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Assuring the quality of achievement standards and their valid assessment in Australian Higher Education

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2014 National Senior Teaching Fellow

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< flipcurric.edu.au >

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1 The OLT ceased on 30 June 2016. The Australian Government Department of Education and Training continued to support the fellowship through the Promotion of Excellence in Learning and Teaching in Higher Education (PELTHE) program.

List of acronyms used

ACDICT	Australian Council of Deans of ICT
ACT	Australian College of Theology
ACPET	Australian Council for Private Education and Training
ACU	Australian Catholic University
ALTC	Australian Learning and Teaching Council
ASKe UK	Assessment Standards Knowledge exchange, United Kingdom
ASU	Arizona State University
AVP	Associate Vice-President
BLASST	Benchmarking leadership and advancement of standards for sessional teaching
CDU	Charles Darwin University
CLA	Collegiate Learning Assessment
COPHE	Council of Private Higher Education
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DVC	Deputy Vice-Chancellor
ECU	Edith Cowan University
ESA	Education Services Australia
FoE	Field of Education
HEA	Higher Education Academy (UK)
HEPP-QN	Higher Education Private Providers' Quality Network
HoD	Head of Department
HoP	Head of Program
HoS	Head of School
IAU	International Association of Universities
ICT	Information and Communications Technology
IPENZ	Institution of Professional Engineers New Zealand
JCU	James Cook University
L&T	Learning and Teaching
MIT	Massachusetts Institute of Technology
NGO	Non-government Organisation
NILOA	National Institute for Learning Outcomes Assessment (USA)
NPI	Navitas Professional Institute
NSAI	Non Self Accrediting Institution
OCU	Ontario Council of Universities
OLT	Office for Learning and Teaching
PLO	Program Learning Outcome
PRAN	Peer Review of Assessment Network
PSU	Portland State University
PVC	Pro Vice-chancellor
QAA	Quality Assurance Agency (UK)
QUT	Queensland University of Technology
RTO	Registered Training Organisation
SCU	Southern Cross University
SDSU	San Diego State University
SUSTAINED	Australian Tertiary Education for Sustainability Network
TEC	Tertiary Education Commission (NZ)
TEQSA	Tertiary Education Quality and Standards Agency
UA	Universities Australia
UBC	University of British Columbia
UK	United Kingdom

UNSW	University of New South Wales
UNU	United Nations University
US(A)	United States (of America)
USC	University of the Sunshine Coast
USP	University of the South Pacific
USQ	University of Southern Queensland
UTS	University of Technology Sydney
UWS	University of Western Sydney (now Western Sydney University)
VP	Vice-President
VU	Victoria University
WASC	Western Association of Schools and Colleges (USA)
WSITAFE	Western Sydney Institute of Technical and Further Education
WSU	Western Sydney University

Key terms

Educational terminology varies enormously from institution to institution and country to country. Below are the definitions of some key terms as they are used in this report:

<i>Assessment</i>	Gathering evidence about the current levels of capability and competency of students using valid (fit-for-purpose) tasks.
<i>Course</i>	A series of credit-bearing activities leading to an award. Synonymous with 'program'.
<i>Evaluation</i>	Making judgements of worth about the quality of inputs and outcomes (including the evidence gathered during assessment).
<i>Learning</i>	A demonstrably positive improvement in the capabilities and competencies students are expected to demonstrate they have developed to a required standard by the end of a program or unit of study.
<i>Learning outcomes</i>	The personal, interpersonal and cognitive capabilities as well as the key knowledge and skills confirmed as being necessary for effective early career performance and societal participation.
<i>Quality</i>	Fitness for purpose/fitness of purpose and performance to an agreed standard.
<i>Standard</i>	A level of achievement with clear criteria, indicators and means of testing.
<i>Strategy</i>	Linking relevant, desirable and clear ends to the most feasible means necessary to achieve them.
<i>Unit</i>	A discrete assessed component of a student's course or program. Synonymous with 'subject' or 'module'.

Executive summary

The focus world-wide is increasingly on assuring the quality of the outcomes and impact of universities and colleges, not just the inputs. There is growing interest in making sure that graduates emerge from higher education with the capabilities and competencies that will equip them to be not only ‘work ready’ for today, but also ‘work ready *plus*’ for tomorrow. Universities and colleges help shape the vast majority of our political and change leaders and create many of the social, cultural, technical, economic and environmental solutions that ensure we have a sustainable future. There is also an important ‘moral purpose’ to be considered – if those who are the first in their family to attend a university or college graduate with a high quality degree, their life chances are profoundly improved. This Fellowship has, therefore, taken the perspective that it is pointless to assess effectively, efficiently, rigorously or reliably, if what we are assessing doesn’t count, is irrelevant, unproductive, has limited benefit or is undesirable.

In giving focus to this issue we are led to look more carefully at exactly how program level outcomes are determined. This involves confirming that the graduate capability framework used to profile graduates is robust; that the reference points, sources, criteria, processes and validation evidence consulted are comprehensive, and that who is and should be involved when the desired graduate outcomes and standards are established is carefully consideredⁱ.

The Fellowship has confirmed that, to assure the achievement standards and the quality of assessment in the contemporary university, we must start, therefore, by first confirming the quality (relevance and desirability) of *what* is being assessed before looking at *how* well we are assessing (for example, at confirming how ‘fit-for-purpose’ (valid) assessment tasks are, how reliable and well calibrated grading is, or how effectively plagiarism is being minimised).

A complementary and equally important focus of the Fellowship has been to identify what is necessary to build the capacity of those local leaders who are the key arbiters of whether any desired improvements in this area are effectively embraced, implemented and sustained – people in roles like Head of Program, School or Department, Associate Dean (Learning and Teaching), and Director of Learning and Teaching. We know from our studies of successful leadership in post-secondary and higher educationⁱⁱ that, if these players do not effectively engage with and support all their staff, not just the enthusiasts, to embrace and learn how to action a desired improvement in learning, teaching or assessment, there will be no change in practice or consequent benefit for students and our nation.

This Fellowship has sought to address the twin challenges identified above –

1. On the one hand, assuring the quality of higher education achievement standards and their valid assessment on the one hand, and, on the other,
2. Building the capacity of local learning program leaders and their teams to enact this agenda – consistently, sustainably and effectively.

The approach to developing and implementing the Fellowship has applied the key lessons which have emerged from over 30 years’ research and experience with effective change leadership in higher educationⁱⁱⁱ.

Active engagement of the sector started from day one of the Fellowship with user-testing and refinement at Western Sydney University of a pilot institutional capacity-building strategy based on the Fellowship's objectives and proposed deliverables. The Fellowship evaluator sat in on this pilot. This was followed by testing the refined model with overseas partners and Fellowship reference group members to identify further enhancements. Then workshops based on the finalised, user-centred design were held in every Australian state and territory with A/Deans (L&T), Directors of Learning and Teaching and Program Directors from all interested universities and private higher education providers. The workshops' overall theme was *Developing and assessing graduates who are 'work ready plus'* and they lasted 3-4 hours. Parallel events were delivered internationally with a view to benchmarking. The workshops have generated a large number of requests to re-deliver them at individual colleges and universities within and beyond Australia.

The key findings and guidelines for action that have emerged from the Fellowship have identified the importance of:

1. Confirming there is shared understanding of key terms.
2. Giving increased focus to assuring the fitness of purpose of what is being assessed and to the development of work ready *plus* graduates.
3. Flipping the curriculum not just the classroom.
4. Validating program level outcomes more carefully.
5. Assessing less but assess better.
6. Applying the key lessons on effective change management for this area including the effective strategies identified during the Fellowship on:
 - a. How to engage all staff not just the enthusiasts with desired changes in this area.
 - b. How to ensure institutional systems & culture are in alignment with and support the change agenda.
 - c. How to negotiate externally driven change challenges successfully.
 - d. Effective local change leadership.
 - e. Effective approaches to networked learning.

These key outcomes and lessons have been showcased at a wide range of national and international conferences; and a co-created good practice website which gives access to them – *FLIPCurric* (flipcurric.edu.au) – has been field tested, refined and populated during this process.

In total, some 3700 learning and teaching leaders from 154 colleges and universities participated in 65 workshops and 21 keynote addresses within and beyond Australia. Chapter 5 of the Fellowship Report provides evidence against a range of indicators verified by its evaluator that its impact has been both extensive and positive.

The Fellowship has produced:

1. A summary report.
2. A tested capacity-building methodology for replication both within and beyond Australia.

3. A user-tested and co-created learning system which is comprised of a set of workshop slides and guidelines for their use; and an online, interactive practitioners' guide for program teams and their leaders (*FLIPCurric*).
4. An internationally validated framework for higher education institutions to confirm the validity of their achievement standards and proven ways of assessing them in different fields of education.
5. A clear profile of the key areas of focus, performance indicators and capabilities necessary for effective change leadership and implementation in this area with particular emphasis on the roles of Program leader, A/Dean (L&T) and Director (L&T) benchmarked against the earlier ALTC/OLT Learning Leaders' findings.
6. An identified set of core dilemmas and challenges that face local leaders in this area and practical suggestions from experienced learning and teaching leaders on how they can be most productively addressed.
7. A tested set of policy guidelines for embedding the outcomes of this and earlier OLT fellowships and projects into core quality assurance processes for effective assessment and learning design in Australia's Universities.
8. A sharper set of international support and information-sharing networks for the area.
9. A set of key publications^{iv}.

In order to sustain the impact of the capacity-building initiatives undertaken during this Fellowship it is recommended that:

1. The proposed Education Services Australia (ESA) peer review of assessment web tool be finalised and linked to the Fellowship's *FLIPCurric* guide.
2. Higher education institutions review their current Learning and Teaching leadership selection, professional development and promotion processes to confirm they are addressing the top ranking capabilities identified in earlier national and international research and endorsed during the Fellowship^v.
3. A 'nested' leadership system be established in each higher education provider to support linked and leveraged action on the achievement standards agenda.
4. The wide range of existing networks focused on this area be linked and leveraged.
5. More systematic use be made of successful early career graduate studies to confirm and validate the relevance of program-level outcomes and to identify case studies for use in real-world dilemma-based learning and assessment.
6. Each higher education institution seeks to align incentives, accountabilities, policies, procedures and systems to more directly track and support the sustained implementation of the action agenda identified in Chapter Three.
7. The policy and procedural initiatives identified in Chapter Five be considered to ensure that the Fellowship's findings are embedded into daily practice.
8. A sessional staff capability framework is developed for this area that includes inviting successful, experienced sessional staff to write a 'lonely planet guide' for new sessional staff on how best manage assessment in their area^{vi}.

The 'key insights' discussion paper which accompanies this report and identifies the recurring key issues raised during the Fellowship workshops can be used to provide key local and senior leaders with the underpinning rationale for these recommendations. This is available for download from the flipcurric.edu.au site.

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Chapter 1: Context and focus

The starting point for any discussion of the quality of higher education is the quality and relevance of its purposes. Assessing the quality of higher education according to the extent to which it achieves its purposes – i.e. assessing its fitness *for* purpose without assessing fitness *of* purpose – equates quality with efficiency and is therefore of limited value.

Stephenson, J. (1992: p 2)^{vii}

Building on the extensive work already undertaken in this area

Many earlier Office for Learning and Teaching (OLT) and Australian Learning and Teaching Council (ALTC) projects have concentrated predominantly on *how* assessment might best be mapped, used and delivered to foster effective assessment of and for learning. That is, they are mainly concerned with the processes of assessment and its support.

Increased attention is now needed to assure the fitness of purpose of what is being assessed

However, less work has been undertaken to explore whether the outcomes set down for university learning and assessment are, in the first place, demonstrably relevant and desirable. This entails determining *what* assessment in different fields of education should be giving focus to in the context of the rapidly changing needs of the 21st century; and whose voice and what reference-points should be given most/least attention when seeking to ensure that the capabilities and competencies to be developed by our students are what is needed for productive professional performance and societal participation in the new, highly volatile, digitally disrupted global context.

Looking more closely at the fitness *of* purpose of assessment, and at what exactly our higher education students are achieving that is of value from their higher education studies, has periodically been given emphasis over the past 30 years. In the 1980s, for example, the influential US higher educator Ernest Boyer observed that:

(Learning) ... technical skill, of whatever kind, leaves open essential questions: Education for what purpose? Competence to what end? At a time in life when values should be shaped and personal priorities sharply probed, what a tragedy it would be if the most deeply felt issues, the most haunting questions, the most creative moments were pushed to the fringes of our institutional life.

Boyer (1987:p 283)

A decade later David Boud, a leading figure in Australian higher education learning, teaching and assessment, observed:

... a remedy for the crude instrumentalism which has begun to gnaw at the edges of higher education and which for a time dominated discussions of competence... capability shifts consideration to the most important question of all: what sort of learning do we need to promote in higher education to equip us for the future?

Boud, D., as cited in Stephenson & Yorke (1998: p viii)

Assuring the quality of the outcomes of higher education and the achievements of our graduates has recently seen a resurgence of interest as governments world-wide focus increasingly on confirming that their massive investments in the sector over the past three decades and the opening up of access to tertiary studies are

delivering 'value for money'. In a context where there is growing diversity in participation in higher education, in what is studied, how it is learnt and assessed, and in when, where and why this takes place it has been observed that: "... student learning outcomes might come to provide the ultimate test and safeguard for standards" (James, 2003).

As a result of the United Nations' [Decade of Education for Sustainable Development 2005-14](#) there has been increased interest across member nations to confirm that graduates have developed those capabilities that are central to assuring the social, cultural, economic and environmental sustainability of our world.

The Higher Education Standards Framework (Commonwealth of Australia, 2015, Section 1.4) gives emphasis not only to assuring the standard and quality of the inputs to higher education (curriculum, teaching, support, facilities, governance and administration) but also to the quality and focus of its outcomes and its impact, in particular to the quality of graduates, and to the validity and reliability of their assessment.

In the UK, the Quality Assurance Agency (QAA), in Part A, Section 6.9 of its 2014 [Quality Code For Higher Education](#) gives similar emphasis when it says: 'It is the setting and assessment of the outcomes of learning that is important, rather than the nature of any component element of study' (QAA, p 32).

Numerous other commentators from around the world provide additional arguments for giving greater focus to assuring the fitness of purpose of our higher education programs, their achievement standards and the capabilities being developed in graduates^{viii}.

Need for capacity-building on change management

Valuable work has been completed on what should change in our higher education learning programs. However, there has been much less focus on specifically building the collective capacity of learning program teams and their leaders so they can take these 'good ideas' and actually ensure they are put into practice consistently, effectively and with demonstrable benefit for students.

The focus and objectives of the senior fellowship

This Fellowship has sought to address the twin challenges identified above –

1. On the one hand, assuring the quality of higher education achievement standards and their valid assessment on the one hand, and, on the other,
2. Building the capacity of local learning program leaders and their teams to enact this agenda – consistently, sustainably and effectively.

In doing this it has given specific attention to:

- Linking, leveraging and building on the extensive work already underway and on the outcomes of earlier ALTC/OLT projects (See References).
- Highlighting the importance of ensuring that program-level outcomes and achievement standards are much more carefully formulated, considered and validated - that they are demonstrably relevant, desirable, feasible and comprehensively considered.

- Confirming that this can best be achieved by adopting a process of evidence-based peer review similar to that used to assure the quality of research. In this approach each learning program team takes into account data from a wide range of weighted reference points and uses a comprehensive graduate and professional capability and competency framework validated in earlier studies of successful graduates in nine professions to gather and accommodate the results.
- Building the capability of both universities and private higher education providers to address this agenda.
- Applying the key lessons from research and practical experience on effective change management and leadership in higher education to the design and delivery of the Fellowship.
- Developing an online, searchable practitioners' guide and self-managed learning system using a proven approach to co-creation and user-centred design.
- Locating the Fellowship firmly within an overall quality and standards framework for learning and teaching in higher education (Scott, 2013: p 280-82).

Chapter 2: Approach & key success factors

Application of key lessons on effective change management and capacity building

The approach used to design and deliver the Senior Fellowship has applied 30 years' experience in change leadership and capacity building in higher education (Fullan and Scott, 2009).

Active engagement of the sector started from day one of the Fellowship with user-testing and refinement at Western Sydney University of a pilot institutional capacity-building strategy based on the Fellowship's objectives and proposed deliverables. The Fellowship evaluator sat in on this pilot. This was followed by testing the refined model with overseas partners and Fellowship reference group members to identify further enhancements. Then workshops based on the finalised, user-centred design were held in every Australian state and territory with Program Leaders, Associated Deans (Learning and Teaching) and Directors of L&T from all interested universities and private higher education providers. Parallel events were delivered internationally with a view to benchmarking. The workshops generated a large number of requests to re-deliver them at individual colleges and universities within and beyond Australia.

The key outcomes and lessons on good practice and effective change management and leadership generated in the workshops were showcased at a wide range of national and international conferences; and a co-created good practice website which gives access to the outcomes – *FLIPCurric* – was field tested, refined and populated during this process (flipcurric.edu.au).

In total, some 3700 learning and teaching leaders from 154 colleges and universities participated in 46 workshops and 21 keynote addresses within and beyond Australia.

The workshops' overall theme was *Developing and assessing graduates who are 'work ready plus'* and they lasted 3-4 hours. Emphasis was on the following areas and each workshop explored successful approaches to addressing them:

- Why bother giving focus to assuring the quality of achievement standards and assessment?
- Where the Fellowship fits into an overall quality and standards framework for learning and teaching in higher education (Scott, 2013: 280-82).
- Ensuring that we are speaking a common language – the importance of clarifying key terms.
- The Six Keys to 'flipping the curriculum' not just the classroom.
- Validating program-level learning outcomes by using a proven professional capability framework, evidence-based peer review and multiple weighted reference points.
- What does developing graduates who are work ready *plus* look like in practice?
- Identifying the key indicators of a 'powerful' assessment task, testing these indicators against examples provided by participants and, from this, producing a typology and searchable database.
- Key implementation challenges to be faced in addressing the action agenda

developed during the Fellowship and how these might best be handled, given what we know about effective change management and leadership in higher education.

- The key capabilities of the effective local change leader and optimum forms of support.

The slides used in each of the workshops, and which were the basis for the keynote addresses and interviews with key leaders, can be downloaded along with a video under the 'Resources' button on the Fellowship Website (flipcurric.edu.au).

Key success factors & strategies

The key lessons from 30 years' research and practical experience with effective change implementation in higher education which were reviewed during the workshops (Fullan and Scott, 2009) are summarised below. These lessons were also applied during the Fellowship to optimise its successful implementation.

Key lessons on effective change implementation in higher education

1. Give more focus to engaging with staff than to disseminating information;
2. Give particular attention to engaging the disengaged;
3. When engaging with staff first *listen* (with a case for change and options known to work elsewhere); *link* together what most people favour; then *leverage* what you find by commissioning a subgroup of more advanced staff to try out the preferred solution under controlled conditions. Finally, when a workable solution is developed you *lead* – scale up this version using the team which developed it as peer coaches.
4. Remember that there is a profound difference between 'change' (something becoming different) and 'progress' (a conclusion by individuals that this is an improvement on what went before).
5. Recognise that change is a learning and unlearning process for all concerned. It is not an event;
6. Learn by doing – start small, learn what works under controlled conditions, then build on your successes as you scale up;
7. Foster networked learning & shared solutions around a common quality framework;
8. Ensure policies, procedures, leadership structures, accountabilities, staff development, resourcing and incentives are brought into alignment to support the change;
9. Make sure meetings and processes are efficient and demonstrably 'value add', that they 'leave room' and time for staff to implement the desired change;
10. Give focus to achieving consensus around the data not simply around the table;
11. Use a process of 'steered engagement'^{ix} where a small number of priorities are agreed then pursued in the ways that best fit local circumstances;
12. Use 'nested' leadership (a process where local leaders like Associate Deans or Heads of Program work with a central leader like a PVC or DVC (L&T) to support each other in the process of 'steered engagement').

Chapter 3: Key findings & areas for action

A qualitative analysis of the 220 pages of feedback gathered from participants at the end of the Fellowship workshops, keynotes and interviews on the most significant aspect of what had been explored during these events has identified the following key areas for action:

Confirm there is shared understanding of key terms

There is a need to develop an agreed, 'plain English' set of definitions for key terms, otherwise program teams and leaders may find themselves talking at cross-purposes. The following terms and preliminary definitions (indicative only) were discussed during the Fellowship workshops:

- *Standard* – a level of achievement with clear criteria, indicators and means of testing.
- *Quality* – fitness for purpose/fitness of purpose and performance to an agreed standard.
- *Learning* – a demonstrably positive improvement in the capabilities and competencies students are expected to demonstrate they have developed to a required standard by the end of a program or unit of study.
- *Learning outcomes* – the personal, interpersonal and cognitive capabilities as well as the key knowledge and skills confirmed as being necessary for effective early career performance and societal participation.
- *Assessment* – gathering evidence about the current levels of capability and competency of students using valid (fit-for-purpose) tasks.
- *Strategy* – linking relevant, desirable and clear ends to the most feasible means necessary to achieve them.
- *Evaluation* – making judgements of worth about the quality of inputs and outcomes (including the evidence gathered during assessment).

Increased focus on assuring the fitness of purpose of what is being assessed

In recognition that assessment is the key to assuring achievement standards and that it drives learning, participants in the Fellowship recommend increased attention be given to assuring the fitness *of* purpose of what is being assessed not just its fitness for purpose. The 'accessing the student voice' research (Scott, 2006) highlights that a powerful motivator for engaged learning and retention is student recognition that program level outcomes are demonstrably relevant to their future. Deciding what is 'relevant and desirable' involves value judgement.

In concentrating on this issue we are led, as already noted, to look more carefully at exactly how program level outcomes are determined, at the robustness of the graduate capability framework being used to profile the learning outcomes, what reference points, sources, criteria, processes and validation evidence are considered in this process, and at who is and should be involved when the desired outcomes for the graduates of each degree are established^x.

This, in turn, requires program development and review teams to take much more careful account of the transdisciplinary and volatile nature of the world graduates now enter as they determine program level outcomes and how they will be assessed.

Flip the curriculum not just the classroom

The importance of ‘flipping’ not just the classroom but the curriculum itself was repeatedly endorsed by Fellowship participants. This involves starting with carefully validating the program level outcomes and capabilities graduates are to develop, not with content or individual units of study. Only after this is done, say participants, should program development and review teams confirm the units of study that make up the program map onto and are scaffolded towards achieving program level outcomes.

Having done this, they proceed to confirm that the way each unit of study is to be assessed is valid, how assessment tasks will be graded is clear, and that those who will do the marking have ‘calibrated’ how they will apply the agreed grade indicators. It is only after the completion of this work that the most engaging learning methods and resources would be built into each unit of study to enable students to perform as successfully as they are capable on assessment.

The Fellowship has confirmed, therefore, that, to assure the achievement standards and the quality of assessment in the contemporary university, it is best to start by confirming the quality (relevance and desirability) of *what* is being assessed before looking at how rigorously and reliably students are being assessed and how best to foster their learning.

This notion of ‘flipping the curriculum’ is not new. It is closely aligned with previous work on ‘backward mapping’, ‘backward design’ and on ‘constructive alignment’^{xi}. Aspects of the approach have also been carefully explored in earlier OLT projects including in Romy Lawson’s (2015) OLT project on curriculum design for assuring learning and in the work on graduate outcomes by Barrie, Hughes, Crisp & Bennison (2012).

Box One identifies the ‘Six Keys’ to flipping the curriculum discussed during the Fellowship. The *FLIPCurric* Guide (flipcurric.edu.au), which brings together the practical outcomes of the Fellowship, gives detailed practical advice on how best to address each Key and provides a wide range of exemplars and resources to support this work.

Box One

The Six Keys to flipping the curriculum and assuring the quality of higher education achievement standards and assessment

Making sure we have the 'Right'^{xii} (evidence-based, relevant, benchmarked, situation specific, peer-confirmed):

1. *Program level outcomes* – relevant, desirable, feasible, clear, comprehensively considered against multiple reference points and situated into the professional and graduate capability framework in Appendix 3.



2. *Mapping* – confirmation that all the program level outcomes are being picked up in units of study in a scaffolded way.



3. *Assessment tasks* – are demonstrably fit-for-purpose (valid) and address the mapped learning outcomes for each unit.



4. *Grading* – an agreed, operational picture of what indicators will be used to allocate different grade levels, preferably with exemplars.



5. *Calibration* – peer agreed processes for reliably applying the indicators for allocating different grade levels^{xiii}.



6. *Learning design and resources* – fit-for-purpose learning design, learning resources, with an aligned student support system & capable staff available to deliver it.

Validate program level outcomes more carefully

When validating program level outcomes, the need to use evidence-based peer review of a wide range of relevant inputs and reference points guided by a comprehensive professional and graduate capability framework was repeatedly endorsed as a key area for improvement if the achievement standards of 21st century higher education programs are to be ensured. The strategy of using evidence-based peer review was seen as mirroring the process used to assure the quality of research. It was also seen as an important way to assure key stakeholders that achievement standards are being maintained whilst avoiding a 'one-size fits all' approach or the standardisation that could emerge if a single graduate exit test were to be introduced to confirm the comparative quality of graduates across the sector. A clear distinction was, therefore, made between 'assuring standards' and 'standardisation'.

Use multiple reference points to validate program level outcomes

This involves each program development or review team considering all the reference points listed below), along with any additional ones, and specifically deciding on the relative importance/weighting to be given to each. It also involves ensuring that a comprehensive, validated professional and graduate capability

framework (Diagram One) is used when gathering information from each of their priority reference points and sources.

Potentially relevant reference points for validating program level outcomes

1. National Qualifications Framework or equivalent;
2. The University's mission & its graduate attributes;
3. Learning outcome standards like those determined by ALTC discipline groups, UK subject benchmarks, the UK Quality Code and the Australian HE Learning and Teaching Standards;
4. Suggested program level outcomes from the Assessment of HE Learning Outcomes project, from US bodies like the Western Association of Schools & Colleges, the US National Institution for Learning Outcomes Assessment, the UN Decade of Education for Sustainable Development, the Business Council of Australia etc;
5. The learning outcomes for courses of the same name in other places;
6. The requirements for post-graduate study in the discipline/profession concerned;
7. External professional accreditation standards and requirements (when applicable);
8. Results from inter-institutional benchmarking and peer review;
9. The work-ready *plus* capabilities highlighted in the Fellowship, including graduates being sustainability literate, inventive, change implementation savvy and having come to a considered position on the tacit assumptions driving the 21st century agenda;
10. Academic experts' and program team input, including inter-institutional peer review and moderation;
11. The key capabilities and future trends identified by successful early career graduates, alumni and entrepreneurs;
12. The capabilities sought in job advertisements;
13. Employer feedback; input from External Course Advisory Committees;
14. The results of School/Department Reviews;
15. Government policy and funding incentives;
16. What peak industry, social and scientific bodies are calling for;
17. Regional development priorities and opportunities;
18. What parents, prospective students and others say they want;
19. Plus?

This use of multiple, external reference points like those above to validate program level outcomes is a requirement in UK Quality Code for Higher Education 2016: Part B1: Indicator 5 pp 12-13).

The relevance and ease of use of this suite of reference points was beta tested during the Fellowship workshops and found to be both workable and helpful by teams of participants from more than 30 different fields of education^{xiv}.

Use a comprehensive and valid professional and graduate capability framework when seeking to assure the fitness of purpose of program level outcomes

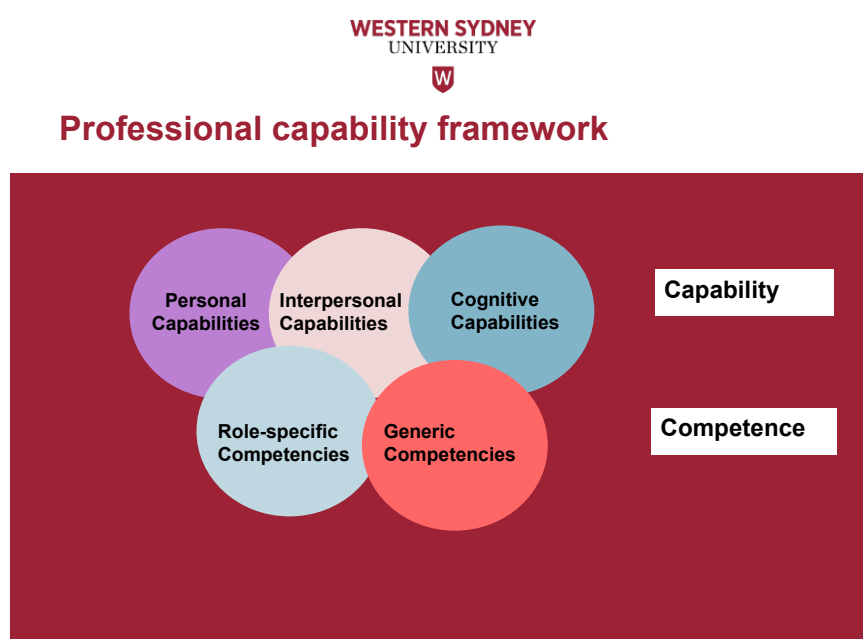
The need to use such a framework was consistently acknowledged during the Fellowship, along with showing where its use fits into the bigger picture of assuring

learning and teaching quality and standards in higher education (Scott, 2013: p 280-82). A framework that meets this need has been developed from studies of successful early career graduates in nine professions over the past decade (see References). Its validity, clarity and relevance was tested and endorsed during the Fellowship workshops.

This framework is summarised in Diagram One. The factor analysed capability subscales in the personal dimension include *Self-awareness and regulation*, *Decisiveness* and *Commitment*; in the interpersonal dimension, *Influencing* and *Empathising* and in the cognitive dimension, *Diagnosis*, *Strategy* and *Flexibility and responsiveness*. Competencies are both generic (transferable skills and knowledge and skill) and role or discipline specific. Further detail is provided in Appendix Three, including the distinction between ‘capability’ and ‘competence’.

Importantly, all research to date using this framework confirms that one’s capability is most tested when the unexpected happens, things go awry or an unanticipated opportunity arises, not when things are running routinely. The findings also highlight the central importance of personal, interpersonal and cognitive capabilities, with the possession of key skills and knowledge (competence) being necessary but not sufficient for effective practice.

Diagram One



When seeking to assure the quality of the outcomes of each higher education program, it is recommended that consideration be given to all the dimensions and subscales identified above and to the validated items in Appendix Three that make them up. This will help ensure that our graduates not only have the competencies (skills and knowledge) necessary for them to be work ready for today but also the personal, interpersonal and cognitive capabilities necessary for them to be work ready *plus* for tomorrow. Furthermore, it will help ensure that our university graduates emerge with capabilities that are not only of demonstrable value for

themselves individually, but also for the nation's future and its social, cultural, economic and environmental sustainability.

Emphasise the development of graduates who are work ready plus

"To reshape action in the future you must reshape thinking in the present"

Doug Parkin (2014)

There was particular interest throughout the Fellowship in the notion of developing graduates who are not only work ready for today but who are also work ready *plus* for tomorrow, people who are, as some participants put it 'future ready' as well as 'career ready' and ethically entrepreneurial. This, they say, is because it reminds us that we need professionals who not only possess the relevant skills and knowledge (competencies) but also the capabilities identified in Appendix Three that enable them to effectively manage themselves, work productively with others and diagnose what is happening and shape uniquely suitable responses when they inevitably encounter unexpected events, times when things go awry or unpredicted opportunities arise.

Furthermore, universities and colleges don't just produce workers. As already noted, they produce our future leaders (the vast majority of the world's political leaders and policy makers have been to a university). They also develop people who create their own enterprises and help invent the new sources of income we need for economic sustainability as old revenue sources dry up and 'digital disruption' rapidly reshapes our business models and how people work. Similarly, university graduates play a central role in developing the breakthroughs necessary to manage environmental sustainability and the solutions necessary to ensure social and cultural sustainability and harmonious societies. Therefore, in seeking to produce graduates who are work ready *plus*, our universities need to ensure they are not only job ready and skilled for today but are in addition:

- sustainability literate (socially, culturally, economically and environmentally);
- change implementation savvy (able to engage productively a wide variety of people with necessary change and help them to deliver it);
- inventive and creative (able to create and test out innovative social, cultural, economic, technical or environmental solutions; and are clear on what concepts like 'ethical entrepreneurialism'^{xv} entail);
- clear on their, personal, considered position on the tacit assumptions driving the 21st century agenda (assumptions like 'growth is good for everyone'; 'consumption is happiness'; 'ICT is the answer'; and 'globalisation is great')^{xvi}.

To summarise: When we talk about being 'work ready' we are talking about competencies (generic and job specific skills and knowledge) relevant to today. But when we talk about being 'work ready *plus*' we are talking about capabilities for not only today but for tomorrow – capabilities like the ability to manage the unexpected, remain calm and tolerate ambiguity, to '*read* what is really going on in a specific, challenging situation and *match* the most relevant, feasible and appropriate response', being change implementation savvy, inventive, sustainability responsive, able to learn from experience and to operate with a clear understanding of one's ethical position on the tacit assumptions driving the 21st century agenda. It is in this way that we can assure the quality of our future leaders, inventors and

entrepreneurs as well as the resilience and adaptability of our workers. Importantly, in coming to their own considered, articulated and justified position on the tacit assumptions driving the 21st century agenda, our future leaders will be able to articulate the value position(s) they will be drawing upon when they have to take a hard decision^{xvii}. The [Education Plus white paper](#) (Fullan and Scott, 2014) explores the idea of developing work ready *plus* graduates in greater detail.

Develop creative, ethically entrepreneurial graduates

The creativity-entrepreneurship dimension of being work ready *plus* was explored in considerable detail in the Fellowship workshops and meetings. It was highlighted in [the opening keynote address by Jo Rizen](#) at the 2016 Universities Australia Conference (Alexander, 2016) as well as in key reports from bodies like CSIRO^{xviii}. Workshop participants emphasised that this doesn't only involve the creation of new sources of income to replace the shortfall that has resulted from the fading of the resources' boom, by fostering innovations in IT-enabled areas or making money out of waste by building innovations in the [Blue Economy](#) as discussed by Guther Pauli in [the book of the same name](#) (Pauli, G, 2010). It also involves developing graduates capable of being socially entrepreneurial - future leaders and professionals who can help us shape and implement the solutions necessary to address the increasingly significant challenges of social and cultural sustainability.

In the US national groups like EDUCAUSE are advocating a shift from students being seen as the consumers of higher education to fostering and assessing their creativity and inventiveness (Johnson, Adams Becker, Estrada and Freeman, 2014).

Importantly, a range of those interviewed during the Fellowship emphasised the close links between emotional intelligence, the top rating personal and interpersonal capabilities, being 'mindful' and the ability to create.

International Journals like the *Journal of Asia Entrepreneurship and Sustainability* (see Rushworth, 2013 for an indicative article) and the Entrepreneurship Centres, courses and 'maker spaces' that have emerged in universities across the world in the past decade are part of this trend^{xix}.

Promote the role of higher education in delivering invention not just training

We have ample evidence that higher education and the academics it produces play a central role in driving national innovation and invention and, through this, social, cultural, economic and environmental sustainability. In Australia, for example, it has been graduates based at CSIRO or in our universities who have produced dozens of internationally significant inventions ranging from WiFi, gene shears and the polymer banknote to the photovoltaic cell, solar hot water, the cochlear implant, the 2 minute AIDS test and the vaccine for cervical cancer^{xx}.

Similar patterns can be seen in other countries^{xxi}. These higher education inventions have generated significant social and economic benefits. For example, the [MIT Entrepreneurship Development Program](#) (MIT, 2015) reports:

"MIT entrepreneurs (run) the world's 10th largest economy (with)... 30,200 active companies, 4.6 million people employed... (and) \$1.9 trillion in annual reserves."

All the researchers behind these innovations became interested in their field of exploration, invention and creation in large part as a result of inspirational teachers and their experiences not just during their post-graduate, but initially during their *undergraduate* studies. Because of this, a number of Fellowship participants have argued that we need to position more explicitly this critically important function of undergraduate teaching and learning at the centre of program level outcomes and assessment, and to make clear how it directly links to the country's innovation agenda and its pursuit of economic, social, cultural and environmental sustainability^{xxii}.

As Universities Australia noted in its 17 November 2015 media release when congratulating Bill Ferris AC on his appointment as Chair of Innovation Australia:

"Universities are major contributors to Australia's innovation agenda - as a source of ground breaking innovation through research and as educators of the next generations of innovators."

Develop graduates who are change implementation savvy

As the data in Appendix Three indicate, implementation savvy graduates are 'mindful'^{xxiii}, have an explicit and considered historical, ethical and philosophical perspective and have transparent and considered values. They are authentic, can engage the disengaged, can work in partnership with multiple groups and productively with diversity. They can listen, link and leverage – in that order; they have vision, can articulate new ideas succinctly and in plain English, and can shape the best way to action a desired change in partnership with those intended to benefit, and then ensure it is implemented effectively.

Of particular interest to participants in the Fellowship workshops has been the role which 'strategic serendipity' plays in fostering effective individual and organisational adaptation, resilience, implementation and opportunities for invention. If practitioners have high levels of personal and interpersonal capability and become well regarded and respected in the relevant networks – for giving not just receiving support – colleagues think of them when new opportunities arise and alert them to initiatives and opportunities of which they may not otherwise be aware. Being 'strategic' is figuring out which of these opportunities to take up and which to let pass. It is in this way that high levels of emotional intelligence and a commitment to reciprocity are critical to achieving the full benefits of networked learning. In the past couple of years a number of writers and researchers have noted the importance of positive, reciprocal workplace relationships in achieving effective organisational change implementation, adaptation and resilience^{xxiv}.

Assess less but assess better

'If assessment continues to focus largely on knowledge acquisition and understanding, and less on the capacity to find things out and use the knowledge in context, then it will steer tutors and students away from learning for employability... Assessment reform with these aims would ... build on existing efforts to design integrative and creative assessment that is more able to determine authentic achievement.' HEA (2012: p 12)

There is considerable evidence that graduates learn about and are best assessed on the key capabilities identified in Appendix Three through the use of strategies which are integrated, transdisciplinary, dilemma-based and drawn from daily practice.

These can be instances actually confronted when on a practicum placement or simulations of them and they work best if the student uses the key capabilities and competencies identified by the successful early career graduates who have gone before them in their field of study as a diagnostic framework for focused reflection.

This notion of ‘authentic assessment’ (Wiggins, 1993)^{xxv} – assessment which is experiential, integrated and transdisciplinary has been emphasised by a range of scholars since the 1930s^{xxvi}.

And, as Alan Tough (Tough, 1979; Tough and Donaghy, 2005) has reminded us from his research on the adults’ learning projects across multiple cultures, a key resource for such learning is having access to a ‘successful traveller’ further down the same change (that is, learning) path we are on who is doing well. This is why it is so important to use successful early career graduates as a key source for validating university learning program outcomes, to provide real world cases and dilemmas for learning and assessment and to highlight for new students the capabilities that most count for effective professional performance in their professional area.

‘Powerful’ assessment tests and examples

The key tests for a ‘powerful’ assessment task suggested in the Fellowship workshops are identified below, along with types of powerful assessment.

Key tests for ‘powerful’ assessment

The assessment task or tool under consideration:

1. Attracts high levels of student satisfaction;
2. Clearly addresses the key capabilities set down for the program/unit, especially those identified as characteristic of work ready *plus* graduates in the field of education concerned;
3. Brings to bear different perspectives, taps into multiple domains of learning;
4. Is integrated – that is, it concurrently seeks to assess key personal, interpersonal and cognitive capabilities in the profession/discipline concerned, along with appropriate and effective use of relevant competencies;
5. Is not just problem-based but solutions oriented; and involves doing not just knowing;
6. Has a whole-of-program focus;
7. Directly relates to what has been learnt;
8. Produces representations of what students can do rather than just a grade;
9. Can be digitally enabled;
10. Promotes academic integrity;
11. Is, whenever possible, dilemma-based/“wicked”/real-world focused/authentic and demonstrably relevant to effect early career practice;
12. Can be used for learning (formative) as well as for assessment (summative);
13. Is scalable.

Types of ‘powerful’ assessment

- Capstones and other forms of program level assessment – especially when these test the ability of students to address key technical and human challenges based on real-world cases in an integrated way (see Professor Nicolette Lee’s OLT National Senior Teaching Fellowship website on Capstones

at: <http://www.capstonecurriculum.com.au/>) and her report on the Fellowship (Lee, N, 2015).

- ePortfolios which provide evidence of effective performance in formal courses and in co-curricular activities against the highest ranking capabilities identified in studies of successful early career graduates in the profession/discipline concerned.
- Dilemma-based assessment: Here students are confronted with a real-world dilemma - an actual 'forked-road' situation - identified by an early career graduate and asked to say what they would do and why. These dilemmas can be presented as a case, in-tray exercise, a simulation or as a trigger video.
- Field research, action research, clinical or practicum placements, internships and real-world projects – local and international – always with a focus on those capabilities in Appendix Three identified as most important by successful graduates and employers in the field of practice concerned.
- The use of senior students and early career graduates to co-create assessment tasks along with a rationale on why they are relevant. (The clearing house of good practice examples in the '[Students as change agents](#)' review by Mick Healy, 2013 gives examples).
- Role-play based on real-world cases.
- 360 degree feedback on performance using a validated professional capability framework.
- Assessment tasks focused on social entrepreneurialism, creativity, invention, addressing key issues associated with social, cultural, economic and environmental sustainability, including [Blue Economy](#) projects.
- Performances in various mediums, including scripting and production of a film on a hot issue in the profession/discipline concerned which is loaded onto YouTube for formal review.
- ICT-supported assessment – for example, interactive assessment including assessable gaming or Wiki-based assessment.
- Disassembling a real world product and identifying all of the aspects of the course necessary to build it; then reassembling it and applying what has been learnt to the development of a new product.
- Reflective learning journals using a validated set of high-ranking capabilities for effective practice in the specific practice area as a benchmark for this process.
- Problem-based or solutions-based assessment around a real world challenge.
- [Learning contracts](#). In this method the lecturer and student identify a capability gap and jointly negotiate the best way to address it. The contract includes what capability is to be developed, how this will be done, what will be produced as evidence of learning and by when, along with what learning resources will be used and the key indicators that will be used to judge that the learning has been effective.
- Interviews with successful early career graduates and critical discussion of the relationship between what they say and what is being learnt in the degree.
- Thesis (including undergraduate thesis) and Viva Voce.
- Critical appraisal of data, articles, performances using agreed quality tests.

The online [FLIPCurric](#) guide provides access to some 240 examples for each of the above forms of assessment. It is searchable by either field of education or type.

Dilemma-based assessment

During the Fellowship there has been particular interest in exploring how ‘authentic’, dilemma-based assessment tasks that give focus to the real world ‘wicked problems’ of daily practice (Rittel & Webber, 1973; UNSW 2013) might be developed and used most productively. The key suggestions on how this might best be done are listed below. It is important to note that this form of assessment, like many of the types noted earlier, needs to be scalable. In this regard there is particular potential to use recent developments in high-speed interactive online tools to address this challenge.

Some participants suggested that a focus on dilemma-based assessment could be facilitated by introducing a capstone unit of study called ‘dilemmas of professional practice’ in which students discuss in class how they would handle a series of key dilemmas identified by early career graduates in their profession or discipline and then are assessed on how they would handle an unseen dilemma using an online trigger video or case notes.

Developing and using dilemma-based assessment tasks

Developing dilemma-based assessment tasks

1. Identify successful early career graduates (e.g. people identified as performing effectively);
2. Ask them to identify a time when, in the first three to five years of professional practice, they were most challenged;
3. Ask them to describe what happened, especially the moment when they were suddenly “thrown”, things went awry, or the unexpected happened;
4. Then ask them what they did to resolve the situation successfully and why they did this, using the framework in Appendix Three as a guide;
5. Finally, ask them to make sense of their strategy by referring to the key domains, subscales and items in the professional capability framework (Appendix 3.)

Using dilemma based assessment

1. When you have a pool of key dilemmas some can be used as a tool for learning – for formative assessment - and others (unseen by students) for summative assessment;
2. In both cases you present the case description of the dilemma identified by the successful early career graduate – this can be done as a written case study or as an online ‘trigger’ video scenario produced by actors;
3. It is critically important to ‘spring the surprise’ or dilemma (‘forked road’ situation) that the early career practitioner experienced;
4. The student is then asked to diagnose what is happening and what needs, in their view, to be done;
5. They are then asked to compare and contrast their strategy with what the successful early career graduate actually did using the top 12 ranking professional capabilities identified in studies of effective early career practitioners in the field of education/profession concerned as an evaluation framework.

6. Finally they are to note what, in the light of this comparison, they would do the same and differently if they encountered a similar (but never identical) dilemma in the future.

The example below shows how the above guidelines can be applied (see Appendix Four for additional examples).

An example of 'authentic', dilemma-based assessment

A group of 100 final year doctors in an examination are asked to view a 'trigger' video in which a real-life dilemma unfolds on their laptop. Based on an actual case identified by a successful early career practitioner, the fledgling doctors see a young mother and two children in the doctor's waiting room. She is in a positive mood and is about to get the results of her regular, routine mammography check.

The scene cuts to the practitioner and on the screen are the results of the young mother's most recent mammography and her associated blood tests. Each student doctor must interpret what these results suggest. It is in this way that generic and role specific skills and knowledge (for example the ability to read and interpret blood test and mammography results) are tested in context. If this is done correctly they will see that the results are very bad news, with secondaries already spreading. Each student is told that the mother is about to walk through the door and they must say how they would break the news. Their response is recorded. They then watch how the experienced practitioner does this. After this students write an essay which appraises the accuracy of their diagnosis and compares how they broke the news with the GP's approach, using the top 12 professional capabilities identified by successful early doctors as a reflection and evaluation framework.

Making it happen

Here the focus shifts to the issue of 'what do we do on Monday' to take the agenda outlined above and put it into daily practice – both consistently and effectively. This highlights two key lessons that have emerged from 30 years' experience and research on effective change management:

*Good ideas with no ideas on how to implement them are wasted ideas
and
Change doesn't just happen but must be led and deftly.*

Applying the key lessons from research on effective change implementation and engagement in this area and highlighting the key capabilities of effective local change leaders was repeatedly identified as requiring more direct attention and support throughout the Fellowship. The same implementation lessons that have underpinned the approach to designing and delivering the Fellowship (Chapter Two) were confirmed as applying equally well to implementing the Fellowship's action agenda. What is suggested also aligns closely with the challenges and the solutions identified in earlier studies of successful learning leaders in higher education (Fullan & Scott, 2009); and case studies of effective change management (Scott, 2013: 286-92).

Below, the key implementation challenges identified during the Fellowship workshops for this area and the suggested ways of handling them are summarised. All of the strategies identified align well with the research on effective change leadership and management in higher education.

Key implementation challenges and suggested ways to handle them

How to engage all staff not just the enthusiasts?

Here the challenge is how best to move beyond 'preaching to the converted' and the already enthusiastic to engaging everyone with change – including those who are disengaged or uninterested and the growing number of sessional staff who may be isolated from mainstream action. Effective strategies identified during the Fellowship include:

- Seek a senior mentor in the Executive to champion the achievement standards and assessment agenda and endorse its importance to all staff.
- At the outset undertake a stocktake of what is currently working effectively at the local level in your higher education institution in each component of the 'Six Keys' framework. This builds ownership and shows that what is proposed is feasible and already successfully underway, albeit in pockets. This strategy is a practical example of the key change leadership strategy identified in all successful higher education leadership studies to date and roundly endorsed in every Fellowship workshop – effective change leaders and change capable universities always listen first (with a focus), then link, leverage and lead (scale up) in that order.
- Include tracking items in student feedback surveys that cover the quality of learning outcomes and assessment and use the results to help those with lower ratings on these items improve by linking them to those who are attracting higher ratings.
- Recognise that change is a complex learning and unlearning process for all concerned – it is not an event like launching a new assessment policy. Because of this it is important to keep constantly in mind that everyone who is being asked to engage with the achievement standards and assessment improvement agenda will constantly be asking – what do I have to do differently? Is this relevant, desirable, feasible and clear? Will I be receiving support to help me fill in this gap in my expertise? With this in mind the Fellowship participants suggest:
 - Giving focus to this area in professional development and review programs for staff by replicating customised versions of the Fellowship workshops with local staff as part of a train-the-trainer approach; using the *FLIPCurric* self-teaching guide co-created during the Fellowship as a 'just-in-time, just-for-me' learning resource;
 - Using staff who have successfully implemented change in this area to coach colleagues who are just starting out;
 - Getting involved in external networks focused on this area to identify successful ways to tackle any emerging implementation challenges;
 - Setting up local 'coaches' on the 'Six Keys' framework – people who have already successfully engaged with the 'Six Keys' agenda. Build these local coaches into a university-wide network convened by a senior leader;
 - Putting in place an assessment-focused learning guide system for each unit of study and requiring all staff to 'teach' it in the first session of each unit delivery;
 - Linking successful action on the agenda to the institution's promotion and award system.

- Always listen to ‘resisters’ – because this will help you find out what change implementation challenges you have to address and because, if listened to carefully, they will often suggest a positive idea that can be acknowledged to others, thereby creating a positive incentive for them to engage.
- Start small and build on your successes. Do this by using a small volunteer group of staff and students to try out a desired change under controlled conditions. Here the aim is to learn how best to make a desired improvement to assessment and assuring achievement standards work in practice by trying it out in a pilot and then, once it is operating successfully, to use this pilot group as coaches for others to assist scale-up of the most workable approach. This is consistent with the ‘ready, fire, aim’ strategy endorsed at the workshops and was seen as a more productive approach than the ‘ready, aim, aim, aim’ one that has been characteristic of some change approaches in the past. It is also consistent with the observation by Francis Bacon (1625) that in life ‘we rise to great heights by a winding staircase.’

How best to engage senior executives and key external players with this agenda

- Develop a ‘why bother’ case that shows how this initiative meets the motivators, priorities and key deliverables expected of each of these leaders. Start, therefore, with the ‘why’ not the ‘what’ – and go for both the heart and the head.
- Articulate both the business case for the change and how it will achieve the institution’s/nation’s key development objectives and the ‘moral purpose’ of action in this area – demonstrate the positive benefits for reputation, demand, retention, income, improved life chances and graduate success.
- Listen (with a menu of relevant initiatives that have worked elsewhere and invite their feedback on whether any of these might be worth pursuing) and link (what most leaders find most relevant and feasible) into a proposed plan of action. Don’t tell.
- Use peer pressure between senior leaders in different higher education institutions as a potentially relevant extra incentive to foster engagement.
- Give leaders the language to use – but keep it simple by using plain English and avoiding ‘eduspeak’.

Lack of practical exemplars and case studies of success to show that action in this area is both beneficial and feasible

- Develop a searchable clearing-house of exemplars of successful implementation using the ‘Six Keys’ framework as an organising system.
- Alert academics to the relevant sections of the *FLIPCurric* guide when they need ideas, tips and examples of how others have successfully carried out a particular aspect of the ‘Six Keys’ framework.
- Foster networked learning – a key form of learning for leaders.

How to ensure institutional systems & culture align with and support the change agenda

Staff say they don’t have time to engage with the Six Keys’ agenda

- Seek to identify and reduce duplicated effort or procedures that do not add value to student outcomes; avoid ‘busy work’.

- Undertake an audit of meetings to identify exactly how each of them ‘adds value’ to student outcomes and effective operation – remove or decrease the number of those that don’t meet this test.
- Meet less but meet better – consider undertaking meetings by teleconference to save travel time, especially when everyone knows each another.
- Ensure that those who chair meetings are trained and hold to account colleagues who agreed to undertake an action in a previous meeting.
- Set a smaller number of institutional priorities for action and foster a ‘steered engagement’ strategy for implementing them in locally suitable ways.

What to do if the institutional culture is ‘change averse?’

- Recognise that change capable cultures are built by:
 - Change capable leaders, including local ones, modelling the top rating capabilities of effective leaders— especially when things go awry or an unexpected opportunity arises.
 - Focusing on the top capabilities associated with successful professionals (Appendix Three) and the direct link they have to developing a productive ‘why don’t we’ rather than a ‘why don’t you’ culture.

Having to operate within the ‘siloed’, mono-disciplinary, accountability and funding structure and systems found in some higher education institutions

- Set up a ‘nested’ leadership system to help overcome this.
- Emphasise consensus around the data not just around the table.
- Argue for more ‘systems thinking’ and integration- a process in which all the key players are acknowledged for the complementary role they play in enhancing the total student experience, retention and success.
- Encourage the development of a ‘why don’t we’ not a ‘why don’t you’ culture.

Not being at the ‘high table’ of decision-making

- Argue for and show the institutional benefits of ‘nested leadership’ and the benefits of the DVC/PVC holding ‘stocktake meetings’ with Heads of Program as well as Associate Deans, Deans and Heads of School. For one model see the [UWS \(WSU\) Head of Program initiative](#).
- Put in place clear senior leadership accountabilities for the successful implementation of the agenda, with appropriate support and rewards for successful implementation.

Institutional rewards are not in alignment with the Six Keys agenda and may focus more on research and individual success

- Put in place team-focused improvement awards for:
 - successful implementation of quality improvements in assuring achievement standards, achieving a demonstrably positive impact on student outcomes and
 - the use of dilemma-based assessment, capstones and other forms of ‘powerful’ assessment that attract high levels of student satisfaction and show a positive impact on student outcomes.
- Reward successful, collaborative action in this area in the annual VC awards and in promotion systems.

Misaligned policies and procedures

- Suggest the adoption of an online course development and review system based on the notion of ‘flipping the curriculum’ and using the ‘Six Keys’ framework – align policy and procedures to this and allocate key central and local leaders to be accountable for its effective operation and support. Provide exemplars written by successful program teams for each of the ‘Six Keys’ to help teams new to the process to see how it works in practice.
- Advocate for promotion systems to reward demonstrable success in addressing the achievement standards and assessment quality system.
- Review leadership promotion criteria and ensure that the criteria for each local and central leadership role take into account the top 12 highest ranking capabilities identified in the learning leaders and other HE leadership studies.

How to negotiate externally driven change challenges successfully

Fellowship participants noted that the following, broader change forces are important and need to be recognised and negotiated positively as a team whenever possible.

A rapid growth in enrolments and in student diversity

Identify and share effective strategies for alerting students from this increasingly wide range of backgrounds, abilities, needs and experience to how assessment works in their specific program. For example, at Western Sydney University successful third year students from particular transition groups (e.g. mature aged students, Indigenous students, students transitioning in from TAFE, International Students) have been invited to write a ‘lonely planet’ guide for people from the same background just entering university. These guides outline, in the voice of the group concerned, ‘how things work around’ here and how best to handle common challenges, including how best to manage assessment. To illustrate this see the [WSU Top Tips from Mature Age Students Guide](#).

The greater focus now being given by funding agencies, governments and students on demonstrating ‘value for money’ and positive outcomes from higher education programs

Use this as part of the ‘why bother’ case with colleagues when seeking their engagement with the achievement standards and quality assessment agenda. Show how the capabilities being developed are directly relevant to successful early career performance.

A growing emphasis in external audits and in (re) accreditation systems on confirming the quality of the outcomes of higher education not just of the inputs

- Use what external auditors and accreditors focus on as an internal change lever.
- Note that what auditors look for is evidence of a change capable, quality-focused university/college culture – the key attributes include: consistency, equivalence, evidence-based improvement action, accountable leadership and demonstrably positive student outcomes and impact.

External accreditation requirements don’t align with the validated professional capability framework endorsed during the Fellowship

- Introduce the accrediting agencies to the validated capability framework in Appendix Three and to the outcomes of studies of successful early career graduates in the profession concerned with the aim of working together to

further enhance and sharpen their current framework and better position the profession concerned.

- Show that what counts for successful employment, entrepreneurship and effective early career performance is what the studies of successful, work-ready *plus* early career graduates have revealed: that the most effective performers are able to operate proactively, inventively and productively in a rapidly changing, transdisciplinary world where it is the effective integration of personal, interpersonal, cognitive capabilities of the type outlined earlier that count, not merely the possession of high levels of current skills and knowledge (competencies).

Digital 'disruption' and a tendency to modularise and disaggregate learning into discrete packages of information

Explore the use of new interactive ICT tools for dilemma-based/problem-based assessment simulations to enable scale-up in the use of this 'powerful' approach to assessment and learning and to put paid to the myth that 'information is learning'.

Growing national and international competition

- Use this as part of the 'why bother' case with colleagues when seeking their engagement with the achievement standards and quality assessment agenda – by showing that if we are not able to retain 'market share' and optimise retention and success students may go elsewhere and that, as a consequence, their jobs may be under threat due to loss of income.
- Emphasise that for every student lost at the end of first year some \$20,000 in government funding is lost (the amount provided by government for years 2 and 3 of an undergraduate degree).

Change doesn't just happen but must be led, and deftly

Below is a summary of the key lessons from three decades' research and experience with effective change leadership in higher education (see Scott, 1999, Scott, Coates and Anderson, 2008; Fullan and Scott, 2009: Chapter 5, Scott et al 2012, Scott, 2013: 290-92). These key lessons were tested and endorsed during the Fellowship workshops.

Key lessons on effective change leadership in higher education^{xxvii}

- ***Listen*** to those who have to implement the proposed change (always with a case for change and a menu of options that have worked elsewhere), ***link*** (what most of the people involved say is most relevant and feasible), ***leverage*** (by asking a small group of those staff most advanced in the area concerned to trial the preferred option under controlled conditions in order to identify what works best in practice then ***lead*** (scale up what works with other staff using the trial team as coaches) – ***always in that order***. Effective leaders are effective teachers & practice what they preach.
- The most effective leaders have highly developed personal, interpersonal and cognitive capabilities.

Chapter 4: Products

The Fellowship has produced:

1. A summary report.
2. A tested capacity-building methodology for replication both within and beyond Australia.
3. A user-tested and co-created learning system which is comprised of a set of workshop slides and guidelines for their use; and an online, interactive guide (flipcurric.edu.au).
4. An internationally validated framework for higher education institutions to confirm the validity of their achievement standards and proven ways of assessing them in different fields of education.
5. A clear profile of the key areas of focus, performance indicators and capabilities necessary for effective change leadership and implementation in this area with particular focus on the role of Program leader, Associate Dean (L&T) and Director of L&T, benchmarked against the earlier ALTC/OLT Learning Leaders findings.
6. An identified set of core dilemmas and challenges that face local leaders in this area and suggestions from experienced learning and teaching leaders on how they can be most productively addressed.
7. A tested set of policy guidelines for embedding the outcomes of this and earlier OLT fellowships and projects into core quality assurance processes for assessment in Australia's Universities.
8. A sharper set of international support and information-sharing networks for the area.
9. A set of key publications^{xxviii}.

Chapter 5: Impact & sustainability

Key impact indicators & results

Specific indicators and evidence that the Fellowship has had a positive impact on the sector include:

Participation rates and participant feedback on Fellowship activities

- During the period of the Fellowship some 3700 learning and teaching leaders from 154 colleges and universities within and beyond Australia have participated in 65 workshops and attended 21 keynote addresses (Appendix 5).
- Some 220 pages of qualitative data and follow-up emails have been generated on the quality and impact of the workshops and keynotes. An analysis of these data by the Fellowship evaluator indicates exceptionally high levels of participant satisfaction and self-reported impact. Both the raw data and the analysis are available on request.
- Positive reviews by national and international reference group members who have sat in on workshops/keynote addresses/reviewed the *FLIPCurric* guide^{xxix}.

Policy and institutional impact

- The key leaders from the following sample of higher education institutions can report on the ways in which the Fellowship has had a positive impact on policy and procedures at their institution – Victoria University, University of Wollongong, QUT, Avondale College, Alphacrucis College, the University of Toronto and the University of the South Pacific.
- Follow-up invitations to deliver individualised institutional capacity development workshops on the Fellowship have been accepted from 22 universities and colleges from within and beyond Australia^{xxx}.
- The Fellowship focus on developing sustainability literate graduates aligns with the Nagoya declaration and the Global Action Plan on the impact of UN Decade of Education for Sustainable Development 2005-14.
- Impact on key employer groups – for example, on the Institute for Professional Engineers, New Zealand and a replication of the successful graduates' research with successful early career engineers in that country in 2016.
- Impact on Australian peak groups like the Council of Private Higher Education Providers.
- Input as part of the external panel of experts into Alphacrucis College's successful TEQSA self-accreditation application.
- Canada's University of Toronto has set 'powerful assessment' as one of its development priorities for Learning and Teaching in 2016.
- Impact on the 'work ready plus' policy agenda now being pursued by the New Zealand Tertiary Education Commission.

National and international recognition of the Fellowship

- An enhanced image of Australian higher education in this area overseas as evidenced by emails from key players the USA, UK and Canada on the relevance and quality of the fellowship.

- The Fellow has moved from being in the top 5 per cent of researchers on *Academia* in October 2015 to being in the top 3 per cent in February 2016.
- Invitations to join Boards at the University of Gibraltar and Alphacrucis College, to participate on expert advisory panels for peak bodies like Teaching and Learning Canada and lead the NZ Ako Aotearoa Academy in December 2014.

Positive contributions to the work of OLT

- Multiple requests to be advisor to or a member of OLT project reference groups have been received.
- Invited evaluator of OLT grants related to the Fellowship in 2015.
- The Fellowship's focus is reflected in a range of the OLT priorities for commissioned projects in 2016:
 - Academic standards;
 - Assessing equivalence of qualifications and learning outcomes;
 - Assessment and promotion of student learning;
 - Designing learning for the future;
 - Employability skills for the future.

Strategies undertaken to sustain & spread the impact of the Fellowship

- Advice to the group seeking to establish an IT-enabled national peer review of assessment system which is underway in partnership with Education Services Australia.
- Key support for and input into workshops organised by Australia's first Higher Education Private Providers' Quality Network (HEPP-QN) established by Avondale College of Higher Education.
- An extensive international network has been engaged with the focus areas of the Fellowship – this includes Vice-Chancellors and University Presidents, Provosts, Deputy Vice-Chancellors, Network Presidents, HEA fellows, Deans, senior government advisers, Directors of agencies, and student leaders.
- The fact that the *FLIPCurric* good practice guide has been co-created by those involved in the Fellowship workshops and has been field-tested with them will optimise the chances of its use.

Key recommendations for higher education providers

In order to sustain the impact of the capacity-building initiatives undertaken during this Fellowship it is recommended that:

1. The proposed Education Services Australia (ESA) peer review of assessment web tool be finalised and linked to the Fellowship's *FLIPCurric* guide.
2. Higher education institutions review their current Learning and Teaching leadership selection, professional development and promotion processes to confirm they are addressing the top ranking capabilities identified in the *Learning Leaders in Times of Change* study and endorsed during the Fellowship^{xxxi}.
3. A 'nested' leadership system be established in each higher education provider to support linked and leveraged action on the achievement standards and assessment quality agenda verified in the Fellowship.
4. The wide range of existing networks focused on this area (for example, PRAN, SUSTAINED, and HEPP-QN) be linked and leveraged.

5. More systematic use be made of successful early career graduate studies to confirm and validate the relevance of program-level outcomes and to identify case studies for use in real-world dilemma-based learning and assessment.
6. Each higher education institution seeks to align incentives, accountabilities, policies, procedures and systems to more directly track and support the sustained implementation of the action agenda identified in Chapter Three.
7. The following policy and procedural initiatives be considered to embed the findings of the Fellowship into daily practice:
 - Develop an online course development and review system using the Six Keys;
 - Build the key quality checkpoints identified in the Fellowship and exemplars into this system;
 - Train key local and central leaders on effective change management for the area;
 - Introduce a comprehensive capability framework to ensure full, valid coverage when gathering data on what graduate outcomes would be most relevant and desirable from multiple reference points and sources;
 - Review existing policies against the guidelines provided on the *FLIPCurric* site.
 - Prioritise validating program level outcomes before getting onto mapping these to units and designing/assuring valid assessment and learning designs.
 - Require use of external peer review of the quality of each step in the course development and review process against an agreed set of quality indicators based on those identified in the Fellowship and in the earlier inter-university moderation project (Krause et al, 2014).
 - Align five yearly program reviews with the Six Keys identified in Box 2 and target professional support to assist teams to address them effectively.
8. Develop a sessional staff capability framework for this area that includes inviting successful, experienced sessional staff in different fields of education to write a 'lonely planet guide' for new sessional staff on how best manage assessment^{xxxii}.

The 'key insights' discussion paper which accompanies this report and identifies the recurring key issues raised during the Fellowship workshops can be used to provide key local and senior leaders with the underpinning rationale for these recommendations. This Fellowship discussion paper is available for download at:

<http://flipcurric.edu.au/>.

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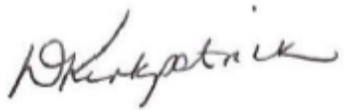
Appendices

Appendix 1:

Certification

Certification by Deputy Vice-Chancellor

I certify that all parts of the final report for this OLT fellowship provide an accurate representation of the implementation, impact and findings of the project, and that the report is of publishable quality.



Name: Professor Denise Kirkpatrick
Deputy Vice-Chancellor and
Vice President (Academic)
Western Sydney University

Date: 3 May 2016

Appendix 2: Independent evaluator report

National Senior Teaching Fellowship
Emeritus Professor Geoff Scott
University of Western Sydney

Evaluator

Emeritus Professor Mark Tennant²

Program Title

Assuring the quality of achievement standards and their valid assessment in Australian higher education.

Rationale

The overarching concern is with the quality of graduates, their desired capabilities, how the capabilities identified are relevant to the emerging demands of the 21st century and how to validly assess them. In this regard there is a need for an institutional capacity-building strategy that has as its elements:

- capacity development of change management leaders in quality and relevance of achievement standards
- a graduate capability framework and learning and teaching standards framework

The project builds on earlier ALTC/OLT projects and a range of parallel initiatives overseas (e.g. Krause and Scott. Inter-university moderation project, HEA, Higher Education Standards Panel, UK Quality Assurance Agency, OECD). It leverages the academic tradition of evidence-based peer review in research.

Context for the Senior Fellowship

This project was funded by the OLT under the Fellowships' Program, which is a highly competitive scheme. The Fellowships' program advances learning and teaching in higher education by supporting a group of leading educators to undertake strategic, high-profile activities in areas of importance to the sector.

² Mark Tennant is an Emeritus Professor of Education at the University of Technology, Sydney. He was Dean, University Graduate School for 10 years to 2010 and prior to that he was Dean of the Faculty of Education on two occasions. He was an AUQA Auditor for 10 years and is currently on the TEQSA Register. He has published widely on higher education and post-school teaching and learning.

National Senior Teaching Fellowships are awarded to outstanding scholars who are respected leaders in learning and teaching in higher education. National Senior Teaching Fellows are expected to:

- undertake a significant program of fellowship activities
- contribute to various OLT events
- develop national and international networks appropriate to the Fellowship activities.
- establish a collaborative team of internationally recognised scholars
- lead an extended seminar as part of their Fellowship program.

Context for the evaluation

This project has already been subjected to an assessment process against selection criteria specifically developed for the National Senior Teaching Fellows program. National Senior Teaching Fellows are required to carry out an evaluation of their fellowship that encompasses the activities, the deliverables and the outcomes. The evaluation strategy is therefore required to incorporate elements of evaluation during the fellowship, in addition to evaluation of the outcomes upon completion. Evaluation should thus take place throughout the program as well as at the end. It is worth noting that the Senior Teaching Fellow is also configured as evaluator in this project, very much engaged in the iterative process of critique and commentary. Ideally the evaluation also needs to comment on the extent to which the project meets the broader aims of the Fellowships Program. The evaluation below then is set out under three headings: ongoing internal evaluation activities; evaluation against the activities, deliverables and outcomes; and commentary on the impact of the Fellowship and how it has contributed to the broad aims of the OLT National Senior Teaching Fellows program.

Ongoing internal evaluation activities

Much of the data feeding into the evaluation has been generated through the normal process of conducting the project. As the external evaluator of this project I have been engaged throughout as a critical friend. Professor Scott and I have exchanged more than 120 emails in the 18 months I have been an evaluator. Most of the emails had to do with comments and suggestions I had in reaction to Professor Scott's plans and materials. We also talked on the phone from time to time and had planning meetings throughout.

Our joint evaluation activities have been well documented. Professor Scott has compiled an eight-page summary of my feedback and our joint discussions beginning June 2014. We agreed early on that the design and delivery of workshops would be the central platform for dissemination, feedback, evaluation and research on current practice and perceived challenges. Each workshop involved the delivery of pre-prepared content (dissemination), activities for participants (feedback / validation of content and data gathering), and an evaluation activity at the end.

The activities for participants focused on the two areas of assessment (current practice, challenges, capabilities being assessed and ideas for improvement,) and leadership and institutional capacity building (strategies that have worked, challenges, priorities for improvement).

The evaluation activity at the completion of the workshops comprised the following:

- Key insights and what next?
- One aspect of this workshop you found particularly helpful.
- One aspect you would like to know more about.
- One suggestion on how we can best build university staff capacity in this area – especially the capabilities of sessional staff.
- One suggestion on how to help further develop your capabilities in this area.
- Other suggestions.

Professor Scott has provided me with a summary of the feedback received from 3700 participants in 65 workshops, 21 Keynote addresses and 44 separate interviews/focus groups conducted in Australia and around the world in 154 universities and colleges (58 of these in Australia). The Summary extends to 220 pages and is supported by extensive extracts from participants and interviewees. As agreed he also provided me with the raw data so that I could verify the summary. The headings used in the Summary are as follows (the full document is available on request):

- Workshop Participation data - who participated and their roles
- Interview Participation Data – sector leaders/head of peak bodies
- Issues and themes
- Overall quality of workshops
- Most significant helpful aspect of the workshop
- Key areas for follow up
- Optimum approaches to staff and leadership capacity building
- Change implementation challenges and leadership
- Use of multiple reference points and peer review
- Powerful assessment

I have set out below some typical quotes from participants. This is simply to provide a taste of the tenor of the comments. The comments come from workshops and presentations in the Czech Republic, the UK, USA, Canada, Japan, New Zealand and Australia.

Your session and presentation on your fellowship was identified as the highlight of the conference in the feedback of delegates. Everyone has requested a copy of your slides.

Copernicus Conference, Prague 3rd October 2014 (Conference Rapporteur)

A wonderful seminar – we are going to now use your professional capability framework in our UK-European study of early career graduates in sports management.

University of Gloucestershire, UK 10 Oct 2014

This work throws directly to the importance of now making our universities and colleges more transdisciplinary - to match the transdisciplinary world which our students must negotiate when they graduate.

San Diego State University 23-24 October 2014

Just to say I have followed your work for years, and have recommended and given your book with Michael Fullan to many administrators... You keep us optimistic at our university.

Ontario Council of Universities Learning Outcomes Symposium 17 October 2014

Your focus on work-ready plus graduates and more concentration in assessment and learning on 'ethical entrepreneurialism' is a key priority for the IAU's members.

Member, International Association of Universities. World Conference on the Decade of Education for Sustainable Development Nagoya 9 Nov 14

I just wanted to say that when I thought of having to spend two days here I was skeptical. What you have done has been amazing – it has opened my eyes and helped me see how it all fits together. Can we get you to come to our place and do this?

Executive Member Ako Aotearoa National Centre for Tertiary Teaching Excellence Academy

I love your focus and aims for this – to produce a self-teaching guide that brings together what everyone is providing at these workshops – not just in Australia but around the world. What a great idea.

Queensland State Workshop, QUT, 27th April 2015

This was one of the most insightful and clear one and a half hours I've experienced in a university.

Queens University Canada 4 May 2015

As always – love your work! Thank you for the opportunity to read the report. I have made it required reading for my staff. As discussed we have already integrate (sic) your work (high level) into our course design and accreditation processes. This resource and the forthcoming website will be very helpful to support that work.

Dean of Studies March 24 2016

It is important to note that the information garnered from each workshop was fed back into subsequent workshops in an iterative fashion. In this way the feedback contributed to the development of the central themes of the Fellowship and ensured the relevance of the co-created FLIPCurric web-tool that emerged from it. Another aspect of the workshops is that Professor Scott is able to motivate participants. He does this partly through personal enthusiasm but also by providing participants with a sense of empowerment – a framework, a change management and capacity building strategy, and practical tools to implement.

Evaluation against the activities, deliverables and outcomes

Table 1 sets out the planned activities together with comments on what was achieved. The deliverables and outcomes with associated commentary are set out in Table 2.

Table 1 Commentary on the Senior Fellowship activities

Activity	Comments
User-testing, refinement and benchmarking of institutional capacity-building strategy.	The aim here was to pilot an institutional capacity building strategy, first at UWS, then in overseas locations to test the capacity building strategy and obtain input on the workshop topics in terms of successful solutions for each topic in that country. Overseas visits were to be used to develop an international network for validating HE learning outcomes/standards and their valid measurement. This was delivered – see above comments on quality
Workshops with Associate Deans, Directors of Learning and Teaching, Program Directors- developing change leadership capability. Outcomes are: <ul style="list-style-type: none"> • Good practice • Effective change management • Leadership The workshop contents are described in the Chapter 2 of the Report .	Workshops delivered with over-subscription and consistently high levels of positive feedback and requests for local university follow-up. A co-created, searchable website including key tips on how to address the key issues in the Fellowship and exemplars of what these tips look like in practice has been successfully produced.
National Conference Outcomes from workshops showcased	This was embedded into all of the key conferences where the target groups of the Fellowship would already be present. The peak conferences where the outcomes of the Fellowship have been showcased include: the OLT side event at the Universities Australia Conference 2015 and at the OLT national L&T conference April 2016 and at multiple Australian and overseas peak conferences – The European Copernicus Conference 2014, World Conference on DESD Nagoya Oct 2014, National PRAN

Activity	Comments
	Conference 2014, ISSOTL 2015, HERGA 2015, 2015 Ontario Council of Universities Learning Outcomes Conference 2015, TEQSA private providers forum, COPHE 2015, ICT A/Deans national conference 2015, National Employability forum 2015, HEPPQN launch 2015, NZ National L&T Conference 2015.
Website	The FLIPCurric website's shape, focus and contents have been co-created and tested with the 3700 workshop participants and members of the National Reference Group. It is searchable and allows submission of good practice cases for sign-off by an international panel prior to being loaded up.
Internal Evaluation	Done – see 'Ongoing Internal Evaluation activities above. If required the 220 pages of data are available for verification of the thematic analysis.

Table 2 Outcomes and Deliverables

Outcome/Deliverable	Commentary
A summary report for wide dissemination nationally and internationally on key outcomes	The Report is to be distributed to the 3700 participants; available for download from the fellowship website. The senior fellow met with the chair of the UA DVC's group Professor Pip Patterson to discuss dissemination on 7 April 2016.
An internationally validated framework for understanding and tracking how higher education institutions can confirm the validity of their achievement standards and ways of assessing them in different fields of education.	The Professional and Graduate Capability Framework is described in the main Report – see particularly Box 2 and Box 3, the Professional Capability Framework in Diagram 1 and the more detailed outline in Appendix Three.
A clear profile of the key areas of focus, performance indicators and capabilities necessary for effective change leadership and implementation in this area.	The Key Implementation Challenges in this area and suggested ways to handle are elaborated in the 'Making it Happen' section of Chapter 3 in the Report '. This has also been incorporated into the FLIPCurric

Outcome/Deliverable	Commentary
An identified set of core dilemmas and challenges that accompany leadership in this area and suggestions from experienced L&T leaders on how they can be most productively addressed.	website.
A user-tested learning system for building the capability of staff in setting achievement standards, designing valid assessment, using OLT resources for the area and engaging others with the implementation of these strategies within and beyond their institution. This will include a set of workshop guidelines and resources based on the Fellowship's outcomes.	This was co-created in all of the workshops and built as a user designed self-teaching guide with key tips from participants on how to address each step and exemplars from practice that have been productive. The field tested workshop slides and a video on how to use them are included in the resources section of the FLIPCurric site.
A set of national and international presentations, papers and publications on its key findings and recommendations, including at HERDSA, ISSOTL 2015, 2015 UA conference satellite events and at the 2016 OLT conference.	See the full list of workshops and presentations in Appendix 5 of the Report. These include the 24 invited capacity building workshops that were institution specific. The invitations came as a result of the planned workshops. The feedback cited under Ongoing Evaluation Activities is evidence of quality. See also the Fellowship publications listed below under Impact and and Professor Scott's performance on Academia.com (in 2016 in the top 3% of searches).
International recognition of the work of OLT in this area	This was completed through using well-established links with transnational networks like the United Nations University, The European Copernicus Network, the International Association of Universities (IAU) and national groups like Teaching and Learning Canada, the Association for the Advancement of Sustainability in HE, the US HE Assessment Network, New Zealand's Ako Aoeteroa, Tertiary Education Commission & the NZ Academic Audit Unit, the UK's Higher Education Academy and Quality Assurance Agency, the University of the South Pacific and AKEPT in Malaysia.

Outcome/Deliverable	Commentary
A sharper set of international support and information-sharing networks for the area, using a common framework and set of indicators for effective practice in validating and assuring the quality of assessment in post-secondary and higher education, supported by a jointly developed Fellowship outcomes website.	The website has been co-created by the 3700 participants and brings together in one place links to all of the relevant networks and to prior OLT and other key initiatives relevant to the Fellowship's focus
A tested methodology for replication both within and beyond Australia, including in the range of developing countries which are also giving focus to this area in their emerging higher education systems.	Done as a user-developed, self-teaching, searchable website – FLIPCurric.

Impact

The sheer volume of Professor Scott's workshops, invited keynote addresses, interviews with colleagues across a wide range of universities and countries with as many as 3700 participants is indicative of his reach and penetration into the higher education sector at a global level (see Appendix 5 of the Report for a full list of workshops, presentations and interviews).

Moreover, given that the participants and interviewees were all senior academics in a position to effect teaching and learning reforms, and given that there is ample testimony to the quality of Professor Scott's workshops, the impact on the sector is likely to be multiplied well beyond the workshops. While long term impact cannot be measured at this stage the feedback clearly indicates an impact on the participants and through their positional responsibilities, a highly likely substantial and sustainable continuing impact on the higher education sector. I say this because, as Professor Scott points out, there is a concern in higher education globally with graduate attributes and how to build these attributes into the assessment regime. The great contribution Professor Scott has made is to flesh out what this policy concern means for practice and how best to effect change in this area. He has, as part of the Fellowship, produced resources that can be used by others. Once again his resources have been peer reviewed, trialled and tested during their formation. I note that some 150 HEIs within and beyond Australia have requested a link to the FLIPCurric guide.

Evidence of impact can also be gleaned from the numerous invitations Professor Scott has received from participants to conduct further workshops or seminars in their institutions. These invitations are ongoing. To date Professor Scott has

delivered institutional capacity development workshops at 24 universities and colleges in Australia and overseas. These are:

Alphacrucis College
Australian College of Theology
Australian College of Applied Psychology
CAANZ - Replication of successful early career accountants research
Charles Darwin University
COPHE
CSU Professionalism Conference
Federation University
James Cook University
Macleay College
Moore College
Navitas
NZ Tertiary Education Council Business-Universities Roundtable
Queens University, Ontario, Canada
Southern Cross University
TEQSA benchmarking workshop 30 June 2015
Uni of Adelaide – HE L&T Conference
University of Gibraltar - asked to join the Academic Board
University of Gloucestershire, UK
University of Tasmania Successful graduate studies
University of Windsor, Ontario, Canada
University of Wollongong
Victoria University
Wilfrid Laurier University, Ontario, Canada

The keynote addresses arising from or associated with the Fellowship were:

Copernicus Network Conference, Prague, 3 Oct 2014;
President's public lecture McMaster University 15 Oct 14
Keynote address Ontario Council of Universities 16-17 Oct 14
World UNESCO Conference on HESD, Nagoya 4-9 November 2014
World RCE conference Okayama 4-9 November 2014
National HE Assessment Networking Forum Melbourne 12 Nov 2014
Ako Aotearo Academy 4-6 Dec 2014
UA/OLT Side Event 13 Mar 2015
COPHE national conference on assessment 31 Mar 2015
National Practice-based Education Summit, Sydney 15-16 April 2015
Windsor-Oakland L&T conference 14 May 2015
IPENZ/NZTEC Engineering Employers' conference 9 June 2015
TEQSA Private Providers Workshop Melbourne 30 June 2015
HERDSA workshop on developing employable graduates July 2015
Engagement Australian conference 22 July 2015 Sydney
University of Wollongong L&T conference 20-21 July 2015
HERGA conference 2015, Adelaide 22nd September 2015

NZ Academic Quality Agency national conference, Wellington 1 Oct 2015
 NZ National L&T Conference keynote, Tauranga 2 Oct 2015
 ISSOTL International Conference, Melbourne 26-30 October 2015
 Inaugural HEPPQN conference, Melbourne 2-3 Nov 15
 HE Compliance and Quality Conference, Melbourne keynote 4 Nov 15
 Inaugural Australian college of Theology L&T conference, Melbourne 3-4 Dec 2015
 Inaugural Vice-Chancellor's public lecture University of Gibraltar 18 Jan 2016

Professor Scott will have an ongoing engagement with the higher education sector following the completion of his Fellowship. An example is that he has been invited to present at the Forthcoming Education, Practice and Employability Network 'Think Tank'. Geoff is a key member of this Network and he will no doubt leverage his position to disseminate the key outcomes of his Fellowship.

Even at this early stage there is good evidence that Professor Scott has directly stimulated strategic change in higher education institutions. For example:

- advice on policy change and focus at Victoria University, James Cook University, Southern Cross University, the University of Wollongong, Avondale and Alphacrucis Colleges of HE,
- the inaugural L&T conference at the Australian College of Theology,
- assistance with the establishment of the Higher Education Private Providers Quality Network,
- the development of a national clearing house on assessment and peer review by Education Services Australia.

As part of his Fellowship Professor Scott established national and international reference groups. All members of these reference groups provided advice, as part of the agreed ongoing consultation and evaluation, on how to optimize the quality of the program and its outcomes. He maintains contact with all those on the reference groups as part of his network. The composition of the two reference groups is set out below.

The national reference group

- Prof Kerri-Lee Krause, Provost Victoria University
- Prof Pip Pattison, DVC (Education), University of Sydney. Chair DVC (A) group
- Prof Denise Kirkpatrick, DVC (A), University of Western Sydney
- Prof Stephen Towers, Dean of Studies, QUT
- Dr. Sarah Booth, Head of Evaluation & Review UTas and leader of OLT national assessment network
- Prof Denise Chalmers, Director Centre for L&T, UWA, Vice-president of Council of Australian Directors for Academic Development
- Prof Jane Fernandez, Vice-President Quality & Strategy, Avondale College of HE
- A/Prof Mark Freeman, Director Accreditation USyd and joint author with Christine Ewan of the 2014 OLT stocktake report on good practice in assuring learning standards and outcomes in Australian HE.

The international reference group

- Professor Clemens Mader: President of the European Copernicus Network of Universities
- Prof Daniella Tilbury: Vice-Chancellor, the University of Gibraltar
- Prof Michael Fullan OC, former Dean OISE, Principal Adviser to Premier of Ontario & CEO US National Deep Learning Consortium
- Professors Sally Brown and Phil Race, Principal Fellows UK HEA
- Professor Phil Levy, Deputy CEO, UK HEA and now PVC, University of Adelaide
- Professor Marilee Bresciani, Professor of Post-secondary education, San Diego State University, national institutional assessment expert & former AUQA auditor
- Professor Alex DeNoble, Executive Director Lavin Entrepreneurship Center, San Diego State University.
- Professor Carol Rolheiser, Director of the Center for Teaching Support and Innovation, University of Toronto
- Professor Margaret Price and Berry O'Donovan, UK ASKe project, Oxford Brookes University
- Beverly Hamilton, Academic Initiatives Office, University of Windsor
- Dr. Matthew Bronson, Director of Assessment, Dominican University, California.

In addition to the above members of the reference group there are at least another 21 senior academics who have formed part of Professor Scott's network and who have been consulted on how to secure the impact of the project. (full list available on request). He has also either joined or helped to establish networks through which the project can be disseminated. For example:

- He has played an important role in the establishment of Australia's inaugural Higher Education Private Providers Quality Network (HEPPQN) and the training of its leaders.
- He has been a senior advisor to Australia's Peer Review of Assessment Network (PRAN) and assisted with the development of a pilot of a national clearing house on assessment in higher education by Education Services Australia (ESA) and Higher Education Services (HES).
- He is a member of the newly formed Australian Education, Practice & Employability Network.

Throughout the Fellowship Professor Scott has also engaged with OLT in various ways, including:

1. OLT side event Universities Australia conference 2015.
2. Invited assessor OLT projects in 2015 and reflection of his Fellowship in a range of the 2016 priorities for commissioned projects including: assuring academic standards, designing learning and employability skills for the future.

3. Requested adviser to existing OLT projects on employability
 - eSage project (Curtin)
 - Bond graduate employability project
 - Reference group and a wide range of invitations to be an adviser on OLT projects – for example the Flipping the classroom project (University of Adelaide).
4. Attendance at each of the OLT L&T awards ceremonies.
5. Attendance at the BHERT summits at the invitation of OLT.
6. Invitation from OLT to be on an experts' panel on assessment at its 2016 national conference and to present on the Fellowship outcomes.

A significant aspect of impact is that Professor Scott has an international academic presence as an author. He is ranked in the top 3% of researchers for hits on the website academic.edu which places him nicely to having a sustained impact on higher education globally. One instance of his impact through academic.edu is the particularly high number of downloads of the white paper Education Plus produced for the US National Deep Learning Consortium. His books and publications promoting the Fellowship outcomes are:

- Fadeeva, Z, Galkute, L, Mader, C & Scott, G (2014): Sustainable development and quality assurance in higher education, Palgrave MacMillan, London & New York.
- Fullan, M and Scott, G (2014): Education Plus, White Paper, National Deep Learning Consortium, Washington, US.
- A 40 minute video of the key themes from the workshops has been produced and is available for viewing on the UWS YouTube site at: <http://youtu.be/26d0WrG1nf8>.
- Invitation to produce a book for Stylus on the area with Professor Marilee Bresciani San Diego State University and to discuss the use of the frameworks produced and endorsed during the Fellowship with the CEO of the US Council of HE Accreditors (CHEA).

Concluding Commentary – the extent to which the broad aims of the National Senior Teaching Fellowship have been met

Professor Scott has made a Herculean effort in conducting this project. He has met the expectations of a National Senior Fellow several times over. He has in fact provided me a detailed document mapping the impact and outcomes of the project against the broad aims of the National Senior Teaching Fellowship program. Much of this information is presented elsewhere in the Report and this Evaluation so I simply list the broad aims of The National Teaching Fellowships below (slightly edited) and provide cross-references to evidence in the Report and/or Evaluation.

- Identifies an educational issue across the higher education system and facilitates approaches to address these issues.
- Devises and undertakes a significant program of activities that will advance learning and teaching in Australian higher education.

- Stimulates strategic change in higher education institutions. See comments above regarding impact.
- Raises the profile of learning and teaching in higher education and the prestige associated with the pursuit of excellence in teaching.
- Shows leadership in promoting and enhancing learning and teaching in higher education and exploring new possibilities.
- Establishes and builds on national and international partnerships in learning and teaching in higher education
- Fosters national and international collaboration and collegial networking for sharing research, innovation and good practice in learning and teaching.
- Contributes to the growing community of scholars in higher education learning and teaching.
- Contributes to various OLT events

From my point of view the distinctive contribution of the Fellowship has been to provide a framework for thinking about 'fitness of purpose' in higher education and a set of strategic and practical initiatives for academic managers. Professor Scott's focus on program level outcomes (not just on isolated unit-level ones) and on 'powerful' assessment are distinctive themes emerging from the Fellowship. He creatively links 'fitness of purpose' with 'fitness for purpose' through his elucidation of powerful assessments. In my view these are the type of assessment activities that have 'fitness of purpose' built into their very nature. Professor Scott's ongoing concern with how to manage change in this area is testimony to his holistic view that ideas for change are, of themselves, inadequate without the individual and organisational capacity to implement change.

Appendix 3

Professional and graduate capability framework

One of the challenges faced when seeking to ensure that higher education programs focus on the capabilities that count (the Impact dimension in the Quality and Standards Framework outlined in Diagram 2) is the absence of a validated, proven capability framework to ensure that input and feedback from successful practitioners, employers and other key stakeholders is comprehensive.

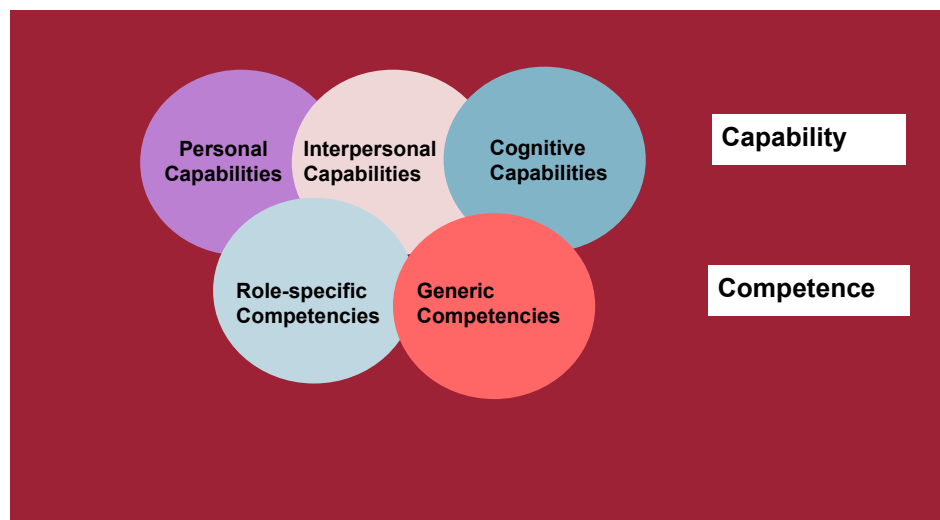
Below is a professional capability framework validated in studies of successful graduates in nine professions along with studies of educational leaders in schools, VET and Higher Education. It distinguishes between capabilities and competencies.

It can be used when seeking to identify, validate and cluster the program-level learning outcomes deemed relevant in each degree or diploma, using peer review and taking into account the input from a wide range of university and external reference points.

In the tables which follow the diagram the specific capabilities validated in all these studies are presented as a series of factor analysed sub-scales. Every study undertaken to date identifies generic and role-specific competencies (skills and knowledge) as being necessary but not sufficient for effective early career performance.



Professional capability framework



Personal capabilities

Table 1 presents the scales and items developed to provide measurement of the domain of personal capability. This aspect of the practitioner's capability is made up of three interlocked components: Self-awareness, Decisiveness and Commitment.

Table 1 Personal capability scales and items

Scale	Item
Self Awareness & Regulation	Deferring judgment and not jumping in too quickly to resolve a problem
	Understanding my personal strengths and limitations
	Being willing to face and learn from my errors
	Bouncing back from adversity
	Maintaining a good work/life balance and keeping things in perspective
	Remaining calm under pressure or when things take an unexpected turn
Decisiveness	Being willing to take a hard decision
	Being confident to take calculated risks
	Tolerating ambiguity and uncertainty
	Being true to one's personal values and ethics
Commitment	Having energy, passion and enthusiasm for my profession and role
	Wanting to produce as good a job as possible
	Being willing to take responsibility for projects and how they turn out
	PA willingness to persevere when things are not working out as anticipated
	Pitching in and undertaking menial tasks when needed

Interpersonal capabilities

Table 2 presents the scales and items developed to provide measurement of the practitioner's interpersonal capabilities. This has been distinguished into two subscales: Influencing and Empathising with others.

Table 2 Interpersonal capability scales and items

Scale	Item
Influencing	Influencing people's behaviour and decisions in effective ways
	Understanding how the different groups that make up my university operate and influence different situations
	Being able to work with senior staff within and beyond my organisation without being intimidated
	Motivating others to achieve positive outcomes
	Working constructively with people who are 'resistors' or are over-enthusiastic
	Being able to develop and use networks of colleagues to solve key workplace problems
	Giving and receiving constructive feedback to/from work colleagues and others
Empathising	Empathising and working productively with people from a wide range of backgrounds
	Listening to different points of view before coming to a decision
	The ability to empathise and work productively with people from a wide range of backgrounds
	Being able to develop and contribute positively to team-based programs
	Being transparent and honest in dealings with others

Cognitive capabilities

Table 3 presents the scales and items developed to provide measurement of the domain of cognitive capability. This aspect of the practitioner's capability is made up of attributes that fit into three interlocked subscales: Diagnosis, Strategy and Flexibility & Responsiveness.

Table 3 Cognitive capability scales and items

Scale	Item
Diagnosis	Diagnosing the underlying causes of a problem and taking appropriate action to address it
	Recognising how seemingly unconnected activities are linked
	Recognising patterns in a complex situation
	Being able to identify the core issue from a mass of detail in any situation
Strategy	Seeing and then acting on an opportunity for a new direction
	Tracing out and assessing the likely consequences of alternative courses of action
	Using previous experience to figure out what's going on when a current situation takes an unexpected turn
	Thinking creatively and laterally
	Having a clear, justified and achievable direction in my area of responsibility
	Seeing the best way to respond to a perplexing situation
	Setting and justifying priorities for my daily work
Flexibility & Responsiveness	Adjusting a plan of action in response to problems that are identified during its impl
	Making sense of and learning from experience
	Knowing that there is never a fixed set of steps for solving workplace problems

Aggregated results of studies of successful early career graduates in nine professions

Table 4 presents (in rank order) the 12 items attracting the highest importance ratings in the successful graduates' research out of the full list of capabilities identified in tables 1-3.

What is noteworthy is that only one of the top 12 ranked items concerns generic or role specific competencies. The other 11 are made up of 5 specific capabilities from the personal domain; 4 from the Interpersonal domain and 2 from the cognitive domain. Our research has demonstrated that each of these is both assessable and learnable, especially if directly given focus in work-based placements, simulations and in dilemma based tasks.

Table 4

Top ranking capabilities from studies of successful graduates in 9 professions (top 12/38 in rank order)

1. Being able to organise work and manage time effectively (GSK)
2. Wanting to produce as good a job as possible (P-C)
3. Setting and justifying priorities for my daily work (C-S)
4. Being able to remain calm under pressure or when things take an unexpected turn (P-SA)
5. Being willing to face and learn from errors and listen openly to feedback (P-SA)
6. Being able to identify the core issue from a mass of detail in any situation (C-D)
7. Being able to work with senior staff without being intimidated (IP-I)
8. Being willing to take responsibility for projects & how they turn out (P-C)

9. Being able to develop and contribute positively to team-based projects (IP-E)
10. A willingness to persevere when things are not working out as anticipated (P-C)
11. The ability to empathise and work productively with people from a wide range of backgrounds (IP-E)
12. Being able to develop and use networks of colleagues to help solve key workplace problems (IP-I)

Code

P-SA: personal-self awareness; P-D: personal-decisiveness; P-C: personal-commitment

IP-I: interpersonal-influencing; IP-E: interpersonal-empathising;

C-D: cognitive-diagnosis; C-S: cognitive-strategy; C-F/R: cognitive-flexibility & responsiveness

These align closely with the results when the specific dimensions, subscales and items in the graduate and professional capability framework have been used to get feedback from employers (Table 5).

Table 5
Capabilities rated greater than 4/5 on importance by 147 Western Sydney employers

Personal capabilities

- Willing to learn from errors; calm under pressure; perseveres; responsible; wants to do a good job; ethical practitioner; sustainability literate; adaptable; knows own strengths/weaknesses; can defer judgement; pitches in; has sense of humour & perspective

Interpersonal capabilities

- Empathy – can work with diversity; listens; networks well; team-player; communicates effectively; understands organisations; not intimidated

Cognitive capabilities

- Can set priorities; sees key point; diagnostic not fixed approach; can adjust plans in practice; independent thinker; creative & enterprising

Generic skills & knowledge

- Can organise and manage workload; effective user of IT; effective at self-managed learning and professional development; sustainability literate

What is particularly noteworthy is how closely these top ranked capabilities align with those allocated most importance by university learning leaders in our 2008 *Learning leaders in times of change* study. The top ranking items for these HE leaders are given in Table 6.

Table 6 Top 12 highest ranked capabilities for HE Learning Leaders
(rank order in brackets)

<p>EI (Personal)</p> <ul style="list-style-type: none"> • Being true to one's personal values & ethics (2) • Remaining calm under pressure or when things take an unexpected turn (3) • Understanding my personal strengths & limitations (5) • Energy & passion for L&T (7) • Admitting to & learning from my errors (10) 	<p>Intellectual</p> <ul style="list-style-type: none"> • Identifying from a mass of information the core issue or opportunity in any situation (8) • Making sense of and learning from experience (9) • Thinking creatively & laterally (11) • Diagnosing the underlying causes of a problem & taking appropriate action to address it (12)
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EI (Interpersonal) <ul style="list-style-type: none"> • Being transparent & honest in dealings with others (1) • Empathising and working productively with staff and other key players from a wide range of backgrounds (4) 	Skills & Knowledge <ul style="list-style-type: none"> • Being able to organise my work & manage time effectively (6)
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Distinguishing between 'capability' and 'competence'

A brief distinction between capability and competence (which aligns with the 'five circle' framework and the scales above) is given in my article in the South African Journal of Higher Education, Vol 27, no 2, 2013: 283-4

'It is important to distinguish between the terms 'capability' and 'competence', as they are often used interchangeably but incorrectly:

Whereas being competent is about delivery of specific tasks in relatively predictable circumstances, capability is more about responsiveness, creativity, contingent thinking and growth in relatively uncertain ones. What distinguishes the most effective (performers) ... is their capability -- in particular their emotional intelligence ... and a distinctive, contingent capacity to work with and figure out what is going on in troubling situations, to determine which of the hundreds of problems and unexpected situations they encounter each week are worth attending to and which are not, and then the ability to identify and trace out the consequences of potentially relevant ways of responding to the ones they decide need to be addressed ... While competencies are often fragmented into discrete parcels or lists, capability is a much more holistic, integrating, creative, multidimensional and fluid phenomenon. Whereas most conceptions of competence concentrate on assessing demonstrated behaviours and performance, capability is more about what is going on inside the person's head' (Scott, Coates and Anderson 2008, 12).

And, as Stephenson (1992, 2-3^{xxxiii}) concluded some 20 years ago, capability depends '... much more on our confidence that we can effectively use and develop our skills in complex and changing circumstances than on our mere possession of these skills... Capability is not just about skills and knowledge. Taking effective and appropriate action within unfamiliar and changing circumstances involves judgments, values, the self-confidence to take risks and a commitment to learn from the experience'.

Lester (2014) in his draft article 'Professional standards, competence and capability' provides a comprehensive and detailed analysis of the area. He reports on a study by 'Lester and Chapman (2000) who comment that while competence "is typically concerned with fitness for purpose (or getting the job right), capability infers concern also with fitness *of* purpose (or making judgements about the right job to do)" (p2), again suggesting a conceptually higher level of operation than that typically captured in most notions of competence. Nevertheless, in all these accounts the capable practitioner is also expected to be functionally competent, while also being aware of the limits of his or her competence – and potentially how to overcome them – in any given situation' (Lester, 2014: pgs 7-8).

Appendix 4

Additional examples of dilemma-based assessment

Practicum in Teaching

The supervisor is briefed on the top 12 ranked capabilities from studies of successful early career teachers and asked to identify a time during the practicum when the student being supervised is confronted with a dilemma – a forked road situation where there is no clear, ‘right’ way to respond. The supervisor notes what happened and how well the person being supervised handled the situation, using the top 12 capabilities as an assessment framework. The student teacher is then asked to take the supervisor’s feedback and compare it with their own perception of what happened and how well they handled the situation again taking into account the key capabilities and, from this, to write a comparative essay. This is submitted for assessment against a rubric discussed in class before the practicum period got underway. (Bloxxham, S., 2007:9 ‘*Diversifying assessment*’ gives parallel examples).

Engineering

An early career engineer – Rosemary (not her real name) – has been working successfully over the previous 3 years since graduation in a large construction firm. This day she is to accompany the firm’s senior partner to a public meeting about a by-pass the company is building around a regional town. They know in advance that there is considerable public opposition and are greeted by a very angry audience. The senior partner presents a series of slides on the proposed construction showing that all that is proposed is fully compliant with all the regulations. However, this does not placate the audience.

Engineering students undertaking the assessment task are asked to say what, if they were Rosemary, they would do to resolve the situation and why. They are then given an outline of what Rosemary did - at a tea break she quietly approaches some of the most vociferous members of the audience, gives them her card and says it would be great if she could talk privately after the meeting so she could hear directly from them what is going on. This establishes that the mayor is a keen ornithologist and there is a flock of rare birds that nest in one of the small patches of forest that will be felled to make way for the by-pass. A diversion around this is negotiated and the by-pass project proceeds. For assessment students are to compare and contrast their strategy with Rosemary’s making reference to the top 12 key capabilities identified in studies of successful early career engineering graduates.

Appendix 5

Profile of completed Fellowship Workshops and Meetings

Workshops

Workshop group/date	Number of participants	Roles represented
1. University of the South Pacific, Fiji, 9 th August 2014	50	Deans, A/Deans, Snr Quality, L&T trainers, HoPs
2. Avondale College 15 th Aug 2014	41	Deans, HoSs, Course convenors, Chair Ac Board, snr lecturers
3. Western Sydney University 2 nd September 2014	30	PVC, Deans, A/Deans, HOPs, HoSs, Evaluator, OLT mgrs.
4. National Peer Assessment Network NSW state Meeting 18 September 2014	90	DVCs, PVCs, Exec Officers from disciplinary networks, OLT Fellows, Directors L&T, HoPs, NSAI leaders from 35 HEIs
5. Copernicus Network Conference Prague 3 Oct 2014	100	A/Deans, course coordinator, ESD Leaders from 52 European Universities in the network
6. University of Gloucestershire, UK 10 Oct 2014	20	Heads of Department, student leaders
7. Ontario Council of Universities Learning Outcomes Symposium 17 October 2014	140	Provosts, A/Provosts, Deans, Heads of Department, A/Deans, OCU CEO, University Presidents
8. San Diego State University 23-24 October 2014	20	Department Chairs, Directors Entrepreneurship & Mindfulness Centres, ICorps leader, Alumni leaders, Program QA team
9. World Conference Decade of Education for Sustainable Development Nagoya 9 Nov 14	80	UNU Executive, Deans, A/Deans, CEO of IAU, RCE University Leaders from 60 countries
10. National Employability Forum RMIT Melb 27 Oct 2014	100	Program leaders, Deputy Deans, Industry Accreditation Bodies, PVCs, DVCs, successful graduates – 20 Universities and private providers
11. National HE Assessment Networking Forum 12 Nov 2014	150	DVCs, Provosts, TEQSA Commissioner, Mgr OLT, ACPET, private providers and A/Deans HoPs from 30 universities, Chris Rust ASKe UK.
12. Ako Aotearoa Academy Symposium 4-6 December, Wellington	85	HE teaching excellence winners, Ako Board Members & Director/Staff from all NZ Universities and Polytechnics
13. Tasmanian Workshop UTas 6 Mar 2015	58	A/Deans, Heads, coordinators in a wide range of programs, PVCs, Registrar, Snr Staff from private providers like Tabor
14. UA Side Event 13 Mar 2015	70	DVCs, PVCs, Deans Network heads, L&T coordinators, HoDs, from universities and private provider networks

15. ACT Workshop, University of Canberra 18 march 2015	50	Deans, A/Deans, HoPs, L&T staff from University of Canberra, UNSW (ADFA), CSU (Goulburn), ANU
16. COPHE national workshop 31 Mar 2015 Sydney	35	Directors, CEOs, Academic Board Heads, Program directors from Moore College, Institute of Auditors, Endeavour College, Excelsia, college of Law, Tax Institute, Governance Institute, Top Ed, Group Colleges Australia, Navitas, Broken Bay Institute, College of Theology, UofW College, Blue Mntns Int Hotel School, Melbourne Institute of Technology, Kaplan, SIBT
17. ICT A/Deans national workshop Canberra 9 th April 2015	38	A/Deans, HoPs, Directors L&T, Chief Scientist, TEQSA Standards Panelist; Professors ICT, ACDICT president, UA
18. 2015 Practice-based education summit Sydney 15-16 April 2015	52	DVCs, PVCs, Directors L&KT, Professors of HE, Program Heads, Ed developers from Australia, NZ, South Africa, Norway, Thailand
19. South Australian Workshop University of Adelaide 23 April 2015	60	DVC, PVC, Dep Deans (L&T), A/Deans, HoPs, Design Directors, in a wide range of FoEs from Uni SA, Flinders, University of Adelaide, University of Newcastle and Tabor College
20. Victorian Workshop, VU 24 th April 2015	61	Provost, PVCs, Deputy PVC, Dep & Assoc Deans, HoPs, Directors L&T, College Principals, Prog Design Teams in a wide range of FoEs from Deakin, RMIT, La Trobe, CQU, Griffith, Swinburne, Melbourne Uni, VU, Kaplan, Tabor, AIAs Comp Medicine, Design Academy
21. Queensland Workshop, QUT, 27 th April 2015	96	PVCs, A/Deans, HoSs, HoPs, Directors L&T in a wide range of FoEs from QUT, UQ, CQU, USQ, USC, JCU, ACU, Uni Wollongong, Kaplan, Qld Conservatorium of Music, ACPET, Study Group, Qld College of Teachers
22. Queens University Canada 4 May 2015	43	Provost, Vice-Provosts, A/VP, Deans, HoDs, University Librarian, Head IT, Academic Program Leaders, Student Leaders
23. Wifrid Laurier University Canada 8 May 2015	120	Provost, A/VP, Head L&T, Deans, A/Deans, Program heads from WLU, University of Toronto, Uni of Waterloo, Nippising University, University of Guelph, York University, McMaster University, Bloorview Research Institute
24. University of Windsor 12 May (2 groups)	50	Deans, A/Deans, Directors of CLT and staff, HoDs from across the UofW
25. Windsor-Oakland L&T Conference keynote & workshop 14 May 2015	85	Provosts, A/Provosts, Deans, A/Deans, HoDs, HoPs. Directors of T&L from 16 Canadian & US Universities
26. WA State workshop ECU 28 May 2015	52	PVC, Deans, Directors of Program and L&T Centres, A/Deans (L&T) from UWA, Curtin, ECU, Notre Dame, Murdoch & private providers including Montessori Teacher Education, Stanley College & the Engineering Institute of Technology
27. NSW State Workshop UWS 4	42	A/Deans & Directors (L&T); HOPs & HOSs; Exec

June 2015		Director Australian Cl of Deans of ICT from UNSW, Macquarie University, ACU, UWS, University of Sydney, Kaplan, Avondale, Australian College of Physical Education, Australian College of Theology, Alphacrucis College, CQU, UTS, University of Newcastle, SCU
28. National Engineering Employers' workshop New Zealand Tertiary Education Commission & IPENZ 9 th June 2015 Wellington.	40	CEOs, Senior Engineers, Regional Managers, Directors from NZ's major Civil, Construction, Electrical, Environmental, Infrastructure, Aeronautical, Systems, Clinical, Manufacturing, Mechanical, Telecommunications, Food Engineering Companies along with the CEO and senior managers from IPENZ, Business NZ, the NZ TEC, the NZ Board of Engineering Diplomas and ITPs
29. TEQSA Private Providers Workshop 30 June	80	Academic Directors & Deans from 30 Private HE Providers from around Australia; TEQSA staff
30. HERDSA: Joint workshop on developing responsive, adaptable & employable graduates (video) July 2015	40	Directors of Learning & Teaching in HE, A/Deans, Heads of Program, relevant PVCs. & DVCs
31. University of Wollongong Workshop & Keynote L&T conference 20-21 July 2015	90	DVC, PVC, A/Deans, Heads of Program & School, L&T Director and staff (over 2 days)
32. Engagement Australia Conference Keynote	80	Kwong Lee Dow, Executive of E.A., Deans, A/Deans, University Program Coordinators, Engagement Staff
33. Moore Theological College	20	College CEO, Director of Academic Programs, Registrar academic subject leaders and department/program heads.
34. Southern Cross University Gold Coast campus	22	DVC, Director L&T, Chair Academic Board, Deputy Deans, Course coordinators, SCU Assessment Working party members
35. James Cook University 11 Aug 15	50	DVC, Deans, A/Deans, Heads of School and Program, CLT Director and Staff, Professional staff, including those from the careers centre
36. Charles Darwin University NT workshop (Darwin & Alice) 14 Aug 15	48	PVC L&T; A/Deans; Program Heads from Environmental Science, Law, Foundation Studies, Nursing, Social Work L&T staff; Accreditation Team
37. HERGA Conference 2015 keynote 22 nd September 2005 University of Adelaide	105	DVC, PVC, Deans, A/Deans L&T, Directors of L&T, Program Coordinators, HRD leaders, university librarians from all South Australian Universities plus USP, USQ and a range of private providers & RTOs.
38. NZ Academic Quality Agency conference keynote 2015 1 st October 2015	36	DVC(A); AQA Director; quality managers/directors all NZ Universities; President of the NZ HE Students Union
39. NZ National L&T Conference keynote 2 nd October 2015	210	Directors of L&T; program leaders; policy directors; indigenous HE leaders
40. Navitas Professional Institution Leadership	30	All NPI Heads of School & Deputy Heads of School; program coordinators and Dean of L&T

development 8 th October 2015		
41. University of the Sunshine Coast NSTF and Leadership workshops 13/14 October 2015	45	Deans, A/Deans, Director L&T, program coordinators, directors of student support and transition programs
42. University of the South Pacific 10 -13 October 2015	50	DVC (A); DVC (Res); Deans; A/Deans; Program Heads; Student support directors; graduate students
43. ISSOTL Conference keynote Melbourne 26-30 Oct 15	400	DVCs; PVCs; Deans; L&T Directors; Heads of Department, School and Program from UK, Nth America, Europe, East Asia
44. HE Private Providers Quality Network Keynote	40	Presidents, Vice-Presidents, Quality Managers from 12 key private HE providers along with OLT fellows, TEQSA
45. HE Quality and compliance forum keynote	140	DVCs, PVCs, Directors of L&T, OLT Fellows, TEQSA staff, managers of quality
46. Southern Cross University Coffs Harbour & Lismore 18-19 Oct	45	Chair of Academic Board, L&T Director and staff, A/Deans and Program Heads
47. University of South Australia	30	Dean, A/Deans, Heads of Program, Directors of L&T from health sciences, nursing, OT, dietetics, pharmacy, science, engineering, business, education, arts
48. Australian College of Theology 3-4 Dec 2015	49	Principals, Vice-principals, Program heads, Directors & A/Deans, quality management staff from Melbourne School of Theology, Qld Theological, Christ, Mary Andrews, Morling, Maylon, SA Bible, Regent and Ridley Colleges, Vose Seminary, Brisbane School of Theology and the ACT secretariat
49. ASKe UK Assessment Centre Oxford Brookes University 13 Jan 2016	2	Margaret Pierce Director of ASKe & Berry Donovan Program Head (2 hour benchmark meeting)
50. UK workshop hosted by University of Gloucestershire, Jan 14-15 2016	25	Program leaders and directors from University of Gloucestershire, University of Worcester, London College of Fashion, University of Manchester, Trinity St Davids, Wales and the University of Plymouth.
51. Inaugural public lecture at the new University of Gibraltar 18 Jan 16	40	U of Gib VC, Exec Directors, Deans, Heads of School, Chair and members of Board of Governors, Director General of Education, Academic Board, Doctoral students
52. Charles University Prague Mon 25 Jan 2016	15	Director, Associate Director, Staff of the Charles University Sustainability Institute & Copernicus Secretariat
53. Anglo-American University, Prague Tue 26 Jan 2016	12	Provost, Vice-Provost, Assessment & QA team
54. Leuphana University, Luneburg, Germany 28 Jan 2016	10	Director, Deputy Director, Staff of the Leuphana cross-university sustainability programs. Chair of Copernicus

55. University of Zurich 29 Jan 2016	22	EfS leaders from Swiss Universities and NGOs. President's leader of sustainability. Director & staff of the UofZ European EfS leadership program.
56. University of Toronto 2 Feb 2016	85	Director, deputy director, staff of the UofT centre for teaching innovation; applicants for the UofT powerful assessment grants; program directors from all UofT degree areas
57. MIT 4 Feb 2016	15	Director MIT learning lab; director, executive director, staff and students leading the new MIT whole-of-university sustainability strategy
58. Harvard 5 Feb 2016	1	Evelyn Hu Harvard Professor on Nano-technology and physics – re Harvard Innovation Lab & Olin College of Engineering invention programs
59. Simon Fraser University 9 Feb 2016	40	Provost, head of L&T Centre, deans, faculty development officers, professors, program leaders, support directors, SFU student sustainability leaders
60. Portland State University 10-11 Feb 2016	10	Provosts; Capstone co-ordinators; innovation incubator directors; Director & staff office of academic innovation
61. Dominican University, California 12 Feb 2016	25	Director of Assessment; Deans; program leaders; academics; professional support coordinators
62. San Diego State University 15-16 Feb 2016	7	Dean of UG studies; Director L&T: A/Deans Health, Creative Arts, Business, Education; student directors
63. Arizona State University 18 Feb 2016	14	Snr VP; Director ASU sustainability; Snr VP student services; Vice-Provost UG Ed; Vice-Provost Student Services; Dean of Sustainability; Director Global Institute for Sustainability; 7 sustainability students
64. Maricopa College System 19 Feb 2016	30	Vice-President Academic, Directors of L&T, Director System Development; Heads of department & program, sustainability staff and faculty (Maricop with 250,000 students is one of the largest college system in the US)
65. California State University, Northridge, Los Angeles 22 Feb 2016	8	President, Director of Sustainability, Professors of Marketing, Arts, Engineering entrepreneurship, A/V-P Educational Technology, Program heads.
Total number of participants	3701	

Interviews/Meetings on the Fellowship

(International sector leaders/heads of Peak Bodies used as a reference group on the Fellowship's progress and outcomes in addition to the key national reference group members Kerri-Lee Krause, Denise Kirkpatrick, Sara Booth, Mark Freeman, Jane Fernandez and Denise Chalmers) and international reference group members like Michael Fullan (Canada) and Marilee Bresciani (USA).

Person(s)	Role/Organisation	Date
Daniella Tilbury	Vice Chancellor University of Gibraltar	2 October 2014 & 18 January 2016
Clemens Mader	Chair, Copernicus Network of 52 European Universities	6 October 2014 & 27 January 2016
Ron Barnett	Professor Emeritus London Institute of Education	8 October 2014
Margaret Price/Berry O'Donovan	Leaders ASKe UK HE Assessment Centre Oxford Brooks University	10 October 2014 & 13 January 2016
Will Naylor	Deputy Director UK QAA Gloucester	11 October 2014
Sally Brown & Phil Race	Principal Fellows HEA – HE Assessment, Newcastle	12 October 2014
Phil Levy	Deputy CEO, UK HEA, Sheffield	15 October 2014
Arshad Ahmad	VP T&L, McMaster University	17 October 2014
Maureen Mancuso	President T&L Canada	17-18 October 2014
George Kuh	National Institute for HE Learning Outcomes Assessment USA	23-24 October 2014
Marilee Bresciani	Professor of HE Leadership & Assessment San Diego State University	5 November 2014
Dzul Razak	President of the International Association of 600 Universities	25 November 2014
Ralph Wolff	Immediate Past CEO of Western Association of Schools & Colleges, San Francisco	5 December 2014
Murray Johnson	Senior Manager NS TEC	6 December 2014
Peter Coolbear,	CEO Ako Aotearoa	4-6 December 2015
Suzi Hewlett, Di Weddell, Ben Johnson, Virginia Hart, Andrew Taylor, Lyndal Groom, Val Braithwaite, Belinda Probert	Roundtable on quality in Australian HE – discussion with senior Federal Department of Education staff	22 January 2015
Professor Emeritus Michael Fullan, OC	Adviser to the Premier of Ontario on Education	1 May 2015, 1 Oct 2015, 1 Feb 2016
Professor Pat Rogers,	Canadian 3M National Teaching Fellow, A/Vice-President WLU & former president of the Society for T&L in higher education	6 May 2015
Murray Johnson & Judy Zhang	Senior Policy Advisers NZ TEC	8 June 2015 a.m.
Seth Campbell & Murray Johnson (TEC); Brett Holland (Lightning Lab); Prof George Benwell (Otago); Prof Peter Boxall (Auckland);	NZ Entrepreneurs & Business Deans	8 June 2015 p.m.

Candace Kindser (Palantir); Samantha Seath (EDANZ)		10 June 2015
Chris Wheelahan	Executive Director, Universities NZ	10 June 2015
Heather Kirkwood	NZ Academic Quality Agency	30 July 2015
Andrew McAuley	DVC, Southern Cross University	4 August 2015 & 5 Jan 2016
Denise Kirkpatrick	DVC, Western Sydney University	11-12 August 2015
Sally Kift, Robyn McGuiggan	DVC, PVC (ER), JCU	13-14 August 2015
Sharon Bell, Martin Carroll	DVC, PVC, CDU	11 September 2015
Robyn Shreeve	Executive Director WSITAFE	3 October 2015
Peter Coolbear	Executive Director Ako Aoetearoa	13-14 October 2015
Kylie Readman	Director of L&T, USC	19-23 October 2015
Derek Armstrong & Richard Coll	DVC Research & DVC Academic University of the South Pacific	28 October 2015
Di Weddell & Paul Corchoran	Head/Deputy Head OLT	1 November 2015
Michael Fullan	Head US National Deep Learning Consortium	13 January 2016
Margaret Price & Berry Donovan	ASke UK Assessment Centre Oxford Brookes University	1-2 Feb 2016
Michael Fullan	NPDL/member international ref group	7 Feb 2016
Peter Englert	President Quest University Canada	8 Feb 2016
Jean Marcus	A/Director Sustainability Ed UBC	10 Feb 2016
John Fink	Vice-President Research & Partnerships Portland State University	10 Feb 2016
Sona Andrews	Provost Portland State University	11 Feb 2016
Rowanna Carpenter	EPortfolio coordinator of uni studies Portland State University	5 Feb 2016
Marilee Bresciani	Professor of PSE SDSU; US HE accreditor; quality auditor	17 Feb 2016
Linda Lujan	Director of System development Maricopa State System (one of the largest college systems in the US)	18 Feb 2016
Christine Wilkinson	Senior Vice-President, Arizona State University	22 Feb 2016
Dianne Harrison	President, California State University, Northridge; commissioner Western Association of Schools and Colleges Accreditation Agency	22 Feb 2016
Helen Cox	Director Institute for Sustainability California State University Northridge	

Appendix 6

FlipCurric Website

'Assuring the quality of achievement standards and their valid assessment in Australian higher education'

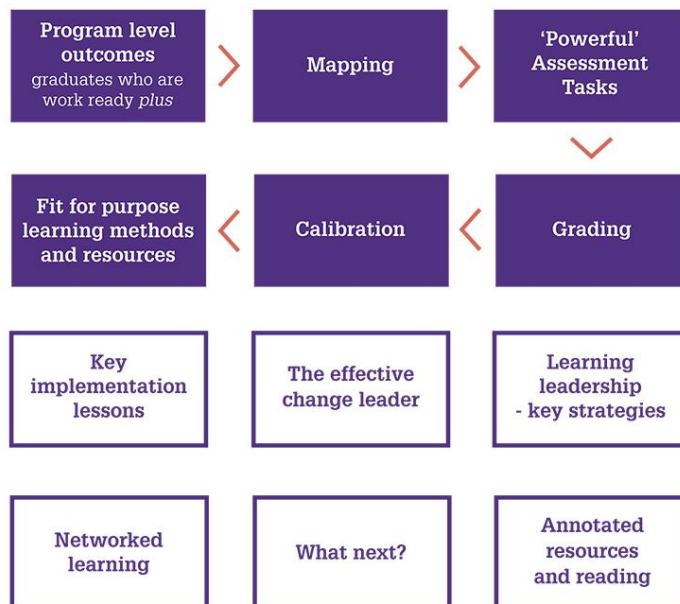
The 6 'Keys' to flipping the curriculum and how to make it happen

FlipCurric has been co-created by learning leaders in universities and colleges from around the world. It provides program teams and their leaders with practical tips, ideas and exemplars on how to ensure that the quality of our graduates keeps pace with the rapidly changing needs and contexts of the 21st century.



The 6 'Keys'

Ensuring the fitness of purpose of higher education learning programs and assessment by using evidence-based peer review to confirm we have the 'right' (relevant, desirable, benchmarked, feasible and peer confirmed)



Making it Happen

Good ideas with no ideas on how to implement them are wasted ideas and change doesn't just happen but must be led, and deftly.



FLIPCurric is a searchable web-based guide which brings together practical suggestions and working examples on both the 6 'Keys' to flipping the curriculum and how to implement turnaround change in this area sustainably and successfully.

For further details, please contact Emeritus Professor Geoff Scott at g.scott@westernsydney.edu.au



Endnotes

ⁱ This focus builds on the important work undertaken in a range of OLT Fellowships including, in 2013 -, by Romy Lawson (University of Wollongong) along with a range of other Carrick, ALTC and OLT projects over the past decade, as well as from our own studies of successful early career graduates and research with employers.

ⁱⁱ See, for example: *Change matters* (Scott, 1999), *Learning Leaders in Times of Change* (Scott, et al 2008) and *Turnaround Leadership for Sustainability in Higher Education* (Scott et al, 2012).

ⁱⁱⁱ This research and experience is explored in detail in Scott (1999), Scott, Coates & Anderson (2008), Fullan & Scott (2009), Scott, Tilbury, Sharp & Deane (2012), and Scott (2013).

^{iv} These include Fadeeva, Z, Galkute, L, Mader, C & Scott, G (2014): *Sustainable development and quality assurance in higher education*, Palgrave MacMillan, London & New York; Fullan, M and Scott, G (2014): *Education Plus*, White Paper, National Deep Learning Consortium, Washington, US; Scott, G (2016): *Transforming graduate capabilities and achievement standards for a sustainable future*, Western Sydney University, Sydney.

^v For a sample of questions that align with the top ranking capabilities of effective professionals and local leaders see the approach adopted by Google at: <http://www.businessinsider.com.au/google-laszlo-bock-interview-questions-2015-4> and at: <http://www.wired.com/2015/04/hire-like-google/>.

^{vi} It is recommended that this work be linked to the outcomes of existing OLT projects on this issue like [BLASST](#)

^{vii} John Stephenson was Director of the Royal Society for Art's Higher Education for Capability (HEC) project from 1988.

^{viii} See, for example, the World Economic Forum, 2015; The Council of Europe – Bergan, 2015; Dodson, 2013; Diab, 2015, Mulgan, 2016.

^{ix} See Fullan and Scott (2009: pgs 85-88).

^x This focus builds on the important work undertaken in a range of OLT Fellowships including, in 2013-14, by Romy Lawson (University of Wollongong) along with a range of other Carrick, ALTC and OLT projects over the past decade, as well as from our own studies of successful early career graduates and research with employers.

^{xi} See, for example, the work of Elmore (1979) on 'backward mapping', (Wiggins & McTighe, 2005) on 'backward design' and (Biggs & Tang, 2007) on 'constructive alignment'.

^{xii} I am indebted to Professor Jane Fernandez, Vice-President of Avondale College, for the notion of identifying the 'rights' of assessment.

^{xiii} See, for example, the calibration strategies identified Freeman, M & Ewan, C (2014).

^{xiv} Arts & Humanities, Accounting, Business, Business management, Business Administration, Marketing, Sports Coaching, Engineering, Engineering & IT, Information Systems, IT and Business, Journalism, Media, Law, Medicine, Nursing, Nursing and marketing, Public Health, Health Promotion, Physiotherapy, Theology, Ministry, Teacher Education, Higher Education, Higher Education Transition, Psychology, Clinical Psychology, Social Science, General Science, Biological Science, Chemistry, Agricultural Science, Environmental Sciences, and Work Safety.

^{xvi} For example Adolfo Nicolas, S.J. (2011) identifies what he calls 'the globalisation of superficiality': ... 'When one can access so much information so quickly and so painlessly; when one can express and publish to the world one's reactions so immediately and so unthinkingly in one's blogs or micro-blogs; when the latest opinion column from the *New York Times* or *El Pais*, or the newest viral video can be spread so quickly to people half a world away, shaping their perceptions and feelings, then

the laborious, painstaking work of serious, critical thinking often gets short-circuited’.

And in his book *iDisorder* Dr. Larry Rosen (2012) notes a range of distinctive psychological disorders associated with the ubiquity of the smart phone and the tendency for people to ‘get high’ on its use. These include obsessive-compulsive disorder (having to constantly check one’s device for messages), cyberchondria (the tendency to obsessively self-diagnose by searching the web) and narcissism (living life through social media sites and the constant posting of ‘selfies’).

^{xvii} There are a number of programmes now available that invite leaders and potential leaders to surface and reflect on the tacit assumptions, beliefs and values that inform their choices when faced by decision-making dilemmas. One good example is Victoria’s [Cranlana Programme](#). The [Cranlana Prospectus](#) outlines the range of activities provided.

^{xviii} See, for example, the CSIRO report ‘[Tomorrow’s digital workforce](#)’ and its prediction that we are entering ‘the era of the entrepreneur’ and its prediction of the increasing importance of education and training institutions in developing the new capabilities needed in graduates, like aptitudes and mindsets to invent new jobs and to handle a dynamic labour market, the new peer-to-peer (freelancer) economies.

^{xix} See, for example, the Western Sydney University MakerSpace program and the *Instigating creativity: open innovation* initiative which operates in partnership with Price-Waterhouse Coopers, Google and Cisco at: http://www.uws.edu.au/auws/arounduws_home_page/auws_archives/2014/july/instigating_creativity_open_innovation.

^{xx} Additional examples from CSIRO include extended wear contact lenses, aerogard, gene shears, microwave landing systems, the world’s first effective influenza treatment, solar hotwater, atomic absorption spectrometry, and the control of rabbits. And it was academics in Australian universities who developed the treatment for ulcers, spray-on skin, the cochlear implant (bionic ear), penicillin, the 2 minute AIDS test, the photovoltaic cell, the continuous pressure airflow mask, the scramjet, solar powered airconditioning, smart plastics, X-ray crystallography and the basis of quantum computing - the quantum bit.

^{xxi} For example in Canada the electron microscope and insulin were invented at the University of Toronto; and plexiglas was invented at McGill University. In the USA it was MIT that developed the world wide web, the transistor radio, the human genome project, email, iRobot, technicolor, condensed soup, PET scans, open courseware, and identified the link between cancer and genetics. For other US University entrepreneurship and student start up programs see the work of places like [Princeton](#). For the top 25 US College UG programs in entrepreneurship see: <http://www.entrepreneur.com/slideshow/23733>.

^{xxii} We explore this issue in detail in Chapter One of our 2014 book on *Sustainable Development & Quality Assurance in Higher Education* (Fadeeva, Galkute, Mader & Scott, 2014).

^{xxiii} Extensive activity and research is now underway in this area in higher education, especially but not exclusively in the U.S. (Bresciani Ludvik, 2016). In companies like Google a clear business case in terms of retention and productivity for developing mindful practitioners has been demonstrated (Tan, 2012).

^{xxiv} See, for example, Knudsen & Lemmergraard (2014).

^{xxv} Many universities are now providing guidelines on how to make assessment ‘authentic’. A good example is the UNSW (2013) [Assessment Toolkit on Assessing Authentically](#). This toolkit provides excellent guidelines on how to design such tasks and lists examples including problem-based tasks, structured clinical examinations, scenario based assessment, portfolios, solution focused tasks, forensic problem solving and video triggers.

^{xxvi} See, for example, the work of John Dewey in the 1930s (1933 and 1938); Kolb in the 1980s (1984) and in the 1990s by Boud, et al (1993); and Boud & Filletti (1998).

^{xxvii} See Fullan and Scott (2009: Chapter 5: *Leadership capacity for turnaround*, pgs 97-127).

^{xxviii} These include Fadeeva, Z, Galkute, L, Mader, C & Scott, G (2014): *Sustainable development and quality assurance in higher education*, Palgrave MacMillan, London & New York; Fullan, M and Scott, G (2014): *Education Plus*, White Paper, National Deep Learning Consortium, Washington, US; Scott, G (2016): *Transforming graduate capabilities and achievement standards for a sustainable future*, Western Sydney University, Sydney.

^{xxix} These include Professor Denise Kirkpatrick, A/Professor Mark Freeman, Professor Kerri -Lee Krause, Professor Jane Fernandez, Dr Sara Booth, Professor Sally Kift, Australia, Professors Michael Fullan and Carol Rolheiser Canada, Professor Marilee Bresciani, USA, Professor Margaret Price and Dr Alex Ryan (UK), Dr Peter Coolbear, New Zealand and Professor Richard Coll, University of the South Pacific.

^{xxx} These institutions include: James Cook University, the University of the Sunshine Coast, Southern Cross University, Victoria University, the University of South Australia, the University Adelaide, Swinburne University of Technology, University of Wollongong, University of the South Pacific; Moore Theological College, Australian College of Theology, Navitas Professional Institute, University of Toronto, University of Windsor, Wilfrid Laurier University, Queens University, Simon Fraser University, Maricopa College System Phoenix, University of Gloucestershire, University of Zurich, University of Gibraltar and AKPET Leadership Institute Malaysia.

^{xxxi} For a sample of questions that align with the top ranking capabilities of effective professionals and local leaders see the approach adopted by Google at: <http://www.businessinsider.com.au/google-laszlo-bock-interview-questions-2015-4> and at: <http://www.wired.com/2015/04/hire-like-google/> .

^{xxxii} It is recommended that this work be linked to the outcomes of existing OLT projects on this issue like [BLASST](#)

^{xxxiii} Stephenson, J (1992): 'Capability and quality in HE', in Stephenson, J & Weil, S (eds): *Quality in learning: a capability approach in HE*, Kogan Page, London Chapter One: pgs 1-9.