committee with broad representation across the faculty. Participants without assurance data collection also engaged in improvement processes, using overall student performance in particular units and assessments;
- In terms of the challenges, participants talked about: integrating the law threshold learning outcomes into their existing processes; dealing with regulatory arrangements that do not have teaching and learning considerations at the centre; the teaching of skills, time constraints, student awareness and engagement with attributes; the different contexts for regional/distance universities; and unrealistic expectations of employers. The main challenge identified was staff engagement, which participants felt may be particularly difficult in the law context. Participants talked about resistance from (sometimes) small groups of staff that were resistant to any discussion about teaching and learning;
- The strategies used to resolve some of these challenges centred on professional development and support for staff; demonstrating organisational commitment to assuring learning through leadership; and communication strategies alongside collaborative processes.

## Pharmacy

- *Philosophy*: Participants emphasised the ability to identify and address gaps, and to better elucidate the process of their programs;
- *Motivations*: Accreditation, student expectations about the acquisition of skills, and the importance of graduate attributes to the profession;
- *Mapping*: Most of the schools with developed programs engaged in some kind of mapping, although often it reflected an out of date template. Newer schools were actively engaged in developing their programs through curriculum mapping;
- *Data Collection*: Two of the smaller but established schools had data collection processes in place; one with consistent criteria for graduate attributes and another without;
- *Closing the Loop*: Closing the loop primarily involved student feedback information, although one school reported that data collection fed into course review processes;
- *Challenges*: The most common challenge was how to manage assurance processes without adding to academic workloads. There were also some challenges in fitting the rigours of a pharmacy program into the university's restrictions around contact hours;
- *Solutions*: External advisory panels with staff and students looking at assurance, flexible processes that can work around the preferred practice of teams, and having staff with experience in curriculum design.

## Engineering

- *Philosophy*: Clarifying the relationship between the program and the development of graduate attributes, assuring learning has occurred, and improvements to curriculum;
- *Motivations*: Compliance with Engineers Australia (EA) accreditation requirements, providing the industry with competent graduates and improvements to teaching and learning;
- *Mapping*: Programs were often mapped to both the EA requirements and the university-level attributes, while some schools used the EA requirements to demonstrate the development of the GAs. While all the participants had curriculum maps they varied in terms of whether they were mapped at the assessment or unit level;
- *Data Collection*: Half of the schools included were engaged in collecting assurance data. One school used full assessment marks, while two others used part-marks related to unit learning outcome criteria;
- *Closing the Loop*: One of the schools collecting data had a well-developed formal process for closing the loop. Another undertook data collection primarily for accreditation purposes and had limited feedback to curriculum from this data;
- *Challenges*: Communication and engagement, the use of technology, the sense that staff did not have the skill set to teach these skills, preparing for TEQSA and the AQF, and the fact that students could pass the unit and not develop the GAs without proper assurance. Staff engagement as a whole had not been a particular problem, but to suddenly involve staff at the point of mapping without previous engagement could be challenging;
- *Solutions*: Professional development and community, and the proper resourcing to build capacity.

## Nursing

- *Philosophy*: Being able to show the link between assessment and program-level outcomes;
- *Motivators*: Developing students into professionals, to form a coherent program, accountability to the profession;
- *Mapping*: Participants mostly mapped to the Australian Nursing and Midwifery Council (ANMC) competencies as these fulfilled many of the university graduate attributes. All schools had developed mapping at the assessment level, with some engaging in a more consultative process;
- *Data Collection*: None of the schools were in the process of collecting outcome-specific data. Clinical placements were used to assure some of the ANMC competency standards;
- *Challenges*: Getting clinical placements at the appropriate time in the program, the changing demands of nursing graduate skills, how to maintain quality with lower funding, how to manage the different agendas shaping curriculum. While staff engagement was generally reported to be good, change could be problematic for some staff;
- *Solutions*: Flexibility in delivery links to industry to keep across demands on staff, proper resourcing of change.

## Tool Review

A set of criteria (see page 18) were developed for use in an external review of curriculum mapping tools. These drew on the principles developed from interviews with ADTLs. In terms of the technical capabilities of a particular tool, the reviewer was asked to determine if it supported a program-wide view and mapping by assessment tasks.

## Curriculum Mapping

The main features found to be of importance in selecting a system to support AoL was how the tool could be used to:

- Support an inclusive and participatory process;
- Foster a program-wide approach to produce a mapped overview;
- Map by assessment task;
- Assist develop student awareness of attributes and their distribution within the program.

## Curriculum Mapping Standouts

The reviewer identified three tools as the most useful: the Subject Overview Spreadsheet (SOS), C2010 and JISC Designstudio<sup>2</sup>.

**Table 5.2 Review of the Subject Overview Spreadsheet (SOS)**

Key Features
The SOS tool (developed at UTS Business School) is very clear, practical and efficient. It facilitates AoL work at unit, program and institutional (GA) levels. Program/curriculum

<sup>2</sup> The JISC Designstudio package consists of a number of integrated tools.

review is assisted by some particularly valuable features/capabilities (e.g. means for gap analysis and examination of assessment policy compliance). The tool provides concrete guidance for improving the clarity and accuracy of articulation of learning objectives. Mapping tasks that incorporate assessment elements are possible and the tool enables the generation of a range of derivatives of assessment results for different purposes.

**Weaknesses**

As it stands, many educators who might approach SOS would be put off persisting with it unless their initial engagement was supported by some appropriate induction, coaching or professional development (ref: criterion 1.8; p.54). Depending on individuals' needs, this would need to focus more or less on understanding of pedagogical concepts, the inherent logic of AoL and curriculum design and/or operational aspects of getting going and following through with AoL work. Some kind of face-to-face support is almost always the best approach in these kinds of contexts but in any case the tool could be improved by incorporating better induction and explanatory information and links.

With SOS, and the other course mapping tools, there are a range of inherent assumptions and/or matters that are not made explicit, perhaps because they are considered to be at a more precise level or there is a view that 'there's only so much you can do' with such applications without making them too unattractive for potential users.

**Considerations**

*Planned student learning experiences* for achieving particular learning objectives is generally not included as a key element in the CM-related tools and the frameworks and processes they present. It is possible to read this as a reflection that this element is not considered to be that important in CM/AoL frameworks (although it certainly is), or that it is simply assumed that all is usually fine on this front, which is not a reasonable assumption. The *quality* of assessment components/tasks nominated, as part of CM exercises, seems to be unproblematic, that is, it seems to be assumed that all identified assessment components are appropriate and of good quality. There is no expectation to describe (briefly) *why* particular major assessment components are 'good' for their purpose and place within a unit or program. Ultimately, this is a critical factor for good AoL work. A further comment on SOS is warranted. It is really a suggestion and implies no criticism. As part of its evolution, having the capability for SOS and ReView (one of the DC-M tools discussed later) to 'talk to each other' (in ways that are valuable for users) would build on the already considerable power of SOS for helping with AoL work.

**Table 5.3 Review of the C2010 Software**

<b>Features</b>
C2010 (developed out of a project at Curtin University) is comprehensive and valuable for several aspects of AoL work. Importantly it encourages and provides means for program-level design and review. C2010 has good layout and visualisation features in its representations of alignments between institutional-level intended learning outcomes (GAs), program objectives, assessment types and requirements, learning support resources and student performance levels. Some of the 'sub-tools' appear to be particularly useful (e.g. Unit Outline Builder within the Course Information Tool).
<b>Weaknesses</b>
C2010 does not quite have the diversity and levels of analytic and mapping power that SOS does. The explanatory material within C2010 is clear and informative although in places has

been found to be a bit too discursive.

**Considerations**

The reviewer suggests that like the JISC Designstudio (see below) C2010 is much more than a single tool, but its components are relatively circumscribed and quite clearly related.

**Table 5.4 Review of JISC Designstudio**

<b>Features</b>
As a compendium, it has real value in a one-stop-shop sense for educators who wish to gain a bigger-picture view and learn generally about the concepts and techniques of curriculum design and aspects of mapping (e.g. high-level course mapping; stakeholder consultation). Most of the materials looked at are clear, conceptually sound and explained well. Visualisation features in some of the ‘tools’ are very good (e.g. <i>Course Maps under Learning Design</i> ).
<b>Weaknesses</b>
The vast amount of information included in the JISC site could have a deterrent effect on some people. As noted on the site, “finding a single format to communicate educational design is problematic”. Because of the range of resources and their variable complexity, some coaching or other kind of professional development or support would be necessary for many users. It was not clear how many practical tools there were for more concrete AoL activities concerned with alignment and coherence of curriculum elements across different levels.
<b>Consideration</b>
It does not seem sensible to regard the JISC Designstudio as a tool in any singular sense. It is an extremely comprehensive suite of resources, with a strong ‘general guidance’ feel to it.

**Other CM tools**

The reviewer also provided a summary of some of the other prominent tools. All of the *CM*-related tools reviewed appear to be at least somewhat useful and have some good features. For example, CoGent, is strong in the ways it represents the logics of processes and it is clear and relatively easy to use. Its functional scope for AoL work is limited and it appears not to emphasise an integrative program-level perspective. Similarly, Weave has an impressive and engaging Web presence and appears to provide a wide general coverage of curriculum design ideas and resources, with a North American orientation.

As an overall summary of mapping tools, SOS, C2010 and the JISC Designstudio went closest to satisfying the desirable criteria nominated for effective *CM* tools although none of the tools reviewed satisfied criterion 1.3 (concerning the need to consider *planned student learning experiences* as a key element in *CM* and *AoL* work). It would also be a stretch to conclude that the better tools satisfied criterion 1.8 (concerning ease of use without much need for supplementary professional development), such as initial coaching, but that is not necessarily a major problem.

**Data Collection**

The main features found to be of importance in selecting a system to support AoL was how the tool could be used to:

- Implement a consistent criteria for attributes across programs;
- Extract outcome-specific data;
- Embed measurement in the curriculum;
- Produce built-in reports;
- Conduct analysis for closing the loop;
- Implement multiple measures of AoL for a program-wide view.

### Data Collection Tools Standouts

According to the reviewer three *DC-M*-related tools stood out when judged against the criteria above: ReView, ELumen and SPARK Plus. It should be noted that SPARK Plus has a narrower focus, in terms of range of coverage of assessment matters, than ReView and ELumen.

**Table 5.5 Review of the ReView Software**

<b>Features</b>
ReView is a well-established and evolving tool (developed at UTS). It has considerable power and flexibility for helping with the recording, summarising, analysis and reporting of assessment data. The tool is valuable for facilitating improvement in the quality of many aspects of assessment practices. It encourages and provides effective means for student engagement in many aspects of assessment, including self and peer performance evaluation and feedback processes and practices that are explicit and helpful for students (and educators). Overall, ReView is grounded in sound pedagogical principles and practices. For example, it emphasises the need for clear student performance criteria for assessment components and the evident alignment of these criteria with learning objectives at unit and program levels. The tool has a valuable and expanding range of functions that enable derivatives of data to be generated (e.g. distributions of marks; subject/unit reports). One recent addition enables graphic-form data summaries of students' levels of achievement of 'standards' expressed in terms of program level objectives (desired GAs).
<b>Weaknesses</b>
Like most of the other tools examined, ReView does not rate that well on 'ease of use without the need for much supplementary professional development' (criterion 2.6, p. 54). Improved induction within the application would help with this problem, but for many educators, some professional development support would be necessary for them to feel confident about using the resource effectively.

**Table 5.6 Review of ELumen**

<b>Features</b>
The main website is informative, very clear and well organised with good visual design. As a resource it is holistic, logical and adopts an integrative perspective on curriculum development. These features are evident, for example, in the tool's layered approach to overall quality assurance which relates institutional and program level concerns such as accreditation to clear and appropriate student learning outcomes, assessment practices and the specification of standards. It also emphasises the importance of serious consideration of the views of multiple stakeholders in curriculum design, implementation and management.



ELumen has good functionality for processing and reporting assessment data sets, data mining and the generation of derived data.

**Considerations**

ELumen is founded on a stated (but not original) ‘point of difference’ in relation to assessment, which is that there is a need for “tracking learning (outcomes) instead of assessment activities”.

**Table 5.7 Review of SPARK Plus**

**Features**

The induction and explanatory material incorporated in SPARK Plus is relatively good. This includes effective introductory material and cases which illuminate aspects such as set-up and monitoring for a unit or cohort. The tool’s organisational and visual design features are very good. There are also helpful support elements (e.g. criteria sets for assessment responses (‘ratings’). Notwithstanding SPARK Plus’s focus on assessment in group learning and performance contexts, flexibility is a positive aspect of the tool. For example, variations in rating styles/approaches are accommodated, a range of different ratings data summaries can be reported (e.g. ‘self’, ‘peer average’), and it is possible to vary precision levels in ratings on scales using a scale ‘slider’ function. The tool also has very good functionality for summarising, reviewing and examining patterns in results, and it also enables some kinds of analyses of (assessment) item performance.

**Considerations**

SPARK Plus focuses primarily on assessment of/for group participation and performance or contribution in teams. The tool’s foundation pedagogical principles are generally sound. Key among these is that ‘assessment drives learning’. While it is true that students’ understandings of what their assessments will require can be a powerful factor for shaping how they will apportion their learning efforts and for determining the quality of their learning, assessment is certainly not the only significant factor. The *quality of the planned student learning experiences* and *teacher practices and attributes* are two other evidence-based significant factors. SPARK Plus stresses other principles for good assessment practice, particularly the importance of being able to engage effectively in self and peer assessment, and the need for high quality formative feedback based on explicit and relevant performance criteria.

**Other DC-M tools**

According to the reviewer all of the *DC-M* tools reviewed can be seen as having some utility value and merits. Chalk and Wire seems to be a useful resource for assisting with e-portfolio development and associated assessment matters. WAYPOINT Outcomes is a professionally presented ‘up-beat’ North American package which presents some good ideas and practice supports concerning, for example, ICT-based personalised feedback for students and course outcomes reports. Despite its very limited applicability, and the need for some review of its descriptors for student performance standards, the INSEARCH Template could still be a helpful resource for some educators in certain circumstances.

**International Review**

In comparison to many other jurisdictions, Australia possesses a developed and systematic

approach to quality assurance. While TEQSA and the AQF are both relatively new, having a national qualifications framework and a quality agency that will undertake quality assessments represents steps towards the UK and European models, and away from the US and New Zealand models of voluntary accreditation and self-assessment.

A summary of international quality assurance, including major international projects, and a brief summary of quality assurance systems across different jurisdictions can be found in Appendix H, below. While certainly not exhaustive, this information provides a sense of how the trend for increased quality assurance processes has played out in other jurisdictions.

## Factors that Contributed to the Project's Success

One of the main factors that contributed to the project's success was its timing. The establishment of TEQSA, the need for AQF compliance and the Standards Debate in general have raised awareness within institutions regarding the importance of being able to assure GAs. Heightened awareness also raised a multitude of questions about how processes should or could be approached. The project positioning and priorities, with focus on the practicalities behind curriculum mapping and data collection for assuring GAs, have been well received as timely contributions to discussions on assuring learning. This has meant that the task of trying to get buy-in from stakeholders to participate in surveys or to attend dissemination events has been supported by recognition of the importance of a project that reviews strategies for supporting AoL. The support of the ABDC Teaching and Learning Network, the AACSB Google Group, and the Discipline Scholars was particularly appreciated and efficacious.

The next critical factor in the success of the project was the project team itself. Although the team was newly formed for the project, members quickly bonded to form an effective working unit from the start. The team members brought a wealth of varied experience to the project as well as good networking connections. From the onset, the team agreed on various working protocols and this provided a firm foundation for the rest of the project, for example, a communication system was devised where all materials were shared using a Dropbox system. In addition, it was agreed that all team members would be listed on all the project publications with different members being given the opportunity to lead on presentations and papers.

Lastly, the project was supported through an excellent reference group and external evaluator. Members of the reference group were kept informed of the project activities via regular updates and invitations to project meetings and a mid-project reference group forum. The feedback from these communications was extremely valuable to the project and allowed the team to gain additional insights. The project's external evaluator was also provided with regular updates and attended a number of project meetings, thus allowing for critical questions to be asked as the team progressed, which helped to responsively guide the work.

## Factors that Impeded Success

The main challenge has been in maintaining a project officer. Due to the part-time nature of the role, the initial project officers that were recruited did not complete their contracts and

so it was necessary to re-recruit. This meant that the project had three different project officers in its first year. The turnover of project officers was problematic with time needed to recruit and brief incoming project officers which caused a slight slip in the original timeframe meaning that the additional disciplines were not surveyed before the end of 2011. The third project officer, however, has remained in place since the start of their contract and has proved to be a very able addition to the team.

During the surveying of the additional disciplines, it was found that some key contacts were already working with the Assessing and Assuring Graduate Learning Outcomes (AAGLO) project team. This caused some confusion and overlap but after consultation with the other project team a solution was found whereby materials were shared so that stakeholders were not asked to supply the same material twice.

## Lessons Learnt

Recruiting business school ADTLs to participate in interviews was reasonably successful with 25 institutions out of 39 (64%) participating. However, getting institutions to commit to focus groups was more challenging.

In future, if this team and additional partners are able to extend their work in AoL, the team will use personal contacts to a greater extent to gain personal introductions, and will also make sure that all the benefits of participation are fully articulated to potential participants.

In the second stage of the project, the team actively worked with 'discipline scholars'<sup>3</sup> to make contact, request participation and expand networks. The project team adopted a Delphi-like approach to the methodology, where experts were used to generate and then confirm data and ideas, thereby reducing the number of participants required. This approach was run in conjunction with an Australia-wide online survey to gain additional data to that gathered from the experts.

Progress was commendable and most timeline targets were met or easily reached. The project was predominantly run on time and always to budget.

Numerous resources to support curriculum mapping and data collection were developed and disseminated via the project website ([assuringlearning.com](http://assuringlearning.com)). The project team actively disseminated findings through conference presentations, key stakeholder groups and the preparation of critical review papers for journal publication.

The development of external accrediting organisations (TEQSA, AQF), as well as the ongoing public discussions on higher education standards, have provided guidance for the project. Working through discipline scholars and discipline head of school councils proved to be effective in fostering participation from disciplines. Compared to Business, the other disciplines that participated had a fairly undeveloped approach to AoL, which meant that

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<sup>3</sup> Discipline scholars are senior academics selected by the ALTC for their recognised standing within their discipline. They are driving the Learning and Teaching Academic Standards project.

the respective data was limited in being able to identify good practices in terms of collection and closing the loop. As described above, it was therefore decided to streamline data collection by using a Delphi approach in collecting data to utilise experts with an online survey to provide wider perspective from the additional disciplines.

The initial project focus was on leadership issues for assuring GAs. As a result of the focus groups with academics regarding implementation of the AoL process, the thematic focus expanded to include issues about teaching, assessing and providing feedback for GAs. To address this, experts in teaching and assessing GAs were gathered in focus groups and dissemination workshops to identify good practice principles in these areas.

The feedback from the external examiner and reference group has been invaluable. They have helped the team by providing a national context for the work and giving guidance on how to use the project findings to add to the standards debate and impact on practice.

## HG Dissemination Events Evaluations

Overall, the dissemination events were extremely well received, particularly in terms of providing participants an overall sense of what is happening in the sector, and some key ideas and resources that could be applied to their institutional context. Beyond the content of the day, participants got value out of the ability to share and discuss their experiences and challenges with other participants, and a sense of emotional support that seemed to come from the acknowledgement of the common challenges. The critical feedback about the day mainly concerned wanting more time on particular areas, and a sense that particular people could dominate the workshops.

Across the dissemination events participants primarily indicated that they attended because they were in a leadership role that included AoL; they were prompted by concerns about accountability to TEQSA or the incorporation of Threshold Learning Outcomes and the AQF; specific speakers drew their interest (David Boud and Romy Lawson); they had a research or general interest in the topic; or that they were interested in driving change within their institution.

In terms of the parts of the events thought to be most useful, participants identified being able to share and exchange experiences and perspectives with other attendees; the overview of the sector; specific parts of the day (overview, workshops, keynote, anecdotes, contrasting views of academics and leaders); the availability of resources and tools; and specific concepts or ideas discussed (feed-forward, embedding GAs within discipline knowledge, cultural change, scaffolding, social-constructivist approach, Bloom's taxonomy, rubrics).

Where participants had been asked about parts of the day that were the least useful they mentioned a number of areas where they would have liked more content, or parts they did not think were particularly useful. Overall participants wanted more time, more examples, more discussion, and more focus on GAs. A number of participants reported that there were dominating personalities in the master-classes (across multiple events), that the teaching and assessing workshop was too basic for the audience, that the booklet was unnecessary

as the resources are on the website, that some of the bullet points on the presentation slides were too long, and that they were not particularly interested in the project findings.

Finally, participants were asked to indicate what impact the project was likely to have on their practice. Some of the areas identified included strategies to lead AoL processes; awareness of the resources and approaches to AoL identified and made available through the project; emotional support and a positive approach to the challenges; a big picture understanding of AoL and being able to articulate this to colleagues; and thinking and engaging with GAs and learning outcomes. Some participants gave specific examples of the projects/activities that they were engaged in at their university that the session would have an impact on (e.g. development of capstone unit, designing learning outcomes for subjects, review/redesign of programs). Other participants identified specific ideas and concepts they were likely to employ (e.g. embedding GAs, feed-forward to unit coordinators, the five steps of AoL).

## Website Evaluation

The respondents indicated that the project has been able to put together a lot of information and resources that are accessible despite the complexity of the issues. That the project has been able to provide a sense of what is current practice across the sector is thought to be a significant achievement.

Respondents were asked what they saw the impact of the project being for both their institution and nationally. They provided three kinds of responses: that the impact came from clarifying what is known and what is done; that there is value and impact from the sharing of practices; and that clarifying and sharing can lead to a change of practices nationally and in institutions. Clarification included the definition of AoL and its purpose, the different stakeholders and systems that are involved, and the issues that are already broadly understood about the mapping, embedding and assessment of GAs. It was suggested that sharing good practices might have the effect of assisting institutions to refine their approaches by drawing on lessons from other institutions, along with the knowledge of the kinds of tools and resources that exist. Clarifying and sharing practices was thought to lead to change in the sector through agreement on the best way forward. The project was thought to have played a part in increasing the national focus on teaching and learning quality, which can foster engagement amongst both leaders and academics.

Ratings of the website content were positive with all ratings above a three out of five ( $m=3.57$ ;  $SD=0.53$ ) from the seven respondents that completed this section. Respondents also indicated they were quite likely to use the material ( $m=3.14$ ;  $SD=0.378$ ), and were generally satisfied with the design ( $m=3.00$ ;  $SD=0.82$ ) and the ease of use ( $m=3.00$ ;  $SD=0.82$ ). Along with the structure of the website, participants appreciated the best practice/case studies, links to models and links to the tools. Respondents indicated they would use the resources to promote thinking about AoL across programs, as a clearing house for tools, and as a resource for developing resources and institutional strategies.

### Website Impact Comments:

- Clarification on what AoL is and what it is for;

- Refining the model based on lessons from elsewhere;
- Recognition of the range of voices and stakeholders that need to be involved in the process and the limitations of the infrastructure, systems, etc. in delivering what is needed;
- Greater focus on assuring teaching and learning, which is beneficial for both my institution and quality across the sector more broadly;
- It is good to have this kind of repository where examples and cases are shared – why reinvent the wheel?;
- Use of the mapping tools will be useful at my institution;
- Constructive for academics who may feel their emphasis/interest in teaching puts them at a research disadvantage;
- For my institution – insight, guidance, reference tools;
- Nationally – agreement on the way forward;
- In one sense this project is affirming much of what is already known about curriculum mapping generally and about issues surrounding the embedding/scaffolding and assessment of any of the various course-level learning outcomes (whether they are called attributes, qualities, capabilities, threshold learning outcomes or something else);
- My take-home message from this project is that it is essential to have executive-level buy-in and nothing can be achieved without resources;
- My other take-home message is that some aspects require a top-down approach while others require a bottom-up approach;
- To encourage a more systematic approach to development of AoLs across our programs rather than viewing them as an issue.

Google analytics also provided some interesting data. A healthy mix of returning viewers (42.86%) and new visitors (57.14%) were using the site. On average viewers were visiting 5.22 pages, spending 1 minute 16 seconds on each page for a total visit duration of 5 minutes 24 seconds. The majority were accessing the site directly (61.22%) with the remainder using search engines (predominantly google) with most common search terms being: assuring learning, leadership, implementing university wide change, hunters and gatherers, and quality assurance. The most popular pages were the Home page (20.5%); Tool Review (9.77%); Good Practice (8.59%); and Dissemination (6.25%).

## External Evaluation

The External Evaluator's Interim Report stated that the project is clearly meeting its objectives and delivering as the project application anticipated. Highlights include:

- Interviews with the business ADTLs in 25 of the 40 Australian university business faculties and schools that are member institutions of the Australian Business Deans Council (ABDC [www.abdc.edu.au/7.0.0.1.0.0.htm](http://www.abdc.edu.au/7.0.0.1.0.0.htm)). This is a 62% response rate, which the ALTC commended as 'a good result' in response to the August 2011 Progress Report, although it is not recorded whether the sample is proportionally representative of those ABDC member institutions who have Association to Advance Collegiate Schools of Business (AACSB) accreditation. Eight follow-up focus groups were also conducted;
- The completion of the Literature Review;

- A commendable number of disseminations either completed or in progress, which include both information provision and peer reviewed submissions (e.g. to *Higher Education Research and Development (HERD)*) and engaged disseminations (e.g. to Australian Business Deans Council (ABDC) T&L Network);
- The development of the project website at <<http://assuringlearning.com>>, which will shortly be populated with project resources.

In the final external evaluation report Professor Sally Kift concludes that:

This was a timely, important and well-managed project that has more than achieved its objectives and produced deliverables that have been valued, keenly embraced by the sector and are certain to make a significant contribution to the enhancement of current practice. The members of the Project Team are to be congratulated on their work and on the project's obvious success. The Office for Learning and Teaching should be very pleased with *Hunters and Gatherers* and its obvious impact. From my own perspective it has been a genuine pleasure and a great learning experience to be involved in the project as its Evaluator.

Given the obvious appetite and steady demand for the project's outcomes and deliverables in the current TEQSA environment and the enthusiasm with which the project's dissemination events have been met, it is **strongly recommended** that every effort be made to ensure that the momentum that has been generated not be lost to the sector on the project's conclusion. Desirably, this momentum should be harnessed and further supported under the auspices of OLT programs (e.g. via extension grant(s), discipline-specific work or fellowships) and by institutions benefited themselves.

# Chapter 6 Sharing Project Outcomes across the Higher Education Sector

## Dissemination and Embedding Strategies

The project involved both passive and engaged dissemination strategies, consistent with the ALTC/Carrick dissemination framework (2006) and recommendations of the dissemination report by McKenzie et al. (2005). An integrated embedding strategy was developed and implemented which draws upon both the ALTC Dissemination Framework and the findings of the D Cubed project, employing ‘engaged’ and ‘information sharing’ dimensions.

There were two main components to our strategy. The first part of the embedding strategy focuses on ensuring that ongoing dissemination and embedding occur internally within the universities managing this project by establishing communities of practice and engaging leaders. The second embedding strategy focuses on ensuring that dissemination and embedding of project outcomes occur nationally through ongoing and systemic engagement with senior management, for example through the Australian Business Dean’s Council (ABDC), and key staff responsible for AoL practices, for example the ABDC Teaching & Learning Network. A key element of the dissemination strategy is a series of (five) state-based professional development workshops to showcase and disseminate the audit analysis and supporting resources and tools. This increased recognition at the institutional, faculty and staff levels of effective mechanisms for mapping and collecting AoL data. Other dissemination and embedding strategies included focus groups conducted throughout the project, the strategic paper, presentation of findings to the conference presentations, publications in academic journals and periodicals, and the online resource kit.

## Dissemination Events

### Focus Groups

**Table 6.1 Summary of Dissemination events**

Date/s of the event	Event title, Location (city only)	Brief description of the purpose of the event	Number of participants	Number of Higher Education institutions represented	Number of other institutions represented
8.8.11	USQ	Focus Group (Academics)	8	1	0
8.8.11	USQ	Focus Group (Leaders)	3	1	0
16.8.11	RMIT	Focus Group (Academics)	6	1	0
16.8.11	RMIT	Focus Group (Leaders)	8	1	0
17.9.11	UTS	Focus Group (Academics)	3	1	0
17.9.11	UTS	Focus Group (Leaders)	3	1	0
19.9.11	QUT	Focus Group (Academics)	8	1	0
19.9.11	QUT	Focus Group (Leaders)	5	1	0
May 2012	UWA	Focus Group	12	1	0
May 2012	QUT	Focus Group	11	1	0
May 2012	UTS	Focus Group	9	1	0
<b>TOTAL</b>			<b>76</b>	<b>5</b>	



## Conferences & Forums

**Table 6.2 Summary of Dissemination at Conferences and Forums**

Date/s of the event	Event title, Location (city only)	Brief description of the purpose of the event	Number of participants	Higher Education institutions represented	Other institutions represented
May 2012	UWA	Dissemination event	40	1	0
Aug 2011	Academic Standards Clearinghouse, Sydney	Forum	25	Unknown	Unknown
Aug 2011	University of Southern Queensland	Workshop	44	1	0
Sep 2011	UTS Business T&L Forum, Sydney	Forum	20	1	0
Oct 2011	ATN Assessment Conference, Perth	Conference	32	Unknown	Unknown
Nov 2011	AACSB Google Group Annual Meeting Presentation, NZ	Forum	35	Unknown	Unknown
Dec 2011	APLEC Conference, Sydney	Conference	40	Unknown	Unknown
Feb 2012	ABDC T&L Network Meeting, Adelaide	Forum	35	Unknown	Unknown
Jun 2012	8th International Conference on Evaluation for Practice, Finland	Conference	45	15	15
Jul 2012	4th EDULEARN Conference, Spain	Conference	55	Unknown	Unknown
Jul 2012	8th ICE Conference, Greece	Conference	45	Unknown	Unknown
Dec 2012	ANZAM, Perth	Conference	21	Unknown	Unknown
Dec 2012	ANZAM, Perth	Conference	4	Unknown	Unknown
Dec 2012	HERSLEB, Melbourne	Conference	12	Unknown	Unknown
Aug 2012	JCU, Townsville	Academic Development	23	1	0
Nov 2012	DWU, PNG	Academic Development	44	1	0
Dec 2012	CBS, Perth	Consultation	15	1	0
Dec 2012	U Melbourne	Consultation	4	1	0
Mar 2013	AACSB, USA	Conference	Unknown	Unknown	Unknown
May 2013	NZ	Consultation	Unknown	2	0
<b>TOTAL</b>			<b>539</b>	<b>24</b>	<b>15</b>

## Workshops

A series of dissemination events were run across Australia consisting of a Project Overview; Keynote address; Master Classes – Leadership Strategies & Teaching & Assessing Graduate Attributes. These were run in conjunction with existing events/conferences to maximise impact:

- National T&L Forum – Brisbane – 17–18 Sep 2012: OLT Project Event 19 Sep 2012;
- AACSB Google Group – Sydney – 25–26 Oct 2012: OLT Project Event 24 Oct 2012;
- HERSLEB – Melbourne – 10–11 Dec 2012: OLT Project Event 12 Dec 2012 ;
- ANZAM Conference Workshop and Presentation – Perth – 5–7 Dec 2012:  
OLT Project Event 4 Dec 2012.

**Table 6.3 Summary of Project Dissemination Workshops**

Date/s of the event	Event title, Location (city only)	Brief description of the purpose of the event	Number of participants	Number of Higher Education institutions represented	Number of other institutions represented
Sep 2012	Brisbane	Dissemination Workshop	32	12	3
Sep 2012	Townsville	Dissemination Workshop	18	2	0
Oct 2012	Sydney	Dissemination Workshop	38	16	4
Dec 2012	Perth	Dissemination Workshop	27	8	1
Dec 2012	Melbourne	Dissemination Workshop	55	24	5
<b>TOTAL</b>			<b>170</b>	<b>62</b>	<b>13</b>

## Project Materials/Resources

A project website has been in place since the start of the program ([assuringlearning.com](http://assuringlearning.com)). This site has a range of features to support both academics and leaders in implementing the curriculum mapping and data collection processes of AoL.

### **Website**

#### Project Overview

Good Practice Strategies (with examples) for:

- Curriculum Mapping Process;
- Data Collection Process;
- Closing the Loop Process;
- Staff Engagement;
- Leadership for Implementation;
- Teaching GAs;
- Assessing GAs;
- Providing Feedback for GAs.

#### Tool ReView

Links to further reading/other projects

Dissemination Materials (Presentations & Papers)

*The site has received over 700 hits to date.*

Also to support the dissemination event a workshop booklet was developed with tables and charts to be completed by participants. Finally conference presentations and papers are available through conference websites, conference proceedings and once published in academic journals (these are also available from the website).

### **Dissemination Event Work Booklet**

#### **Conference Presentations/Academic Papers**

**Bookmarks and Post-its** – these were distributed at dissemination events and conferences to alert people to the [assuringlearning.com](http://assuringlearning.com) website with the project details.

## Links to other Projects

Assessing and Assuring Graduate Learning Outcomes (AAGLO)

Team Leaders – Simon Barrie, University of Sydney; Clair Hughes, UQ; Geoffrey Crisp, RMIT; Anne Bennison, UQ

Achievement Matters: External Peer Review of Accounting Learning Standards

Team Leaders – Phil Hancock, University of Western Australia; Mark Freeman, University of Sydney

After Standards: The Future of History

Team Leader – Sean Brawley, UNSW

ALTC Learning and Teaching Standards Project Peer Review and External Moderation of Coursework

Team Leaders – Kerri-Lee Krause, UWS; Geoffrey Scott, UWS

Key stakeholders have been involved in and engaged with the project throughout.

The following ALTC discipline scholars were engaged to facilitate two-way communication between the project, discipline communities and councils of deans.

<b>Discipline</b>	<b>Name of Scholar/s</b>	<b>University Affiliation/s</b>
Engineering	Ian Cameron Rodger Hadgraft	University of Queensland RMIT
Law	Sally Kift Mark Israel	James Cook University University of Western Australia
Nursing	Amanda Henderson	Griffith University

In addition, delegates from seven other significant national disciplinary bodies were consulted.

<b>Organisation/National Body</b>	<b>Name of Delegate</b>
Australian Business Deans Council, Teaching and Learning Network	Chair Professor Phil Hancock
Law Associate Deans (Learning and Teaching) Network	Co-convenor Kate Galloway
Council of Pharmacy Schools	Director Professor Nick Shaw
Engineering Associate Deans Council (Teaching and Learning)	Professor Caroline Crosthwaite
Australian Council of Engineering	Executive Officer Professor Robin King
Australian and New Zealand Council of Deans of Nursing and Midwifery	Chair Professor Patrick Crookes
The Creative Arts Learning and Teaching Network	Associate Professor Jonathan Holmes

## Concluding Remarks

The project team have been very grateful to OLT for supporting this work. It has approached an important area and has been very timely with all the quality assurance developments taking place both nationally and internationally. The response for the project has been very positive with praise for both the strategies and the resources to support those strategies; this has been particularly voiced in relation to the series of dissemination events held across Australia and the website that houses all the materials. The team see this project as the beginning of supporting assurance of learning implementation in Australia and would like to continue this initial work with follow-on projects to build on this work.

## References

- AACSB. (2007). *AACSB assurance of learning standards: An interpretation*. Retrieved March 21, 2012, from: <http://www.aacsb.edu/accreditation/papers/AOLPaper-final-11-20-07.pdf>
- Adelman, C., Ewell, P., Gaston, P., & Schneider, C. G. (2011). *The Degree Qualifications Profile*. Indianapolis: Lumina Foundation.
- ALTC. (2010). *Learning and teaching academic standards project*. Retrieved March 21, 2012, from: [http://www.griffith.edu.au/\\_data/assets/pdf\\_file/0004/334084/ALTC-Academic-Standards-Final-Report.pdf](http://www.griffith.edu.au/_data/assets/pdf_file/0004/334084/ALTC-Academic-Standards-Final-Report.pdf)
- Australian Qualifications Framework Council. (2011). *Australian Qualifications Framework* (1<sup>st</sup> ed.). Retrieved January 9, 2013, from [http://www.aqf.edu.au/Portals/0/Documents/Handbook/Aust%20Qualifications%20Framework%20First%20Edition%20July%202011\\_FINAL\\_LOCKED.pdf](http://www.aqf.edu.au/Portals/0/Documents/Handbook/Aust%20Qualifications%20Framework%20First%20Edition%20July%202011_FINAL_LOCKED.pdf)
- Barrie, S., Hughes, C., & Smith, C. (2009). *The national graduate attributes project: Integration and assessment of graduate attributes in curriculum*. Retrieved March 21, 2012, from: <http://www.altc.edu.au/resource-national-graduate-attributes-project-sydney-2009>
- Barrie, S., Smith, C., Hughes, C., & Thomson, K. (2009). Quality assurance: The way a higher education system, university or discipline monitors and assures the development of graduate attributes is one of the most influential drivers of effective implementation (pp. 16-17). In *The national GAP issues papers: Key issues to consider in the renewal of learning and teaching experiences to foster graduate attributes*. Retrieved March 21, 2012, from: <http://www.itl.usyd.edu.au/projects/nationalgap/resources/GAPpdfs/National%20Graduate%20Attributes%20Project%20Final%20Report%202009.pdf>
- Biggs, J. (1999). What the student does: Teaching for enhanced learning. *Higher Education Research & Development*, 18(1), 57-75.
- Biggs, J. (2003). *Teaching for quality learning at university* (2<sup>nd</sup> ed.). Buckingham: SRHE and Open University Press.
- Bowden, J., Hart, G., King, B., Trigwell, K. & Watts, O. (n.d.) *ATN Project on Graduate Capabilities*. Retrieved from <http://www.clt.uts.edu.au/ATN.grad.cap.project.index.html>
- Bryman, A. & Bell, E. (2007). *Business research methods*. Oxford: Oxford University Press.
- Carew, A., Therese, S., Barrie, S., Bradley, A., Cooper, P., Currie, J., Hadgraft, R., McCarthy, T., Nightingale, S., & Radcliffe, D. (2009). *Teaching and assessing meta-attributes in engineering: identifying, developing and disseminating good practice*. Retrieved March 21, 2012, from: [http://www.olt.gov.au/system/files/resources/CG623\\_UoW\\_Carew\\_Final%20Report\\_new.pdf](http://www.olt.gov.au/system/files/resources/CG623_UoW_Carew_Final%20Report_new.pdf)
- Chalmers, D. (2008, September). *Teaching and learning quality indicators in Australian universities*. Paper presented at the Institutional Management in Higher Education (IMHE) 2008 General Conference proceedings. Retrieved from <http://www.oecd.org/dataoecd/4/40/41216416.pdf>
- Coates, H. (2010). Defining and monitoring academic standards in Australian higher education. *Higher Education Management and Policy*, 22(1), 1-17.

- Coates, H. & Richardson, S. (2011). An international assessment of bachelor degree graduates' learning outcomes. *Higher Education Management and Policy*, 23(3), 51-69.
- Council for Aid to Education (CAE). (2009). *Collegiate Learning Assessment (CLA)*, CAE; New York.
- Crowston, K., Allen, E. E., & Heckman, R. (2012). Using natural language processing technology for qualitative data analysis. *International Journal of Social Research Methodology*, 15(6), 523-543.
- Esterberg, K. G. (2002). *Qualitative methods in social research*. New York: McGraw-Hill.
- Ewan, C. (2010, February). *The learning and teaching academic standards project*. Australian Technology Network of universities Assessment Conference, Sydney Australia, November 18-19, 2010.
- Fouché, C. & Light, G. (2010). An invitation to dialogue: 'The world café' in social research. *Qualitative Social Work*, 10(1), 28-48.
- Freeman, M. (2010, November). *Australian Technology Network of universities (ATN): Assessment conference panel discussion*. Australian Technology Network of universities Assessment Conference, Sydney, Australia, November 18-19, 2010.
- Freeman, M., Hancock, P., Simpson, L., & Sykes, C. (2008). *Business as usual: A collaborative investigation of existing resources, strengths, gaps and challenges to be addressed for sustainability in teaching and learning in Australian university business faculties*. Retrieved 21 March, 2012, from: [http://www.olt.gov.au/system/files/resources/Grants\\_DBI\\_ABDC%20Freeman%20Business%20Final%20Report\\_March27\\_2008.pdf](http://www.olt.gov.au/system/files/resources/Grants_DBI_ABDC%20Freeman%20Business%20Final%20Report_March27_2008.pdf)
- Gephart, R.P. (2004). Qualitative research and the academy of management journal. *Academy of Management Journal*, 47(4), 454-462.
- Hager, P. (2006). Nature and development of generic attributes. In P. Hager & S. Holland (Eds.), *Graduate Attributes, Learning and Employability* (pp. 17-47). In D.N. Aspin & J.D. Chapman (Eds.). *Lifelong learning book series: Volume 6*. Dordrecht, The Netherlands: Springer.
- Hall, O.P. & Kro, K. (2006). Learning assurance using business simulations applications to executive management education. *Developments in Business Simulation and Experiential Learning*, 33, 1-6.
- Hancock, P., Howieson, B., Kavanagh, M., Kent, J., Tempone, I., Segal, N., & Freeman, M. (2009). The roles of some key stakeholders in the future of accounting education in Australia. *Australian Accounting Review*, 19(3), 249-260.
- Hine, D., Barnard, R., Rifkin, W., Bridge, W., Franco, C., Schmidt, L., & MacKinnon, P. (2008). *Extending teaching and learning initiatives in the cross-disciplinary field of biotechnology*. ALTC project report. Retrieved March 21, 2012, from: <http://www.olt.gov.au/project-extending-teaching-learning-uq-2006>
- Hsieh, H. & Shannon, S. (2005) Three approaches to qualitative content analysis. *Qualitative Health Journal*, 15(9), 1277-1288.
- Jackson, M., Watty, K., Yu, L., & Lowe, L. (2006). *Assessing students unfamiliar with assessment practices in Australian universities (accounting)*. ALTC project report. Retrieved March 21, 2012, from: <http://www.olt.gov.au/project-accounting-future-more-uwa-2007>
- Kotter, J. P. & Cohen, D. S. (2002). *The heart of change: Real life stories of how people change their organizations*. Boston: Harvard Business School Press.

- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology*. Thousand Oaks, Sage.
- Landeta, J. (2006). Current validity of the Delphi method in social sciences. *Technological Forecasting and Social Change*, 73(5), 467-482.
- Lawson, R., Taylor, T., Fallshaw, E., French, E., Hall, C., Kinash, S., Summers, J. (2011). *Hunters & Gatherers: Strategies for curriculum mapping and data collection for assurance of learning*. Australian Technology Network of universities Assessment Conference, Perth Australia, October 19, 2011.
- Leximancer. (2005). *Leximancer manual* (Version 2.2). Retrieved March 21, 2012, from: [https://www.leximancer.com/wiki/images/7/77/Leximancer\\_V2\\_Manual.pdf](https://www.leximancer.com/wiki/images/7/77/Leximancer_V2_Manual.pdf)
- Lincoln, Y.S. & Guba, E.G. (1985). *Naturalistic inquiry*. Thousand Oaks: Sage.
- Mansilla, V.B., Duraisingh, E.D., Wolfe, C.R., & Haynes, C. (2009). Targeted assessment rubric: An empirically grounded rubric for interdisciplinary writing. *Journal of Higher Education*, 80(3), 334-353.
- Martell, K. (2007). Assessing student learning: Are business schools making the grade? *Journal of Education for Business*, 82(4), 189-195.
- Martell, K., & Caldron, T.G. (2009, July 6-7). *Assessment in business school: What it is, where are we, where we need to go now*. Assessment Seminar, Sydney, Australia.
- McKenzie, J., Alexander, S. Harper, C., & Anderson, S. (2005). Dissemination, adoption & adaptation of project innovations in higher education. Retrieved 16 January, 2012, from: [http://www.olt.gov.au/system/files/resources/dissemination\\_disseminationadoptionadaptation\\_report\\_2005.pdf](http://www.olt.gov.au/system/files/resources/dissemination_disseminationadoptionadaptation_report_2005.pdf)
- Miles M.B., & Huberman A.M. (1994) *Qualitative data analysis* (2<sup>nd</sup> ed). Thousand Oaks, Sage.
- Mills, J. N., Baguley, J., Coleman, G., & Meehan, M. (2009). *Enhancing communication and life skills in veterinary students: Curriculum development and assessment of methods*. Sydney: Australian Learning and Teaching Council. Retrieved January 16, 2012, from: Organisation for Economic Co-operation and Development. (2011). *Education at a Glance 2011: OECD indicators*. OECD Publishing. Retrieved January 16, 2012, from: <http://dx.doi.org/10.1787/eag-2011-en>
- Oliver, B. (2011). *Assuring graduate outcomes*. Sydney: Australian Learning and Teaching Council. Retrieved January 16, 2012, from: <http://www.olt.gov.au/system/files/resources/PP7-340%20Murdoch%20Mills%20ECALS%202009%20Final%20Report%20.pdf><http://tls.vu.edu.au/portal/site/liwc/resources/Assuring%20graduate%20outcomes%20%20ALTC%20Good%20practice%20report%20%20Oliver%20B%2020111.pdf>
- Oliver, B. (2010). *Teaching fellowship: Benchmarking partnerships for graduate employability*. Sydney: Australian Learning and Teaching Council. Retrieved March 21, 2012, from: <http://www.olt.gov.au/system/files/resources/Oliver%20B%20Curtin%20Fellowship%20report.pdf>
- Owen, S., Davis, G., Coper, M., Ford, W., & McKeough, J. (2009). *Learning and teaching in the discipline of law: Achieving and sustaining excellence in a changed and changing environment*. ALTC project report. Retrieved March 21, 2012, from: <http://www.olt.gov.au/project-learning-teaching-law-flinders-2006>
- Porter, A. C. (2004). *Curriculum assessment*. Retrieved March 21, 2012, from:

- <http://www.andyporter.org/papers/CurriculumAssessment.pdf>
- Pringle, C. & Michel, M. (2007). Assessment practices in AACSB-accredited business schools. *Journal of Education for Business*, 82(4), 202-211.
- Radloff, A., de la Harpe, B., Scoufis, M., Dalton, H., Thomas, J., Lawson, A., David, C., & Girardi, A. (2009). *The B factor project: Understanding academic staff beliefs about graduate attributes*. Retrieved March 21, 2012, from: <http://www.olt.gov.au/system/files/GI7-638%20RMIT%20delaHarpe%20BFactor%20graduate%20attributes%202009.pdf>
- Rescher, N. (1998). *Predicting the future*. New York: State University of New York Press.
- Students at the Heart of the System. (2011). *UK Government White Paper*. Retrieved March 21, 2012, from: <http://c561635.r35.cf2.rackcdn.com/11-944-WP-students-at-heart.pdf>
- Sumsion, J., & Goodfellow, J. (2004). Identifying generic skills through curriculum mapping: A critical evaluation. *Higher Education Research & Development*, 23(3), 329-346.
- Taylor, T., Thompson, D., Clements, L., Simpson, L., Paltridge, A., Fletcher, M., Freeman, M., Treleaven, L., Lawson, R., & Rohde, F. (2009). *Facilitating staff and student engagement with graduate attribute development, assessment and standards in business faculties*. Retrieved March 21, 2012, from: <http://www.olt.gov.au/system/files/resources/PP7-322%20UTS%20Taylor%20Report%20Sept%202009%20edited.pdf>
- TEQSA, (2011). Retrieved March 21, 2012, from: <http://www.teqsa.gov.au/higher-education-threshold-standards>
- Tractenberg, R.E., Umans, J.G., & McCarter, R.J. (2010). A mastery rubric: Guiding curriculum design, admissions and development of course objectives. *Assessment & Evaluation in Higher Education*, 35(1), 17-35.
- Uchiyama, K.P., & Radin, J.L. (2009). Curriculum mapping in higher education: A vehicle for collaboration. *Innovative Higher Education*, 33(4), 271-280.
- Voluntary System for Accountability (VSA) (2009). *Voluntary System for Accountability*, Retrieved October 21, 2012, from: [www.voluntarysystem.org](http://www.voluntarysystem.org)
- Welsh, E. (2002). Dealing with data: Using NVivo in the qualitative data analysis process. *Qualitative Social Research* 3(2), Art. 26.
- Yorke, M. (1998). Assessing capability. In J. Stephenson & M. Yorke (Eds.), *Capability and quality in higher education* (pp. 174–191). London: Kogan Page.
- Yorke, M. & Knight, P.T. (2006). *Embedding employability into the curriculum*. Retrieved March 21, 2012, from: [http://www.heacademy.ac.uk/assets/documents/employability/id460\\_embedding\\_employability\\_into\\_the\\_curriculum\\_338.pdf](http://www.heacademy.ac.uk/assets/documents/employability/id460_embedding_employability_into_the_curriculum_338.pdf)



# Appendix A

## Telephone Interview Schedule

Name	Date
Institution	Contact Details

*NB: Research institution prior to establish language/terms used*

*Establish terminology of program breakdown eg program- majors-subjects/units*

### **Introduction to project including how it relates to the standards agenda**

- i. Do you have defined graduate outcomes/graduate attributes for each of the degree programs in your school at your university? (follow up: is this typical across the university?);(follow up if yes: are these graduate learning outcomes expressed students eg. to current students in orientation and in marketing to future students)
- ii. Where have these defined graduate outcomes originated from, eg professional/university/program?
- iii. How do you assure that students in your programs achieve your defined graduate outcomes?
  - a. What is the underpinning philosophy
  - b. What are your motivators – external/internal reviews eg TEQSA/AACSB/EQUIS? Eg. quality assurance or quality enhancement
  - c. How do your processes fit/feed into your uni model? (follow up: what primary motive is locally versus rest of uni ie for QA and QE? Is there an agreed Assessment Plan for school/uni?)
  - d. How do you map your graduate outcomes into your programs – how (tools/ involvement, breakup of formative/summative activities), when (at what points do you assure learning), why (internal, external, considerations), do you use any indicators /principles to map (fail rate)
  - e. How you set the measures for graduate outcomes? (Assessment task design; standards set;) Who is involved? (internal, external, professional peer; indiv/program team ?

- f. How do you collect data? (Is it embedded into subject assignments? Standardised tests? Do you use internal/external/professional peers? Do you use tools eg. ReView/SPARK/etc?) What type of data do you collect? (actual assignment marks, part marks for specific criteria, specific graduate outcomes grades, comments generated by examiner) When? (is it just at the end or at specific milestones over a program).
  - g. Does your process differ for variations in delivery? (offshore/foundation/diff models of teaching, i.e. block v semester)
  - h. How do you examine the data? (who is involved? what are you looking for, e.g. benchmarks (internal, external, peer))
  - i. Do you examine the data for different groups? (TAFE, International, offshore)
  - j. How do you use the data? Closing the loop/development mechanisms (who is involved, what levels are considered, e.g. subject, program, assurance process)
  - k. Do you use any tools to support/streamline the AOL process?
  - l. How do you archive assurance data (student work; assessment requirements; minutes of program team discussing/deciding QE actions?)
- iv. How have you implemented this process with key stakeholders ?  
(training/communication/student awareness; professional and academic staff)
- v. What challenges have you faced? How did you overcome them/ what are the lessons learnt?  
Have you any current challenges? How do you propose to overcome them?  
Can you foresee any future challenges? How would you like to further develop your process?
- On the whole:
- i. Are you happy with the process?
  - ii. Is the process sustainable?
  - iii. Is there staff buy-in?  
(what % of academics and leaders do you use to indicate this?)
  - iv. What makes your program/way of doing things stand out?

- vi. Do you have any evidence/examples/tools that you would be happy to share with us?
- vii. Are there any other comments you would like to make? Is there anyone else that I should talk to in regard to this?

# Appendix B

## Focus Group Questions

	<b>Management (HOS, Program Directors, T&amp;L Reps, T&amp;L Support)</b>		<b>Teaching Staff</b>	
1.	Do you have defined graduate outcomes/graduate attributes for each of the degree programs in your faculty?	Q	Do you have defined graduate outcomes/graduate attributes for each of the degree programs in your faculty?	Q
2.	What is your institution/faculty philosophy behind assuring these graduate attributes?	Z	What is your institution/faculty philosophy behind assuring these graduate attributes?	Z
3.	What is your understanding of the external motivators behind assuring graduate attributes? (TEQSA, AUQA, AQF, standards agenda)	Z	What is your understanding of the external motivators behind assuring graduate attributes? (TEQSA, AUQA, AQF, standards agenda)	Z
4.	How do these external motivators impact your processes?	Q	How do these external motivators impact your processes?	Q
5.	If you were talking to a new academic, how would you explain your process for assuring graduate attributes? (mapping, data collection - type, when, rubrics, examining data, closing the loop, engaging students)	Z	If you were talking to a new academic, how would you explain your process for assuring graduate attributes? (mapping, data collection - type, when, rubrics, examining data, closing the loop, engaging students)	Z
6.	Do you feel you have got staff buy in for the process?	Q	Are you engaged with the process?	Q
7.	How did you get staff buy-in for the process?	Z	How have you been involved in the process?	Z
8.	What are the main enablers for the process?	Q	What are the main enablers for the process?	Q
9.	Are you using any “tools” to support assuring graduate attributes?	Z	Are you using any “tools” to support assuring graduate attributes?	Z
10.	What are the intended outcomes of the process?	Q	What are the intended outcomes of the process?	Q
11.	What are the unintended outcomes of the process?	Q	What are the unintended outcomes of the process?	Q
12.	What challenges have you/are you facing?	Z	What challenges have you/are you facing?	Z
13.	How did/will you overcome them/ what are the lessons learnt?	Z	How did/will you overcome them/ what are the lessons learnt?	Z
14.	In an ideal world what innovations would you like to see implemented for the future?	P	In an ideal world what innovations would you like to see implemented for the future?	P

# Appendix C

<b>Mapping Tool:</b>							
Unit Mapping		Assessment Mapping		Embedded		Non-Embedded	
<b>Comment:</b>				<b>Comment:</b>			
Capstone Based		Whole of Program		All Students		Sampling	
<b>Comment:</b>							
<b>Visual Presentation of Mapping information</b>				<b>How Well Does the Tool Lend Itself to Participation and Interaction?</b>			
<b>Comments:</b>				<b>Comments:</b>			
<b>Ease of Use</b>				<b>Level of Training Required</b>			
<b>Comments:</b>				<b>Comments:</b>			
<b>How Well Suited is the Tool for the Following Purposes?</b>							
<b>Identifying Gaps and Overlap in a Program</b>				<b>Assuring the Development of Attributes Over the Program</b>			
<b>Comments:</b>				<b>Comments:</b>			
<b>Aligning Graduate Attributes, Program, Objectives, and Assessments</b>				<b>How Well Does the Tool Lend Itself to Ongoing Development and Discussion of Curriculum?</b>			
<b>Comments:</b>							

Operating System Compatibilities							
PC – Windows Vista		PC – Windows 7		Mac – Snow Leopard		Mac - Lion	
<b>Comments:</b>							
Web-Based		Excel-Based		Shared Data Entry			
<b>Comments:</b>				<b>Comments:</b>			
Outputs							
Built-in Tables & Graphics		Built-in Analysis and Summary					

**Assessment/Unit Mapping:** This refers to the level of detail the software allows for the maps. Software with assessment mapping is built to show which outcomes are addressed in each assessment; software with unit mapping only shows outcomes across the unit.

**Embedded/Non-Embedded:** Embedded assessment involves the inclusion of the standards and rubrics referring to the development of particular skills and attributes being embedded in the assessments. This means that the performance of all students is marked and recorded. Non-embedded measurement means that assessments are remarked using a sample of students.

**Capstone Based/Whole of Program:** Whole of program mapping means that all units are included and aligned to learning outcomes. Capstone/Core Unit based maps rely only assessing achievement against learning outcomes at a few key points in the program.

**Visual Presentation:** How clear and well presented is the interface; how effective is the visual presentation of the mapping information; does the software effectively present how each unit fits into the program as a whole?

**Participation and Interaction:** Involving a broad set of staff in the process of mapping programs represents good practice. Does the format of the tool lend itself to collaborative use among unit coordinators and other staff?

*How Well Suited is the Tool for the Following Purposes:*

**Gaps and Overlap in a Program:** One of the purposes of mapping is to identify gaps or overlaps in the distribution of learning outcomes and assessment types.

**Development of Attributes Over the Program:** Alongside making sure there is adequate coverage of outcomes across the program, mapping is also used to identify how students develop attributes over the course of the program from multiple assessment points. The mapping tool needs to be able to show the scaffolding of abilities over the program.

**Aligning Graduate Attributes, Learning Outcomes, and Assessments:** Mapping can be used to show the links between assessments and learning outcomes, but also the link between learning outcomes and graduate attributes. How does the tool present the relationship

between these interrelated criteria?

Ongoing Development and Discussion of Curriculum: Thinking specifically about the process of continuous improvement in curriculum, how well would the tool suit this kind on ongoing change and review?

Web-Based: Is an active internet connection needed to use the tool?

Excel-Based: Is the tool based in excel? If so what version of Excel is needed?

Shared Data Entry: Is the tool set up to be run with multiple users?

<b>Measuring Tool:</b>							
Unit-Based Measurement		Assessment Based Measurement		Embedded Measurement		Non-Embedded Measurement	
<b>Comment:</b>				<b>Comment:</b>			
Capstone Based		Whole of Program		All Students		Sampling	
<b>Comment:</b>				<b>Comment:</b>			
<b>Visual Presentation of Data</b>				<b>How Well Does the Tool Lend Itself to Participation and Interaction?</b>			
<b>Comments:</b>				<b>Comments:</b>			
<b>Ease of Use</b>				<b>Level of Training Required</b>			
<b>Comments:</b>				<b>Comments:</b>			
<b>How Well Suited is the Tool for the Following Purposes?</b>							
<b>Identifying Student Performance Against Learning Outcomes</b>				<b>Demonstrating the Development of Attributes Over the Program</b>			
<b>Comments:</b>				<b>Comments:</b>			
<b>How Well Does the Tool Lend Itself to Ongoing Development and Discussion of Curriculum?</b>							
<b>Comments:</b>							



Operating System Compatibilities							
PC – Windows Vista		PC – Windows 7		Mac – Snow Leopard		Mac - Lion	
<b>Comments:</b>							
Web-Based		Software-Based		Shared Data Entry		Built-In Rubrics and Marking	
<b>Comments:</b>				<b>Comments:</b>		<b>Comments:</b>	
Outputs							
Built-in Tables & Graphics		Built-in Analysis and Summary					

Unit-Based/Assessment-Based: This refers to the level of detail the software allows for the data. Software with assessment-Based measurement is built to show which outcomes are addressed in each assessment; software with unit-based measurement only shows outcomes across the unit.

Embedded/Non-Embedded: Embedded assessment involves the inclusion of the standards and rubrics referring to the development of particular skills and attributes being embedded in the assessments. This means that the performance of all students is marked and recorded. Non-embedded measurement means that assessments are remarked using a sample of students.

Capstone Based/Whole of Program: Whole of program measurement means that data is included from all units. Capstone/Core Unit based measurement relies only on assessing achievement against learning outcomes at a few key points in the program.

Visual Presentation: How clear and well presented is the interface; how effective is the visual presentation of the data?

Participation and Interaction: Involving a broad set of staff in the discussion and interpretation of data represents good practice. Does the format of the tool lend itself to collaborative use among unit coordinators and other staff?

Ease of Use: How easy the tool is to use quickly, and an estimate of the level of training required for proficient use of the tool.

*How Well Suited is the Tool for the Following Purposes:*

Identifying Student Performance Against Learning Outcomes: The primary purpose of data collection tools is to be able to identify student performance against the outcomes; data is entered into the tool and presented in a way that shows the performance of the cohort.

Development of Attributes Over the Program: Alongside collecting evidence of student

achievement against the learning outcomes, data collection tools can be used to show the development of attributes over the program. The tool presents the achievement of students against multiple levels of the outcome over the program.

Ongoing Development and Discussion of Curriculum: Thinking specifically about the process of continuous improvement in curriculum, how well does the tool suit this kind on ongoing change and review?

Web-Based: Is an active internet connection needed to use the tool?

Excel-Based: Is the tool based in excel? If so what version of Excel is needed?

Shared Data Entry: Is the tool set up to be run with multiple users?

Built-In Rubrics and Marking: Are rubrics and tools for marking built-in and used for the collection of data?

# Appendix D

## Online Survey

### Introduction and Demographics

#### **Hunters and Gatherers: Strategies for Curriculum Mapping and Data Collection for Assurance of Learning**

This survey will ask for some detail on the current practices of graduate attribute mapping and data collection for quality assurance in use within your learning programs. The interview will take approximately 30 minutes (depending on the extent of quality assurance practices at your university) and will be treated as anonymous.

This information will be critically analysed to develop strategies on curriculum mapping and data collection, these will then be developed into resources that will be disseminated for interested parties through academic papers, conference presentations, and through the project website (<http://www.assuringlearning.com>). The outcomes of the project will therefore benefit institutions by providing solutions to both quality enhancement and assurance in Higher Education, processes that are important for external scrutiny, for example, AUQA, TEQSA, and professional bodies.

(Note: For this research the term "program" refers to a whole degree, while "unit" refers to the units of study that make up the degree program)

*Q1. University Name:*

*Q2. University Faculty (i.e. discipline group you are responding in regards to):*

#### **Graduate Outcomes & Degree Programs**

*Q3. At what level are your graduate attributes set?*

*Q4. Do you write program learning objectives/goals that directly relate to your unit of study?*

*Q5. Where have these defined graduate attributes originated from (e.g. standards from professional bodies, university outcomes, program specific outcomes) and please explain the process by which they were developed?*

#### **Assurance of Graduate Attributes**

*Q6. Why do you think assuring graduate attributes is considered good practice in the higher education sector?*

*Q7. What are the key motivators behind assuring that students achieve your defined graduate attributes (e.g. compliance with accreditation bodies, improvement processes)?*

*Q8. Please describe how you map graduate attributes into your programs/degrees.*

*Q9. What stage/s in the program do you use to map your graduate attributes?*

*Q10. Do you map graduate attributes after the completion of the program (e.g. development of attributes during graduate placement or professional certification)?*

*Q11. Do you map to units of study or to individual assessment tasks?*

*Q12. Do you use any tools/software to map graduate attributes (e.g. ReView, Excel)?*

*Q13. Please describe which tools you use to map graduate attributes.*

*Q14. Do you collect data on the student achievement of graduate attributes?*

*Q15. Please explain how you collect data on the student achievement of graduate attributes (e.g. subject assignments, standardised tests, rubrics).*

*Q16. Who do you use to assess student achievement in the graduate attributes (e.g. academic teaching staff, external markers, professional peers)?*

*Q17. Do you use any tools or software in collecting graduate attribute data?*

*Q18. Please describe which tools or software you use in collecting graduate attribute data.*

*Q19. What types of graduate attribute data do you collect (e.g. actual assignment marks, part-marks for specific criteria, specific graduate outcomes grades, comments generated by examiners)?*

Q20. *What stage/s in the program do you use to collect your graduate attribute data?*

Q21. *Does your process differ for variations in delivery (offshore/foundation/different models of teaching)?*

Q22. *Please describe how your process differs for variations in delivery.*

Q23. *How do you use graduate attribute data in order to develop your programs (e.g. who is involved, is there a established process, what are you looking for)?*

Q24. *Do you examine the data for different groups (e.g. TAFE, international, offshore)?*

Q25. *Do you archive graduate attribute performance data/examples of student work?*

Q26. *How do you archive assurance data (student work; assessment requirements; minutes of program team discussing/deciding actions)?*

### **Quality Assurance in Practice**

Q27. *How have you implemented the quality assurance process with key stakeholders (training/communication/student awareness; professional and academic staff)?*

Q28. *What have been the main challenges in the process? How did you overcome them and what are the lessons learned?*

Q29. *Are there any current/ongoing/future challenges? How do you propose to overcome them?*

Q30. *Do you think the process is sustainable?*

Q31. *How would you describe the level of staff buy-in in the process? How was this achieved?*

### **Finishing Up**

If you have any evidence/examples/tools that you would be happy to share with us, please send to [james.herbert@uts.edu.au](mailto:james.herbert@uts.edu.au)

While the survey is confidential, if you're happy to be contacted by the research team to: a) follow up on any details you've provided, or b) to get permission to use direct quotes from the information you've provided, please enter in your name and email address.

Thank you for participating in this research. If you'd like to keep up to date with the progress of the research and findings, please visit [www.assuringlearning.com](http://www.assuringlearning.com)

## Appendix E

**Let us know what you think about our project and website.**

**As a contributor to the OLT Hunters & Gatherers Project we are asking for feedback on the project and its website.**

It would be appreciated if you could take a few moments to participate in our website survey so that we may receive your constructive feedback to further develop our project. We welcome your input and will take your ideas and comments into consideration when evaluating the project and website and implementing new content and enhancements in the future.

The survey is anonymous.

1. Have you any comments about what the project has achieved in its first year?
2. What do you see as the impact of this project on assuring learning practice - for your institution? nationally?
3. Is there anything else you would like to see the Hunters Project achieving the its second year?
4. On a scale of 1-5, how would you rate the content on our website?
5. Tell us specifically what content or features you like in the website:
6. Tell us specifically what content or features you did not like in the website:
7. How likely are you to use the material provided in the online resource?
8. Please explain how you may use the online resource.
9. On a scale of 1-5, how would you rate the design of our website?
10. On a scale of 1-5, how would you rate our website's ease of use?
11. Tell us what information and features you'd like to see added to the website:
12. Have you found any mistakes - links that do not work, spelling mistakes - Please tell us about them:
13. Any other comments to help us further develop the site:

# Appendix F



## Assuring Graduate Attributes – why do we do it and how can we do it better?

### Event Evaluation

Sydney: 24<sup>th</sup> October 2012

What prompted you to attend this event?

Overall, did you find the event satisfactory?

Very satisfied			very dissatisfied	
5	4	3	2	1

Which Masterclass did you attend:

- (1) Leadership Strategies in Assuring Graduate Attributes
- (2) Teaching & Assessing Graduate Attributes

What did you find most useful from the event?

What do you find least useful from the event?

What impact do you feel this project will have on your practice?

# Appendix G

## Key Evaluation Questions

### *Key Evaluation Questions (high-level)*

8. To what extent did the Project achieve its important and feasible objectives?
9. What other valuable outcomes (beyond its objectives) has the Project achieved?
10. What were the Project's overall strengths and how could it have been improved?
11. What significant learning has the Project generated concerning strategies for curriculum mapping and data collection for assurance of learning?
12. Has the Project resulted in significant dissemination (e.g. sharing of good practice, resources and strategies to overcome challenges)?
13. What is the perceived significance/value of the Project in the overall scheme of assuring graduate attributes in Australian universities (e.g. has it added to the current standards debate)?

### *Second-level Evaluation Questions*

- a) What valuable learning has the Project enabled about strategy, success factors and issues for the curriculum mapping and data collection in assuring graduate attributes?
- b) How have these been valued by the stakeholders?
- c) Has the Project initiated processes to sustain or expand activities (beyond the Project timeline) to enhance curriculum mapping and data collection in assuring graduate attributes?
- d) Have you provided resources for guiding curriculum mapping and data collection in assuring graduate attributes?
- e) How have these resources been received?
- f) Have you produced any significant reports or papers as a result of the project?

# Appendix H

## International Quality Projects

This section contains a summary of international quality assurance, including major international projects, and a brief summary of quality assurance systems across different jurisdictions. While certainly not exhaustive, this information provides a sense of how the trend for increased quality assurance processes has played out in other jurisdictions.

### [Internationalisation Quality Review Process](#) - (OECD):

The IQRP is a process developed by the OECD to conduct cross-country analysis of higher education internationalisation with a focus on quality assessment and assurance. The review process has been piloted at universities across the world.

### [The European Association for Quality Assurance in Higher Education \(ENQA\)](#)

The European Association for Quality Assurance in Higher Education (ENQA) is conducts reviews of quality agencies, which is influenced by the Bologna Declaration of 1999, where European leaders committed to a European Higher Education area by 2010. The aim is a comparable criteria, methodology, and degrees (ENQA, 2010).

### [Assessment of Higher Education Learning Outcomes \(AHELO\)](#) – (OECD):

AHELO is a Feasibility study looking at the evaluation of generic skills and discipline specific skills; the aim is to see if it is practically and scientifically feasible to assess what students know and can do at graduation. The project tests students across countries to provide data on learning quality and relevance to the labour market. Part of the project is to identify universities that are able to affect improvement; e.g. A+ Universities attract A+ students, but what about B+ universities that produce A+ students. Part of the project is to discover the value added.

The study is still ongoing, [Volume 1 of the Feasibility study report](#) has been published, and the final report will be published around April 2013 by the OECD, followed by a symposium.

### [The Tuning Approach](#)

The Tuning Approach is a process to foster the comparability of higher education programs across the European Union, while still protecting the diversity and independence of degree programs. Based on the Bologna progress, programs need to satisfy the following: relevance for society, lead to employment, prepare for citizenship, be recognised by academic and sufficiently transparent and comparable to facilitate mobility and recognition.

Judging quality draws on two terms: fitness for purpose and fitness of purpose. Fitness for purpose concerns if the process (curriculum & teaching) are suited to achieving the aims of a program. Fitness of purpose is if the aim of the program are suitable.

Tuning emphasises the importance of competencies. Learning outcomes are what students are expected to know, understand or be able to demonstrate. Competencies are a dynamic combination of knowledge, understanding, skills, and abilities.

Tuning compliant courses are output oriented and preferable modular.

The Tuning approach to programs:

- The availability of resources to support the program
- A demonstrated need for the program based on a broad consultation, which also determines the academic reference points for the program (Tuning questionnaires available for this)



- A degree or qualifications profile that defines the aims and purposes of the program. Formulation of these into intended learning outcomes that are coherently linked to curriculum design and student assessment.
- Consideration of academic content and the level of achievement, also the imperative to promote autonomous learning.
- Evaluation through the systematic collection and analysis of indicators (e.g. examination success rates, progression of students to employment, student recruitment numbers, evaluation survey results, results of external benchmarking). Feedback and feed forward loops should be in operation, which include students, alumni, academic staff. The feedback is to correct deficiencies in delivery or design, the feed-forward is to identify expected developments.

An important issue in the European context is the need for comparability and transparency across countries. The comparability of programs is from the use for learning outcomes; competencies with a definition of level, and well-focused teaching, learning and assessment approach.

Relevance is determined by academic, professional and social development, intellectual endeavour, employment and citizenship in a European context. Demand for clarity about the needs of degree programs.

Need for transparency in outcomes, process, resources, and in the quality systems and data collection.

### National Quality Assurance Processes

In comparison to many other jurisdictions Australia possess a developed and systematic approach to quality assurance. While TEQSA and the AQF are both relatively new, having a national qualifications framework and a quality agency that will undertake quality assessments represents steps towards the U.K. and European model, and away from the U.S. and New Zealand model of voluntary accreditation and self assessment.

Jurisdiction	Quality Agency	Notes
New Zealand	<a href="#">New Zealand Universities Academic Audit Unit</a>	In New Zealand the NZUAAU is responsible for conducting external institutional audits, which have increasingly focused on graduate attributes, and assessment. Examining the internal processes in place is part of the institutional audits. However there is no real requirement to have anything in particular in place, just that there are processes in place. The graduate attributes are determined by the university internally, along with the relationship between the NZQF, with the processes for assuring them determined by the university. Because the auditing body for universities is separate to the body for private education providers the context it quite different. There is a lot of trust and a sense of collaboration in the auditing process, particularly as the auditors are all senior academics, the system is much more like peer review.

United Kingdom	<a href="#">Quality Assurance Agency for Higher Education</a>	<p>The QAA undertakes reviews of higher education institutions against the <a href="#">UK Quality Code for Higher Education</a>. Processes differ slightly between England and Northern Ireland, Wales and Scotland. The review team makes judgements about how the institution performs in setting and maintaining threshold academic standards, managing student learning, and enhancing quality. Setting and maintaining threshold standards refer to the level of achievement required for an award, and are set out in the <a href="#">Framework for Higher Education Qualifications</a>.</p> <p>The team examine how institutions if programs are aligned to threshold standards and any relevant subject benchmark statements.</p>
Europe	<a href="#">European Association for Quality Assurance in Higher Education</a>	<p>The ENQA is a membership organisation consisting of all the quality assurance agencies in the European Higher Education Area. The mission of the organisation is to work across their members to enhance European higher education and develop quality assurance across all Bologna signatories. Membership requires adherence to the <a href="#">Standards and Guidelines for Quality Assurance in the European Higher Education Area</a>, which includes external assessment criteria and processes.</p>
United States	<a href="#">Council on Higher Education Accreditation</a>	<p>The United States lacks a system of qualifications frameworks, meaning there are no agreed to standards and descriptors about what constitutes a bachelors/masters level program. The CHEA represents a large group of associated and accredited degree granting bodies who sign on to standards of academic quality and ongoing quality improvement. The standards emphasise: advancing academic quality, accountability, and self-scrutiny and improvement. While undertaking some reviews, it is a voluntary agency and emphasises self-study.</p>
Asia		<p>There is no centralised body for quality assurance across Asia, but a number of research projects have begun to compare the functioning of different agencies across the region. <a href="#">Lenn (2004)</a> and <a href="#">Hou (2012)</a> identify quality assurance agencies in Provincial China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, Mongolia, Philippines, Thailand, Vietnam, Russia, and Cambodia. None of these countries have national qualifications frameworks setting out the competencies required for different levels of programs.</p>
South America		<p>No centralised body across the region, but recognition of a diversity of models and approaches across countries. <a href="#">Lemaitre (2011)</a> describes quality assurance models emphasising quality control, accountability, or</p>

		improvement, and a mix of autonomous national agencies (Colombia, Chile, Ecuador, Peru, Uruguay), government ministries (Argentina, Bolivia, Brazil, Colombia, Mexico), and university consortiums (Bolivia, Costa Rica, Panama).
Africa		Quality assurance is still developing in africa, only 19 african states (out of 55) have a national quality assurance agency (Lenga, 2011, p. 30). A joint study <a href="#"><i>Europe-Africa Quality Connect: Building Institutional Capacity through Partnership</i></a> (QA Connect) was undertaken between 2010-2012 to test the suitability of the European University Association's Institutional Evaluation Program in the African context. The piloted scheme was oriented towards external auditing and assessment, with some requirement for self-evaluation. There was a lot of variation in internal quality assurance processes; one institution that was ISO certified to one with no QA procedures. Other had features like student evaluation, curriculum committees, a QA central committee, and quality officers, but the approach to internal QA was not systematic and there was limited use of the evaluation results.