



Turnaround Leadership for Sustainability in Higher Education

Final Report 2012

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Sustainable Futures Leadership Academy

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Support for the production of this report has been provided by the Australian Government Office for Learning and Teaching. The views expressed in this report do not necessarily reflect the views of the Australian Government Office for Learning and Teaching.



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This document and related resources are available from www.sustainability.edu.au

Sydney, 2012

ISBN 978-1-922218-02-5

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List of Acronyms

AASHE	Association for the Advancement of Sustainability in Higher Education (USA)
ACARA	Australian Curriculum, Assessment & Reporting Authority
ACTS	Australian Campuses Towards Sustainability
ACUPP	Association of Canadian University Planning Programs
ALTC	Australian Learning & Teaching Council
ANU	Australian National University
AQF	Australian Qualifications Framework
ATEM	Association for Tertiary Education Management (Australasia)
AUQA	Australian Universities Quality Agency (disestablished 2012)
BOT	Board of Trustees
CWF	Capital Works and Facilities
EfS	Education for Sustainability
ESD	Education for Sustainable Development
FoE	Field of Education
FoR	Field of Research
GSAIG	Green Skills Agreement Implementation Group (Australia)
HE	Higher Education
HEA	Higher Education Academy (UK)
HEFCE	Higher Education Funding Council for England
HEIP	Higher Education Innovation Program for Australia
IAU	International Association of Universities
ICT	Information and Communications Technology
KPIs	Key Performance Indicators
LEED	Leadership in Energy and Environmental Design
LiFE	Learning in Future Environments
MESA	Mainstreaming Environment & Sustainability in African Universities
NSC	National Steering Committee for OLT projects
OLT	Office for Learning & Teaching (Australian Government)
PD	Position Description
RCE	Regional Centre of Expertise (in ESD)
QAA	The Quality Assurance Agency for HE (UK)
QM	Quality Management
QMF	Quality Management Framework
SD	Staff Development
SFLA	Sustainable Futures Leadership Academy
STARS	Sustainability Tracking, Assessment & Rating System (USA – AASHE)
TAFE	Technical & Further Education
TEQSA	Tertiary Education Quality & Standards Agency (Australia)
TLSHE	Turnaround Leadership for Sustainability in HE
UA	Universities Australia
UNICEF	United Nations Children’s Fund
UNESCO	United Nations Educational, Scientific & Cultural Organisation
UNU	United Nations University
VET	Vocational Education & Training

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Executive Summary

About this study

As Albert Einstein reminded us: ‘The problems that exist in the world today cannot be solved by the level of thinking that created them’ and that it is important to avoid ‘doing the same thing over and over again and expecting different results’.

Higher Education around the world is at a cross-road as a wide range of change forces bear down upon it. These include a complex, interlocked and rapidly unfolding set of sustainability challenges underpinned by social, cultural, economic and environmental developments. This scenario calls for Higher Education to take a leadership role in producing the future leaders equipped to manage them effectively.

The Study which is the focus of this report recognises that universities and colleges giving consistent and productive focus to the four pillars of social, cultural, economic and environmental sustainability in their teaching, research, engagement activities and operations will not just happen but must be led, and deftly. And it is this issue of effective approaches to ‘Turnaround Leadership for Sustainability in Higher Education’ that the Study addresses.

The study has a focus on *Education for Sustainability (EfS)*, recognising that sustainability needs to be embedded in learning programmes – the core business of higher education. Universities and colleges frame the thinking and decisions that influence quality of life across the globe and it is through education that it has its greatest impact.

The research has brought together an experienced international team to identify the:

- distinctive and complex mix of challenges facing higher education leaders as they seek to transform universities and colleges to give central focus to Education for Sustainability (EfS)¹ in their curriculum, research, engagement activities and operations;
- incentives, strategies and processes necessary to address these challenges and embed EfS in our institutions of higher education;
- change leadership capabilities needed to effectively and consistently enact this agenda;
- optimum focus for the work of EfS leaders, both centrally and locally, and the
- most productive approaches to leadership selection, support, performance management and development for the area.

Key recommendations

Ten interlaced areas of recommendation for higher education institutions interested in pursuing EfS in a more systematic way have emerged from the study:

1. Acknowledge the distinctive challenges and complexity of EfS leadership.
2. Sharpen the focus and understanding of EfS as it applies in higher education.
3. Context counts: ensure organisational integration and system alignment to support EfS and its leaders.
4. Track and improve EfS program quality more systematically.
5. Put in place the right incentives.
6. Engage the disengaged and the institution’s senior leadership.

¹ Education for Sustainability is a process which engages people in decision-making and action-taking for a more socially just, economically sound and ecologically responsible future.

7. Apply the key lessons on successful change management in higher education.
8. Focus on the change leadership capabilities identified in this study.
9. Review EfS leadership position descriptions, selection processes and succession strategies in the light of the study's findings.
10. Apply the most productive approaches to leadership learning identified in the study to the professional development of EfS leaders.

What follows summarises the Study's key findings and recommendations for action. These have emerged from a two year research inquiry, funded by the Australian Government's Office for Learning and Teaching (OLT). The findings have been informed by a set of preparatory workshops with 200 participants within and beyond Australia and the responses to an online survey completed in late 2011 by 188 experienced local, middle level and senior change leaders of Education for Sustainability in universities and colleges across Australia, New Zealand, the USA, Canada, the UK and the European mainland. The findings have been validated and their key implications for action identified in a series of workshops on the results involving an additional 300 key informants from 70 universities, colleges and peak bodies in Australasia, North America, the UK and Europe.

The international project team is comprised of three leaders of EfS initiatives from Australia, the UK and the USA, and a senior university leader at Pro Vice-Chancellor level. The study has been guided by a National Steering Committee comprised of Ian Hawke, Tertiary Education Quality and Standards Agency (TEQSA) Commissioner, Professor Kerry Cox, Vice-Chancellor, Edith Cowan University, Professor Sharon Bell, Deputy Vice-Chancellor (Academic), Charles Darwin University and Professor Carol Adams, Pro Vice-Chancellor (Sustainability), La Trobe University. Mark Tennant, an independent evaluator, a former Dean of Education and Graduate Studies and a TEQSA auditor, assessed the validity and reliability of the insights generated and the follow-up actions recommended.

A turnaround moment for higher education & the need to give more direct focus to education for sustainability

This is a turnaround moment for higher education world-wide – the traditional 19th century didactic, fixed timetable, two-semester, campus-based model of Higher Education is coming under increasing pressure as:

- Access to Higher Education is widened and institutions are confronted with the dilemmas of how best to balance growth with quality, access with excellence; and mission with market.
- Universities and Colleges are subjected to funding cuts and must manage growth, costs and risk in an environment of increasing regulation and financial constraint;
- Student expectations change and they increasingly seek just-in-time support, real-world learning and placements, targeted learning assistance, convenient access and value-for-money in their studies, along with successful employment or further study outcomes;
- The IT-revolution reshapes the world of information, interaction, knowledge-generation and sharing;
- The professions and employers seek graduates with the ability to manage rapid change;
- Governments are confronted with having to respond appropriately to the challenges of increasing globalisation, demand for high quality higher education, educational

competition, fractious division, and the impact of rapidly unfolding climate and financial crises.

Interwoven with these broader change forces is a growing movement which expects universities and colleges to engage their staff, students and stakeholders in creating more sustainable futures (GUNI 2011):

- The period 2005-2014 marks the UN Decade of Education for Sustainable Development and global efforts to integrate sustainability more consistently into higher, further and informal education;
- In June 2012 the UN Conference on Sustainable Development (Rio +20) was held in Brazil. The Rio +20 commitments call for universities to become models of best practice and transformation (paragraph 99).
- A formal Higher Education Treaty for Rio+20 has been generated through a collaborative process involving key international and national agencies, associations and organisations. The document, which is an official Rio+20 Treaty, commits the sector to transformational change for sustainability. Of particular relevance to the present study is the support from its signatories to: ‘develop the capabilities of existing leaders to enact sustainability commitments and to ensure succession planning and selection processes give focus to this area’ (HE Treaty, Rio +20: Short Term Action 5).
- Governments increasingly expect their universities and colleges to respond to the sustainability imperative. In Australia, for example, the [2009 National Action Plan for ESD](#) provides a framework for higher education leadership in this area; and peak groups like Universities Australia have given [commitment](#) to action on this agenda.
- The United Nations, via its UN University, has endorsed some 100 Regional Centres of Education for Sustainable Development around the world. This is supported by the UNECE ESD Competences framework which guides development across the Higher Education curricula.

The literature and the results of this study suggest effective implementation of EfS across the core activities of universities and colleges requires a distinctive transformation in the focus, structure and processes underpinning HE leadership and learning models. The key insights are summarised in the box below:

Higher education needs to transform itself if it is to assist societal transformation for a more sustainable future.

Good ideas with no ideas on how to implement them are wasted ideas.

Change doesn’t just happen but must be led – and deftly.

The key to progressing sustainability in HE is to identify and systematically build viable leadership capabilities, competencies, support systems and pathways.

Overview of Key Findings and Recommendations

Although the capabilities of effective change leadership for EfS in higher education identified in this study generally align with those found in a suite of earlier studies, summarised in the book *Turnaround Leadership for Higher Education* (Fullan & Scott, 2009), what has also emerged is that leadership of EfS in higher education poses a distinctive set of challenges that extend these capabilities.

This is perhaps not surprising, given that Education for Sustainability redefines effective change leadership and management for Higher Education – it requires leaders who can facilitate a complex process of transformation – not only in the core higher education activities of learning and teaching, research and engagement but also in how the university operates, in its culture, governance, structure and how it positions itself and supports staff and students. And it is this complex and comprehensive focus on transformative rather than adaptive oversight, including a move from a single disciplinary focus to an interdisciplinary one in our institutions of higher education, that makes leadership of EfS so challenging, multifaceted and distinctive.

The study shows that, given the above context, what is needed is not only higher education leaders for today but for tomorrow - people with a vision for higher education capable of tackling the challenges of the 21st century and of producing graduates with the capacity to make it happen.

Ten key recommendations for acting on the results of this study have emerged. These have been identified and endorsed by over 500 HE leaders from across the world who have been involved either as a respondent to its online survey or as a participant in the workshops organised to test the veracity and implications of the results. It is important to note that the 10 areas for action are interrelated. This means that the actions recommended below should be taken synergistically if EfS is to be effectively embedded, led and scaled up in our universities and colleges.

1. Acknowledge the distinctive challenges & complexity of EfS leadership

A range of contextual challenges found to face higher education leaders in earlier research have also been identified in this study (see recommendation area 3).

However, the study has revealed additional, *distinctive challenges* that make the job of EfS leader particularly testing.

These include a focus on:

- ***Transformation not adaptation***: EfS requires a reorientation of existing curricula and pedagogy rather than the adaptation of proposed courses or content to current educational structures, systems, processes and objectives. That is, change leadership in this area requires a focus not only on curriculum change but also on the gradual transformation of the overall way in which our universities are structured and operate. And, as noted already, it is this that makes the role particularly complex.

Leadership in this area, therefore, goes beyond producing ‘work ready’ graduates or delivering education *about* sustainability to developing ‘future ready’ graduates using new knowledge and learning experiences that build every graduate’s commitment and ability to engage productively with the unfolding challenges of social, cultural, economic and environmental sustainability in their chosen profession and more broadly (see Box 1).

Box 1: A new focus for Learning Outcomes in HE

EfS seeks to introduce a quite different set of graduate attributes and outcomes – for example graduates who are sustainability literate; collaborative, focused, systems’ thinkers; who are change implementation ‘savvy’, have an interdisciplinary perspective and who have come to a considered position on the key, tacit assumptions about what constitutes ‘progress’ and a ‘productive’ nation and society (assumptions like ‘growth is the key’, ‘consumption is happiness’ and ‘technology is the answer’).

Seeking to make this shift in focus creates significant tensions in a context where consumer demand for job-focused degrees, filling quotas, high fees and policies focused on producing predominantly ‘work ready’ graduates are given priority.

- ***Future not present.*** Leadership of EfS is thus not limited to addressing current issues but seeks to construct and implement an alternative more positive future for people and planet. This, in turn, requires leaders who are adept at building a relevant, desirable, clear, future-focused vision and strategy for university transformation which is both owned by those who are to implement it and feasible (achievable). It calls on higher education to be more socially, culturally, economically and environmentally responsible in its policies and practice and to model the desired future in its day-to-day operations, programs and behaviour.
- ***Inter-disciplinary and Inter-portfolio:*** To enact this agenda EfS leaders must work across disciplinary ‘silos’, divisions and organisational ‘tribes’ to integrate the efforts of a wide variety of players at every level from academia, operations and administration, and help reshape unsupportive or unaligned systems, structures, funding mechanisms, leadership roles and performance indicators.

The fundamental problem faced in meeting the goal of education for a healthy and sustainable society for all students is that the existing curriculum in higher education has not been developed to examine how we shape a sustainable world. Much of the curriculum has been developed to provide students with an increasingly narrow understanding of disciplines, professions and jobs and is focused on specific knowledge and skills employed in the given area. (AASHE, 2010: 2)

As one member of the project’s national steering committee observed, leadership in this area requires the ability ‘... to work in multi-functional environments with everyone from the gardener to the VC... this is not leadership based on specialist knowledge of one functional area but of how to productively bring together people from many different backgrounds’. The analogy that ‘being a leader of EfS is like trying make a quilt’ captures the distinctive nature and complexity of this challenge.

The study has found, therefore, that the interlaced and complex nature of this transformation agenda requires leaders with highly developed and nuanced capabilities, including the ability to work with diversity and foster change, a high level of emotional intelligence, a capacity for systems’ thinking and collective vision-building and a highly developed ability to accurately ‘read’ (diagnose what is going on in) the complex situations and dilemmas of daily practice and ‘match’ a uniquely suitable response.

The Study invited respondents to propose analogies to describe their day-to-day experience of being a sustainability leader. Box 2 gives indicative examples. They provide an insider's perspective on the challenges EfS leaders face:

Box 2: Typical EfS leader analogies

For me, being an EfS leader in my university or college is like:

'herding cats'
'swimming against the tide',
'building a plane whilst you are flying it'
'waving a flag from the back of the crowd',
'conducting an orchestra',
'quilting',
'learning Spanish but finding myself in China',
'being a competitor on American idol',
'being Stephen Bradbury winning gold at the Winter Olympics',
'trying to pin jelly to the wall',
'being asked to make trifle with no bowl or ingredients and a constantly changing recipe

These analogies capture the complex, constantly shifting, diverse and loosely coupled nature of the world of EfS change leaders in higher education. The analogies of more senior leaders (e.g. 'conducting an orchestra' or 'making a quilt') indicate a greater sense of efficacy than those of local leaders (e.g. 'swimming against the tide', 'waving a flag from the back of the crowd' or 'being a competitor on American idol'). All of the analogies confirm that change in this, like all areas of higher education, is always a function of being able to work with a diverse and constantly shifting range of change forces, many of which are beyond the control of the individual but can be negotiated and others which are amenable to personal influence and can be reshaped to be more supportive. It is important to note that participants in the study emphasised that, despite the many challenges faced, there are many satisfactions and that, if leveraged, these foster wider engagement and commitment.

2. Sharpen the focus & understanding of EfS in higher education

Participants in the study consistently reported having to deal with widely varied and often confused understandings of what EfS in higher education entails. They also regularly reported having to tackle misperceptions that a commitment to EfS is synonymous with being a 'greenie' or is simply about greening campus operations.

They noted that, if terms like those listed in Box 3 are not clarified at the outset to ensure that everyone is using them with the same meaning, the change process can stall because people will find themselves talking at cross-purposes.

Box 3

Check everyone is using key terms in the same way

These include terms like: ‘sustainability’, ‘education for sustainability’, ‘education for sustainable development’, ‘engaged learning’, ‘leadership’, ‘management’, ‘competence’, ‘capability’, ‘change’, ‘progress’ and ‘implementation’.

Underpinning the use of these terms are different ways of knowing, engaging and responding to the EfS challenge: rarely are words used with identical meaning.

The way in which these terms are used in the present study is given in Attachment One of the main report. The study’s participants noted that working with the university community to identify and discuss successful examples of what EfS looks like in the specific context of each institution would provide further clarity and understanding.

A 2010 national stocktake of sustainability programs in every Australian University gives one operational picture of the range of options underway at that time. The many examples of successful practice documented in [the interactive website](#) developed in this project can be used to further assist this process of clarification.

3. Context counts: ensure organisational integration and system alignment to support EfS & its leaders

This study, like all the studies of change in higher education that have preceded it, demonstrates that *context counts* – that turnaround leadership for sustainability in higher education needs an amenable operating context and environment and that, at the same time, effective leaders can help reshape this context to be more supportive. As one respondent put it: ‘At the moment there is a conceptual and emotional mismatch between sustainability leaders and the context they are trying to work in’. The study has found that:

- it is the combination of the right leaders *and* the right institutional context that optimises successful change in this area.
- like the earlier *Learning Leaders in Times of Change* study (Scott, et al 2008, ALTC), our EfS leaders need ‘room to lead’ – that they can be faced with an endless round of unproductive meetings, administrative processes that do not demonstrably add value or manage risk, and a continuous bombardment of ad hoc demands that do not have a clear outcome.
- an application of ‘systems thinking’ and proven approaches to quality management and improvement, along with targeted support for EfS initiatives in higher education are necessary. The key strategies that underpin this approach have been endorsed by the participants in this study and are outlined below.
- appointing a critical mass of leaders with the attributes and capabilities identified in this study will, in its own right, help reshape the context.

The study has found that transforming the operating context of our universities to more systematically support EfS and its leadership involves shifting EfS from being a fringe activity to embedding it into all aspects of the university system.

During the study it became clear that there are various effective ways in which this can be achieved. Participants in the study *recommend* these now be linked, leveraged, up-

scaled and more consistently embedded within and across institutions. These proven solutions can be continuously updated and disseminated via the well-developed EfS networks now operating across the world. In addition to effective approaches to building EfS into the curriculum, they include productive strategies for engaging staff, students and employers, embedding Efs into the university's strategic plan, targeted funding and resourcing, aligned operations, KPIs, governance and administrative structures, central and local leadership processes and associated accountabilities, as well as into the key activity areas of research, teaching and engagement.

In summary, the study has found that it is important to build EfS into what the UK Higher Education Academy (Ryan: 2011) refers to as 'the institutional mainframe' if staff beyond the already committed are to engage and commit to the EfS change agenda.

To achieve this, the participants in this study *recommend* that the following specific steps be taken:

Engagement

- Institute processes that engage all key players (including the university executive and staff, students and employers) with the EfS agenda;

Alignment

- Ensure that the institution's vision, structure, resources, performance plans and Key Performance Indicators are all aligned towards a focus on EfS. This would include ongoing allocation of relevant human and non human resources to the area; targeted staff development programs to share good practice; carefully managed and evaluated pilot programs to identify what works and what does not; and clear senior and local performance targets and accountabilities for the area.
- Demonstrate that such a focus aligns not only with the mission and core values of the institution but also with national policy requirements and local and international peak body commitments in order to achieve further buy-in.
- Align staff selection, performance review, tenure, promotion and recognition processes with the institution's EfS goals and priorities; and remove disincentives in these areas.

Governance and Management

- Ensure EfS leadership is centrally located in the *management and governance structure* of the university. Key steps in this regard identified in the present study include:
 - Appointing an appropriate senior leader accountable for overall action and coordination of all four sustainability pillars across the four key activities of the university or college;
 - Locating the leader in the senior executive not in one of the support areas (e.g. in the area of Capital Works and Facilities);
 - Ensuring that the senior leader reports directly to the VC or President and does this regularly – preferably on a monthly basis with a focus on implementation of an agreed performance plan and key achievements;
 - Establishing a senior leadership and coordination team to ensure consistent cross-departmental and unit linkages and collaboration.
 - Establishing a small coordination and implementation unit reporting to the sustainability leader to identify, illuminate, link and leverage EfS initiatives already successfully underway across the institution and in partner universities.
 - Establishing a *nested system of leadership* – with local leaders mirroring the focus and accountabilities of the central leader in their local context and reporting to him/her as part of a network.
 - Seeking to ensure that that action on EfS is a standing item on the agenda of all core committees.
 - Putting in place a monitoring system for the area, the results of which are regularly reported at these committees.

Efficiency

- Ensure that meetings are outcomes-focused and effectively chaired; and that administrative systems are ‘fit-for-purpose’, efficient, and that they demonstrably assist the institution to put its EfS agenda successfully into practice.

Collaboration

- Actively foster a culture of collaboration – in which teams involved in cross-faculty and inter-unit projects are supported, recognised and rewarded.

4. Track & improve EfS program quality

The participants in this study have identified a range of key indicators that would demonstrate that a comprehensive approach to embedding EfS in a university is successfully underway (see Attachment Two in the study’s full report). These include quality indicators for inputs and, most importantly, quality indicators for delivery, engagement and impact. It is *recommended* that the indicators in Attachment Two are used as a starting point for not only setting the KPIs and vision for EfS in our universities and colleges but also for tracking, assessing and improving key initiatives in the area. It is also suggested that existing reporting schemes like the *Learning in Future Environments* ([LiFE](#)) index be considered as a one way to give this process coherence and enable benchmarking.

In order to enable central and local EfS leaders to track, link and improve the many initiatives already underway, the study has identified the need to develop a comprehensive (inter) national Quality Management & Tracking Framework for EfS in Higher Education. In particular, it has identified the need to establish a tracking and improvement system which gives focus to four interlaced dimensions of EfS quality - course design, support, delivery and impact – and locates this within a broader framework that identifies all of the dimensions of embedding sustainability in our universities and colleges.

In this regard there are a number proven approaches for assuring and improving academic standards and the quality of higher education learning and teaching in general that can be readily adapted to the specific context of EfS.

The Higher Education Funding Council for England has funded a national initiative in the UK to develop a quality framework for EfS which could support institutional development and reviews in this area. The work is supported by the Quality Assurance Agency of the UK.

5. Put in place the right incentives

Respondents and workshop participants in the study identified a combination of nineteen extrinsic and intrinsic incentives which will not only encourage and support the engagement of university staff and students with EfS initiatives but also will then sustain them:

- Extrinsic incentives
 - Active endorsement and leadership by the Vice-Chancellor, President, or Rector.
 - Introduction of relevant awards like a VC/President’s Sustainability Award and systematic acknowledgement by senior leaders of successful implementation of agreed EfS initiatives and collaborations as they occur.
 - A focus on EfS capabilities in staff selection and promotion processes; along with a focus on successful implementation of agreed EfS initiatives in the performance management and development processes of all relevant central and local leaders.

- Rewards for trans-disciplinary research in national research reward schemes like Excellence in Research Australia (ERA) where the focus at present is primarily on single disciplines.
 - In the Australian context, achieving better alignment between Field of Education and Field of Research categories.
 - The allocation of targeted human and resource support for EfS initiatives, including the use of a Sustainable University Rolling or Revolving Fund to support both staff and student initiatives.
 - Having a senior leader who works with local ‘champions’ to assist staff with implementation and link up parallel initiatives being undertaken in different parts of the university or beyond.
 - Giving careful attention to illuminating, linking and leveraging what is already being implemented; including disseminating positive media coverage of such achievements.
 - Right resourcing – targeted support with clear accountabilities for its effective application.
 - Peer engagement and support – from both within and beyond the university via networks of staff pursuing the same developments in different locations.
- Intrinsic incentives
- Knowing that one is playing an active part in helping one’s students, profession and nation build a socially, culturally, economically and environmentally sustainable future.
 - Feeling that what one is doing is both meaningful and useful.
 - Satisfaction in seeing one’s students develop their capabilities and hearing back from them about the relevance of what they have learnt and how they have applied it in their work or more generally.
 - Receiving positive student responses to one’s teaching.
 - Gaining intrinsic enjoyment from the process of helping people learn.
 - Seeing increasing numbers of students wanting to enrol in one’s classes.
 - Working with inspiring people.
 - Creating a legacy.
 - Seeing that one’s views are being incorporated into a new plan and that past successes relevant to that plan are being taken into account and acknowledged (the ownership incentive).

Overall, the study has found that external and internal influences, challenges, satisfactions and incentives all interact to shape what EfS leaders give focus to in their role and how they judge they are doing a good job. This, in turn, sets the agenda for the change strategies necessary to engage key players and to support implementation, along with determining the key leadership capabilities necessary to enact them.

6. Engage the disengaged and the institution’s senior leadership

Successful implementation requires *consistent* delivery of each EfS innovation. Therefore, the quality of what is delivered and its impact is directly linked to the extent to which not only the already committed engage with implementation but also those who are less interested. How to engage central and local staff for whom EfS is not a priority is a key implementation challenge for EfS change leaders. The study has found that, to achieve this, it is critical for them to consistently shape, link and leverage the incentives identified in recommendation area 5.

The study has established that a key motivator for engagement with EfS initiatives is the active endorsement by the institution’s senior executive. However, the study has found that not all senior executives and trustees are engaging with the potential for this area to assist their nation, attract students and position their university or college favourably. How to engage such people when EfS is not already their priority is a

distinctive challenge for leaders committed to embedding EfS not only in the curriculum but also in their institution's research, engagement and operational activities.

A range of strategies has been suggested by participants in this study to foster the engagement of each institution's senior leadership with the area. They include:

- Demonstrating the potential for EfS to attract students and staff to their institution and that initiatives in this area will have a positive return on investment;
- Linking the initiative directly to the existing mission, values and strategic objectives of the institution, and the KPIs of the senior leader concerned;
- Noting alignment of EfS action with key external priorities and policy requirements;
- Leveraging peer pressure from senior leaders in other universities;
- Winning external funding and endorsement for the area (like the endorsement of a Regional Centre of Expertise in ESD by the UN University);
- Gaining positive media coverage and external awards;
- Ensuring key players in the institution's Governing Body are on side by having one of them chair a sustainability task force;
- Seeking to have a focus on the area built into the KPIs of the CEO and senior staff and funding allocations by the Governing Body;
- Undertaking a stocktake of what is already happening across the university to demonstrate the current levels of support for and viability of giving more systematic focus to the area;
- Identifying exactly where sustainability-oriented *jobs, specialisations and careers* currently exist or are emerging. Doing this not only will help engage senior leaders with the business case for EfS but also will help ensure that EfS programs are relevant and that prospective students are attracted to them by being alerted to careers of which they were hitherto unaware.
- Demonstrating growing student demand.

Participants in the study and related workshops have all made the case for a targeted effort to provide leaders at all levels with capacity building for EfS change leadership.

7. Apply the key lessons on successful change management in higher education

Good ideas with no ideas on how to implement them are wasted ideas

This study, like all those that have preceded it, has confirmed that change is not an event like the launch of an EfS policy, plan or program but a complex learning and unlearning process for all concerned.

It has also shown that how students like to learn (i.e. develop their capabilities and ability to implement desired change) is how staff like to learn - through collaboratively figuring out how to solve relevant, real-world challenges, through practical action and learning by doing, reflection on experience, peer support, having access to proven solutions as one needs them, 'just-in-time' and 'just-for-me'; and assistance from people further down the same change path; all guided by the use of overall good practice and diagnostic frameworks like those developed in the current study.

The driving force of this process of change (learning) is motivation. Motivators can be both extrinsic and intrinsic (recommendation area 5). Staff will, for example, be consistently asking 'Is this EfS initiative relevant to me, is it desirable, is it clear what I am to do, have I got some ideas on what works, is this a priority for my boss, am I getting help to make it work and, most importantly, is it feasible (i.e. do I have time to

learn how to make this change work and to grapple with putting it effectively into practice)?’

Discussion of the study’s findings at the phase 2 feedback workshops has confirmed that a set of productive change development and implementation strategies identified in previous studies apply equally well to the distinctive context of EfS change leadership. To be enacted successfully they require EfS change leaders with the capabilities highlighted in recommendation area 8, people who understand the incentives identified in recommendation area 5 and know how to use the strategies identified in recommendation area 6.

Participants in this study identified the following *successful change strategies* which leaders of EfS can use:

Identify and acknowledge what is already happening in your institution at the outset

- Undertake a stocktake of current EfS activity early on in order to engage staff, and to identify, acknowledge, link, build on and leverage what is already happening.
- Acknowledge the current contributions of staff and emphasise that everyone has a role to play in achieving the successful implementation of the EfS agenda. In this regard local staff particularly value senior leaders noticing and praising their success in implementing desired EfS innovations.
- Ensure that everyone involved is speaking the same language_– as noted in recommendation area 2, the study has found considerable variation in the way in which HE staff, students and stakeholders are using key terms.

Learn by doing

- Use a process of ‘steered engagement’ which sets a small number of overall strategic priorities and then invites local groups/units to identify how best to implement them, given local capabilities, resources, student needs, area(s) of study and context (Fullan & Scott, 2009: pgs 85-88). This combined top-down and bottom-up approach sets overall parameters for change but allows local development and ownership of the most suitable and feasible solutions.
- Recognise that implementation does not unfold in a one-off, linear fashion but through rising spirals of development, implementation, evaluation and improvement as those who are seeking to put a desired EfS change into practice learn how to make it work by doing it. This process of action learning or ‘learning by doing’ involves trialling proven solutions under controlled conditions, determining what works and what does not, enhancing the approach in the light of this monitoring and finally, usually after a number of iterations, specifying what really works and helping others to adapt and implement this proven approach in other locations. This process of ‘mutual adaptation’ is very different to the more linear one of trying to finalise what is to be implemented at the outset.

This is in recognition of the observation by Francis Bacon in the 16th century that – ‘In life we rise to great heights by a winding staircase’.

Focus on evidence-based decision making

- Give focus to making decisions based on ‘consensus around the data’ not just ‘consensus around the table’.
- Use data from the tracking system identified in recommendation area 4 to identify priority areas for improvement action and successful areas of practice warranting acknowledgement and scale-up.

Institute, link and leverage incentives for engagement and collaboration

- Put in place a range of incentives and rewards to build a change-capable, collaborative culture which fosters cross-disciplinary and cross-unit work, along with

the other incentives known to engage people with desired EfS initiatives identified in recommendation areas 5 and 6.

- Use external levers for internal improvement (Scott & Hawke, 2002). This includes using an external quality audit to give focus to the area; leveraging relevant government policies and grants to the university's strategy; hosting key national forums and high profile centres on the area (like a UN University endorsed Regional Centre of Expertise in ESD); and using positive media reports to promote achievements to internal audiences.

Build linked leadership and networks

- Put in place a 'nested' system of leaders of EfS that can help give overall coherence but also foster locally appropriate solutions.
- Identify and build champions for this work into a mutually supporting network, led by the member of the university executive responsible for this area.
- Seek to ensure that there is a champion for this work on the governing body of the university and work with this person to engage that group to 'mainstream' the area by building attention to EfS into the strategic objectives of the university, and the associated funding, KPIs and performance requirements of senior, middle and local leaders.
- Learn from the successes of others through building targeted networks with institutions addressing the same agenda. This is best achieved via a process of 'benchmarking for improvement'.

It is **recommended** that professional development for leaders of EfS give specific, situated attention to how the above key change management strategies can best be deployed in their own, distinctive context, taking into account the stage of development of their institution in addressing the EfS agenda.

8. Focus on the change leadership capabilities identified in this study

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

To negotiate and reshape existing organisational contexts and implement the challenging transformation agenda summarised above successfully requires a distinctive set of leadership capabilities. The study has found that these capabilities align generally with those identified in earlier studies of leadership in higher education (Scott et al, 2008, Scott & McKellar, 2011) and in studies of effective leadership of change in other educational contexts (Scott, 2003, Fullan & Scott, 2009, Fullan, 2011). However, given the distinctively challenging transformation agenda identified in the study, they need to be particularly well developed. It has also found that the combination of capabilities varies depending on whether the EfS leadership role is one that is local, in middle management or in the senior levels of the institution.

A key message of this study is that change capable and resilient universities are built by change capable and resilient leaders. This is why their selection against the key capabilities identified in this study is so important. If we get a critical mass of leaders with the right capabilities working on a shared EfS vision and agenda with colleagues centrally and locally and, if they also model how to behave appropriately and constructively when the inevitable glitches of implementation arise, they will be building a change capable and resilient culture by modelling what works to their staff and students.

Furthermore, it is via the unified actions of leaders that the transformation of the focus, structure and support systems necessary to create an operating context more supportive of EfS in our institutions of higher education will be achieved.

Importantly, the study has found that the EfS leadership capabilities that *count* have much in common with the attributes of change capable and resilient organisations and societies. And, interestingly, that many of them also align with the underpinning values of the world’s major religions. It is for this reason that participants in the study have identified the need to give the capabilities highlighted in the study more specific focus in the graduate attributes of our universities and colleges.

In this study the top 15 ranking capabilities on importance for effective leadership of EfS out of the 38 investigated are, in rank order:

- | | |
|---|----------------------|
| 1. Having energy, passion and enthusiasm for EfS | (P – commitment) |
| 2. Being willing to give credit to others | (IP – empathising) |
| 3. Empathising & working productively with diversity | (IP –empathising) |
| 4. Being transparent and honest in dealings with others | (IP empathising) |
| 5. Thinking laterally and creatively | (C – strategy) |
| 6. Being true to one’s values and ethics | (P - decisiveness) |
| 7. Listening to different points of view before coming to a decision | (IP - empathising) |
| 8. Understanding personal strengths & limitations | (P – self-awareness) |
| 9. Time management skills | (GSK) |
| 10. Persevering | (P – commitment) |
| 11. Learning from errors | (P – self-awareness) |
| 12. Learning from experience | (C - responsiveness) |
| 13. Remaining calm when under pressure or the unexpected happens | (P – self-awareness) |
| 14. Being able to make effective presentations to different groups | (GSK) |
| 15. Identifying from a mass of information the core issue/opportunity | (C – diagnosis) |

Code: P– Personal Capability domain; IP – Interpersonal Capability domain; C– Cognitive Capability domain; GSK– Generic Skills & Knowledge domain

Every one of these top 15 ranked capabilities attracted an importance rating of more than 4.3/5.

The study’s findings and the phase 2 workshop discussions of them have confirmed two key conclusions from earlier studies.

First, that the highest ranking capabilities consistently come from the Personal (P) and Interpersonal (IP) capability domains, with the remainder typically coming from the cognitive capability scale (C). High levels of skill and knowledge (competence) emerge as being necessary but not sufficient for effective leadership in the area. Yet the hundreds of respondents and workshop participants involved in this and previous HE leadership studies have repeatedly reported that there is only limited focus on the specific aspects of emotional intelligence and cognitive capability identified above in the selection and promotion processes they have encountered during their career in higher education.

Second, that the most effective leaders in higher education:

- listen, link and lead – always in that order.

That is, they listen with a case for change and a framework or menu of options to identify what those who are to implement a desired initiative are already doing and what, in their view is most likely to work; then they link this feedback together into an ‘owned’ plan of attack and finally they lead – by actively helping staff to try out their chosen strategy under controlled conditions, keeping what works and modifying what does not. This is a distinctive and highly effective way to develop an owned, implementable vision for change and aligns with the key lessons identified from two decades of

research on effective change management in higher education (Fullan & Scott, 2009: 73-96).

- model, teach and learn

That is, they model the behaviours that count to their staff when change is in the air; they operate as effective teachers with their staff as they help them learn how to implement desired changes and, finally, they are constantly 'on the look out' to improve their own practice.

9. Review EfS leadership position descriptions, selection processes and succession strategies in the light of the study's findings

In the light of the above findings it is recommended that each university and college review its leadership policies, processes and procedures as a threshold issue.

Specifically, it is *recommended* that each HEI:

- Review its *position descriptions* for all local, middle and senior leaders of EfS, and leaders more broadly, against the study's findings on the top rating leadership capabilities, along with the findings on how respondents judge there are doing an effective job and the aspects of their role which they believe are most important. For example, it is recommended that the performance criteria in PDs give specific focus to all of the capabilities attracting an importance rating of more than 4.2/5 in each leadership category studied. It is also suggested that a more comparable definition of specific role descriptions be established, given the fact that many common position titles have quite different levels of scope and focus.

Participants in the study repeatedly emphasised how important it is to have a '*critical mass*' of the right leaders in place and how a poor leadership selection decision not only costs the university in terms of the salary for the appointee but can have dramatic collateral damage on the morale, efficacy and engagement of the staff who report to them.

In addition, they recommended that the same capabilities could be given more specific emphasis in the position descriptions and selection processes for entry-level staff. This, said participants, would help build up a pool of people with the potential to take on leadership positions later in their career. An interesting parallel was noted between the findings for leaders and those for successful graduates in a series of studies undertaken in nine professions over the past decade.

- Revise leadership *selection procedures* so that what is given focus in these processes is valid (i.e. that it focuses on what counts for effective leadership in the EfS role concerned) and that how these selection processes are carried out is both valid and reliable. (For example, there are clear indications in this study that short interviews with a selection panel may not reliably tap the capabilities found to be critical for effective leadership of EfS).
- Give more careful attention to *succession planning* by identifying prospective leaders seen to possess the capabilities ranked highest on importance in the study and assisting them to prepare for leadership via targeted mentoring, secondments, exchanges and other practice-based learning strategies focused on EfS.

10. Apply the most productive approaches to leadership learning identified in the study to the professional development of EfS leaders

Participants in this study have identified an array of preferred modes for learning leadership for EfS. These include learning on the job, via ad hoc conversations

with experienced colleagues, peer to peer learning within and beyond their institution, studying ‘real life’ workplace problems in EfS, through local and external networks of peers involved in the same work, visiting other institutions, attending EfS conferences and involvement in relevant professional associations. To apply these findings it is recommended that a comprehensive and integrated approach be adopted. What follows is a detailed overview of the elements and guiding principles for such an approach.

EfS leadership learning principles

In terms of leadership support and development, the study has confirmed the key lessons from studies of productive adult learning extending back more than four decades (Tough, 1977), lessons which also align with international research on professional learning in general and what engages and retains university students in productive learning (Scott, 2008, Fullan & Scott, 2009 and Scott, Grebennikov & Chang 2011, Scott & Yates, 2002, Scott & Wilson, 2002, Wells et al 2009) in particular. This includes the importance of:

- Ensuring such programs meet the following *quality checkpoints*:
 - immediate relevance to participant needs;
 - a focus on active, problem-based and work-based learning;
 - availability of ‘just-in-time and just-for-me’ solutions;
 - consistent theory-practice links;
 - clear management of expectations about what is to be provided in the program and a clear direction for learning using the frameworks for good practice identified in this study;
 - a focus on the leadership capabilities that count:
 - flexible access and learning modes;
 - timely and constructive feedback on progress;
 - the use of program facilitators who are experienced EfS leaders and effective teachers; and
 - aligned and effective learning support.
- Giving focus to the *priority areas* for EfS leadership development identified by respondents in the study. These include:
 - how best to achieve high levels of staff and student engagement with EfS initiatives;
 - how to build a collegial and collaborative working environment;
 - how to connect EfS with the campus and/or the region as a ‘living laboratory’; and
 - how to achieve the successful implementation of new initiatives in EfS.
- Enabling our leaders to identify *successful solutions* to implementation problems as they experience them².
- Provision of a range of *targeted leadership development* opportunities, including:
 - Individual universities and colleges running role-specific EfS leadership programs on the results of this study for their own local, middle and senior leaders of EfS;

² Here a national good practice clearing house which builds on the interactive platform www.sustainability.edu.au developed in 2010 by UWS and ALTC is one good starting point. This platform identifies all current EfS initiatives in the area, effective teaching resources for different fields of education and provides a section on effective leadership into which the findings of the current study are to be located. There is potential to link this portal up with others now available around the world, including those provided by AASHE in the US, Copernicus in Europe, the [UNAI Hub on Sustainability](#) operated by the Black Sea Universities Network, along with others.

- running ‘market days’ and offering broader staff seminars on what EfS means in practice by showcasing the activity that is already underway;
 - embedding leadership training into EfS leaders’ performance development indicators and individual development programs; and
 - Establishing staff exchanges with partner institutions pursuing the same EfS change agenda.
- Modelling the effective approaches to just-in-time, just-for-me, problem-based and (inter) active learning in these leadership programs so that the leaders learn through experience what works for students.
 - Mining the data in this study to produce a series of succinct guides (‘skinnies’) on effective change leadership for EfS in HE – each targeted on how best to address the distinctive challenges faced in different EfS leadership roles. There is potential for these to be produced as interactive, digital, mixed media artefacts.
 - Securing the active endorsement of the peak bodies in each country for action on the area and for these groups to actively lead, monitor, disseminate and acknowledge what is happening; and, when feasible, to run their own national EfS leadership program. Equally important is these peak bodies ensuring that relevant government policy (e.g. Australia’s National Action Plan for ESD) and commitments to international initiatives like the HE Treaty at Rio +20 are appropriately acted upon, supported and tracked.
 - Using the study’s phase 2 feedback workshops and resources as a leadership development strategy in their own right. The 300 EfS leaders from around the world involved in these workshops have **recommended** their use in this way not only at local institutions but regionally and nationally, via UA, ACTS and equivalent overseas peak groups. More broadly, they have **recommended** that OLT use the approach to engaging users of the results from the outset as a model and requirement for all subsequent OLT-funded projects.

Networked learning

A key strategy recommended by participants in this project concerns now moving to link and leverage the many parallel networks for EfS currently in place around the world. Key suggestions in this regard include:

- Building local, national and international links between EfS leaders in a similar role in different locations. Participants noted the potential to use the 500 EfS leaders involved in the present study as the basis for an international EfS leadership network upon which to build a community of practice.

An important complementary networking and development initiative is the *Sustainable Futures Leadership Academy*. The SFLA seeks to use experienced VCs, Rectors and University Presidents to assist CEO colleagues new to the area who wish to give focus to building EfS systematically into their university’s core activities. This is in recognition of the key finding in the current study that one of the key challenges for our EfS leaders is the difficulty of getting momentum if the VC or equivalent is uninterested, unclear on how best to proceed or unengaged with the area.

- Sector bodies like Universities Australia, Australian Campuses Towards Sustainability (ACTS), the US Association for the Advancement of Sustainability in HE (AASHE), the UK HE Academy and Copernicus working in concert to sponsor conferences which focus on *change leadership* for EfS, in order to build informal networks and foster inter-institutional leadership exchanges focused on good practice.
- Ensuring that these networks work effectively by using a common tracking framework with which to identify successful practice.

- Peak bodies like UNU and IAU convening regional, national and international conferences for leaders of sustainability in higher education in order to build, link and leverage best practice on leadership for EfS.

The study has not only found many similarities in its findings across the countries involved but also some significant differences which suggest strong potential for cross-cultural learning and improvement benchmarking.

An important next step *recommended* by participants in the present study is to replicate it in a range of other contexts, starting with Malaysian Higher Education and then in Asia, the Sub-Continent, South America and Africa. This process could, it was suggested, be facilitated by groups like the [International Association of Universities](#).

Acting on the opportunity to learn across countries is indeed at the core of what the EfS agenda is all about. A good first step for networked learning would be to not only build an international portal around the findings listed above, with situated case studies of how to enact them in different contexts, but also to link and leverage the following peak sustainability in HE networks to support the use of this resource: ACTS, AASHE, Copernicus and similar networks in other countries, along with the UNU RCE Network and the IAU.

Summary

This study has taken place at a turnaround moment for universities and colleges around the world – a time supportive of sector transformation towards giving more central focus to education for social, cultural, economic and environmental sustainability. The study has identified how this opportunity might best be addressed, what the key elements of transformation should be, how to manage the process and, most importantly, the key capabilities necessary for those who lead this transformation to enact it.

The international networks and commitments exist – now is the time to act in concert to take up the challenge and use higher education to build a better future and the next generation of leaders capable of making it happen.

Products

The study has produced

1. A validated framework and guide for effective change leadership for sustainability education in universities and colleges.
2. A functional prototype of an online tool for subsequent use by institutions of higher education.
3. A field-tested methodology and set of resources for engaging higher education staff with the results of the study including a set of slides on the results and a video on how to use them.
4. A set of empirically confirmed benchmarks for validating position descriptions and selection procedures for leaders of EfS in higher education.
5. A set of checkpoints for developing a university culture and mode of operation that will facilitate effective change leadership in the area.
6. A set of quality checkpoints for effective leadership development and training in the area.

In the longer term, the project will encourage:

- Accelerated leadership for sustainability in HE institutions.
- New sustainability leadership corridors- spaces for leaders to work together, share and develop new skills and capabilities.
- A group of leaders who are ready to act as change agents to advance the transformation of higher education for sustainability across the world.

In the report that follows the study's aims, focus, context and methodology, along with each of the 10 recommended areas for action identified above, are explored in more detail.

1. Project Aim

This project has sought to define the capabilities which characterise an effective change leader of Education for Sustainability (EfS) in universities and colleges across Australasia, North America, the U.K. and Europe. It has also sought to identify the challenges such leaders face, how these challenges might best be addressed and to produce resources to help select, support, develop and monitor leadership for the area.

2. Key issues investigated

1. What should be the key areas of focus in the work of senior and local university leaders of EfS?
2. What are the forces influencing the work of change leaders for EfS?
3. What organisational conditions are necessary for individual leaders of EfS to successfully implement and sustain the developments for which they are responsible?
4. How do successful leaders in this area judge that they are performing effectively?
5. What professional capabilities underpin effective practice in this role?
6. To what extent do the leadership capabilities identified in the earlier ALTC *Learning Leaders in Times of Change* and the ATEM *Professional Leaders in Australasian Tertiary Education* research align with those for leaders of EfS?
7. To what extent are the roles, effectiveness indicators and capabilities identified common across countries and higher education systems?
8. What forms of professional learning and support are most or least productive for leaders of EfS in our colleges and universities?
9. What resources can be used to develop and enhance effective academic leadership of EfS in higher education?
10. What are the implications of this research for the recruitment, promotion, development and performance management systems for leaders of EfS in our universities?
11. In what ways can Australia learn and build upon best practice and experience internationally to leverage the application of the results?
12. How can university staff, students and other stakeholders be most productively engaged in EfS initiatives?

It is important to be clear on how key terms like ‘Education for Sustainability’, ‘leadership’, ‘management’, ‘change’, ‘progress’ are being used in the report that follows. Attachment One gives details.

3. Context

3.1 Change forces creating a new context for higher education

Financial problems, environmental issues, management of finite energy, food and water resources and lower wealth increasingly converge in a toxic brew

Das, S (2011: 444)

The following social, cultural, economic and environmental changes are feeding into and off each other to create the need for Education for Sustainability (EfS) and upgrading its importance in higher education where a large number of tomorrow's leaders are being produced:

Social & cultural change

- A rapid and uncontrolled growth in the world's population with attendant health, migration and food security issues;
- A growing disparity between the rich and poor;
- An increase in 'fractious division' between countries, cultures and different interest groups;
- The growing impact of new technologies on how people interact, including a suggested increase in IT-triggered disorders including narcissism, 'Facebook depression', 'electronic voyeurism', 'hypochondria', 'techno addiction' and obsessive compulsive disorder (Rosen, 2012);
- Increased challenges to human rights and security;
- A reported loss of 'moral compass' (Henriques, 2012);
- New, more complex forms of covert civil violence, threats to social sustainability and national security - including a rapid growth in the number and scope of cyber security threats and breaches³ and an associated growth in social dislocation and refugee numbers.

Economic & technological change

- The development of multinational corporations that operate beyond national borders and often beyond national regulation;
- A lightning fast growth in technology including communications and information technology; and a consequent growth in the ease and speed with which people and ideas can move within and beyond our nations;
- The emergence of new world players and an associated shift in the power balance and operation of the world economy;
- The unfolding impact of the Global Financial crisis;
- A continued 'growth fetish' (Hamilton, 2003):

The evidence shows that, beyond a certain point, increased income does not result in increased wellbeing... if a sharp rise in personal incomes does not result in any increase in reported life satisfaction why do we as societies give such enormous emphasis to economic growth?

Hamilton (2003: 28,30 & 209)⁴

³ For example, in Australia, the *Sydney Morning Herald* reported (24 September 2011, *News Review* pgs 1 & 6) that cybersecurity attacks on the Department of Defence had increased from approximately 200 per month in 2009 to 930 per month in 2011, including attempts to determine different country's current positions on climate change.

⁴ Hamilton (2003: 55) notes that alternative measures to financial growth are indexes like the Genuine Progress Indicator also known as the Index of Sustainable Economic Welfare. The GPI incorporates a range of factors known to influence well being and aggregates them into a single index that can be compared over time with GDP. A similar index, launched at the UN's 2012 Rio +20 conference on sustainable development is the [Inclusive Wealth Index](#).

- Failure to question core assumptions about what constitutes a harmonious and productive society – prevailing assumptions like ‘consumption leads to happiness’⁵, ‘greed is good’ and economic growth is a key indicator of societal progress – along with a lack of clarity about what contributes to personal happiness and well-being (Hamilton, 2003).

The master narrative of the world is now economic and financial as much as social, cultural or political. Identities are defined and reinvented around money.... Businesses and governments define their performance by financial measures.

Das (2011: 20)

- Rapid developments in green construction that have demonstrable value benefits (Kats, 2003; Miller, 2009).

Environmental change

- The impact of global warming, including the threat of rising sea-levels, more intensive storms, changing patterns of rain-fall and consequent social dislocation;
- The impact of diminishing natural resources and the continued use of those which are negatively affecting the environment.
- A culture of waste:

Wastefulness is ..(not just) .. the waste of packaging or built-in obsolescence; it is the waste arising from the fact that the physical properties of the goods purchased are not the things to be consumed. It is the style, the attitude and the image... (So).. protecting the natural world requires not only far-reaching changes in the way we use the natural environment: it calls for a radical transformation of ourselves

Hamilton (2003: 97)

It is increasingly being argued that, for these interlocked social, cultural, economic and environmental challenges to be addressed, there is a need for policy formation, research and professional practice to take a multi-disciplinary and integrated focus rather than a more narrow, specialist one and that higher education should lead this shift.

3.2 A turnaround moment for higher education

The fundamental educational problem of a changing world is neither one of knowledge nor of skills but is one of being. To put it more formally, the educational challenge of a world of uncertainty is ontological in nature.

(Barnett, 2006, p.51)

The broader change forces identified in Section 3.1 are unfolding at a time when there is increasing evidence that higher education itself is at a turnaround moment – a time when the traditional 19th century didactic, fixed timetable, two-semester, campus-based model of university and college education is coming under increasing pressure as:

- Access to Higher Education is widened and institutions are confronted with the dilemmas of how best to balance growth with quality, access with excellence; and mission with market.
- Universities and Colleges are subjected to funding cuts and must manage growth, costs and risk in an environment of increasing regulation and financial constraint;

⁵ Hamilton (2003: 66 & 88) observes that: ‘instead of society being populated by free agents rationally maximizing their welfare through their consumption choices,.. the brand has increasingly become the product, a free-standing idea pasted onto innumerable surfaces’.

- Student expectations are changing and they increasingly seek just-in-time support, real-world learning and placements, targeted learning assistance, convenient access and value-for-money in their studies, along with successful employment or further study outcomes;
- The IT-revolution reshapes the world of information, interaction, knowledge-generation and sharing;
- Governments are confronted with having to respond appropriately to the challenges of increasing globalisation, demand for high quality higher education, educational competition, fractious division, financial challenge and the impact of a rapidly unfolding climate crisis.

For example, in a recent international study of the top ten issues facing higher education, Deloitte-Touche (2011) identified the following:

Having to:

- enhance environmental performance, research and learning programs for a sustainable future;
- deal with constrained funding and assure financial sustainability;
- negotiate increased competition for students at home and abroad in not only face-to-face delivery modes but online;
- set a small number of strategic priorities and align the University's programs, resources and budget with them;
- rapidly adapt to the new expectations of students about the use of ICT-enabled learning, social media and online administration and support;
- rethink infrastructure provision and asset optimisation;
- more effectively link academic programs to employment outcomes and market demand;
- attract the best and brightest academic staff in a context of rapid growth in some countries, contraction in others and the retirement of the baby boomers;
- tackle the challenges and quality assurance issues associated with increased diversity, access and calls for more affordable learning programs;
- respond promptly and effectively to increased regulation and reporting requirements.

This analysis aligns with the four key areas of challenge identified as facing 21st century higher education in *Turnaround Leadership for Higher Education* (Fullan and Scott, 2009: Chapter One):

- Opening up of access – with the consequent challenge of figuring out how best to balance growth with a capacity to deliver high quality learning programs and support systems both consistently and effectively;
- Managing effectively a rapid growth in user-pays funding systems and changing patterns of participation;
- Handling rapidly changing expectations from a new generation of students and growing diversity;
- Maintaining and enhancing standards, including the need to assure standards whilst enhancing responsiveness and avoiding standardisation.

In Chapter 3 of *Turnaround Leadership for Higher Education* (Fullan & Scott, 2009: 43-4) a new agenda better suited to education in 21st century is suggested; an agenda which seeks to integrate what happens in schools, colleges and universities by giving consistent focus to:

1. The development of practical reasoning and reflection-in-action and on-action – a more integrated conception of the role of knowledge that combines collaborative engagement with real-world issues (including the challenges of sustainability), analysis and application;
2. Putting teaching and learning at the centre of the traditional triumvirate of research, teaching and university engagement and service;
3. Turning inquiry on itself to establish quality processes, data and consistently effective implementation;
4. Building the corresponding leadership capacity based on theory and knowledge.

It is argued that this vision for education both models and helps develop socially, economically and environmentally sustainable citizens, organisations and societies that are adaptable, resilient and productive. This in turn implies, as GUNI (2009) emphasises that higher education for the next decades of the 21st century must refocus its purpose away from transmission and towards transformation.

The central educative purpose of HEIs ought to be the explicit facilitation of progressive, reflexive, critical, transformative learning that leads to much improved understanding of the need for, and expression of, responsible paradigms for living and for 'being' and 'becoming', both as individuals alone and collectively as communities.'

(GUNI, 2009, p 11)

The characteristics of a curriculum and an approach to learning that enacts this vision in ways consistent with research on what optimises student (and staff) engagement in productive learning and retention are identified in Scott (2008), Fullan & Scott (2009) and Scott (2012). This research indicates that the most productive approach to education for sustainability should:

- use our schools, colleges and universities as 'living laboratories' which model to students how to build social, economic and environmental sustainability and engage them in active, problem-based learning around the real world challenges of their region;
- link students working on equivalent projects around the world via the new social media;
- 'green' the learning strategies and tools, operations and administration of the educational institutions;
- bring together and link those academics working in parallel areas on the same sustainability problems in different contexts around the world for more intentional and networked action and learning;
- use the new media, TV and other interactive forms of ICT to promote what is happening;
- study the psychology of engagement (and disengagement) amongst staff, students, parents and community in needed change areas like energy saving, water conservation, consumption, waste management and transport;
- green the curriculum in the trades⁶.
- use strategic placements in organisations and businesses that are active in the area in order to build two way learning between education and society;

⁶ Australia's industry skills councils in conjunction with the Australian Government's Green Skills Accord Implementation Group has incorporated [a module on sustainability](#) in every one of the country's training packages.

- use Vocational Education & Training (VET) students to build sustainable buildings, undertake local food initiatives, enhance water conservation and protect native plant life.
- draw the attention of school students to the new careers now emerging in the professions and trades in order to elevate the take-up of sustainability- related courses in post-secondary and higher education.

Ryan’s (2011) UK Higher Education Academy study of EfS and holistic curriculum change at the Universities of Bradford, Gloucestershire, and Plymouth gives UK case studies of how these principles can be applied; Rappaport & Creighton (2007), Brown (2008), Sullivan & Rosin (2008) and AASHE (2010) provide US case studies; Gutz (2004), Helferty & Clarke (2009), and Moore (2005) give examples from Canada; and Niu et al (2010) give an example from China.

3.3 The call for a more central focus on EfS in higher education

Higher education institutions bear a profound moral responsibility to increase the awareness, knowledge, skills and values needed to create a just and sustainable future. These institutions have the mandate and potential to develop the intellectual and conceptual framework for achieving this goal. They must play a strong role in education, research, policy development, information exchange and community outreach and support... They have the unique freedom to develop new ideas, comment on society and engage in bold experimentation, as well as contribute to the creation of new knowledge.

Cortese, A (1992)

The complex combination of [change forces](#) outlined above has come together to give formal and informal education at all levels an increasingly central role in addressing the challenges of social, cultural, economic and environmental sustainability. It is post-secondary and higher education institutions in particular that are increasingly being expected to develop sustainability literate professionals and change savvy leaders capable of helping their colleagues and communities negotiate the rapidly unfolding and complex mix of changes identified in this Report.

The broader context for EfS in Higher Education

“Sustainability has pulled us back from scattered modernity to face the ancient questions of civilization: What is a good life and how do we sustain a good life for ourselves and future generations...?”

(Kelly, Aber and Mallory, 2009: 44).

We are nearing the end of the United Nations’ Decade of [Education for Sustainable Development](#) (DESD) 2005-14 and global efforts to integrate sustainability more consistently into higher, further and informal education.

The overall goal of the DESD is to:

.. integrate the principles, values and practices of sustainable development into all aspects of education and learning. This educational effort will encourage changes in behaviour that will create a more sustainable future in terms of environmental integrity, economic viability and a just society for present and future generations.... UNESCO is the lead agency for the DESD. In this function, UNESCO coordinates the efforts of the various UN agencies, programmes and organizations related to the [DESD](#).

The focus of the UN Decade of ESD is on the four key pillars of sustainability:

Social sustainability

- [Peace and Human Security](#)
- [Gender Equality](#)
- [Disaster Risk Reduction](#)
- [Health Promotion](#)
- [Sustainable Urbanisation](#)

Cultural sustainability

- [Cultural Diversity](#)
- [Indigenous Knowledge](#)

Economic sustainability

- [Poverty Reduction](#)

Environmental sustainability

- [Biodiversity](#)
- [Sustainable Lifestyles](#)
- [Water](#)
- [Climate Change](#)

To action this agenda the [United Nations University](#) gives oversight to 100 Regional Centres of Expertise ([RCEs](#)) in EfS. This is supported by the UNECE ESD Competences framework which guides development across the Higher Education curricula.

In June 2012 the UN Conference on Sustainable Development (Rio +20) was held in Brazil. The Rio +20 commitments call for universities to become models of best practice and transformation (paragraph 99).

A formal Higher Education Treaty for Rio+20 was generated through a collaborative process involving key international and national agencies, associations and organisations. The document, which is an official Rio+20 Treaty, commits the sector to transformational change for sustainability. Of particular relevance to the present study is the support from its signatories to: ‘develop the capabilities of existing leaders to enact sustainability commitments and to ensure succession planning and selection processes give focus to this area’ (HE Treaty, Rio +20: Short Term Action 5).

Higher Education policy context for EfS

Education is not widely regarded as a problem, although the lack of it is. The conventional wisdom holds that all education is good, and the more of it one has, the better... The truth is that without significant precautions, education can equip people merely to be more effective vandals of the earth.

Orr, David (1992:5)

Governments and international coordinating agencies like the Global Network for University Innovation (GUNI) (2011) are increasingly giving focus to the extent to which universities and colleges are addressing key issues of social, cultural, economic and environmental sustainability in not just their operations but also in their core activities of research, teaching and engagement.

Both the Australian Government and the Council of Australian Governments (COAG) are developing policies and programs to help the nation respond to the challenges of climate change. There is also strong support for ensuring that the nation’s future leaders are committed to an Australia which is both socially sustainable and stable.

The Australian Government's [2009 National Action Plan for ESD](#) (2009) provides a framework for higher education leadership in this area. It calls for integrating EfS into all university courses and subject areas, as well as into campus operations. Section 2.2 identifies four areas for development:

- 1) Whole-of-institution approaches to sustainability '*including research, teaching and learning, and campus management*';
- 2) An incentive scheme through which the Australian Government will provide funding to implement Universities Australia's policy;
- 3) Networks for sharing advances in EfS; and
- 4) The promotion of the incorporation of EfS into the accreditation requirements for '*key professions such as engineering, accountancy, economics, law, architecture, planning and teaching. Priority will be given to those professions with the greatest and most immediate impact on sustainability outcomes*'

In the School sector, the Australian Curriculum Assessment and Reporting Authority (ACARA) has set [sustainability as a key cross curriculum theme](#) for the nation.

In the Vocational Education & Training sector The Australian Government has established a Green Skills Accord and a National Green Skills Implementation Plan. This plan gives priority to a coordinated approach between government, industry, community groups, schools, VET providers and universities to address its key provisions.

The National Green Skills Agreement Implementation Group ([GSAIG](#)) has noted the critical importance of universities ensuring that the graduates they produce across all professions and disciplines are committed to action in the area, that they understand the options and will support the development of green skills and sustainability initiatives in the enterprises and institutions in which they will become leaders.

In 2007 the US passed the Higher Education Sustainability Act and, in 2008, put in place the University Sustainability Grants Program. Similar policy developments have taken place in the other countries, like the UK and in the other countries which are the focus of the present study.

EfS as a key focus for higher education to meet the needs of the 21st century

Higher education institutions can play a crucial role in this endeavour. They educate teachers and future decision-makers, they function as think tanks for future oriented solutions, and can thus help set the agenda in their communities and countries.... To achieve sustainable development and ensure that education is meaningful, ESD is not an option, but a must.

Alexander Leicht, Chief - ESD Section UNESCO (2012)

A range of writers argue that higher education for the 21st century must give focus not only to producing 'work ready' graduates but much more. They argue that, to meet the change challenges identified in Section 3.1, the professionals and leaders of tomorrow also need to be sustainability literate, change savvy and to have reflected carefully on the core assumptions about what constitutes a successful, harmonious and satisfying life, career and society.

For example, Kelly et al (2009) call for producing graduates who have drawn on Socrates' concept of 'the examined life', people who have the capacity for self-criticism, self-identification as a citizen of the world and the ability to imagine the world from the perspective of others (Nussbaum, 1997 and Kelly et al, 2009: 41ff).

Pauli (2011) emphasises that higher education for the 21st century needs to assist students to become entrepreneurs in the “Blue Economy”, people who are especially adept at making money from ‘waste’. He provides numerous practical case studies of how this is already happening⁷. They include the:

- use of bamboo in social housing projects – the so called ‘[grow your own house](#)’ project using a completely sustainable and carbon neutral building resource to build a complete house, including balcony, for \$1200. The site [Building with Bamboo](#) gives further details.
- development of the [Songhai Centre](#) (a UN RCE), the largest inner city organic farm in Africa. Profitable new enterprises include the use of maggots to convert slaughterhouse waste into protein by feeding them to fish and quail and to produce the highly valuable and effective anti-bacterial treatment – [seraticin](#) - for MRSA, and e.coli from their saliva
- the local use of 3D lasers to produce components without the need to apply traditional heat, beat and treat processes or the use of carbon to transport products from distant manufacturing sites.
- rejuvenation of a citrus farm in South Africa to provide multiple revenue streams including the provision of fresh fruit and juice to the nearby game lodges in Kruger National Park, [limonene](#) orange oil detergent from the peels, the growth of mushrooms in mulch from the prunings and use of the left-over peels to feed the pigs. It is reported that this has doubled employment on the farm.
- use of CO2 from the Porto Alegre coal-fired power station in Brazil to grow the algae necessary to produce the high protein and valuable food supplement [spirulina](#), along with esters for processing into cosmetics and the production of biodiesel.

Pauli identifies the following graduate capabilities as being necessary to create the “Blue economy”:

- Knowing how to produce more with what we have;
- Understanding how businesses can operate as a system in synergy with their total operating context to actively contribute not just to environmental but to social and economic sustainability;
- Identifying where needless waste lies and how to minimise it - “Learning from Deep Ecology, that humankind is part of nature, “no waste can be wasted”, and whatever is waste for one is food for the other belonging to another kingdom” (Pauli, 2011: 16);
- Understanding how businesses which succeed in the blue economy see themselves as an eco-system in which nothing is wasted and in which multiple sources of income can be generated from the one activity;
- Being able to identify how an activity in one area (e.g. the production of biodegradable soap) can have unexpected or unintended consequences in another (e.g. the destruction of the native habitat of orang-utans by palm oil plantations);
- Seeing the importance of avoiding manufacturing processes that rely on traditional, high carbon heat, beat and treat technologies.

Bawden (2010) adds a call to specifically assist each student to surface and reflect on their world view, on their taken-for-granted assumptions on what constitutes ‘a life well lived’, ‘progress’ and the values which underpin their actions - assumptions which students learn from sources like the popular media and which, if left unquestioned, can lead to uncritical acceptance of an unsustainable status quo. As Shephard (2010: 18) observes: ‘A key concern when educating for sustainability is whose values are we promulgating and which environments, cultures and economies do we choose to sustain?’

⁷ For specific details see the ZERI projects at: <http://www.koolbamboo.com/7-ZERI-Projects.pdf>

Hamilton (2003: 212) argues that a core function of education in the new context is to ensure that every student come to grips with *Eudemonia*, the concept used by Aristotle to explain the process and sources that contribute to the full realisation of human potential. He argues that:

Self-understanding is contingent on understanding one's social milieu, which in turn requires knowledge of philosophy, ethics and history – precisely the subject areas that have been marginalised by the commodification of education.... During the last two decades or so education has come increasingly under the influence of market ideology and commercial pressures. The effectiveness of university courses is now measured by the earning potential of graduates, and little importance is attached to the extent to which education can transform students into well-developed human beings who have a deeper understanding of themselves, their societies and the world.

Hamilton, (2003:214)

Harford (2011) in his book *Adapt: why success always starts with failure* uses a wide range of case studies to emphasise that what is necessary in the new global context is graduates who are deft at managing and leading continuous adaptation in a world that is not easily predicted, who understand that effective adaptation requires variation, selection and survivability, who have a willingness to risk, experiment and fail, to embrace errors and not be captured by 'group think'; graduates who have a capacity for lateral thinking, inventiveness and experiment, who can work productively and strategically with serendipity and who can see the big picture about what is happening in the world. He emphasises that it is schools, colleges and universities that need to reframe their mission and focus to model and achieve these outcomes.

All of this argues in favour of our educational institutions moving towards adopting the more transdisciplinary focus on real world problems of sustainability identified earlier – a focus in which the insights available from the social sciences and humanities are directly brought together with those available from the sciences, arts and the professions. This more integrated approach is consistent with our studies of what distinguishes the way successful early career graduates in nine professions (Vescio, 2005) and in VET (Scott & Saunders, 1995) as well as the successful leaders investigated in schools, VET and higher education (Scott, 2003 and Scott, Coates & Anderson, 2008) go about their work.

It is important to note that many universities are already addressing a number of the DESD themes and the above change issues in their research, curriculum, campus operations, strategic plans and engagement projects and that [Universities Australia \(UA\)](#) endorsed the 'Commitment of Sustainable Practices of Higher Education in preparation for the United Nations Conference on Sustainable Development in Rio 2012 ([Rio +20](#)).

The Universities Australia commitment to the area is not new. For example UA (when the Australian Vice-Chancellors Committee) announced strong support for Education for Sustainable Development in a [Media Release](#) on Tuesday 8th August 2006. The President of the AVCC at this time, Professor Gerard Sutton said:

“Through this policy the AVCC declares a commitment to Education for Sustainable Development, and will strive to ensure that universities are a major driver to society's efforts to achieve sustainability...This will be achieved through the skills and knowledge of its staff and students and through engagement with communities... The AVCC will further promote sustainability by supporting its members and through the creation of strategic linkages with government”.

The AVCC encouraged its members to adopt the following principles:

- create an appropriate institutional culture of sustainable development through benchmarking

and the sharing of good practice;

- build capacity in the community by educating the next generation of professionals and leaders to become fully aware of sustainability:
 - for students, consider embedding elements of sustainability at appropriate levels in academic programs;
 - for staff, consider implementing Professional Development programs on sustainability themes;
- have a clearly enunciated policy on sustainable development for all capital works, including the building of new as well as the refurbishment of existing infrastructure;
- engage with schools, industry and communities in partnership and projects which promote sustainable development; and
- undertake research which will strengthen sustainable development and education for sustainable development.

In March 2010, the Australian Government held a national Sustainability in Higher Education Roundtable. At this meeting it was noted that what started as a focus on ‘greening the campus’ had rapidly become a movement that was also giving emphasis to research on the triple bottom line, and to exploring ways of building a more situated and profession-specific focus on social, economic and environmental sustainability into the higher education curriculum. It was also noted that this broader perspective was being reflected in the recent initiatives undertaken by the national coordinating body – Australian Campuses towards Sustainability ([ACTS](#)) and in the dimensions monitored in its [LiFE](#) index of sustainability in Australian higher education.

At the New Zealand Tertiary Education Summit in 2009 Mellalieu (2009: 10) noted that, to address that country’s challenges of building national capacity for long-term wealth-creation and to respond effectively to business and society’s concerns for sustainable development, transdisciplinary academic literacies and ‘innovation architecture’ were required in higher education to support the ‘sixth wave of productive sustainability’.

At the same time student bodies are becoming increasingly active in local, national and international initiatives focused on sustainability. In Australia, for example, [the Australian Education for Sustainability Alliance](#) has developed a tertiary education policy in partnership with the [Australian Youth Climate Coalition](#).

Internationally, hundreds of universities around the world have signed up to the [Talloires Declaration](#) (*University Leaders for a Sustainable Future*).

In North America more than 670 University and College presidents have signed up to the [American College and University Presidents Climate Commitment](#) and the Association for the Advancement of Sustainability in Higher Education ([AASHE](#)) has over 1000 colleges and universities as members working together to address social, economic and environmental sustainability in their curriculum, research and campus practices.

In Europe [Copernicus: the University Charter for Sustainable Development](#) brings together Universities and other parts of society to collaborate on common environmental issues involving action in areas including education for their employees; instituting environmental education programs; fostering interdisciplinarity; dissemination of sustainability knowledge; networking; forging partnerships; assisting technology transfer and undertaking continuing education programs.

The [Baltic University Programme \(BUP\)](#) is a network of about 225 universities and other institutes of higher learning throughout the Baltic Sea region. The network is coordinated by the [Baltic University Programme Secretariat](#) a part of [Uppsala Centre for Sustainable Development](#) (Uppsala CSD) at [Uppsala University](#), Sweden. The Programme focuses on questions of sustainable development, environmental protection, and democracy in the Baltic Sea region.

Similar initiatives are underway in other parts of the world. For example, more than 300 African Universities have set up the Mainstreaming Environment and Sustainability into African Universities ([MESA](#)) Partnership. Small Island States in the Caribbean, the Indian Ocean and the Pacific have set up the [Small Island States Universities consortium](#) to implement the Barbados Program of Action on EfS. Asian Universities have established [ProSPER.Net.](#) and the Association of Commonwealth Universities, through its [Swansea Declaration](#), has declared its commitment to support universities across the Commonwealth giving focus to sustainability issues in the curriculum, community engagement, research, campus operations and knowledge dissemination.

For a summary of all of the declarations for sustainable development, including recent higher education treaties, produced by universities and their networks see: <http://www.guni.org>. Tilbury (2012) reviews the contribution of each of these documents to changes in the higher education system.

At the same time International journals like [Sustainability in Higher Education](#) have been established to foster dissemination and linkages between what is happening across the world.

Employment opportunities & growing demand

A key issue for many university executives, given the current financial constraints facing the sector, is whether there is or will be a demand for graduates with the sorts of capabilities identified above.

The 2010 Hanover Research report on embedding sustainability in the university curriculum (2010: 2) has predicted a significant increase in the demand for sustainability specialists in the professions. It found that:

- Interest in sustainability-related programs in universities has greatly increased in the last few years, indicating a positive shift in demand from students and employers.
- Over half of employers in the U.K. are looking to employ recent graduates who are socially and environmentally responsible. For the promotion, recruitment, induction, and training of staff in terms of social and environmental responsibility, larger businesses are the most demanding.
- According to the U.S. Bureau of Labor Statistics, employer need for graduates educated in concentrations related to sustainability is expected to increase at least 20 percent between 2008 and 2018. While the Australian labor market will not mirror that of the United States exactly, it is not unreasonable to assume that broad trends will be similar in both.

A 2010 UK study by Bone & Agomabar (2011) of 5763 students in UK universities found, inter alia, that:

- Overwhelmingly, skills in sustainable development are viewed as significant for employability and over 80% of respondents believe these skills are going to be important to their future employers.
- Sustainability concerns are significant in students' university choices.

- Opportunity exists to state the case for a contextual shift for curricula.
- 65% of respondents believe that sustainability skills should be delivered throughout the curriculum rather than through a separate module.
- 63% of respondents would sacrifice 1000 pounds from their salary to work in a responsible company.
- skills in sustainable development are slightly more relevant to students from Scotland, where there is a history of national policy in ESD.

Demand for sustainability-focused higher education courses is already building in the U.S.A.:

With an increased interest in the environment and growth in the "green collar" job sector, colleges and universities are beginning to incorporate sustainability into their programs. From MBAs in sustainable-business practices to programs that give students the technical training necessary to operate wind turbines, students have an increasing array of options to choose from.... David Soto of [The Princeton Review](#) says student interest is driving colleges to create programs that offer training in sustainability.

Two-thirds of students surveyed for the recent "College Hopes and Worries" survey said a college's "environmental commitment" would be a factor in where they applied... Students are really savvy shoppers these days, so they're realizing, with a changing economy and green jobs looking to take a leap within the next couple of years, that they want to be armed with those types of skills....

A [University of Pennsylvania](#) program that started this year lets students earn an MBA and a master's in environmental studies at the same time. ... Arizona State University's School of Sustainability graduated its first class in May. The school offers a bachelor of arts and a bachelor of science in sustainability as well as a graduate degree.... Kalamazoo (Mich.) Valley Community College will offer a 26-week program starting in October to train students in operating wind turbines.

[USA Today](#) 2nd August 2009

These developments in post-secondary and higher education are challenging the relevance of the traditional, individual subject, modularised, specialist, content-based, rigidly timetabled, lecture/tutorial focus and indicate the need for a new, more integrated, problem-based and real-world approach to learning.

3.4 Need for the present study

Change does not just happen but must be led, and deftly

A lot of universities mention sustainability – but there is a difference between saying ‘we are in favour’ and putting in place a process for implementation that makes sure it happens – this needs to span operational and governance dimensions and to cover the key change lessons identified in this and earlier studies – including engaging local staff, supporting them to make change work, providing them with concrete models that work for them to adapt to their context with a local ‘coach’, providing proper senior leadership and aligned resources, incentives, rewards and linkages to those addressing similar innovations in other contexts and universities.

(Senior university academic leader involved in the present study)

In spite of the broader change forces bearing down on universities and policy developments supportive of university action to address the four pillars of social, cultural, economic and environmental sustainability in not only their operations but their core activities of research, teaching and engagement, recent studies have found that much work is still to be done.

For example, the 2011 Global University Network for Innovation (GUNI) Report on Higher education in the world: *Higher education's commitment to sustainability Report*, found significant progress over the past decade in the area of campus operations and research but much less progress in embedding sustainability into the curriculum of universities across the world.

Tilbury (2011) and Lozano (2007) note that the lack of leadership development opportunities for higher education managers may go some way to explaining why progress towards sustainability in higher education has been piecemeal.

The 2010 Hanover report on embedding sustainability in the university curriculum in Australia concluded that (pgs 2-3):

- While many universities have signed declarations pledging support for sustainability initiatives, most have fallen short in regards to implementation.
- Most failed attempts to embed sustainability cite a lack of leadership, incentives, knowledge, and/or resources when trying to implement new programs.
- Findings from case studies suggest that support from top management for embedding sustainability is necessary to maintain a cohesive plan and implement it successfully; especially if used in combination with a range of ‘bottom-up’ approaches.
- Professional Development of academic staff is a major factor identified as contributing to a high rate of success in the effective implementation of EfS initiatives.
- Resistance from academic staff was most common when it became necessary to remove existing materials from the curriculum in order to make room for sustainability education.

This aligns with a key recommendation from the 2010 national forum on sustainability in the curriculum of US universities and colleges convened by the American Association for Sustainability in Higher Education (AASHE):

On many campuses, we now have individuals who have provided leadership and support to others in developing the EFS curriculum. In many cases that leadership has been informal and typically more noticed outside the campus than within it. Appropriate entities on the campus should recognize, formalize, and reward those individuals who have provided this leadership so that they have incentives to continue.

AASHE (2010: 9)

In Australia a national stocktake of sustainability in the curriculum, undertaken with Australian Government funding by the University of Western Sydney and the Australian Learning & Teaching Council in 2010, found that most universities had given attention to aspects of sustainability in their courses with this ranging from short courses, sub-majors, majors to degrees, double degrees and a range of post-graduate programs. However, there was little consistency, system or linkages evident. It was with this in mind that the national interactive website - www.sustainability.edu.au - was developed. This study also revealed patchy and widely varying approaches to leadership for the area and diverse interpretations of what sustainability means in higher education. A clear need for guidance on *what* can be done to embed sustainability in the curriculum and *how* it might best be led and supported both centrally and locally emerged. As the University of Melbourne’s Centre for the Study of HE concluded in its 2011 review of EfS in the university curriculum:

EfS policy and practice need to be better coordinated. While there is considerable enthusiasm for EfS, practitioners await engagement with academic leadership in taking the concept further.

Leihy & Salazar, J (2011: vi)

These findings are consistent with those from a range of earlier studies of change leadership in higher education both within and beyond Australia (Scott, 1999, Scott & Scott, 2003, Scott, Coates & Anderson, 2008, Fullan & Scott, 2009). All of these studies have shown that desired change in higher education doesn’t just happen but must be led, and deftly; and that the leaders of that process are typically untrained on how best to lead it or on what capabilities are necessary for it to be effective. We also know from these studies that change leadership requires a linked and ‘nested’ set of central, middle level and local leaders for any change effort to be effective. No empirical studies on this issue of the size, focus and scope of the present study of effective leadership in the unique and challenging context of EfS in universities and

colleges could be located. Given the ill-defined nature of the area in higher education and the limited amount of empirical research on effective change leadership for EfS, the present study has provided Australia with an opportunity to lead the world.

The fact that the study has been undertaken in a partnership with two internationally well respected leaders of EfS in HE – one from North America and the other from the UK - has provided a unique opportunity to access and work with change leaders of EfS across a range of higher education contexts including Canada, the USA, the UK and the European mainland as well as in Australia and New Zealand.

It was for this combination of reasons that this study has been undertaken. A key factor underpinning our approach has been to acknowledge that excellent practice in change leadership for EfS in our universities and colleges is already occurring across all of the countries studied but that it is now necessary to identify, illuminate, make sense of, link and leverage what has, hitherto, been developed in pockets so that all can benefit.

It is very important to note that the focus of the study is on experienced leaders of EfS. This is in recognition of the fact that, as Alan Tough (1977) discovered in studies of adult learning over a number of decades starting in the 1960s, the key resource for professional learning is having access to what an experienced person in the same role who is further down the same change path has learnt works best.

In summary, there is a lot of talk about change in higher education teaching and learning – about the ‘what’ of change. This project meets the government’s priority of ensuring that the many ‘good ideas’ being proposed for EfS in our higher education institutions actually get led into effective practice, are scaled up and sustained.

The key unifying themes for the Study are, therefore:

‘Good ideas with no ideas on how to implement them are wasted ideas’
(Fullan & Scott, 2009)

and

‘Change doesn’t just happen in higher education but must be led, and deftly’

4. Key terms & concepts

One of the key findings in this study is that there is great variation in the meaning attributed to common terms like:

- Change vs progress
- Education for Sustainability
- Sustainability in Higher Education
- Leadership vs management
- Capability vs competence

If terms and concepts like these are not clarified at the outset to ensure that everyone is using them with the same meaning then the EfS change process can stall because people will find themselves talking at cross purposes.

The way in which key terms are used in the current study is given in Attachment One.

5. The study's conceptual frameworks

5.1 Sustainability in Universities

Diagram 5.1 provides a comprehensive picture of the ways in which a focus on social, cultural, economic or environmental sustainability can be addressed in a university

Diagram 5.1: An overall framework for sustainability in Higher Education



Seeking to address EfS in the curriculum (section 3(b) in the above diagram) inevitably involves the sustainability leader in having to work on and with all of the other components identified in Diagram 5.1. And it is this interlaced and complex web of areas that have to be taken into account and linked that creates such a challenge for the EfS leader.

A recent study of developments in this area in UK higher education by Ryan (2011) for the HE Academy shows this. It identified four key areas of challenge:

Most Intractable Challenges

“Each case study discusses and localises the main difficulties faced by curriculum leads and whilst the circumstances are particular to each institutional ‘journey’, certain issues arise in comparative view:

- ***Creating unified understanding around ESD:*** the complexities of ESD at HE level mean that bringing together shared strategic intent is extremely challenging, on two fronts: i) resolving the different interests and aims of several institutional functions; and ii) outlining academic approaches that encourage institution-wide engagement whilst also protecting academic diversity and freedom. (this involves, inter alia, ‘empathy’ for the different HE ‘tribes’).
- ***Developing connected strategies across the organisation:*** each case study worked towards curriculum change within a ‘whole institution’ approach and noted many benefits of this. Nonetheless, the sheer scale and reach of central strategies and operations meant that problems were encountered, in identifying the right targets for intervention within the institutional mainframe and in generating coherent and mutually supportive alignment with other thematic educational priorities.

- **Alignment with institutional Teaching and Learning functions:** the case studies show the importance of integration with central processes to enhance teaching and learning – in two cases difficulties were noted in building collaboration and achieving more connected positioning within the institution.
- **Content overtakes pedagogy:** in all the case studies, the relative ease of achieving changes in course ‘content’ was noted. This was likened to a reflex action in ESD, which then heightens the challenge of communicating the rationale for and benefits of focusing on innovative critical pedagogies.”

Ryan, 2011: HEA (2011) Findings 3.3

In a 2012 study of leadership of sustainable improvement in university teaching and learning Devlin et al, 2012 found that ‘context counts’ for effective leadership. They cite Marshall (2006):

Recognition that ‘(a) different circumstances require different patterns of behaviour (or qualities) for a leader to be effective; (b) that a dynamic interaction between leader and context will shape the nature of leadership ... [and] (c) that context and circumstances place different demands, constraints and choices on leaders’ (Middlehurst, 1993, p. 20).

So, for Marshall (2006) building leadership capacity from a contingency perspective ‘... is as much a process of developing the organisation as it is one of developing the professional knowledge and skills of those called to leadership positions’ (p. 3).

Devlin et al (2012) conclude

The project team recognises that within Australian higher education there are many variances and differences in terms of institutional context. The guidance provided through this project acknowledges that leadership for sustainable improvement in the quality of teaching and learning needs to be anchored and interconnected in the context in which it occurs:

... the effectiveness of leaders depends, more than is generally realised, on the context around them. Over time, the leader’s capability is shaped by the top team’s quality, and by the capabilities of the full organization. These can either provide invaluable support for the changes a leader wants to make or render those changes impossible. Hence the best leaders pay a great deal of attention to the design of the elements around them: They articulate a lucid sense of purpose, create effective leadership teams, prioritize and sequence their initiatives carefully, redesign organizational structures to make good execution easier, and, most importantly, integrate all these tactics into one coherent strategy.

(Wheeler *et al.* 2007, p. 1)

Additional research on this area comes from: Avery, G & Bergsteiner, H (2010), Bergquist, W & Pawlak, K (2008), Fullan, M (2001), Julius, D et al (1999), Kezar, A (Ed) (2005), Kirp, D (2003), Moore, J (2006), Schein, E (1999), Segal, P & Freedman, G (2007), McMillin, J & Dyball, R. (2009) and Axelsson, H & Sonesson, K (2008).

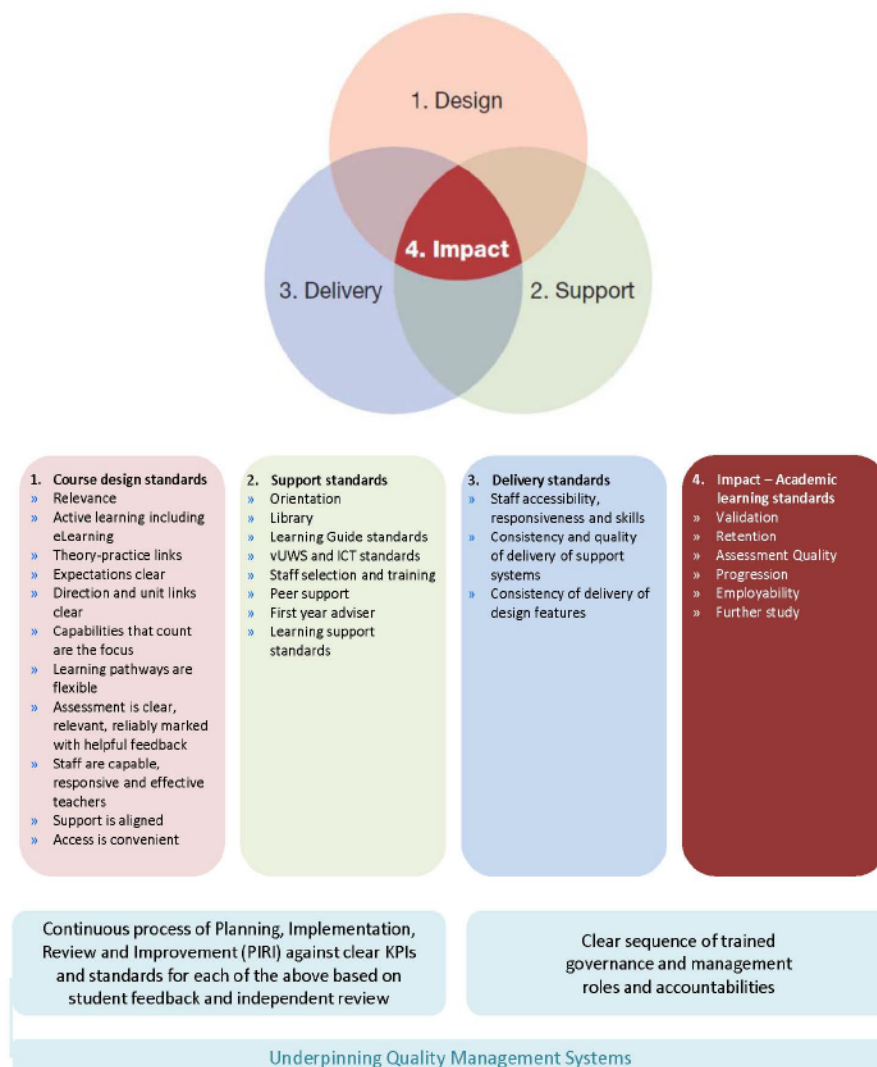
5.2 Effective learning in Universities

A key component of the skill set for the effective leader of EfS in universities and colleges is to understand what optimises student engagement in productive learning and retention in higher education. Diagram 5.2 brings together hundreds of research and analysis reports on the area (see, for example, Scott 2008). Its lessons apply equally to student learning and staff learning in universities⁸. The framework has

⁸ For studies of effective staff and leadership learning in higher education see Marshall, J, Coleman, G & Reason, P (2011), Scott, Coates & Anderson (2008).

recently been endorsed as being comprehensive and valid by the Australian Universities Quality Agency and by a national meeting of Vice-Chancellors and DVCs.

Diagram 5.2
Framework for assuring academic standards and quality in
University Learning & Teaching



The framework has two components. The top half identifies *what* needs to be given focus when seeking to assure the academic standards and quality for learning, teaching and assessment in EfS. The lower half represents *how* a University can go about ensuring that these standards are applied, tracked and improved consistently and effectively. It is the careful and consistent attention to both areas that will provide for effective academic quality management, improvement, implementation and assurance in EfS.

The top section of the framework has the four interlocking domains, each with its own set of standards and quality checkpoints:

- (1) Course design
- (2) Learning support
- (3) Delivery
- (4) Learning outcomes and assessment (impact)

Whereas domains one and two in Diagram 5.2 are concerned with assuring the quality and standards of *inputs*, domains three and four focus more on the quality of *outcomes*. The key test of learning and teaching quality and standards resides in the fourth domain (achieving a demonstrably positive impact on the capabilities that count for our graduates having productive careers and contributing to a socially just and sustainable future).

This framework distinguishes between (3) teaching (what teachers do) and (4) learning (what learners do). In this context, ‘learning’ concerns the extent to which the capabilities and competencies of students have developed in a desirable (professionally and socially relevant) direction over the course of their studies.

Because of this, giving focus to validating course-level learning outcomes (4) using a suite of agreed external and institutional reference points is a key *first* step in course development. Each university can then design engaging courses (1) against these validated learning outcomes to build student achievement progressively while ensuring that there is aligned support (2) and consistent delivery (3). In doing this, the institution aims to ensure that design, support and delivery decisions are not only relevant but also aligned, mutually reinforcing, outcomes-focused and evidence-based.

Every component of the framework in Diagram 5.2 comprises those empirically determined quality checkpoints known to optimise the retention and engagement of students in productive learning. Specific focus is given to ensuring that every staff member – academic or professional – can see what contribution their role makes in helping to retain and engage students and that they are acknowledged for excellence in that work.

The framework recognises that what matters to students is the combined and consistent quality of all four domains in Diagram 5.2 (that is, *the total university experience*) and that it is the extent to which the validated standards in all four areas are delivered, monitored and improved effectively and consistently that determines the quality of graduates.

When new programmes are designed using the framework, concurrent attention must, therefore, be given to the standards identified for all four areas. For example, as courses, including those concerned with EfS, are designed (1) close attention is necessary to ensure that they are relevant to real world practice, give focus to problem-based, integrated, case-based learning, ensure active learning, foster team based work, show clear and consistent links between practice and the underpinning theory, make clear that what is being given focus is the development of the capabilities that will count for subsequent professional and societal effectiveness, that they have experienced staff who are responsive, competent in the area taught and effective teachers, and that all of the learning experiences built into each unit of study enable students to successfully address integrated, problem-based assessment tasks.

Of particular significance in the area of EfS is to intentionally use the campus as a living laboratory for both formal and informal learning about social, economic and environmental sustainability. This is one way in which building EfS effectively into the curriculum can be linked to the other HE sustainability components in Diagram 5.1. This quite new approach to active learning in our universities and colleges is in recognition of Bill Spohn’s (2003) observation that people are more likely to act their way into new ways of thinking than think their way into new ways of acting. This, in turn, echoes the old Chinese proverb: “I hear and I forget, I see and I remember, I do

and I understand” along with John Dewey’s (1933) early 20th century approaches to active, real-world, problem-based learning and reflection.

Again, in terms of ensuring aligned support (area 2 of Diagram 5.2), if a course design includes interactive, online learning, the capacity of the university’s ICT support systems and infrastructure to deliver this reliably and effectively must be confirmed before the course is approved (2). Similarly, if the course requires staff with a particular profile, their availability to deliver the course must be confirmed before the course is approved. This is why the circles in Diagram 5.2 are shown to overlap and is a good example of how systems’ thinking is necessary to optimise the quality of EfS in education.

A key resource in the most effective courses is the provision of a learning guide for each unit of study. These self-teaching guides first identify the capabilities to be developed and then give the assessment tasks that will be used to measure this development, along with specific explanation of how grading works, with examples. Finally, each self-teaching guide then tells the students how the various learning experiences and resources built into the unit will help them complete their assessment tasks. Peer support has been consistently found to be a key ingredient and its use to enhance retention needs to be leveraged in each program, especially the use of experienced students from the same equity group as mentors for those just starting out.

5.3 Effective change implementation

‘Insanity: doing the same thing over and over again and expecting different results’
Einstein.

Far more attention goes into deciding what should change in higher education – for example into how to embed sustainability into the curriculum – than goes into figuring out how to make these desired changes actually work in practice – consistently, effectively and sustainably. Yet the key lessons on how to foster effective change implementation in education have been available for decades.

“In the mid 1970’s, the [Rand Corporation](#) conducted a national study of four federally funded educational programs “intended to introduce and support innovative practices.” The Rand researchers examined a sample of 293 local projects funded by these four federal programs in 18 states. This so-called “Change Agent” study remains the paragon of all “implementation” studies. According to Milbrey McLaughlin (1990), one of the principal investigators on the Change Agent study:

“...the following strategies generally were seen to be **ineffective**:

- reliance on outside consultants
- packaged management approaches
- one-shot, pre-implementation training
- pay for training
- formal, summative evaluation
- comprehensive, system-wide projects

The following strategies generally were **effective**, especially when applied in concert:

- concrete, teacher-specific and extended training
- classroom assistance from local staff
- teacher observation of similar projects in other classrooms, schools, or districts
- regular project meetings that focused on practical issues
- teacher participation in project decisions
- local development of project materials
- principals’ participation in training (p. 12)”

At: <http://edinsanity.com/2008/07/15/change-and-mutual-adaptation/>

Key lessons

Two decades of specific research and involvement with the effective implementation of innovations in higher education (Fullan & Scott, 2009) has identified the following key lessons which are consistent with the Rand study. They were discussed and endorsed at the Sustainable Futures Leadership Academy meeting of world Higher Education Leaders of Sustainability in Salzburg in February 2012:

- Focus on small number of agreed priorities.
 - Ensure that the people who will implement these change priorities agree they are relevant, feasible, desirable and clear.
 - Engage staff by first undertaking a stocktake of current practice using an agreed framework to locate what is already underway and then to link those who are involved in the same area of innovation.
 - Build on this stocktake by using a process of ‘steered engagement’ to involve and support additional numbers of staff to learn how to make the desired changes work with a specific focus on using the experienced practitioners identified in the stocktake as a key source for mentoring. A key component of this process is, as the Rand Study found, to allow for local adaptation:
 - successful innovations occurred when planned curricula were not highly specified or packaged in advance but were mutually adapted by users within specific institutional settings (Bermin and McLaughlin, 1975).
 - Recognise that change is not an event like the launch of a new EfS policy or curriculum document but, instead, is a complex learning and unlearning process for all concerned. In acting on this finding we need to apply the same learning principles with staff that engage students in productive learning. These productive learning (change implementation) principles include assuring:
 - Relevance;
 - Active learning, in particular using ongoing access to those who, elsewhere, have successfully implemented the innovation at hand;
 - Continuous theory practice links;
 - That expectations of what can be achieved, the directions and stages in which the change will unfold and how success will be measured are clear and agreed from the outset;
 - That the staff who are involved in the change have the capabilities and ongoing support necessary to implement it;
 - Building the capabilities that will count for effective and sustained implementation of the desired change;
 - Learning times and locations for capacity building are convenient and focus on learning which is ‘just-in-time’ and ‘just-for-me’;
 - Access is provided for staff to proven solutions that have worked elsewhere;
 - Assessment of progress during implementation is ongoing and is used for continuous improvement;
 - That the infrastructure, systems, administration, resources necessary to support implementation of the change are identified at the outset and put in place.
 - Ensure that all decisions are evidence-based – i.e. that there is consensus on what to do, which is based on robust data not simply on anecdote or ‘group think’.
 - Build a culture which gives focus to working collaboratively, looking for areas that are not working and recognising that change unfolds in a rising spiral of implementation, review and enhancement rather than in a rigid linear fashion.
 - Ensure that everyone who plays a role in the change is identified and acknowledged for their contribution and importance in ensuring successful, sustained implementation.
-

Leaders successful at applying these lessons

Fullan & Scott (2009) have identified that the higher education leaders who are most effective in applying the above change lessons:

Listen, link then lead always in that order.

That is, successful leaders consistently *listen* from the outset to those who are essential for implementation. And they do this with focus. This includes providing a rationale for change and options that have proven successful in addressing the change at hand elsewhere. Listening with a framework involves asking those who are to implement the change what they think, on the evidence given, would be the most relevant, desirable and feasible (achievable) way to address it. *Link* involves bringing together the most common responses generated during the listening phase. And *lead* involves helping those who are to implement the change to learn how to do it. This listen – link – then lead approach is consistent with the notion of ‘steered engagement’ (Fullan & Scott, 2009: 85-88).

Model, teach and learn

That is, the most effective leaders personally model the attributes of a change capable culture to their staff - especially how to behave when things go wrong or the unexpected happens. Like successful early career graduates, effective tertiary leaders have high levels of emotional intelligence and display a contingent, diagnostic way of thinking. In modelling these capabilities they show others how to manage change and uncertainty in a constructive, collaborative, focused and practical fashion.

Equally, the most effective leaders are constantly trying to improve their own practice and capabilities (i.e. to learn). They do this by using the professional capability framework outlined in Diagram 5.4 and the results from studies of successful HE leaders, along with carefully developed networks of fellow practitioners (Scott, Coates and Anderson, 2008).

If both central and local leaders intentionally model the personal, interpersonal and cognitive capabilities identified as most important for effective adaptability, resilience and leadership of EfS in the present study then other staff pick this up as ‘the way we do things around here’. And it is in this way change capable cultures are built not by talk or policy launches but by showing people what works.

Everyone is a leader in their own area of expertise and responsibility

It is a myth that leadership only resides with the most senior people in a university. In fact no change happens if local leaders, like heads of school, local managers and heads of program, do not actively engage with a desired change and help their staff learn how to do it.

Our capability is most tested when things go wrong or the unexpected happens

This is when we learn most and our capabilities as a leader are most tested. The specific findings on the capabilities that count for every Learning and Teaching leadership role (Scott, Coates & Anderson, 2008) have been used successfully for targeted, role-specific and immediately relevant support programs.

5.4 Leadership capability in higher education

The concepts of ‘capability’ and ‘competence’

Before explaining how the study’s leadership capability framework works, it is important to distinguish between the terms ‘capability’ and ‘competence’ as they are often incorrectly used interchangeably:

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 & Anderson, 2008: 12)

The project's leadership capability framework

Diagram 5.4 presents the validated leadership capability framework which has guided the present study. It has been developed and validated in a wide range of educational change leadership and successful graduate studies over the past 20 years. These include:

Studies of successful change leaders in education

In School Education: Scott, G (2003), Fullan, M (2006), Hargreaves, A (2007), Pepper, C & Wildy, H (2008), Pepper, C & Wildy, H (2009)

In Colleges: Scott, G (1999), Coates, H et al (2010), Centre for Excellence in Leadership (2007)

In Universities: Scott, G, Coates, H & Anderson, M (2008), Montez, J (2003)

Studies of leaders of sustainability in non-educational contexts

Ferdig, M (2007), Harford, Tim (2011), Parkin, Sara (2010)

Studies of successful professional and vocational practitioners

Goleman, D (1997), Schön, D (2003), Scott, G & Saunders, S (1995), Vescio, J (2005), Scott, G & Yates, K (2002), Scott, G., Chang, E., & Grebennikov, L. (2010), Wells, P et al (2009), Scott, G & Wilson, D (2002)

Research on the importance of organizational culture, focus and structures

Avery, G & Bergsteiner, H (2010), Bergquist, W & Pawlak, K (2008), Fullan, M (2001), Julius, D et al (1999), Kezar, A (Ed) (2005), Kirp, D (2003), Moore, J (2006), Schein, E (1999), Segal, P & Freedman, G (2007). McMillin, J & Dyball, R. (2009). Axelsson, H & Sonesson, K (2008)

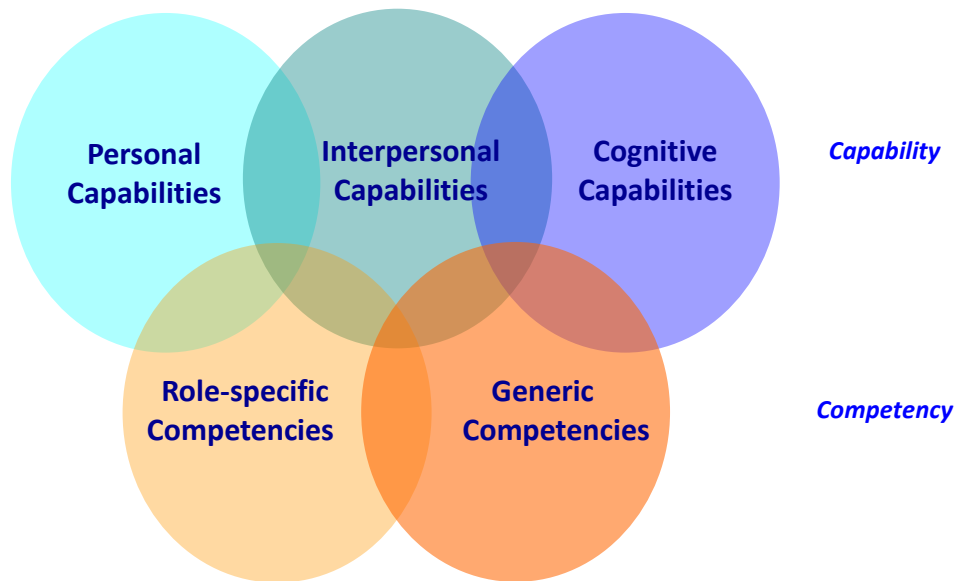
Studies of effective approaches to leadership development for sustainability in HE

Marshall, J, Coleman, G & Reason, P (2011)

The framework is comprised of five interlocked domains of capability – emotional intelligence (personal and interpersonal); cognitive capability; generic skills and knowledge; and role-specific skills and knowledge. Each domain consists of a range of specific capabilities identified in all of the studies completed to date as having an important role to play in effective professional performance and educational leadership.

The capability items in the survey at Attachment 3 identify the specific attributes in each of the five domains in Diagram 5.4.

Diagram 5.4
Leadership capability in higher education



The present study has sought to investigate and validate further these capabilities and domains and to analyse their relative importance in accounting for effective leadership performance in the distinctive area of EfS.

The key dimensions of capability and competence as an EfS leader

The scales and items that make up each of the capability dimensions identified in Diagram 5.4 are as follows, with the personal and interpersonal capability scales having considerable alignment with Goleman’s (1998) concept of emotional intelligence.

Table 5.4 A: Personal capability scales and items

Scale	Item
<i>Self Awareness</i>	Deferring judgment and not jumping in too quickly to resolve a problem
	Understanding my personal strengths and limitations
	Admitting to and learning 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
<i>Decisiveness</i>	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
<i>Commitment</i>	Having energy, passion and enthusiasm for learning and teaching
	Wanting to achieve the best outcome possible
	Taking responsibility for program activities and outcomes
	Persevering when things are not working out as anticipated
	Pitching in and undertaking menial tasks when needed

Table 5.4 B: Interpersonal capability scales and items

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

Table 5.4 C: Cognitive capability scales and items

Scale	Item
<i>Diagnosis</i>	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
	Identifying from a mass of information the core issue or opportunity in any situation
<i>Strategy</i>	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
<i>Flexibility and Responsiveness</i>	Being able to identify the best way to respond to a perplexing situation
	Setting and justifying priorities for my daily work
	Adjusting a plan of action in response to problems that are identified during its implementation
	Making sense of and learning from experience
	Knowing that there is never a fixed set of steps for solving workplace problems

Table 5.4 D: EfS leadership competency scales and items

Scale	Item
EfS Expertise	Having high-level, up-to-date knowledge of relevant current developments in other tertiary education institutions.
	Understanding how to develop an effective HE program
	Being on top of current developments in EfS
	Knowing how to develop and report on key EfS Metrics.
Management	Understanding how to design and conduct an evaluation of a higher education learning program
	Understanding how to identify and disseminate effective learning and management practice across the institution
	Understanding how to implement successfully a new higher education program
	Being able to help my staff/faculty learn how to deliver necessary changes effectively
University Operations	Understanding the role of risk management and litigation in my work
	Understanding how universities operate
	Understanding of industrial relations issues and processes as they apply to higher education
	An ability to chair meetings effectively
	Having sound administrative and resource management skills
Self-organisation	Being able to manage my own ongoing professional learning and development
	Being able to use IT effectively to communicate and perform key work functions
	Being able to organise my work and manage time effectively
	Being able to make effective presentations to a range of different groups

6. Methodology

6.1 Overview

This study essentially replicates the methodology used in the earlier *Learning Leaders in Times of Change* (Scott et al, 2008) and the *Leading Professionals in Australian Tertiary Education* (Scott & McKellar, 2011) studies, along with earlier investigations of effective principals in school education.

It has involved the development, validation and delivery of an online survey followed by a series of sector and respondent feedback workshops which have critically appraised the veracity of the findings and identified their key implications for improvement action. This process has been supplemented by a wide range of parallel semi-structured interview meetings and workshops with key EfS players from across the world in which the study's research questions were explored in a more open-ended way.

Semi-structured interviews

A small number of semi-structured interviews was undertaken to prepare and follow up on the qualitative data generated by the survey.

Findings from this empirical work have informed the stage two feedback workshops from the sector and underpinned the development of a suite of learning resources for subsequent dissemination in the higher education communities of the participants.

6.2 The study's online survey instrument

Validation & contextualisation of the survey instrument

The project survey (Attachment 3) is based on the instruments successfully deployed and validated in leadership studies for the ALTC and other educational systems.

The project team and national steering committee reviewed the available literature on leadership for sustainability in higher education and have used the semi-structured workshops and feedback from a wide range of networks to ensure that the final instrument was comprehensive, specifically relevant to EfS leadership in higher education and valid.

The objective of the validation phase was to ensure that the wording of survey items was accessible, unambiguous and meaningful to the target group and that the items covered not only all of the key areas identified in earlier studies and in the EfS leadership literature but also the input from the project team's national and international networks in the area.

The studies used to validate the approach, methods, focus and data-gathering strategy adopted in the project were identified in Section 5.4.

Structure of the EfS leadership survey

The instrument is completed online and generates both quantitative and qualitative data. In the quantitative sections respondents rate items on importance and/or performance using a five point Likert scale (1 – low to 5 – high).

Respondents are invited to complete the following sections of the survey:

- relevant demographic data;
- the nature of their EfS leadership role,
- identification of an analogy which describes what it is like to be a leader for EfS in the role concerned.
- the key influences on their EfS leadership role.
- identification of key role challenges and areas of satisfaction, along with a brief description of a situation experienced over the past six months when the respondent's leadership capabilities were most tested and how s/he resolved it.
- the criteria they use to judge they are performing their EfS role effectively and areas they would most like to develop
- rating of a set of leadership capability items sorted using the five capability domains identified in Section 5.
- rating of the comparative quality of the different forms of EfS leadership development experienced to date by each respondent and their importance and contribution to current leadership capabilities (1-low to 5-high).

Quantitative data are supplemented by extensive qualitative data generated through a series of open-ended questions on respondents' role, satisfactions, challenges and how to handle them, effectiveness indicators and support.

6.3 Workshops with EfS practitioners

Workshops have been held with a wide range of experienced EfS practitioners and university leaders in Europe, North America, the UK, Australia and New Zealand as a data source to complement that generated by the online survey. Their focus has been

on the key satisfactions and challenges in seeking to introduce EfS into universities and the most effective approaches to ensuring desired changes are effectively implemented.

The results of these workshops have been triangulated against the findings for the same issues from the TLSHE survey. Some 200 practitioners participated in these workshops over the early stages of the project and a further 300 in the workshops that reviewed the veracity and implications of the survey results themselves.

6.4 Identification of Effective EfS Leaders to Participate in the Study

This followed the proven methodology used in the Learning Leaders, VET and School Education research. It involved key contacts in those partner universities and four year colleges within and beyond Australia already active in addressing the EfS agenda identifying the senior, middle level and local leaders that had played a key role in achieving successful implementation of the EfS initiatives being undertaken.

The roles included: Deputy Vice-Chancellor (Academic); Pro Vice-Chancellor (Learning & Teaching or equivalent); Heads of Research Centres with an EfS component to their work; Dean; A/Dean (Learning & Teaching); Head of School (or Department); Director of Sustainability; professional staff with an EfS leadership role; and informal local academic leaders of sustainability. It is important for North American readers to note that when the term ‘staff’ is used in the report that follows this includes academic not just professional/support staff.

Respondents came from Australasia, North America, the UK, Europe and small selection of other countries. The nature of the response sample is discussed in Section 7.

The criteria for nomination of these effective leaders included: demonstrated record of successfully delivering EfS projects and quality improvements on time and to specification; positive perceptions of them as leaders by staff, clients and supervisors; and evidence of a commitment to their own professional growth and that of others.

6.5 Data Analysis

Data analysis addressed each of the study’s target questions and included:

- The use of range of psychometric methods to further validate the identified leadership capabilities, and to calibrate the measurement properties of the instrument.
- Analysis of relationships among capabilities and other sections of the survey along with data generated from participant workshops.
- Analysis of frequencies and likelihood ratios to determine the relative importance of the capabilities.
- Cluster analysis to uncover different approaches to leadership.
- Statistical analyses to review the distribution of capabilities across HE roles and contexts and to identify priority areas and approaches for developing academic leadership.
- Analysis of the extensive qualitative data generated in the project using thematic analysis techniques informed by the study’s conceptual frameworks supplemented by the use of word-cloud software to present the results graphically.

6.6 Presentation of the results

This report presents summary statistical and qualitative data.

First, overall patterns in the results are noted.

Then areas of significant difference are identified for a range of relevant sub-sorts in the data on the following variables:

- gender
- region of the world
- role type and scope
- years in role
- institution type
- institution size

Finally, significant differences between the TLSHE findings and those of the Learning Leaders and Professional Leaders studies were explored.

It is important to keep in mind when interpreting the quantitative data that a difference between means of 0.5/5 is necessary to be significant⁹; and to remember that any means over 4/5 identify an area of high importance, irrespective of their rank¹⁰.

7. The nature of the response sample

When considering the implications of the findings outlined in the sections to follow it is important to take into account the nature of the online survey's response sample.

Response rate

A response rate of 47% was achieved.

Regional spread

The TLSHE contact process generated completed surveys from 188 leaders of sustainability in colleges and universities across all of the target regions.

69 respondents were from Australia, 9 from New Zealand, 47 from the USA, 9 from Canada, 23 from the U.K., 26 from the European mainland and 3 from Africa. A small number of additional respondents came from countries like Mexico and Russia.

Gender

56% of respondents were male and 44% were female.

Age

7% were under 36 years of age; 18.5% were aged 36-45; 40% were aged 46-55; 27.5% were aged 56-65 and 7% were aged over 65.

⁹ The standard deviation of the 5-point scale scores normally ranges between 0.75 – 0.95, thus, based on the “effect size” measure any pairwise differences between means of 0.35 points or more may be of interest as they represent a margin of at least a fifth of a standard deviation. Based on the t-test and given sample size any pairwise differences between means of 0.5 points or more will be statistically significant at the 5 percent level or less.

¹⁰ This is because a mean of 4 or above out of 5 on a five point Likert scale means that more respondents are marking agree or strongly agree than neutral, disagree or strongly disagree.

Disciplinary background

In terms of disciplinary background

- 16.5% of respondents came from a mix of agriculture, environmental studies, ecology, built environment, geography and global studies;
- 12% came from a mix of architecture, building, engineering, technology, IT and Industrial design;
- 20% came from education;
- 5% came from a mix of philosophy, ethics, political science, public policy, religious studies and sustainable development
- 11% came from business, management, commerce and law;
- 18% came from the natural and physical sciences, biological anthropology and health;
- 15.5% came from a mix of society, culture, archaeology, arts, visual arts, creative design, communications, media and journalism;
- the rest were either unspecified or reported coming from a wide mix of disciplines or being from a non-academic background.

Type and size of institution

16.5% of respondents came from a university or college that was research-focused; 20% from one that was teaching-focused and 60.5% from one that had a balance of teaching and research; with the remainder coming from institutions with a particular focus on areas like engagement or international links.

61% of respondents' institutions were multi-campus.

21% reported coming from institutions with less than 10,000 students; 21% with between 10,000 to 20,000 students; and 46% from institutions with more than 20,000 students. The remainder were unspecified.

Role, scope & focus

Dozens of specific position titles were identified by respondents. The role clusters and response rates used in the study are as follows:

- 7.5% of respondents were from senior leadership roles like VC; Rector; DVC, President; Vice-President; Provost; PVC (Sustainability).
- 17.5% were from roles including Dean; Department Head; Head of School; Department Coordinator.
- 16.5% were from roles including Director; Executive Director; Associate Director or Associate Head of School; Deputy Dean.
- 35% were from roles including head/director of program; course coordinator; course leader; curriculum/committee/task force chair; EfS or green university coordinator.
- 6% were from the professional/general staff area including being a faculty or sustainability manager; outreach coordinator; sustainability office head; sustainability education officer; staff member in a T&L centre with responsibility for EfS.
- The remaining 17.5% reported being from a range of local informal academic leadership roles including being a faculty member or lecturer active in the area; professor; emeritus professor; adjunct professor; or an EfS researcher.

54% of respondents reported that their role had an institution-wide scope; 37% reported that their focus was program or department specific and 7% a mix; with the remainder reporting other sorts of roles – e.g. as the leader of a national student union).

20% reported that the primary focus of their role was on instituting new EfS programs; 29% as having a focus more on reforming existing programs; 11% as giving focus to

Higher Education Sustainability leader analogies

Most common analogies

- Cat herder
- Tight rope walker/juggler of multiple perspectives and agendas
- Swimming or sailing upstream, against the tide (at times with one paddle)
- Waving a flag from the back of a crowd

Senior EfS leaders

- Gardener
- Captain of a large ship
- A translator, intellectual broker
- Quilter
- Orchestra conductor/director a choir
- Teacher, coach, guide of a diverse group
- Carer, a parent, or a guardian
- Diplomat

Local leaders

- Jumping into deep water, learning to surf, white water rafting
- Leading a dynamic start up company; kindling fires
- Being Tonto with the Lone Ranger at a bank-robbers' convention
- A bird that sings but no-one listens; dancing by myself; a lone voice in a sea of consumerism
- Trying to interest people who like junk food in a healthy diet
- Trying to sell hungry lions a fruit salad
- Learning Spanish but finding myself in China;
- Being a competitor on American idol
- Being Stephen Bradbury winning gold at the Winter Olympics
- Sisyphus, pushing a wheelbarrow of frogs down a steep hill
- Pinning jelly to the wall; drawing treacle from a well, pushing rope
- Weaving water
- Being asked to make trifle with no bowl and a changing recipe
- Preaching to the converted
- Trying to motivate learning in a class of students with incredibly diverse backgrounds, attitudes, motivations and abilities
- Riding a unicycle on a rollercoaster while juggling knives and flaming batons
- Running a long distance Olympic race
- Living in a Kafka novel
- Being a Buddhist monk – grounded and of no-self
- Drinking from a firehose
- Being an opportunistic species
- Having a doctorate in cheerleading

These analogies capture the complexity, constantly shifting, diverse, non-linear and loosely-coupled nature of the world of EfS change leaders in higher education. The analogies of more senior leaders (e.g. 'conducting an orchestra') indicate a greater sense of efficacy than those of local leaders (e.g. 'swimming against the tide', 'waving a flag from the back of the crowd' or 'being a competitor on American idol'). All of the analogies confirm that change in this, like all areas of higher education, is always a function of being able to work with a diverse and constantly shifting range of change forces, many of which are beyond the control of the individual but can be negotiated and others which are amenable to personal influence and can be reshaped to be more supportive.

The analogies identify a recurring set of leadership challenges which are taken up later in this Section - challenges like figuring out how best to engage the disengaged, how to deal with passive resistance, operating outside of a mainstream role, having to work with diverse institutional 'tribes' and world views and how to influence the action when one is not at the 'high table' of decision-making.

The phase 2 project workshop participants observed that the analogies indicate that some EfS leaders are responding to this world with a sense of frustration, isolation, threat, or being overwhelmed, whereas others see the uncertainty as an opportunity for collaborative action. Some cast the role as being a broker between different worlds, others see it as being more about long term perseverance. They noted a sense of there being a 'disconnect' between the central and local leadership roles and that local leaders find themselves in a more reactive mode than those in more senior ones. As one phase two leader observed: 'Some have a sense of adventure and challenge; others give more of a sense of being overwhelmed. All indicate having to negotiate forces often beyond your control (and) they all indicate having to engage and leverage the efforts of others'.

The 188 EfS Leader analogies generally align with those provided by the 513 academic leaders who participated in the earlier ALTC Learning Leaders Research (Scott, Coates & Anderson, 2008: 50) and those provided by the 159 middle and senior professional leaders in Australasian Tertiary Education in 2011 (ATEM & Scott, 2011). In the tables below the results, first for the academic leaders and then the professional leaders, are shown. In the first cluster are the most common analogies from the leaders; the second set are those of the more senior leaders; whereas the later ones are from more local leaders like heads of department or program.

Academic Leaders' Analogies (2008)

- | | |
|--|--|
| <ul style="list-style-type: none"> • Herding cats • Getting butterflies to fly in formation • Juggling • Being a gardener • Conducting an orchestra/directing a play • Keeping a flotilla heading in the same direction • Being the captain of a sailing ship • Coaching a successful sporting team • Climbing a mountain together • Plumbing a building – essential but no one sees it • Being a diplomat • Wearing multiple hats at the same time • Being the older sibling in a large family • Working with a dysfunctional family • Being the minister of a church where only the converted come • Voting Labor in a safe Liberal seat • Match-making • Bartending | <ul style="list-style-type: none"> • Being a small fish in a large cloudy pond • Being a salmon trying to swim upstream • Rowing without an oar • Sailing a leaky ship - faulty bilge pump • Being the meat in the sandwich • Wading through a quagmire of bureaucracy • Pushing a pea uphill with my nose • Riding a bicycle on a tightrope • Having a Ferrari with no money for fuel • Being a one armed paper hanger working in a gale • Trying to nail jelly to the ceiling whilst trying to put out spot fires with my feet • Trying to drive a nail into a wall of blanc-mange – little resistance but not result • Being in groundhog day • Living in a medieval castle • Being a rubric's cube • Being in an Escher painting |
|--|--|

ATEM Leaders' Analogies (2011)

Below are the most common analogies across all professional leadership roles.

- juggler – of personalities, expectations, egos, eggs, priorities, chainsaws
- captain, navigator, mate on anything from a large ship to a small yacht
- ringmaster
- conductor of an orchestra (sometimes with the score, sometimes not)
- custodian, broker or gatekeeper
- coach of a team
- herding cats/corralling kangaroos/working with organised chaos

Other analogies identified by respondents include:

- taking a roller coaster ride
- a warehouse manager
- traffic cop
- building a plane while you are flying it
- being inside a dark warehouse
- fishing for sharks with a small hook
- hang gliding
- a cog in the larger mechanism of the institution
- in heaven
- being in a barn dance
- managing a medium sized business
- navigating a maze
- playing a game of twister
- coming professionally of age – now at the adult's dinner table
- trying to convince people to eat healthy food when fast food is so much more convenient
- whack – a – mole
- wrestling

Analogies identified by respondents which convey a significant sense of challenge or uncertainty include:

- trying to refloat half the Titanic
- nailing jelly to the wall
- seeing a mirage in the distance but never getting a drink
- swimming against the current
- being a gerbil in a running wheel
- being in the lyrics of Eleanor Rigby “ Father McKenzie, writing the words of a sermon that no one will hear”
- being in a nano-state with a micro manager
- wading through treacle
- being a wrangler on a cat farm
- joining a big family as a step-parent
- trying to maintain a sea of calm in an ocean of churning whirlpools

Implications

- All of the analogies indicate that change is inevitable and to varying extents unpredictable. They consistently indicate that what we do in such a constantly shifting context is always a mix of external forces and our ability to negotiate them deftly, usually in partnership with others. They also indicate that high levels of emotional intelligence are necessary to work productively with these processes and with those who are essential to the effective implementation of any EfS initiative.
- Phase 2 workshop participants observed that underpinning many of the analogies is the challenge of working with different worldviews and the need

for individuals and institutions to be both resilient and capable of constant adaptation.

- In such a context, said these participants, the best bet is to build the change capability and resilience of staff and those who lead them – by helping them understand that on some occasions you can change the context but on others you need to adapt to or negotiate your way through it; that change is rarely a linear process; and that no innovation will ever be fully implemented but will require constant monitoring and enhancement to keep it in alignment with its constantly shifting external operating context.
- Participants in the phase 2 feedback workshops noted that both the analogies and the data on key satisfactions and challenges were supportive to them personally as they aligned with their own experiences as EfS innovators and helped them to ‘feel we are not alone – that our experience of change is not unique’.
- In terms of the differences in the levels of efficacy that have emerged in the analogies between more senior and local leaders of EfS, the phase 2 participants suggested that it is important for local leaders to work strategically to engage senior leaders by aligning what is proposed to the key success indicators identified for these members of their university or college executive.

8.2. Important areas of focus in respondents’ EfS activities

Table 8.2 presents the overall ranking by respondents of the relative importance of different areas of focus in their EfS activities. The top 5 rating items are highlighted. These top ranking areas give important insights not only into the focus of EfS leaders’ work but, as we shall see, some of its key challenges and satisfactions.

It is useful to note that every item attracting a rating of 4 or more out of 5 identifies an important aspect of EfS leaders’ work and that much of these highest ranking areas entail a high level a capacity in building and sustaining relationships and engagement with EfS.

Conversely, any item attracting an importance rating of 3 or less out of 5 raises questions of its significance to the effective delivery of the role. In this way the findings can be used to help validate position descriptions for the area, especially when looked at in conjunction with the significant differences in role focus identified later in this section. It is often instructive to ask staff how much time they spend on the activities listed below and to identify the ones that take up a lot of time but are rated low on importance. A good example in this regard from Table 8.2 is responding to ad hoc requests. Having to attend an endless round of unproductive, poorly chaired meetings is another area often identified.

Table 8.2. Important areas of focus in EfS leaders' activities

How important do you believe each of the following activities is to the effective delivery of your role as an EfS leader in your institution?	Mean	Rank
1. Engaging senior institutional leaders with EfS	4.27	2
2. Engaging my institution's staff/faculty with EfS initiatives	4.34	1
3. Articulating the case for EfS to the institution	4.10	5
4. Securing student engagement and support	4.18	3
5. Marketing EfS activities	3.47	12
6. Liaising with external partners or stakeholders	3.53	10
7. Developing staff/faculty capacity to deliver EfS	4.05	6
8. Reviewing and supporting staff/faculty performance	3.18	17
9. Reviewing teaching of EfS	3.44	13
10. Undertaking scholarly research on EfS	3.53	11
11. Strategic Planning and/or policy development for EfS	4.11	4
12. Developing accredited higher education learning programs in EfS	3.94	9
13. Undertaking community and continuing EfS programs	3.33	15
14. Identifying and piloting new EfS initiatives	3.94	8
15. Developing organisational processes that effectively support EfS	4.03	7
16. General Administration and budget management	2.92	19
17. Responding to ad hoc requests	2.91	20
18. Participating in meetings	3.40	14
19. Chairing meetings	3.21	16
20. Defining and managing EfS metrics and reporting,	3.11	18

Significant differences in ratings x leadership role type, scope & time as a leader

Differences x role type

In terms of significant differences between means (i.e. differences of 0.5/5 or more) by respondents from the different leadership roles investigated in the study, informal academic staff leaders give significantly higher importance ratings to liaising with external partners or stakeholders and to delivering community and continuing EfS programs than others. Heads of Program give lower ratings to strategic planning compared to other EfS leadership groups. Senior leaders give significantly lower ratings to developing staff/faculty capacity to deliver EfS and to developing accredited HE learning programs than other leadership groups.

Differences x role scope

Respondents who reported having both a local and institution-wide role rate liaising with external partners and general administration and budget management lower than the other groups; and rate strategic planning and policy development lower than respondents with an institution-wide role. No other significant differences were identified.

Differences x time in role

Respondents who have been more than 10 years in an EfS leadership role rank engaging senior leaders in EfS lower than those who are just starting out. They also rate developing organisational process to support EfS lower than those who have more recently taken up an EfS leadership role.

Significant differences in ratings x institution size and type

Differences x institution size

Respondents from institutions with less than 10,000 students rate ‘articulating the case for EfS to the institution’ and ‘reviewing teaching of EfS’ significantly lower than respondents from institutions with over 10,000 students.

Differences x institution type

No significant differences in ratings emerged in this area.

Significant differences in ratings x region

Respondents from the European mainland rated ‘engaging senior institutional leaders with EfS’ much lower on importance than colleagues from North America, the UK and Australasia. They also rated ‘developing staff/faculty capacity to deliver EfS’ lower than respondents from the UK.

UK and North American respondents rated ‘undertaking scholarly research’ much lower than those from Europe and Australasia. UK respondents also rated ‘developing accredited HE EfS programs’ and ‘undertaking community and continuing EfS programs’ significantly lower than respondents from other regions.

Significant differences in ratings x gender

No significant differences in ratings emerged in this area.

Comparison with the results of earlier HE Leadership Studies

When the results for the TLSHE sample on this question are compared with the responses in the Learning Leaders and Professional Leaders studies we see that the TLSHE respondents give a significantly higher importance rating to staff development and policy development than respondents in the other two studies.

Predictably, much lower ratings are given by the Professional Leaders for areas like program accreditation and development, market identification and research compared with the Learning Leaders and TLSHE groups. Conversely the Professional Leaders give significantly higher ratings to areas like reviewing performance and responding to requests for information and decision. Respondents in the Learning Leaders study gave significantly lower ratings to areas like ‘collaborating within your institution’ than respondents in the other two studies. High and similar ratings are given by all three groups to areas like strategic planning.

Implications and suggestions for follow up

These results can be used to review and confirm the validity and the focus of position descriptions and workloads. It is important to note that a high ranking item in some cases might simply indicate what usually takes up a significant amount of respondents’ time. It may not, therefore, automatically mean that this is the most productive use of that time, as we will see when challenges and dissatisfactions are discussed later in the report. For this reason a mapping of focus against identified satisfactions x role is recommended.

8.3. Key satisfactions & challenges as an EfS leader

Diagrams 8.3.1 – 8.3.3 present what respondents said in their open ended comments on the key satisfactions and challenges in their EfS leadership role in the form of a word cloud¹¹.

Key satisfactions: indicative comments (direct quotes):

- Communicating and building relationships with others. Creating meaning and relevance for others; engaging and empowering others.
- Community partnerships where I know our research/work will make a significant difference and where I can mentor students as I collaborate with them
- Developing experiential components that focus on sustainable practices and the shaping of attitudes and behaviors directed more towards achieving long term goals that empower individuals to rethink the definition of citizenship and community.
- Engaging minds to think positively.
- Having students (and others) understand why EfS is important to them and thus make changes in their lives.
- Intellectual excitement; developing and delivering novel teaching with SD students; developing interdisciplinary and holistic perspectives.
- Mentoring staff.
- Working with colleagues from other departments to create transdisciplinary EFS initiatives.
- Developing the organisation and stimulating the staff to deliver a new high quality master program in EfS.
- Experiencing high levels of student engagement and enthusiasm.

Diagram 8.3.1.
Most satisfying aspects of EfS leadership as a word cloud



¹¹ In a word cloud the larger the word the more frequently it was used in the open-ended comments by respondents.

are institutions around the world that have figured out how to optimise the satisfactions and productivity of the area and minimise the challenges.

Box 8.3.1 Efs Leaders: satisfactions and challenges

Recurring satisfactions

- Working with a great team
- Helping shape strategy
- Implementing projects
- Seeing systems run smoothly & productively
- Senior staff support
- Having autonomy & trust
- Being recognised for work well done
- Positive student response

Recurring challenges

- HR & staffing issues
- Unclear direction/priorities
- Staff/Leaders hard to engage
- Inefficient processes, systems & meetings
- Contribution not noticed
- Constant ad hoc demands
- Efs
 - unclear concept
 - marginalised in governance
 - unaligned resources; silos
 - proving demand for Efs

It is recommended that not only the lessons in Box 8.3.1 are given attention in universities and colleges wishing to ensure effective implementation of their change initiatives in the area but also that the extensive peer networks already in existence explicitly identify and share the good practice identified in the left-hand column.

These qualitative data also align with what respondents said when asked to identify what had most surprised them about their Efs leadership role. The recurring themes in their comments on this question are summarised in Box 8.3.2.

Box 8.3.2 Leaders of Efs: surprises in the role

Positive

- Strong student interest
- How many staff are ready to engage
- The fun and satisfaction
- Seeing systems run smoothly & productively
- Falling in with a great international network

Negative

- Difficulty in getting cross-disciplinary courses going
- Difficult staff
- Unresponsive, 'silo' structure, resourcing & processes
- How much bureaucracy is necessary

Box 8.3.2 identifies some important indicators of what motivates academic leaders to engage and persevere with innovation in the area (the left hand column) and what, on the other hand, poses an implementation challenge (the right hand column). Once again the importance of positive and constructive workplace relationships, efficient systems and a positive student response is evident.

These findings and those on key satisfactions and challenges identified earlier align with those from all previous studies of what characterises change capable, adaptive and resilient organisations and individuals.

Distinctive Challenges in EfS Leadership

There are a number of challenges which are, to varying extents, unique to innovation in the area of EfS. These include seeking to challenge the existing system by introducing transdisciplinary programs in a context which is structured and funded around specific disciplines; the absence of senior leaders to lead and be accountable for the area; an unclear or limited understanding of what 'sustainability' means; unaligned national policies, rewards and incentives; the failure to reward transdisciplinary research in national research funding formulae; and the 'commuter' nature of the student body in some universities and the increased use of remote learning by others which mitigates against the use of the campus as a living laboratory for sustainability.

Challenges unique to EfS in Higher Education - indicative comments (direct quotes):

- A confused understanding of what the concept 'sustainability' means in the context of the curriculum, research, campus operations and engagement.
- Being truly interdisciplinary and truly applied.
- Can EfS really become mainstream, or will it be a niche next to all other disciplines/themes/programs?
- Challenges - the perceived link with emotive subjects such as climate change, meaning there can be quite immediate emotive responses to the subject acting as a barrier to engaging staff and students with what EfS is really about.
- Challenges of change management and silo mentalities are amplified because EfS requires a multi-disciplinary approach.
- Convincing faculty that their courses, no matter the subject, can be EfS-oriented.
- Desire of top university leaders for high profile infrastructure projects which do not include sustainability considerations.
- EfS is not funded or supported by dedicated and/senior staff; it is expected to happen as a result of the good will of concerned staff.
- Making the case for how EfS 'fits' in with the different disciplines - it is still seen as a soft add-on to the core of any particular discipline.
- Multidisciplinarity.
- My university is a historically black college and university (HBCU). Close to 90% receive financial aid. Their thoughts and concerns often are not about "the environment," so the challenge is to connect the dots between their lives and the climate crisis.
- Particularly awkward reporting line.
- We are seeking to implement educational processes that are innovative both in content and process.
- We do not yet have an EfS director who coordinates across multiple functions (e.g., student affairs, academics, facilities).
- While not confined to my university, the greatest impediment to EfS (and thus the greatest challenge to leadership in the domain) is the prevalence and ubiquity of the reductionist, neo-liberal, technocentric paradigm that prevails in the academy worldwide.

Case studies: managing the challenges of an EfS leader

Respondents were asked to identify a key challenge they have faced and then explain how they handled it. Below are some indicative examples of what respondents said:

Case One – a local leader

All the most useful and interesting examples are ... really complex! In essence, they are usually about trying to encourage staff to participate more and voice/share opinions... I resolved this by finding small, non-threatening ways to go forward e.g. Setting up weekly emails which allowed anonymous feedback which we published so staff could get used to hearing what was happening, and began to develop more of a sense of community. At first I kept the topics very safe e.g. Recycling, water, but after 6-8 months brought in things like disability, well-being...

Whenever possible, I got authority from other parts of the university to extend the topics closer and closer to well being, until finally I had set the precedent enough that open discussions on related topics could be held e.g. in focus groups. The fact that at every step I did not go over the mark, but even by asking permission all the time of senior staff meant they became more and more openly aware of the fact that there were boundaries set by other groups that shouldn't really be there, meant that ultimately (4 years later) not only have those barriers been removed but in the meantime several upcoming senior managers are particularly aware of the need for these issues to be developed, and I think consultation and well being will be highly emphasised (and implemented) in future mission plans.

I figured out how to do this by thinking about the best medium-term solution; rocking the boat too much would have estranged me; constantly 'checking' about boundaries is as good a way as any of bringing attention to them; positivity and clear willingness to work for the good of the institution instead of making some personal victory over one bad policy or person in one Dept. I calculated for mid-term profits, and it paid off very well. .. Dealing with personalities is the most challenging. I have learnt to change my behaviour and work hard on the art of letting others think it's their initiative/idea or new process. I don't always get it right, in fact I often get it wrong, but there are always new chances to try again, a bit like parenting. I use coaching techniques to help me.

Case Two- a middle level leader

Two situations come to mind - both of a similar nature. One was to explore support for a sustainability-across-the-curriculum initiative; the other was to implement a carbon offset program. Both met significant resistance from our faculty senate executive committee--frustrating in that I had invested time and energy and also because so many faculty claim to be environmentally friendly--but when it comes time to take action, the approach is often not one of 'how can we make this happen' but rather thinking of all the reasons why it should not happen. I expect this response but each time it catches me off guard as I tend to think 'this time will be different.'

I find such situations challenging, because with no budget and no incentives at my disposal, it is hard to motivate/incent people to try something new. Instead of arguing or waging a brass-knuckles campaign, I spoke with as many people as possible, gaining support and interest from across campus. Within 18 months, we had a new environmental studies major and a new definition of sustainability in the curriculum that we will be able to use going forward to seek sustainability designations for our courses; perhaps eventually a sustainability requirement will come to pass. As for the carbon offset, I took the idea to faculty senate where it passed on a small scale. A few weeks later our senior administration embraced the idea campus-wide, and a new fund was established that contributes significant money to renewable energy on campus.

So I would say patience, realizing there are many ways to get to a destination, and talking to as many people as possible (many of whom have the budget to fund things) will help solve most challenges.

Case Three – a middle level leader

Attempting to carry EfS principles through the process of revisions to the institutional teaching and learning strategy: this was an anticipated process and involved contributions to committees and consultations, as well as written input, specific meetings with the senior lead and attempts to lobby support and build understanding informally.

Case Four – a senior leader

Engaging the disengaged. My strategy is to go out to everyone with a framework to gather in what is already happening and then to bring all this together in a stocktake for the University Executive. This shows how much is being done to build social, cultural, economic and environmental sustainability into the curriculum, operations, research and engagement activities of the University. This serves two purposes – First, it acknowledges what everyone is already doing and enables us to link and leverage this. Second, it provides an operational definition of what EfS is all about in the unique context of our University. Developing this broader picture is very important as many people think it is only about greening the campus.

Case Five - Senior Leaders

In the broader EfS activity sense, the most testing challenge has been in attempting to establish a sustainability policy/strategy for the University. Engaging the VC and Executive Group in a discussion was challenging enough; achieving a policy outcome seemed completely elusive until we had a change at the level of DVC. As sponsor, the DVC took responsibility for implementing a strategy of sorts. Patience was the key ingredient here.

Managing a conflict between two colleges in an interdisciplinary program so that partners stayed together for the common good. Strategy - to be patient and personally take the blame has largely worked.

My strategic and diplomatic skills were engaged as I worked to get our new interdisciplinary program approved by the faculty at large. I anticipated most of the obstacles, but was surprised that the strategy my committee and I devised was so successful (early meetings with key individual allies and opponents, then meetings with departments to defuse arguments and bolster support, open meetings for any interest faculty members, and finally proceeding through the formal faculty governance process). I found it challenging to decide when to confront opponents head on and when to work more with more subtlety. The combinations we chose seem to have worked, though, as our proposal came to fruition in record time - passing through governance months earlier than we even dared hope.

A high level committee from the various Departments was formed on the invitation of the Rector who encouraged all of them to work under my coordination.

There is the tendency within our institution that people do not always speak openly but arrange their "needs" behind the scenes. Personally I am a very open person who speaks frankly about projects because I believe this is a basic requirement for future cooperation and trust. I think it is rather that people working in my teams and environment need to find out this "new" working culture. Today when starting a project with new people I say from the beginning that I like to have open talks... What has this to do with EfS? I think a lot because trust and openness I see as key requirements for inter- and trans-disciplinary cooperation.

Don't know how to teach passion; perhaps that it's OK to show it. Ability not to put off traditionalists and nonresponsive parts of university so that they can see value in universities demonstrating what is possible with regards to sustainability. Engage with students. They are so cynical about the future of the world, and survival. EfS gives them something to believe in. What is done has to be institution-wide.

Senge et al (2010) recommend very similar strategies for 'engaging the disengaged' to those identified in the cases above. They discourage 'stringent advocacy approaches and suggest that... 'rather than implying that your view must be accepted, appropriate words could be: 'this is what I think and this is how I arrived at it. What do you think?' A gentle query, such as... 'Can you help me to understand what you mean here?' is better than an abrupt 'Where's your proof'. And, of course, do make sure you understand what the other is saying: 'Am I correct in understanding that you are

saying?’ It is better to say: ‘Have you considered?’ rather than going on the attack for what you see as serious omissions”

Box 8.3.3 summarises what respondents and participants in the phase 2 feedback workshops on the results recommended can be done to address the EfS challenges identified constructively, first by the institution (column 1) and second by individuals (column 2). What they say aligns with all of the key research on effective change implementation, the development of productive cultures and leadership capability in higher education undertaken to date (see, for example, Fullan and Scott, 2009) and was confirmed in the Study’s Phase 2 workshops.

The findings in Box 8.3.3 also align well with the recommendations of the AASHE (2010:9) report on building EfS more systematically into the curriculum of US universities and colleges:

- Bring faculty together with sustainability-oriented staff.
- Recognise sustainability curriculum efforts.
- Provide mechanisms for recognising and addressing barriers.
- Provide leadership opportunities.
- Share resources.
- Bring together high impact educational practices and sustainability education.
- Include sustainability in strategic directions.
- Develop hiring practices that would attract ‘sustainability faculty’.
- Leverage the ACUPCC commitment to EfS.
- Link campus to community.
- Encourage the submission of proposals for funding sustainability education.
- Actively participate in relevant state and federal policy-making that furthers EfS.

The Phase 2 workshop participants endorsed the importance of all leaders understanding what the quality checkpoints that make up the RATED CLASS A quality framework for EfS course design identified in the last dot point in Box 8.3.3. entail) and how these also apply to assisting staff to learn how to implement changes in this area¹².

¹² In a commissioned research and analysis report to the 2008 review of Australian Higher Education (Scott, 2008) the key findings on what engages and retains students (and staff) in higher education programs was summarised as this acronym. It stands for **R**elevance; **A**ctive learning; **T**heory-practice links; **E**xpectations that are clear; a clear **D**irection for the course; a focus the **C**apabilities that count for successful early career professional or disciplinary practice; **L**earning pathways that are flexible and responsive; **A**ssessment that is valid and supported by prompt and constructive feedback; **S**taff that are knowledgeable, responsive and good teachers; **S**upport systems that assist the program’s implementation and **A**ccess that is timely and convenient.

Box 8.3.3 Key strategies to manage the challenges of HE EfS leadership

Institutional actions

- Ensure everyone is speaking the same language from the outset.
- Build a strategic focus on the four pillars of sustainability into planning.
- Ensure that this focus covers research, teaching, engagement & operations.
- Account for the particular change challenges of EfS innovation – e.g. a focus on transformation, cross-university & cross-disciplinary teams and projects.
- Align funding, incentives, rewards, KPIs, with this focus in order to engage staff.
- Revise position descriptions, selection processes and succession strategies to align with the findings of this study.
- Align governance, management, leadership & accountabilities to support this work. This includes putting in place a ‘nested’ central and local leadership system.
- Reward and reinforce a change capable, collaborative culture.
- Use the top-down and bottom-up process of ‘steered engagement’ to involve staff at the local level and still get system coherence.
- Ensure system efficiency – ensuring that, for example, procedures and meetings are outcomes-focused, add value and operate effectively.
- Focus on evidence-based decision-making. This includes putting in place and using a valid and comprehensive tracking system for the area.
- Institute a focused leadership and staff development program for EfS.
- Train leaders on how to apply the key lessons of effective change implementation.

Individual actions

- Always seek to ‘listen, link then lead’ – in that order. For example, undertake a stocktake of current EfS activity early on and use this to acknowledge, demonstrate & make sense of what is always underway. Promote successes.
- Engage the senior executive by dealing to their incentives and expectations. Seek an advocate.
- Leverage the 19 extrinsic and intrinsic incentives identified in the study to engage staff who are disengaged with the area.
- Identify and acknowledge that everyone has a role in making EfS work
- ‘Model, teach and learn’. For example, seek to model the top rating capabilities identified in this study, including how to respond constructively and collaboratively to the inevitable challenges of EfS as they arise; and actively help staff learn how to deal productively with them.
- Ready – fire – aim. Learn how to manage EfS changes by doing them under controlled conditions first.
- Build internal and external networks of people in the same role to identify successful solutions that address your local leadership challenges.
- Identify and use a mentor to assist your own leadership learning, using the frameworks of good practice identified in this study to ensure this concentrates on what counts.
- With difficult staff – always talk personally with them first, seek to understand their perspective and keep an email record of what was agreed.
- Recognise that change is a learning and unlearning process for all concerned and apply the principles of effective teaching to this process (see RATED CLASS A below).

8.4. Judging one’s effectiveness as an EfS Leader

In Table 8.4 the overall ratings from respondents on the relative importance of a set of indicators of effective performance are presented in the left hand column. The ratings in the right hand column identify which of the indicators are a development priority for our respondents. The top five items in both columns are highlighted.

Significantly, the top ranking effectiveness indicators (the left hand column) also attract high ratings as a priority for leadership development and improvement programs

(the right hand column). These outcomes align with the earlier findings on the areas of activity rated highest on importance for effective role delivery in Table 8.2.

Table 8.4. Judging effective performance as an EfS leader

Imp Mean	Rank	In your view, how important should each of the following indicators be as a criterion for judging effective performance in EfS activities like the ones you undertake? To what extent is improvement in each area a current priority for you?	Perf Mean	Rank
4.09	4	1. Achieving high levels of staff/faculty engagement, support and commitment	4.01	1
4.18	1	2. Achieving high levels of student engagement, support & commitment	3.96	4
3.79	11	3. Delivering successful EfS team projects in my area of responsibility	3.70	10
4.15	2	4. Establishing a collegial and collaborative working environment	4.01	2
3.47	17	5. Connecting successfully with key external stakeholders	3.39	17
3.38	18	6. Securing funds and resources for EfS programs	3.49	15
3.87	9	7. Producing future EfS leaders	3.77	9
3.35	19	8. Achieving effective alignment of planning, budget and resources with EfS initiatives	3.25	19
3.10	22	9. Achieving a positive financial outcome for my area	3.05	22
3.79	12	10. Designing EfS learning programs that are successfully approved for delivery	3.58	13
3.98	6	11. Producing significant improvements in learning and teaching quality in the area of EfS	3.90	6
3.64	14	12. Successfully embedding EfS in all programs of my University/College	3.64	11
3.88	8	13. Connecting EfS with campus and/or the community as a living laboratory and real life resource for learning	3.91	5
3.93	7	14. Bringing EfS policies & practices successfully into action	3.87	8
3.77	13	15. Delivering my agreed tasks or projects on time and to specification	3.55	14
3.82	10	16. Receiving positive user feedback for my area(s) of responsibility	3.59	12
3.13	21	17. Being invited to present to key external groups on the EfS programs I lead	3.00	23
4.14	3	18. Successful implementation of new initiatives in EfS	3.99	3
3.48	16	19. Achieving positive external recognition, including successful reviews of my area of responsibility	3.34	18
3.07	23	20. Producing refereed publications & reports on EfS	3.13	21
2.64	25	21. Winning awards and prizes for EfS programs & services	2.50	25
4.04	5	22. Building the EfS reputation of my organisation	3.89	7
3.23	20	23. Increased student retention rates	3.14	20
2.74	24	24. Meeting the required number of enrolments for EfS programs	2.64	24
3.52	15	25. Improving student satisfaction ratings	3.42	16

Significant differences in ratings x leadership role type, scope & time as a leader

Differences x role type

There are a number of significant differences (i.e. differences between means of 0.5/5 or more) between the various EfS leadership *roles* on the effectiveness indicators listed in Table 8.4. For example, informal academic staff leaders rate establishing a collegial and collaborative working environment, connecting successfully with key external stakeholders and producing future EfS leaders higher than Senior leaders.

Deans rate achieving a positive outcome for their area higher than all other groups and successful design and approval of EfS programs higher than Senior Leaders and Directors. They rate meeting enrolment targets much higher than not only Senior Leaders and Directors but also Academic Staff. Deans, along with Academic staff,

rate producing significant improvements in L&T, increased retention rates and improving student satisfaction ratings much higher than all of the other leadership groups.

On the other hand Senior Leaders rate being invited to present to external groups on EfS and producing refereed publications and reports much lower than other groups; and they rate achieving positive external recognition and winning awards and prizes for EfS lower than Directors.

Professional staff rate delivering tasks on time and to specification significantly higher than all other groups; and, with academic staff, they rate receiving positive feedback significantly higher than Senior Staff.

In terms of which of these effectiveness indicators is *a high priority for development* for different EfS leadership groups Professional staff rate achieving high levels of staff/faculty engagement, support and commitment much higher than other groups. Informal academic staff leaders give higher development priority to delivering future EfS leaders and connecting EfS with the campus than all other groups. They also give higher priority with Heads of Program to achieving high levels of student engagement; with Professional Staff Leaders to bringing EfS policies and practices successfully into action; and, with Deans, to connecting successfully to external stakeholders.

Deans/HOSs allocate a higher development priority than other groups to improving student satisfaction ratings. They also give much higher priority to learning how to design approved EfS Programs; and to producing significant improvements in L&T quality.

Professional staff give higher priority than other groups to learning how best to deliver agreed tasks on time and to specification and to achieving positive user feedback.

Senior leaders give much lower development priority to producing EfS leaders than all other groups; and, with Directors, to producing refereed publications and reports. Like Deans and Program Heads Senior leaders give their highest priority for development to establishing a collegial and collaborative working environment and, with Deans, building the organisation's reputation.

Differences x role scope

Respondents with both local and institution-wide responsibilities rate connecting with external stakeholders significantly higher than the other groups. On the other hand respondents with a local role rate successfully embedding EfS in all programs in their institution lower and producing refereed publications higher than those with institution-wide or mixed roles.

In terms of which indicator is a development priority, respondents with a local leadership role rate learning more about how to achieve high levels of engagement, support and commitment higher than those with an institution-wide or mixed role. They also give higher priority to EfS program design than those in a mixed role; and to learning how to increase student retention rates than those with an institution-wide role. Those with an institution-wide role give higher development priority to achieving a positive financial outcome than those in a mixed role.

Differences x time in role

Respondents who have been EfS leaders between 4-6 years give a higher rating to achieving high levels of staff/faculty engagement than those in the role for 7-10 years.

Respondents in the role for more than 10 years give a significantly higher rating to delivering successful EfS team projects than those reporting being in the role for 3 years or less. Those in the role from 4-6 years give higher ratings to achieving alignment between planning, budget and resources; and to achieving a positive financial outcome than those in the role for more than 10 years.

In terms of which indicators are a development priority, respondents who have been an EfS leader for more than 10 years in such a role rate learning more about achieving high levels of student engagement and delivering EfS team projects higher than those who have been in their leadership role 3 years or less. And they rate establishing collegial and collaborative working environments higher than those in the role between 4-6 years. They also rate bringing EfS policies and practices into action higher than colleagues in their role for between 7-10 years. Those who have been leaders between 4-6 years give significantly higher development priority to increasing student retention rates than those in the role more than 7 years.

Significant differences in ratings x institution size and type

Differences x size

Respondents from institutions with less than 10,000 students give a significantly higher importance rating to increasing student retention rates than those with between 10,000 and 20,000 students.

The only difference based on institution size in respondents' priorities for development for the effectiveness indicators listed is that respondents from institutions with less than 10,000 students rate development on how to connect EfS to campus and community higher than those from institutions with between 10,000 and 20,000 students.

Differences x type

Respondents from institutions which are research focused, predictably, rate producing refereed publications and reports on EfS significantly higher on importance as an effectiveness indicator than those which are teaching focused. There are no significant differences between institution type and priorities for the development of the indicators listed.

Significant differences in ratings x region

Respondents from Europe rate connecting successfully with external stakeholders significantly higher as an effectiveness indicator than North American colleagues. They also rate designing EfS programs and successfully embedding EfS in all programs higher than UK colleagues; and, with Australasians, they rate producing improvements in EfS quality higher than UK colleagues.

North American respondents rate connecting EfS with campus and community significantly higher but winning awards for EfS programs lower than respondents from the UK.

UK respondents rate increased student retention rates significantly lower than all other regions and delivering agreed tasks on time and to specification significantly lower than Australasian colleagues. However they rate winning awards and prizes much higher than all other regions.

In terms of regional differences on the development priorities for the indicators listed European respondents give higher priority to delivering EfS projects than UK respondents and connecting with external stakeholders of higher priority than UK and Australasian colleagues.

On the other hand North American respondents give a higher development priority to producing EfS leaders and connecting EfS to campus and community than European colleagues. However, they give lower priority to learning how to achieve positive external recognition than colleagues from Europe and the UK.

UK respondents give lower priority to producing significant improvements in L&T quality and improving retention rates than respondents from all other regions. They also give lower priority to meeting enrolment targets than respondents from Europe and Australasia.

Significant differences in ratings x gender

No significant differences in ratings emerged in this area.

Comparison with the results of earlier HE Leadership Studies

When the results on this question for the TLSHE sample are compared with the responses in the Learning Leaders and Professional Leaders studies we see that respondents in the TLSHE and Learning Leader studies rate increasing student retention rates higher in importance than the respondents in the ATEM Professional Leaders study. On the other hand TLSHE respondents rate achieving positive outcomes in external reviews lower than the Learning Leaders respondents.

In terms of differences in which effectiveness indicators are a priority for development, TLSHE respondents give significantly higher priority to improving student satisfaction ratings compared with the Learning Leaders respondents.

Implications and suggestions for follow up

Phase 2 workshop participants identified a substantial disconnect between the ways in which EfS change leaders themselves judge their effectiveness and how the institution formally evaluates their performance. These participants recommended that the results on importance (the left hand column in Diagram 8.4) should be used to review and confirm the validity of the criteria used in performance management for EfS leaders. The improvement priority ratings (the right hand column in Diagram 8.4) can, they said, be directly used to ensure that staff development for this area is relevant and needs-based.

The items which attract higher ratings for both importance and as a priority for development are particularly significant for organisational improvement and identify what leadership programs for the area should give focus to.

The subsorts identify which indicators are of specific significance to different subgroups; and they give important clues on what can motivate different tiers to get engaged. For example the data indicate that getting Deans engaged will require showing benefits in institutional reputation building, meeting enrolment targets, high levels of staff support, student satisfaction and retention

The high rating given to item 18 is particularly significant as it confirms findings from multiple studies in other contexts – that universities are often better at formulating plans and new programs than they are putting them effectively, consistently and

sustainably into practice. It is recommended that alerting all EfS leaders to the key lessons on effective change implementation identified earlier in this report be a focus of all leadership development programs for the area.

More generally participants in the Phase 2 feedback workshops identified a set of overall indicators that could be used to track and establish if a university or college was successfully implementing its EfS strategy. They identified indicators for the quality of inputs as well as outcomes. Attachment Two gives details.

8.5. Influences shaping the work of EfS Leaders

Table 8.5 presents the ratings from respondents on the relative level of impact a range of influences has on shaping their work as an EfS leader. The top rating items are highlighted.

Table 8.5 Influences shaping work as an EfS leader

Please rate the level of impact that each of the following has on shaping the focus of your work.	Mean	Rank
1. Government policy changes	3.19	14
2. Changes in external sources of funding	3.16	15
3. Increased competition for students	2.93	16
4. Growing pressure to generate new sources of income	2.90	18
5. Changing expectations and influence of business and industry	3.19	13
6. Greater external scrutiny	2.69	21
7. Growing importance of managing academic risk at my institution	2.58	23
8. Rapid changes in technology	2.89	19
9. Declining status of academic work	2.42	26
10. Maintaining a specific institutional image and mission	3.43	8
11. Having a clear picture of the institution's strategic direction	3.93	2
12. Changing levels of funding from within my institution for EfS activities	3.27	11
13. Having to deal with incentives which work against collaboration within or between the faculties/different sections of my institution	3.49	6
14. Depth of engagement of senior leaders with EfS	4.00	1
15. Increased focus on filling enrolment targets	2.57	25
16. Finding and retaining high quality staff/faculty	2.92	17
17. Managing diverse and complex institutional sub-cultures	3.36	9
18. Managing difficult staff/faculty members	2.65	22
19. Unresponsive administrative processes	3.20	12
20. Increased student interest in EfS	3.78	3
21. Changing profile and expectations of students	3.45	7
22. Increased pressure to retain students	2.57	24
23. Managing multiple pressures for continuous change	3.31	10
24. Handling unexpected events	2.88	20
25. Balancing work and family life	3.51	4
26. Having to deal with different conceptions of what EfS means	3.49	5

It is noteworthy that these importance ratings are, overall, comparatively lower than those in some other sections of the survey. Having said this, the top ranking items still warrant attention in institutional strategy formation and development programs for leaders.

Significant differences in ratings x leadership role type, scope & time as a leader

Differences x role type

There is a number of significant differences (i.e. differences between means of 0.5/5 or more) between the various EfS *leadership role types* on the influences listed in Table 8.5.

For example, informal academic staff leaders give higher importance to the declining status of academic work than all other leadership groups; to the changing profile and expectations of students than Professional Staff; and, with Professional Staff, to having to manage multiple pressures for change than Senior Leaders and Directors.

Senior leaders rate increased student interest in EfS significantly *lower* as an influence on their work focus than all other groups except Professional Staff. Also, as has been the case in earlier studies, Senior Leaders rate balancing work and family life much lower as an important factor than all other groups; and depth of senior leaders involvement in EfS much lower in importance than all other leadership groups. On the other hand, with Directors, Deans, Heads of School and Heads of Program and professional staff they give highest importance to having a clear picture of the institution's direction.

In terms of priority influences, with Deans/Heads of School, senior leaders rate having a clear picture of the institution's strategic direction higher than local leaders like Heads of Program. They also rate managing difficult staff/faculty much higher than all other groups; and managing diverse and complex institutional subcultures higher than Academic staff.

Deans/HOSs rate finding and retaining high quality staff/faculty higher than Senior Leaders, Heads of Program and Professional Staff.

Directors rate an increased focus on enrolment targets much lower than all other groups.

Professional Staff leaders give significantly higher importance ratings to a wide range of influences compared to other leadership groups¹³.

Differences x role scope

Respondents who have a local leadership role (along with those who have a mixed role) give growing pressure to generate new sources of income a significantly higher rating than respondents with an institution-wide role. Local leaders also rate the declining status of academic work; increased focus on filling enrolment targets and finding and retaining high quality staff/faculty; along with increased pressure to retain students higher than those with an institution-wide role. And they rate unresponsive administrative processes significantly higher than those with a mixed role.

¹³ For example, they give significantly higher ratings to government policy changes than Deans/HOSs and Informal Academic Staff leaders; to changes in external sources of funding than all other role groups; to increased competition than Directors. With Deans, they allocate higher importance to growing pressures to generate new sources of income than Directors and heads of program; with Senior Leaders they give higher importance to the changing expectations of business and industry than Directors and Heads of Program; to greater external scrutiny than Directors; with most other groups to the growing importance of risk management compared with Directors; with Deans and Academic staff to rapid changes in technology than Directors; with academic staff to maintaining institutional image and mission compared with Directors and Heads of Program; to changing funding levels than all other leadership groups; with Academic Staff to increased pressure to retain students than Senior Leaders, Directors and Heads of Program; and they give higher importance ratings to having to deal with different conceptions of what EfS means than Senior Leaders and Directors.

On the other hand respondents with an institution-wide role, along with those with a mixed role rate having a clear picture of the institution's strategic direction higher than those with a local leadership role.

Finally, respondents with a mixed leadership role give a significantly higher importance rating to managing multiple pressures for continuous change than colleagues with an institution-wide role.

Differences x time in role

EfS leaders in the role for 3 years or less rate managing difficult staff/faculty higher on importance than leaders in the role for more than 10 years. They also rate managing multiple pressures for change higher than colleagues in the role for more than 7 years.

Significant differences in ratings x institution size and type

Differences x institution size

Respondents from institutions with 10,000 - 20,000 students give a significantly higher importance rating than those from institutions with less than 10,000 students to the influence of government policy changes, changes in external sources of funding, growing pressures to generate new sources of income, the growing importance of managing academic risk, changing funding levels for EfS from within the institution and having to deal with incentives which work against collaboration between faculties. With colleagues from institutions with more than 20,000 students they also give higher importance ratings to the depth of engagement of senior leaders with EfS than respondents from institutions with enrolments of less than 10,000 students.

Differences x institution type

Respondents from institutions with a balance of Research and Teaching give significantly higher importance ratings to government policy changes than teaching focused institutions; with multi-campus universities, to changing expectations of business and industry than teaching focused institutions; to the depth of engagement of senior leaders with EfS than teaching focused institutions; to increased focus on filling enrolment targets than multi-campus institutions; and to finding high quality staff than research focused institutions.

Respondents from research focused institutions give significantly lower ratings than other types of university to the influence of increased pressure to retain students; multiple pressures for continuous change and having to deal with different conceptions of what EfS means.

Significant differences in ratings x region

European universities give significantly higher ratings to having to deal with incentives that work against collaboration than UK respondents; with Australasian leaders, to rapid changes in technology than UK leaders; with Australasian leaders, to increased pressure to retain students than UK and North American respondents. They also give significantly higher ratings to finding and retaining high quality faculty/staff and managing difficult staff than North American and UK leaders; with Australasian leaders, to increased pressure to retain students than UK and North American respondents. Finally they give higher ratings to handling unexpected events than their North American counterparts

On the other hand, Australasian and UK leaders give significantly higher ratings to changing expectations and influence of business and industry than colleagues from Europe and North America. Australasian leaders also give significantly higher importance ratings to managing multiple pressures for continuous change than North American respondents.

And UK respondents give significantly higher importance ratings to the depth of engagement of senior leaders than European leaders.

Significant differences in ratings x gender

Female respondents give significantly higher importance ratings than male respondents to changing levels of funding from within their institution; and to having to deal with incentives which work against collaboration as influences shaping their work.

Comparison with the results of earlier HE Leadership Studies

When the results on this question for the TLSHE sample are compared with the responses in the Learning Leaders and Professional Leaders studies we see that respondents in the Learning Leaders study rated decreased government funding, growing pressures to generate new sources of income and the declining status of tertiary work as having a significantly higher impact on their daily work than those involved in both the TLSHE and Professional Leaders studies..

On the other hand the TLSHE respondents rate having to engage more with business and industry significantly higher and managing pressures for continuous change lower than respondents in the other two studies.

Implications and suggestions for follow up

The range of different ratings on importance for many of the above influences gives insights into the motivations and perceived accountabilities of different EfS Leadership groups. They not only have links to the effectiveness indicators respondents in different roles emphasise and, in turn, have an affect on the capabilities most important for effective leadership but they also identify priorities for follow up to the study. Of particular interest is the high rating given to having the positive and active engagement of Senior Leaders with the EfS agenda.

This aligns with the findings outlined earlier in this report on the key areas of focus in respondents' work, their key satisfactions and challenges and the indicators of effectiveness to which they give priority. It also aligns with what has emerged in the qualitative data generated by the study. Finally the fact that increased student interest in EfS has attracted high importance ratings from Directors, Deans, Heads of School and Heads of Program suggests that demonstrating high levels of demand is an important factor for engaging people in these roles with EfS initiatives.

The significantly lower importance rating by Senior Leaders on increased student interest in EfS also warrants follow-up. Their much lower importance rating on balancing work and family life has been explained in earlier studies from the fact that they tend to be older, their families are grown up, and they typically have targeted executive assistance.

At the phase 2 workshops considerable attention was given to identifying the key incentives that would influence 'engagement of the disengaged' with EfS change efforts. Some 19 extrinsic and intrinsic incentives (motivators) were identified that change leaders for EfS could link and use:

Extrinsic incentives

- Active endorsement and leadership by the Vice-Chancellor, President, or Rector.
- Introduction of relevant awards like a VC/President's Sustainability Award and systematic acknowledgement by senior leaders of successful implementation of agreed EfS initiatives and collaborations as they occur.
- A focus on EfS capabilities in staff selection and promotion processes; along with a focus on successful implementation of agreed EfS initiatives in the performance management and development processes of all relevant central and local leaders.
- Rewards for trans-disciplinary research in national research reward schemes like Excellence in Research Australia (ERA) where the focus at present is primarily on single disciplines.
- In the Australian context, achieving better alignment between Field of Education and Field of Research categories.
- The allocation of targeted human and resource support for EfS initiatives, including the use of a Sustainable University Rolling or Revolving Fund to support both staff and student initiatives.
- Having a senior leader who works with local 'champions' to assist staff with implementation and link up parallel initiatives being undertaken in different parts of the university or beyond.
- Giving careful attention to illuminating, linking and leveraging what is already being implemented; including disseminating positive media coverage of such achievements.
- Right resourcing – targeted support with clear accountabilities for its effective application.
- Peer engagement and support – from both within and beyond the university via networks of staff pursuing the same developments in different locations.

Intrinsic incentives

- Knowing that one is playing an active part in helping one's students, profession and nation build a socially, culturally, economically and environmentally sustainable future.
- Feeling that what one is doing is both meaningful and useful.
- Satisfaction in seeing one's students develop their capabilities and hearing back from them about the relevance of what they have learnt and how they have applied it in their work or more generally.
- Receiving positive student responses to one's teaching.
- Gaining intrinsic enjoyment from the process of helping people learn.
- Seeing increasing numbers of students wanting to enrol in one's class
- Working with inspiring people.
- Creating a legacy.
- Seeing that one's views are being incorporated into a new plan and that past successes relevant to that plan are being taken into account and acknowledged (the ownership incentive).

Particular attention was given to how the most senior leaders of each university or college could be encouraged to actively engage with and support EfS change efforts. The following were seen to be particularly productive:

- Demonstrating the potential for EfS to attract students and staff to their institution and that initiatives in this area will have a positive return on investment;
- Linking the initiative directly to the existing mission, values and strategic objectives of the institution, and the KPIs of the senior leader concerned;
- Noting alignment of EfS action with key external priorities and policy requirements;
- Leveraging peer pressure from senior leaders in other universities;
- Winning external funding and endorsement for the area (like the endorsement of a Regional Centre of Expertise in ESD by the UN University);
- Gaining positive media coverage and external awards;
- Ensuring key players in the institution's Governing Body are on side by having one of them chair a sustainability task force;
- Seeking to have a focus on the area built into the KPIs of the CEO and senior staff and funding allocations by the Governing Body;
- Undertaking a stocktake of what is already happening across the university to demonstrate the current levels of support for and viability of giving more systematic focus to the area;
- Identifying exactly where sustainability-oriented *jobs, specialisations and careers* currently exist or are emerging. Doing this not only will help engage senior leaders with the business case for EfS but also will help ensure that EfS programs are relevant and that prospective students are attracted to them by being alerted to careers of which they were hitherto unaware.
- Demonstrating growing student demand.

8.6. Relative importance of different capabilities for effective performance as an EfS Leader in higher education

To be a successful sustainability leader, you must be able to establish context as much as direction. That is, the leader must work to create the kinds of processes, systems, and culture that will enable the organization to respond to the systems nature of both the problems and solutions that must evolve.

Sharp & Shea (2012)

In Table 8.6 the overall ratings from respondents on the relative importance of a range of personal, interpersonal, cognitive capabilities and related generic and EfS -specific skills and knowledge are presented. The top rating items are highlighted.

The pattern in the top-ranked capabilities is, as we shall see, consistent with all earlier studies of leadership, with six of the capabilities in the present study coming from the personal domain, three from the interpersonal domain, and one each from the cognitive and the Skills & Knowledge domains in Diagram 5.4.

What emerges in this and earlier sections of the report enables higher education institutions to confirm with greater relevance and precision the validity and focus of their leadership position descriptions along with their selection, promotion and performance management systems for EfS. Ensuring we appoint and promote leaders with the high rating capabilities identified is important not only for optimising the success of EfS innovations but for building the change capable culture so crucial to organisational survival in a period of considerable challenge for the tertiary sector.

The findings in this section also have important implications for what is given focus in the professional development of EfS leaders in higher education.

Table 8.6 EfS leader capabilities
(final data N = 188)

Category	Leadership capabilities	Mean	Rank
Personal	1. Admitting to and learning from my errors	4.40	10
Personal	2. Understanding my personal strengths and limitations	4.42	8
Personal	3. Being confident to take calculated risks	4.26	20
Personal	4. Remaining calm when under pressure or when things take an unexpected turn	4.37	13
Personal	5. Deferring judgment and not jumping in too quickly to resolve a problem	4.02	43
Personal	6. Having energy, passion and enthusiasm for learning and teaching	4.70	1
Personal	7. Persevering when things are not working out as anticipated	4.40	10
Personal	8. Wanting to achieve the best outcome possible	4.19	29
Personal	9. Taking responsibility for program activities and outcomes	4.13	36
Personal	10. Being willing to take a hard decision	3.97	48
Personal	11. Pitching in and undertaking menial tasks when needed	3.84	53
Personal	12. Maintaining a good work/life balance and keeping things in perspective	3.98	45
Personal	13. Bouncing back from adversity	4.12	38
Personal	14. Tolerating ambiguity and uncertainty	4.21	28
Personal	15. Being true to one's personal values and ethics	4.54	6
Personal	16. Being willing to give credit to others	4.68	2
Interpersonal	1. Empathising and working productively with staff and faculty from a wide range of backgrounds	4.60	3
Interpersonal	2. Empathising and working productively with students from a wide range of backgrounds	4.26	21
Interpersonal	3. Influencing people's behaviour and decisions in effective ways	4.22	27

Interpersonal	4. Listening to different points of view before coming to a decision	4.49	7
Interpersonal	5. Developing and using networks of colleagues to solve key workplace problems	4.23	26
Interpersonal	6. Understanding how the wide range of groups that make up my institution operate in different situations	4.18	32
Interpersonal	7. Working with very senior people within and beyond my institution without being intimidated	4.04	40
Interpersonal	8. Giving and receiving constructive feedback to/from work colleagues and others	3.97	46
Interpersonal	9. Motivating others to achieve great things	4.31	16
Interpersonal	10. Contributing positively to team-based programs	4.27	19
Interpersonal	11. Working constructively with people who are 'resisters' or are over-enthusiastic	3.91	50
Interpersonal	12. Being transparent and honest in dealings with others	4.60	4
Intellectual	1. Being able to identify the best way to respond to a perplexing situation	4.19	30
Intellectual	2. Knowing that there is never a fixed set of steps for solving workplace problems	4.25	23
Intellectual	3. Identifying from a mass of information the core issue or opportunity in any situation	4.31	15
Intellectual	4. Thinking creatively and laterally	4.55	5
Intellectual	5. Establishing a clear, justified, achievable direction in my area(s) of responsibility	4.28	17
Intellectual	6. Seeing and then acting on an opportunity for a new direction	4.25	22
Intellectual	7. Using previous experience to figure out what is going on when a current situation takes an unexpected turn	4.04	40
Intellectual	8. Diagnosing the underlying causes of a problem and then taking appropriate action to address it	4.24	24
Intellectual	9. Tracing out and assessing the likely consequences of alternative courses of action	4.00	44
Intellectual	10. Adjusting a plan of action in response to problems that are identified during its implementation	4.24	24
Intellectual	11. Recognising how seemingly unconnected activities are linked	4.19	30
Intellectual	12. Setting and justifying priorities for my daily work	3.81	55
Intellectual	13. Recognising patterns in a complex situation	4.12	39
Intellectual	14. Making sense of and learning from experience	4.39	12
Skills & Kn	1. Having a high level of up-to-date knowledge of what engages higher education students in productive learning	4.12	37
Skills & Kn	2. Understanding how to <i>develop</i> an effective higher education learning program	4.14	34
Skills & Kn	3. Understanding how to <i>implement</i> successfully a new higher education program	4.14	34
Skills & Kn	4. Understanding how to design and conduct an <i>evaluation</i> of a higher education learning program	3.97	47
Skills & Kn	5. Understanding how to <i>identify and disseminate</i> effective learning and management practice across the institution	3.83	54
Skills & Kn	6. Being on top of current developments in EfS	3.90	51
Skills & Kn	7. Understanding how universities operate	4.28	18
Skills & Kn	8. Understanding the role of risk management and litigation in my work	3.11	58
Skills & Kn	9. Understanding industrial relations issues and processes as they apply to higher education	2.87	59
Skills & Kn	10. Being able to use I.T. effectively to communicate & perform key work functions	3.66	56
Skills & Kn	11. Being able to manage my own ongoing professional learning and development	3.94	49
Skills & Kn	12. Being able to help my staff/faculty learn how to deliver necessary changes effectively	3.88	52
Skills & Kn	13. Ability to chair meetings effectively and purposefully	4.16	33
Skills & Kn	14. Being able to make effective presentations to a range of different groups	4.34	14
Skills & Kn	15. Being able to organise my work and manage time effectively	4.40	9
Skills & Kn	16. Having sound administrative and resource management skills	4.03	42
Skills & Kn	17. Knowing how to develop and report on key EfS Metrics.	3.24	57

Significant differences in ratings x leadership role type, scope & time as a leader

Differences x role type

In terms of ***personal capabilities*** Professional and Informal Academic Staff Leaders give significantly higher importance ratings to admitting to and learning from their errors, understanding their personal strengths and limitations and persevering when things are not working out as anticipated than Directors and Senior Leaders. Academic staff also rate being able to defer judgement higher than other groups.

Deans/HOSs give higher ratings to remaining calm under pressure than Heads of Program.

Senior leaders give significantly lower ratings to pitching in and undertaking menial tasks, maintaining a good work-life balance, bouncing back from adversity than other leadership groups. They also rate being confident to take calculated risks significantly lower than Directors, Deans/HOSs and Academic Staff. And they rate contributing positively to team-based programs; along with taking responsibility for program activities and outcomes significantly lower than Deans/HOSs, Heads of Program and Academic Staff. With Directors they give significantly lower ratings to having energy, passion and enthusiasm for learning and teaching.

Directors rate tolerating ambiguity and uncertainty lower than Deans/HOSs, Professional Staff and Academics; and being true to one's personal values and ethics significantly lower than all other groups.

In terms of ***interpersonal capabilities*** senior leaders and professional staff rate empathising and working productively with students from a wide range of backgrounds significantly lower than Deans/HOSs, Heads of Program and Academic Staff. On the other hand Professional Staff rate understanding the wide range of groups in the institution higher than Heads of Program; and Academics rate working productively with senior people higher than Senior Leaders, Directors and Heads of Program.

In terms of ***cognitive capabilities*** informal academic leaders give significantly higher importance ratings to identifying the core issue from a mass of information, tracing out the likely consequences of alternative courses of action and recognising how seemingly unconnected activities are linked than Professional staff. They also give higher ratings to being able to adjust a plan of action during implementation than Professional Staff and Directors.

In terms of ***key skills and knowledge*** informal academic staff leaders, with Heads of Program, give significantly higher ratings to knowledge on what engages students in productive learning than Directors; and to understanding how to develop an effective HE program than Senior Leaders. Along with Heads of Program and Deans/HOSs informal academic leaders also give significantly higher ratings to understanding how to implement a new HE program than Senior Leaders. And, with Deans/HOSs, they give higher ratings to how to conduct an HE program evaluation than Directors and Senior Leaders; and with Professional Staff they give higher ratings to being on top of current EfS developments than Directors.

Senior leaders give significantly higher ratings to understanding the role of risk management in HE than Directors and Heads of Program; and, with Directors, they give higher ratings to being able to effectively chair a meeting than academic staff.

Deans/HOSs, along with Professional Staff, give higher ratings to being able to manage their own ongoing professional learning than Directors and Senior Staff; and they give higher ratings to helping staff learn how to deliver necessary changes than Heads of Program and Academic staff.

Finally, Directors give significantly higher ratings to knowing how to develop and report on key EfS metrics than academic staff.

Differences x role scope

In terms of personal capabilities the only significant difference is that local leaders rate maintaining a good work-life balance higher than those with a mixed institution-wide and local role.

There are no significant differences in ratings on interpersonal capabilities in terms of role scope.

In terms of cognitive capabilities, local leaders rate recognising patterns in a complex situation higher than leaders with a mixed institutional and local leadership role.

In the area of key skills and knowledge leaders in a mixed institution-wide and local role rate helping staff learn how to implement necessary changes effectively lower than those with a local or institution-wide role

Differences x time in role

In the personal capability domain those in a leadership role from 7-10 years rate having energy and passion for L&T higher than those who had been in the role for less time.

Those in the role from 4-6 years rate maintaining a good work-life balance higher than those in a leadership role for a longer time. They also rate bouncing back from adversity higher than those in the role from 7-10 years. Conversely those in the role from 4-6 years rate tolerating ambiguity and uncertainty and being true to one's values and ethics significantly lower than those in a leadership position less than 3 years or longer than 7 years.

There were no significant differences on this variable for interpersonal capabilities, cognitive capabilities or skills and knowledge.

Significant differences in ratings x institution size and type

Size

Respondents from institutions with 10,000-20,000 students give the personal capabilities of being confident to take calculated risks and maintaining a good work-life balance higher ratings than respondents from institutions with less than 10,000 students or more than 20,000. On the other hand leaders in institutions with 10,000 – 20,000 students rate having energy, passion and enthusiasm for learning and teaching lower than those in institutions with fewer or greater numbers of students.

There are no significant differences on this variable in the domains of interpersonal capability, cognitive capability or key skills and knowledge.

Type

Respondents from research focused institutions rate personal capabilities like being able to take calculated risks and being able to bounce back from adversity higher than those from teaching focused institutions or those with a balance of research and teaching; and being able to defer judgement higher than those with a mix of research

and teaching. On the other hand respondents from research focused institutions gave significantly lower ratings to having energy and passion for L&T, to persevering when things are not working out and being true to one's personal values and ethics than respondents from all the other types of HE institutions involved in the study.

There are no significant differences in the ratings between respondents from different sorts of institutions in the domains of interpersonal and cognitive capability or in the competency domain of key skills and knowledge.

Significant differences in ratings x region

In the domain of personal capability UK respondents give significantly higher ratings to being confident to take calculated risks than European respondents. They also rate being willing to take a hard decision higher than European and North American respondents; maintaining a good work-life balance higher than Australasian respondents; and bouncing back from adversity higher than respondents from all other regions.

On the other hand UK respondents rate understanding their personal strengths and limitations and having passion and enthusiasm for learning and teaching, along with being true to one's personal values and ethics, significantly lower than respondents from all other regions. They also rate tolerating ambiguity and uncertainty significantly lower than respondents from North America and Australasia.

In the interpersonal domain European respondents give significantly lower ratings to working with senior people without being intimidated than colleagues from North America and Australasia.

In the cognitive capability domain UK respondents give significantly lower ratings to using previous experience to figure out what is going on in a current situation, diagnosing the underlying causes of a problem and appropriately addressing it, and to setting and justifying priorities than respondents from all other regions

In the key skills and knowledge area respondents from Europe and Australasia rate understanding how to develop an effective HE program and how to implement it higher than UK respondents.

European respondents rate understanding how to disseminate effective learning and management higher than UK respondents; the role of risk management and industrial relations issues higher than North American respondents; how to help staff deliver necessary programs higher than all other regions; the ability to chair meetings effectively higher than Australasian leaders; and how to report EfS metrics significantly higher than respondents from the UK and North America.

Significant differences in ratings x gender

In the personal capability domain females rate being confident to take calculated risks, pitching in and undertaking menial tasks when necessary, along with maintaining a good work-life balance, and bouncing back from adversity significantly higher than male respondents. They also rate tolerating ambiguity and uncertainty, being true to one's personal values and ethics significantly lower than their male counterparts.

There are no significant differences between male and female respondents in their ratings of interpersonal and intellectual capabilities or key skills and knowledge.

Comparison with the results of earlier HE Leadership Studies

When the results on this question for the TLSHE sample are compared with the responses in the Learning Leaders and Professional Leaders studies we see that respondents in the Professional Leader study gave a significantly higher rating to the personal capability of being able to take a hard decision than respondents in the Learning Leaders or TLSHE studies. Conversely, respondents in the Professional Leaders study gave a significantly lower rating to the interpersonal capability of empathising and working productively with students from a wide range of backgrounds than respondents in the other two studies.

There were no significant differences between the three studies in ratings on the Interpersonal and Intellectual capabilities scale or the skills and knowledge scale.

Implications and suggestions for follow up

The consistency in results between this and the earlier Learning Leaders and Professional Tertiary Leaders studies in terms of where experienced leaders give their top ratings on the capabilities investigated has very important implications for what is given focus in leadership position descriptions, selection processes, staff development programs and performance tracking systems in higher education. There is also clear alignment with other work on leadership for sustainability (see, for example, Baan, 2011¹⁴). As has been the case in all studies undertaken to date emotional intelligence (personal and interpersonal) is found to play a central role. Respondents in the phase 2 feedback workshops reported that these are also the attributes they look for in the leaders to whom they report. Yet, they say, they have seen little attention to them in either position descriptions or selection/promotion processes. Finally, they noted how the top 15 attributes are also characteristic of change capable and resilient organisations and have much in common with the underpinning values common to the world's religions¹⁵.

It is very important to note that many of the top ranking capabilities can be learnt through reflection on experience although they may not be amenable to direct instruction in isolation from daily practice. We have found, in all of the studies undertaken to date, that once a leader knows the top 15 ranking capabilities for colleagues in the same role they observe how well they are applying them, especially when things go awry or the unexpected happens during daily practice.

The subparts in this and other sections enable those leading staff development for the area to identify what is of most importance to effective leadership in specific EfS roles. The patterns of similarity and difference on the other demographic variables raise a wide range of implications and suggestions for follow-up. For example the inter-regional differences identify opportunities for inter-cultural benchmarking. Significantly, the top ranked capabilities align well with the characteristics of change capable, resilient and sustainable institutions and societies. Interestingly, they also have much in common with the values that underpin all of the world's major religions.

¹⁴ Baan (2011), in the practice guide for authentic leadership towards sustainability, identifies the key personal capabilities as including being present, suspension of judgement, intention aligned with higher purpose, having whole self-awareness and personal power and energy. The key interpersonal capabilities are identified as having compassion and a willingness to deal with dualities and paradoxes, whilst the key cognitive capabilities include whole system awareness and the ability to hold multiple perspectives.

¹⁵ For details on the common values identified across the world religions see Bouquet (1962) and the Dalai Lama (2011).

8.7 Relationships between influences, role focus, effectiveness indicators and leadership capabilities

“Just as our organizations may be harbouring submerged drivers that can effectively sink innovation efforts, individuals may also be harbouring attitudes and feelings that can impede real engagement and learning. In many organizations a culture of private disengagement has taken hold in certain campus populations, typically as a response to a lack of bottom–up consultation or general engagement regarding everything from budget development, training, advancement processes, and operational decisions.”

Sharp 2009

Table 8.7 allows the reader to explore the linkages between the quantitative findings presented in the Sections above.

Table 8.7: Relationship between highest ranking Influences, role focus & effectiveness indicators and leadership capabilities

Influences	Rank	Role Focus	Rank	Effectiveness Indicators	Rank	EfS leadership capabilities	Rank
14. Depth of engagement of senior leaders with EfS	1	2. Engaging my institution’s staff/faculty with EfS initiatives	1	2. Achieving high levels of student engagement, support & commitment	1	6. Having energy, passion and enthusiasm for learning and teaching (P)	1
11. Having a clear picture of the institution’s strategic direction	2	1. Engaging senior institutional leaders with EfS	2	4. Establishing a collegial and collaborative working environment	2	16. Being willing to give credit to others (P)	2
11. Having a clear picture of the institution’s strategic direction	3	4. Securing student engagement and support	3	18. Successful implementation of new initiatives in EfS	3	1. Empathising and working productively with staff and faculty from a wide range of backgrounds (IP)	3
20. Increased student interest in EfS	4	11. Strategic Planning and/or policy development for EfS	4	1. Achieving high levels of staff/faculty engagement, support and commitment	4	12. Being transparent & honest in dealings with others (IP)	4
25. Balancing work and family life	5	3. Articulating the case for EfS to the institution	5	22. Building the EfS reputation of my organisation	5	4. Thinking creatively and laterally (C)	5
26. Having to deal with different conceptions of what EfS means	6	7. Developing staff/faculty capacity to deliver EfS	6			15. Being true to one's personal values and ethics (P)	6
		15. Developing organisational processes that effectively support EfS	7			4. Listening to different points of view before coming to a decision (IP)	7
						2. Understanding my personal strengths and limitations (P)	8
						15. Being able to organise my work and manage time effectively (S/K)	9
						7. Persevering when things are not working out as anticipated (P)	10
						1. Admitting to and learning from my errors (P)	11
						14. Making sense of and learning from experience (C)	12
						4. Remaining calm when under pressure or when things take an unexpected turn (P)	13
						14. Being able to make effective presentations to different groups (S/K)	14
						3. Identifying from a mass of information the core issue or opportunity in any situation (C)	15

In Table 8.7 there are clear links, for example, between the highest ranking influences (column 1), areas of role focus (column 2), effectiveness indicators (column 3) and leadership capabilities (column 4). For instance, many of the top ranking influences (column 1) concern engaging, clarifying or building on staff and student understanding and interest in EfS. This, in turn, is reflected in many of the top ranking areas for role focus (column 2) and from this in the top ranking effectiveness indicators identified by respondents (column 3). In order to productively address these areas of role focus and achieve the associated effectiveness indicators a significant combination of directly relevant personal, interpersonal, cognitive and skills is necessary (column 4).

8.8 Relative importance of a range of EfS leadership learning strategies and resources

‘We do not receive wisdom. We must discover it from experiences which no one else can have for us and from which no one else can spare us’

Marcel Proust

Table 8.8.1 presents the overall ratings from respondents on the relative importance of a range of EfS leadership strategies and resources which can assist their professional development and learning. The top rating items are highlighted. Like earlier studies, the highest rated leadership learning strategies are related to active learning from experience – especially systematic reflection on experience - assisted by timely peer support. All of the top rated strategies are consistent with the quality checkpoints identified in Diagram 5.2 and confirm the finding in Section 5.2 that it is the total experience that will engage our EfS leaders in productive learning not just what happens in a formal leadership development program or a one-off leadership workshop.

An analysis of the qualitative data on this area confirms this and shows that what helps most is guided experiential learning which is ‘just in time’ and ‘just for me’, supported by practical solutions to immediate workplace problems offered by colleague leaders in the same role, made systematic by the use a diagnostic framework like that summarised in Diagram 5.4 and the top ranking capabilities identified in the current study with which to make sense of and learn from experience. It also shows that attendance at conferences is used to identify and build ongoing contacts and networks.

The data indicate that there is great potential to develop and support EfS leadership networks within and beyond the countries involved in the study to assist the peer learning process in a more coordinated and focused way. This, again, requires the use of a common diagnostic framework like that outlined in Diagram 5.4. This process of using peer supported networks for learning about EfS is already starting in some locations and is well developed in others. Examples of such networks are those being developed by AASHE in North America, ACTS in Australia and Copernicus in Europe. The International Universities Association and the RCE movement both have great potential to extend such work internationally, in particular to developing nations.

Table 8.8.1 Support for EfS leaders' learning and development

In your experience how effective has each of the following activities been in helping develop your capabilities as a leader engaged in EfS?	Mean	Rank
1. Attending Learning & Teaching conferences, including those concerned with EfS	3.45	5
2. Completing a tertiary qualification relevant to leadership	2.22	18
3. Participating in higher education leadership seminars	2.69	12
4. Accessing leadership information on the internet	2.42	14
5. Completing formal leadership programs provided by my institution	2.20	19
6. Completing formal leadership programs given by external providers	2.34	15
7. Study of 'real-life' workplace problems	3.23	7
8. Participating in peer networks within my university/college	3.57	3
9. Participating in peer networks within my country	3.52	4
10. Participating in peer networks beyond my country	2.98	8
11. Ad hoc conversations about work with people in similar roles	3.65	2
12. Undertaking work-placements or exchanges	2.00	21
13. Participation in 360 degree feedback reviews based on known leadership capabilities	2.08	20
14. Participation in an Annual Performance Review	2.53	13
15. Being involved in a formal mentoring/coaching program	2.29	17
16. Being involved in informal mentoring/coaching	2.72	11
17. Involvement in a leadership 'shadowing' program	1.87	22
18. Learning 'on the job'	4.09	1
19. Undertaking self-guided reading on leadership	3.30	6
20. Involvement in professional leadership groups or associations, including those concerned with EfS	2.95	10
21. Participation in leadership development programs which are custom tailored to your needs	2.34	16
22. Site visits to other institutions/agencies engaged in EfS	2.97	9

Respondents were also asked to rate the effectiveness of their professional development to date in each of the capability areas identified in Diagram 5.4 and to indicate the extent to which these had been given focus in selection and promotion procedures. The overall results are given in the tables below. These tables show that, although, the key personal, interpersonal and cognitive capabilities relevant to effective EfS leadership are being given some attention in leadership development programs they are being given much less focus in leadership selection and promotion processes.

Table 8.8.2 Personal capabilities

What level of assistance have you received to develop each personal capability?	Mean	Rank
To what extent has your leadership development to date focused on personal capabilities like those listed above?	3.62	1
To what extent have leadership selection or promotion processes in which you have been involved focused on personal capabilities like those listed above?	2.80	2

Table 8.8.3 Interpersonal capabilities

What level of assistance have you received to develop each interpersonal capability?	Mean	Rank
To what extent has your leadership development to date focused on interpersonal capabilities like those listed above?	3.58	1
To what extent have leadership selection or promotion processes in which you have been involved focused on interpersonal capabilities like those listed above?	2.78	2

Table 8.8.4 Cognitive capabilities

What level of assistance have you received to develop each intellectual capability?	Mean	Rank
To what extent has your leadership development to date focused on intellectual capabilities like those listed above?	3.45	1
To what extent have leadership selection or promotion processes in which you have been involved focused on intellectual capabilities like those listed above?	2.86	2

Table 8.8.5 Key skills & knowledge

What level of assistance have you received to develop each area of skill/knowledge?	Mean	Rank
To what extent has your leadership development to date focused on skills and knowledge like those listed above?	3.37	1
To what extent have leadership selection or promotion processes in which you have been involved focused on skills and knowledge like those listed above?	2.83	2

In an open-ended question respondents were asked to identify, from their perspective, the most effective methods for developing their capabilities (i.e. learn) as an EfS leader in higher education. The results are summarised as a word cloud in Diagram 8.8.1.

**Diagram 8.8.1
Respondents' preferred methods to develop EfS leadership capabilities as a word cloud**



Below are direct quotes which are indicative of what the 188 respondents said in response to this question:

- Leadership workshops and capacity building through collaboration.
- I would love a 1-2 year institute that meets 1-2 times a year, stays in contact electronically through social networking etc; has readings, discussion, and collaborative projects. Maybe course credit for some people, but I would not want it as it just adds to the stress.
- Being able to interact with other EfS leaders at institutions similar to my own who have demonstrated success in the area.
- Being trusted to take the initiative and to learn by working as a team leader.
- Being offered guidance by skilled management when one is moving off track.
- Being receptive to feedback from those one leads, and also from peer leaders.

- Being prepared to step aside and allow others to take over the reins, when their skills or experience warrants this. Then watching how they do it.
- First hand experience and the chance to share experiences and obtain feedback from peers and leaders.
- Mentoring and formal/informal exchange with others in similar or more advanced leadership positions.
- Peer learning with structured coaching and positive regular administrative feedback.
- Reflective practice, action research, listening, learning multiple cultures, sound knowledge of EfS and SD in general.
- Work on international projects, study visits to universities and organization of international meetings in the area of EfS.
- Working in a supportive team environment with uni-wide recognition and value.

Significant differences in ratings x leadership role type, scope & time as a leader

Differences x role type

There is a number of significant differences (i.e. differences between means of 0.5/5 or more) amongst the study's various EfS leadership *roles* on the forms of support for their development respondents have identified in Table 8.8.1 as being most (and least) productive so far in their career.

Senior leaders rate participating in higher education leadership seminars significantly higher than Heads of Program, Professional Staff leaders and Academic staff. They also rate accessing leadership information on the internet and participating in peer networks beyond their country significantly higher than Directors, Deans/HOSs, Heads of Program and Professional staff; and undertaking self-guided reading on leadership higher than Directors, Deans/HOSs and Academic staff. Along with Deans/HOSs and Professional staff they also rate participation in Annual Performance Reviews higher than the other leadership groups.

Deans/HOSs rate completing formal institutional leadership programs higher than Directors and Professional Staff; participation in 360 degree feedback reviews higher than all other leadership groups except Senior Leaders. They also rate being involved in a formal mentoring/coaching program higher than Directors, Heads of Program and Professional Staff; and participation in leadership programs custom-tailored to their needs higher than Directors, Heads of Program and Professional Staff.

Professional staff rate involvement in leadership groups and associations and site visits to other institutions engaged in EfS significantly higher than all other groups.

Finally, informal academic staff leaders rate completing a tertiary qualification relevant to leadership higher than Professional Staff; and, with Senior Leaders, they rate participating in HE leadership seminars higher than Heads of Program and Professional staff.

These role differences give some insight into ways in which EfS leadership learning programs and strategies can be tailored to particular roles. It should be noted however, that this should always be in addition to using the leadership learning strategies in Table 8.8.1 which attract the highest ratings from all leadership groups.

Differences x role scope

Respondents with an institution-wide role rate accessing leadership information on the internet as a productive support strategy significantly higher than those with a mixed institutional and local role.

Those with a local leadership role rate completing a formal institutional leadership program, being involved in formal or informal mentoring and shadowing programs, in leadership groups or associations in the area, in leadership development programs custom-tailored to their needs higher than those with a mixed EfS leadership role. With respondents that have an institution-wide role these local leaders also rate site visits to other institutions engaged in EfS higher as a support for their development than respondents who have a mixed leadership role.

Differences x time in role

Those reporting being in an EfS leadership role between 4-6 years rate completing a formal leadership program provided by an external provider higher than those in the role for a longer period.

Significant differences in ratings x institution size and type

Differences x institution size

Respondents from institutions with between 10,000 and 20,000 students rate participating in higher education seminars, completing formal leadership programs provided by their institution or an external provider and studying real-life workplace problems along with undertaking work-placements and exchanges significantly higher as a support for their development than respondents from institutions with less than 10,000 respondents.

Differences x institution type

Respondents from multi-campus universities/colleges and institutions with a balance of research and teaching give significantly higher ratings to completing formal leadership programs provided by their institution than respondents from research-focused institutions.

Respondents from institutions with a balance of research and teaching rate study of 'real life' workplace problems higher as a support for their development than colleagues from teaching focused ones.

Finally, respondents from research-focused institutions give significantly higher ratings to involvement in professional leadership groups and associations than those from teaching-focused and multi-campus institutions.

Significant differences in ratings x region

Respondents from Europe give significantly higher ratings than most other regions to a large number of the support strategies and resources listed. Specifically they give higher ratings to completing a relevant tertiary qualification; participating in HE leadership seminars and peer networks beyond their country, undertaking work-placements and exchanges, involvement in shadowing programs and professional associations, participation in leadership development programs custom-tailored to their needs and to site visits to other institutions engaged in EfS than all other regions.

European respondents also give significantly higher ratings to completing leadership programs provided by their institution than their North American counterparts; to externally provided leadership programs than UK and Australasian respondents; to ad hoc conversations with people in a similar role than Australasian EfS leaders. They also give higher ratings to participation in 360 degree feedback reviews than UK and North American leaders; and, with Australasian respondents, to involvement in a formal mentoring program than UK respondents.

With North American colleagues, they give higher ratings to attending L&T conferences as a support for their development than their UK and Australasian counterparts; and, with their Australasian colleagues, they give higher ratings to being involved in a formal mentoring program than UK respondents. Australasian and North American leaders give significantly higher ratings to participating in peer networks within their institution than UK colleagues.

Significant differences in ratings x gender

There are no significant differences between male and female respondents on any of the support items listed.

Comparison with the results of earlier HE Leadership Studies

When the results on this question for the TLSHE sample are compared with the responses in the Learning Leaders and Professional Leaders studies we see that respondents in the present study give a significantly higher rating to attending conferences/seminars than respondents in the Learning Leaders study.

Respondents in the Professional Leaders study gave significantly higher ratings than both the Learning Leaders and TLSHE respondents to attending conferences and seminars on leadership, participating in their institution's leadership programs and those provided by external providers, completing a relevant tertiary qualification, undertaking 360 degree review, participating in an annual performance review, and in informal mentoring programs. The Professional leaders also gave significantly higher ratings to attending general conferences and to participating in professional associations than the participants in the Learning Leaders Study.

Implications and suggestions for follow up

Findings in a number of sections of this report point to an important need to review all leadership roles and position descriptions to ensure that they focus on the EfS activities, capabilities and indicators that have attracted the top rankings on importance. They also have important implications for organisational structure, reporting lines and what is given focus in performance management, accountability and individual EfS leader development plans.

The findings on how EfS leaders learn align with the findings from broader studies of effective adult and professional learning and with the key quality checkpoints identified in international research and analysis reports on effective approaches to university study learning specified in Section 5.2. It is important to note the connection here between how university students like to learn (Scott, 2008) and how our EfS leaders like to learn. The implication in this regard is that EfS Leadership programs need to model to the leaders undertaking them how their students like to learn.

The findings on the extent to which the key capabilities are given focus in EfS leader selection, promotion and succession planning indicate that more specific attention needs to be given to validating Position Descriptions against the findings and review the processes used to select leaders to ensure that they are both valid and reliable. The qualitative data indicate that a more systematic approach to succession planning is necessary by using the top rating capabilities to identify future leaders and then assist them to test and develop their potential. Byham (2001) gives a wide range of excellent strategies on how to 'grow your own leaders' using acceleration pools – a new method of succession planning.

Need for a comprehensive leadership learning framework for the area

‘Leadership and learning are indispensable to each other’

John Fitzgerald Kennedy

Diagram 8.8.2 presents an EfS leadership learning framework which applies the key findings from not only this study but the earlier ones and which fits well with Diagram 5.2 and the surrounding discussion in Section 5.2.

At the core of the diagram is the capability framework identified earlier in this report in Diagram 5.1. As EfS leaders experience their daily work a range of challenges, dilemmas, and unexpected or disconcerting outcomes will inevitably arise. It is at this time that the frameworks embedded in the study’s capability and change implementation frameworks and findings can be used to diagnose (make sense of) what is happening and, from this ‘reading’ of the situation, the most productive way to respond can be developed, using the strategies in this report and peer networks (that is, ‘matched’ to the diagnosis of what is needed). The planned response is then implemented and the effects evaluated. If the situation remains unresolved the whole cycle is repeated as the key shortfalls are gradually addressed.

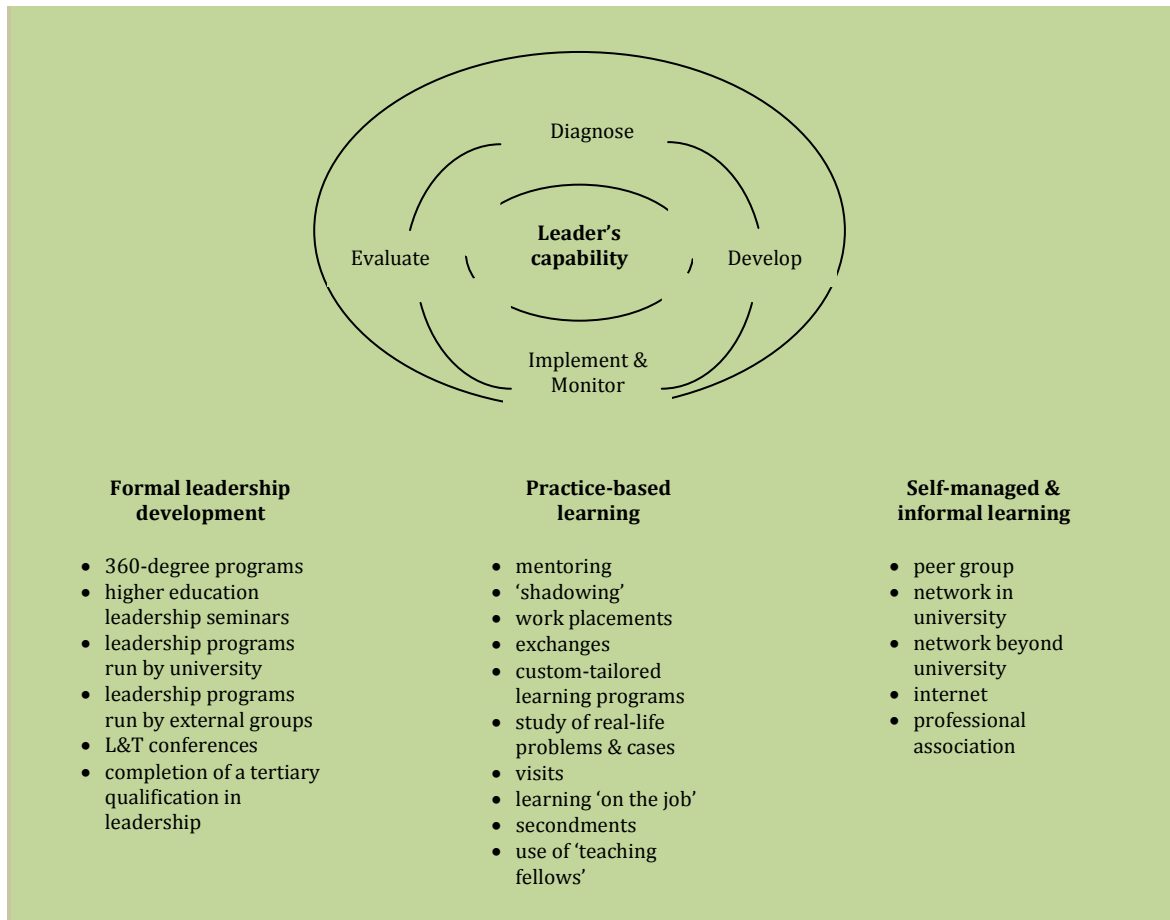
It is in this way that action, learning and capability development are integrated through the focused cycle of experiential learning first described by Kolb (1984, 1987). And it is in this way that reflective practitioners (Schön, 1983, 1987) use problem-based, real-world learning and focused reflection on experience supported by a validated diagnostic framework and peer support to continuously develop their capabilities.

This ongoing process can be assisted by more formal leadership learning programs, provided they are timely and role related, along with a range of practice-based learning strategies and self-managed learning. It can also be assisted by formal support for mentoring programs, provided the mentors are proven leaders and skilled in using the frameworks outlined in Section 5.

As diagram 8.8.2 indicates there is a role for both formal and informal learning. Formal programs are ideally suited to setting up the diagnostic frameworks through which practitioners can learn through experience and the networks of ‘fellow travellers’ from whom they can access just in time assistance and situated solutions.

The key, however, is for all this learning to be centred around the capability and implementation frameworks, identified in Section 5 and validated in Section 8. In summary, it is of little use to reflect on experience if one does not have the tools to make sense of what is going on, along with the capability to diagnose why things are not proceeding productively and the ability to effectively access to networks of fellow practitioners who have figured out solutions to the diagnosed problems.

**Diagram 8.8.2
Professional Leadership Development Framework**



What next?

Respondents and participants in the project's phase 2 feedback workshops were asked to identify one key step they believe their institution could take to drive EfS more deeply into the core business of their university or college. Ten key steps were repeatedly identified:

1. Acknowledge the distinctive challenges & complexity of EfS leadership.
2. Sharpen the focus & understanding of EfS across the higher education system.
3. Context counts: ensure organisational integration and system alignment to support EfS & its leaders.
4. Track & improve EfS program quality more systematically.
5. Put in place the right incentives.
6. Engage the disengaged and the institution's senior leadership.
7. Apply the key lessons on successful change management in higher education.
8. Focus on the change leadership capabilities identified in this study.
9. Review EfS leadership position descriptions, selection processes and succession strategies in the light of the study's findings.
10. Apply the most productive approaches to leadership learning identified in the study to the professional development of EfS leaders.

9. Conclusion

Sustainability is a multi-faceted agenda for organisations, but when harnessed effectively its integrative potential is substantial. Yet to achieve this level of engagement in academic institutions involves profound leadership challenges. Leading change for sustainability in universities requires more than knowledge of, or commitment to, the principles of sustainability. It requires a facility for bringing about change which deals with complexity, uncertainty and multiple stakeholders, as well as ambiguous terminology. It is complex, confusing, time consuming and difficult to implement, which explains why, to date, only a handful of university leaders have taken on the challenge.

Evidence suggests that, despite this inertia, there are movements towards more sustainable planning and practice in higher education. Government incentives, socio-economic expectations, partnership platforms, student leadership and experimental practice ... are all contributing to changes: although these may not be deep or systemic. University leaders now need to help join these dots of activity in ways which align mainstream practices to sustainability innovation in their institutions. Senior management teams, at this moment, hold the key to transforming higher education so that it can play its part in transforming social practices and contribute to more sustainable futures.

Tilbury (2011: 12)

This study has taken place at a turnaround moment for universities and colleges around the world – a time supportive of sector transformation towards giving more central focus to education for social, cultural, economic and environmental sustainability. The study has identified how this opportunity might best be addressed, what the key elements of transformation should be, how to manage the process and, most importantly, the key capabilities necessary for those who lead this transformation to enact it.

It has identified the personal, interpersonal and cognitive capabilities which characterise an effective EfS leader in Australasian, UK, European and North American tertiary education institutions. It has clarified the satisfactions, performance indicators and challenges these leaders face, along with relevant ways to tackle them at both an institutional and individual level and effective approaches to leadership development, selection and support. It has also compared and contrasted these results with those produced in an earlier parallel study of 513 academic leaders in Australian Higher Education and a study of 159 experienced professional leaders in tertiary education.

The international networks and commitments exist and the study has demonstrated how these can be used to engage in collective learning and action. The study has established that this is a propitious time to act in concert and transform higher education to build a just and sustainable future for all and the next generation of leaders capable of making it happen. We trust that the key findings and the way in which the project has been implemented as a collective venture help support and sharpen systematic, linked action on that agenda.

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August 2012

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Attachment One

Glossary of Terms

Sustainability/Sustainable Development

These terms are used interchangeably. The concept stems from a UN World Commission on Environment Development set up in 1983 which coined the term and promoted quality of life for present as well as future generations. The key goals of sustainability are to live within our ecological limits, to achieve social justice and to foster economic and social progress.

Corporate sustainability and responsibility

This refers to an organisation's response to sustainability and ability to embed sustainability thinking and values in its culture, decision-making and practice. Many organisations now provide annual corporate sustainability or responsibility reports.

Education for sustainability (Efs)/ Education for Sustainable Development.

Education for Sustainability is a learning and change process which is relevant to people, communities and organisations. Its ambition is to engage learners in thinking critically and creatively about the future as well as in considering the systemic changes that are needed to improve quality of life across the globe. The terms Education for Sustainability and Education for Sustainable Development are often used interchangeably.

'ESD' covers a range of international initiatives across formal and informal learning contexts and at all educational levels. The concept of sustainability focuses on achieving human wellbeing and quality of life, pursued through the maintenance, care and equitable use of natural and cultural resources. Terminology around sustainability is by necessity extremely complex and highly contested, with definitions varying according to context and perspective. (Ryan, 2011: HE Academy UK)

Higher Education

Higher education, also referred to as tertiary education, is the stage of learning that is accredited by universities, colleges and institutes of higher education. It can take place in a number of settings.

Leadership

I used to think that running an organization was equivalent to conducting a symphony orchestra. But I don't think that's quite it; it's more like jazz. There is more improvisation. — Warren Bennis

Leadership is a process of social influence and motivation which enlists people, communities or organisations in the accomplishment of a common goal, change or task; and, at the same time, builds their change capability and resilience.

Management

The effective day to day delivery of key operations and tasks . "The organization and coordination of the activities of an enterprise in accordance with certain policies and in achievement of defined objectives" ([Business Directory.com](http://BusinessDirectory.com))

Capability compared with competence

"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 leaders... 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 & Anderson, 2008: 12):

Management tends to be more associated with competence whereas leadership is more associated with capability (Scott, Coates & Anderson, 2008: 13).

Change

A situation becoming or being made different

Progress

The evaluation by the individuals concerned that change has been in a 'desirable' direction.

Evaluation

Evaluation is the process which leads to judgements about the worth, effectiveness and efficiency of an activity, project or strategies. It can be formal or informal and can be formative (informs development) or summative (reflects on processes/achievements at the end). At the heart of this process are judgements of 'value'.

Attachment Two

Key indicators that can be used to determine that EfS is being successfully implemented in a university or college

From input provided at the phase 2 feedback workshops and by respondents

Indicators of the quality of inputs

- Strong, active leadership from the senior executive of the university, including the VC
- Senior leaders with the capabilities identified in this study are in place and part of the senior decision-making mechanisms of the institution
- Fact that people like GS has been invited by our CEO to be here with all of our senior executive and key local leaders all present
- A quality assurance and improvement framework is in place and being used as new programs are approved and implemented
- Evidence based practice with a clear tracking and improvement system and quality management framework in place for the area.
- Presence of a graduate attribute that gives focus to the area – e.g. each graduate to be sustainability literate, change implementation savvy and clear on their position on the tacit assumptions being used to describe national 'success' (assumptions like 'growth is critical'; 'the answer is technology')
- The university is modelling sustainability in its operations and management and uses its campuses and surrounding region as a living laboratory for real world, problem based learning and action research
- The University is leading active consideration and action on the key sustainability challenges facing its local region.

Indicators of the quality of the outcomes and impact of EfS initiatives in Higher Education

- Every graduate is being assessed as a sustainable professional and practitioner
- Positive return on investment
- Positive employer feedback
- Staff buy in and support evidenced in applications for awards, engagement in EfS networks, feedback on surveys, participation in Yammer sites, proactive approaches to the institution's office of sustainability
- Positive student evaluations of learning and research units of study and programs in which they are involved
- Best practice defined, disseminated and being taken up

- All players understand what EfS means in their institution and know what is being done
- Awards for successful practice are in place; external awards are being achieved
- Positive media coverage
- Increases in student interest in sustainability courses and specialisations
- Growing enrolments and demand
- Communication with wider community – external endorsement
- Attention to the four pillars of sustainability seen in all practices
- Capstone projects and research outcomes are identified by employers and other key parties as being productive
- A vibrant campus – clear evidence of it being a living lab.

Attachment Three The Survey Instrument & Results

Below all of the quantitative items used in the survey are presented with the results for the EfS leaders. This is followed by a parallel table of the results from the earlier studies of Learning Leaders in Higher Education and Tertiary Education Professional Leaders.

Survey of Education for Sustainability Leaders in Higher Education (final data N = 188) Means and ranks

Important areas of focus in your EfS activities

How important do you believe each of the following activities is to the effective delivery of your role as an EfS leader in your institution?	Mean	Rank
1. Engaging senior institutional leaders with EfS	4.27	2
2. Engaging my institution's staff/faculty with EfS initiatives	4.34	1
3. Articulating the case for EfS to the institution	4.10	5
4. Securing student engagement and support	4.18	3
5. Marketing EfS activities	3.47	12
6. Liaising with external partners or stakeholders	3.53	10
7. Developing staff/faculty capacity to deliver EfS	4.05	6
8. Reviewing and supporting staff/faculty performance	3.18	17
9. Reviewing teaching of EfS	3.44	13
10. Undertaking scholarly research on EfS	3.53	11
11. Strategic Planning and/or policy development for EfS	4.11	4
12. Developing accredited higher education learning programs in EfS	3.94	9
13. Undertaking community and continuing EfS programs	3.33	15
14. Identifying and piloting new EfS initiatives	3.94	8
15. Developing organisational processes that effectively support EfS	4.03	7
16. General Administration and budget management	2.92	19
17. Responding to ad hoc requests	2.91	20
18. Participating in meetings	3.40	14
19. Chairing meetings	3.21	16
20. Defining and managing EfS metrics and reporting,	3.11	18

Judging effective performance in your current role

Importance	In you view, how important should each of the following indicators be as a criterion for judging effective performance in EfS activities like the ones you undertake? To what extent is improvement in each area a current priority for you?		Priority for improvement Mean	Rank
	Mean	Rank		
4.09	4	1. Achieving high levels of staff/faculty engagement, support and commitment	4.01	1
4.18	1	2. Achieving high levels of student engagement, support & commitment	3.96	4
3.79	11	3. Delivering successful EfS team projects in my area of responsibility	3.70	10
4.15	2	4. Establishing a collegial and collaborative working environment	4.01	2
3.47	17	5. Connecting successfully with key external stakeholders	3.39	17
3.38	18	6. Securing funds and resources for EfS programs	3.49	15
3.87	9	7. Producing future EfS leaders	3.77	9
3.35	19	8. Achieving effective alignment of planning, budget and resources with EfS initiatives	3.25	19
3.10	22	9. Achieving a positive financial outcome for my area	3.05	22
3.79	12	10. Designing EfS learning programs that are successfully approved for delivery	3.58	13
3.98	6	11. Producing significant improvements in learning and teaching quality in the area of EfS	3.90	6
3.64	14	12. Successfully embedding EfS in all programs of my University/College	3.64	11
3.88	8	13. Connecting EfS with campus and/or the community as a living laboratory and real life resource for learning	3.91	5
3.93	7	14. Bringing EfS policies & practices successfully into action	3.87	8
3.77	13	15. Delivering my agreed tasks or projects on time and to specification	3.55	14
3.82	10	16. Receiving positive user feedback for my area(s) of responsibility	3.59	12
3.13	21	17. Being invited to present to key external groups on the EfS programs I lead	3.00	23
4.14	3	18. Successful implementation of new initiatives in EfS	3.99	3
3.48	16	19. Achieving positive external recognition, including successful reviews of my area of responsibility	3.34	18
3.07	23	20. Producing refereed publications & reports on EfS	3.13	21
2.64	25	21. Winning awards and prizes for EfS programs & services	2.50	25
4.04	5	22. Building the EfS reputation of my organisation	3.89	7
3.23	20	23. Increased student retention rates	3.14	20
2.74	24	24. Meeting the required number of enrolments for EfS programs	2.64	24
3.52	15	25. Improving student satisfaction ratings	3.42	16

Influences shaping your work

Please rate the level of impact that each of the following has on shaping the focus of your work.	Mean	Rank
1. Government policy changes	3.19	14
2. Changes in external sources of funding	3.16	15
3. Increased competition for students	2.93	16
4. Growing pressure to generate new sources of income	2.90	18
5. Changing expectations and influence of business and industry	3.19	13
6. Greater external scrutiny	2.69	21
7. Growing importance of managing academic risk at my	2.58	23

institution		
8. Rapid changes in technology	2.89	19
9. Declining status of academic work	2.42	26
10. Maintaining a specific institutional image and mission	3.43	8
11. Having a clear picture of the institution's strategic direction	3.93	2
12. Changing levels of funding from within my institution for EfS activities	3.27	11
13. Having to deal with incentives which work against collaboration within or between the faculties/different sections of my institution	3.49	6
14. Depth of engagement of senior leaders with EfS	4.00	1
15. Increased focus on filling enrolment targets	2.57	25
16. Finding and retaining high quality staff/faculty	2.92	17
17. Managing diverse and complex institutional sub-cultures	3.36	9
18. Managing difficult staff/faculty members	2.65	22
19. Unresponsive administrative processes	3.20	12
20. Increased student interest in EfS	3.78	3
21. Changing profile and expectations of students	3.45	7
22. Increased pressure to retain students	2.57	24
23. Managing multiple pressures for continuous change	3.31	10
24. Handling unexpected events	2.88	20
25. Balancing work and family life	3.51	4
26. Having to deal with different conceptions of what EfS means	3.49	5

Personal capabilities

How important do you believe each of the following PERSONAL CAPABILITIES is for effective performance in your current role?	Mean	Rank
1. Admitting to and learning from my errors	4.40	5
2. Understanding my personal strengths and limitations	4.42	4
3. Being confident to take calculated risks	4.26	8
4. Remaining calm when under pressure or when things take an unexpected turn	4.37	7
5. Deferring judgment and not jumping in too quickly to resolve a problem	4.02	13
6. Having energy, passion and enthusiasm for learning and teaching	4.70	1
7. Persevering when things are not working out as anticipated	4.40	5
8. Wanting to achieve the best outcome possible	4.19	10
9. Taking responsibility for program activities and outcomes	4.13	11
10. Being willing to take a hard decision	3.97	15
11. Pitching in and undertaking menial tasks when needed	3.84	16
12. Maintaining a good work/life balance and keeping things in perspective	3.98	14
13. Bouncing back from adversity	4.12	12
14. Tolerating ambiguity and uncertainty	4.21	9
15. Being true to one's personal values and ethics	4.54	3
16. Being willing to give credit to others	4.68	2

What level of assistance have you received to develop each capability?	Mean	Rank
To what extent has your leadership development to date focused on personal capabilities like those listed above?	3.62	1
To what extent have leadership selection or promotion processes in which you have been involved focused on personal capabilities like those listed above?	2.80	2

Interpersonal capabilities

How important do you believe each of the following INTERPERSONAL CAPABILITIES is for effective performance in your current role?	Mean	Rank
1. Empathising and working productively with staff and faculty from a wide range of backgrounds	4.60	1
2. Empathising and working productively with students from a wide range of backgrounds	4.26	6
3. Influencing people's behaviour and decisions in effective ways	4.22	8
4. Listening to different points of view before coming to a decision	4.49	3
5. Developing and using networks of colleagues to solve key workplace problems	4.23	7
6. Understanding how the wide range of groups that make up my institution operate in different situations	4.18	9
7. Working with very senior people within and beyond my institution without being intimidated	4.04	10
8. Giving and receiving constructive feedback to/from work colleagues and others	3.97	11
9. Motivating others to achieve great things	4.31	4
10. Contributing positively to team-based programs	4.27	5
11. Working constructively with people who are 'resisters' or are over-enthusiastic	3.91	12
12. Being transparent and honest in dealings with others	4.60	2

What level of assistance have you received to develop each capability?	Mean	Rank
To what extent has your leadership development to date focused on interpersonal capabilities like those listed above?	3.58	1
To what extent have leadership selection or promotion processes in which you have been involved focused on interpersonal capabilities like those listed above?	2.78	2

Intellectual capabilities

How important do you believe each of the following INTELLECTUAL CAPABILITIES is for effective performance in your current role?	Mean	Rank
1. Being able to identify the best way to respond to a perplexing situation	4.19	9
2. Knowing that there is never a fixed set of steps for solving workplace problems	4.25	6
3. Identifying from a mass of information the core issue or opportunity in any situation	4.31	3
4. Thinking creatively and laterally	4.55	1
5. Establishing a clear, justified, achievable direction in my area(s) of responsibility	4.28	4
6. Seeing and then acting on an opportunity for a new direction	4.25	5
7. Using previous experience to figure out what is going on when a current situation takes an unexpected turn	4.04	12
8. Diagnosing the underlying causes of a problem and then taking appropriate action to address it	4.24	7

9. Tracing out and assessing the likely consequences of alternative courses of action	4.00	13
10. Adjusting a plan of action in response to problems that are identified during its implementation	4.24	7
11. Recognising how seemingly unconnected activities are linked	4.19	9
12. Setting and justifying priorities for my daily work	3.81	14
13. Recognising patterns in a complex situation	4.12	11
14. Making sense of and learning from experience	4.39	2

What level of assistance have you received to develop each capability?	Mean	Rank
To what extent has your leadership development to date focused on intellectual capabilities like those listed above?	3.45	1
To what extent have leadership selection or promotion processes in which you have been involved focused on intellectual capabilities like those listed above?	2.86	2

Skills and knowledge

How important do you believe each of the following SKILLS AND KNOWLEDGE is for effective performance in your current role?	Mean	Rank
1. Having a high level of up-to-date knowledge of what engages higher education students in productive learning	4.12	7
2. Understanding how to develop an effective higher education learning program	4.14	5
3. Understanding how to implement successfully a new higher education program	4.14	5
4. Understanding how to design and conduct an evaluation of a higher education learning program	3.97	9
5. Understanding how to identify and disseminate effective learning and management practice across the institution	3.83	13
6. Being on top of current developments in EfS	3.90	11
7. Understanding how universities operate	4.28	3
8. Understanding the role of risk management and litigation in my work	3.11	16
9. Understanding industrial relations issues and processes as they apply to higher education	2.87	17
10. Being able to use I.T. effectively to communicate & perform key work functions	3.66	14
11. Being able to manage my own ongoing professional learning and development	3.94	10
12. Being able to help my staff/faculty learn how to deliver necessary changes effectively	3.88	12
13. Ability to chair meetings effectively and purposefully	4.16	4
14. Being able to make effective presentations to a range of different groups	4.34	2
15. Being able to organise my work and manage time effectively	4.40	1
16. Having sound administrative and resource management skills	4.03	8
17. Knowing how to develop and report on key EfS Metrics.	3.24	15

What level of assistance have you received to develop each skill/knowledge?	Mean	Rank
To what extent has your leadership development to date focused on skills and knowledge like those listed above?	3.37	1
To what extent have leadership selection or promotion processes in which you have been involved focused on skills and knowledge like those listed above?	2.83	2

Support for your development

In your experience how effective has each of the following activities been in helping develop your capabilities as a leader engaged in EfS?	Mean	Rank
1. Attending Learning & Teaching conferences, including those concerned with EfS	3.45	5
2. Completing a tertiary qualification relevant to leadership	2.22	18
3. Participating in higher education leadership seminars	2.69	12
4. Accessing leadership information on the internet	2.42	14
5. Completing formal leadership programs provided by my institution	2.20	19
6. Completing formal leadership programs given by external providers	2.34	15
7. Study of 'real-life' workplace problems	3.23	7
8. Participating in peer networks within my university/college	3.57	3
9. Participating in peer networks within my country	3.52	4
10. Participating in peer networks beyond my country	2.98	8
11. Ad hoc conversations about work with people in similar roles	3.65	2
12. Undertaking work-placements or exchanges	2.00	21
13. Participation in 360 degree feedback reviews based on known leadership capabilities	2.08	20
14. Participation in an Annual Performance Review	2.53	13
15. Being involved in a formal mentoring/coaching program	2.29	17
16. Being involved in informal mentoring/coaching	2.72	11
17. Involvement in a leadership 'shadowing' program	1.87	22
18. Learning 'on the job'	4.09	1
19. Undertaking self-guided reading on leadership	3.30	6
20. Involvement in professional leadership groups or associations, including those concerned with EfS	2.95	10
21. Participation in leadership development programs which are custom tailored to your needs	2.34	16
22. Site visits to other institutions/agencies engaged in EfS	2.97	9

ATEM 2011 Survey of Professional Leaders & ALTC 2008 Survey of Academic Leaders

Means and ranks

Item numbers and phrasing are as per the ATEM survey tool. Items which were not used in either of the surveys are not included in the tables. This may alter original ranks.

Major areas of focus in your current role: Importance

How important do you believe each of the following areas or activities is to the effective delivery of your role?	ALTC overall (N = 513)			ATEM overall (N = 159)	
	Mean	Rank		Mean	Rank
1. Managing staff	4.14	2		4.18	4
2. Staff development	3.94	6		3.85	7
3. Developing policy	3.92	7		3.58	10
4. Marketing activities	3.04	19		2.41	16
5. Liaising with a range of external constituencies	3.54	13		3.27	13
6. Developing learning programs	3.89	9		2.01	19
7. Accrediting and reviewing learning programs	4.04	4		1.77	20
8. Reviewing performance of your area of responsibility	3.39	16		4.22	2
9. Budget management	3.13	18		3.62	9
10. General administration	3.35	17		3.55	11
11. Responding to requests for information or decision	3.61	12		4.21	3
12. Writing reports/submissions	3.45	15		3.82	8
13. Dealing with student complaints	3.51	14		2.41	17
14. Participating in meetings	4.02	5		4.15	5

15. Chairing meetings	3.64	11		3.33	12
16. Strategic planning	4.13	3		4.08	6
17. Identifying new markets and opportunities	4.18	1		2.56	15
18. Working on student support	3.89	8		2.69	14
19. Collaborating within your tertiary institution	3.77	10		4.33	1
21. Research and writing	3.01	20		2.32	18

Judging effective performance in your role: Importance

How important should each of the following indicators be as a criterion for judging effective performance in your current role?	ALTC overall (N = 513)			ATEM overall (N = 159)	
	Mean	Rank		Mean	Rank
1. Achieving positive financial or various biz outcomes	3.39	18		3.71	11
2. Increased student retention rates	3.44	16		2.71	20
3. Achieving high quality graduate outcomes	4.37	1		2.46	21
4. Achieving goals set for your own professional development	3.41	17		3.57	12
5. Bringing innovative policies and practices into action	4.21	6		4.23	6
6. Delivering successful team projects	3.81	12		4.32	5
7. Producing successful systems or infrastructure	3.81	13		3.94	9
8. Winning resources for your area of responsibility	3.66	14		3.31	15
9. Delivering agreed tasks or projects on time and to specification	4.23	5		4.46	1
10. Producing significant improvements in services or processes	4.31	3		4.45	2
11. Meeting student load targets	3.13	21		2.27	22
12. Receiving positive user feedback for your area of responsibility	4.10	8		4.07	8
13. Providing high level of support for staff	3.92	11		4.32	4
14. Being invited to present to key groups	2.96	22		2.94	17
15. Improving student satisfaction ratings	4.14	7		2.91	18
16. Establishing a collegial working environment	4.27	4		4.15	7
17. Successful implementation of new initiatives	4.32	2		4.41	3
18. Enhanced representation of equity groups	3.26	20		2.86	19
19. Achieving positive outcomes in external reviews of the area	4.02	9		3.77	10
20. Producing future leaders	3.64	15		3.49	14
21. Formative involvement of external stakeholders in your work	3.37	19		3.15	16
22. Publishing papers and reports	2.94	23		2.06	23
23. Achieving a high profile in your area of responsibility	3.93	10		3.55	13

The influences that shape your role

Please rate the level of impact each of the following has on your daily work	ALTC overall (N = 513)			ATEM overall (N = 159)	
	Mean	Rank		Mean	Rank
1. Decreased government funding	3.93	3		3.31	7
2. Growing local competition	2.92	17		2.77	16
3. Growing international competition	2.62	20		2.78	14
4. Increased student complaints	2.44	22		2.38	21
5. Greater government reporting and scrutiny	3.49	8		3.21	9
6. Rapid changes in technology	3.39	10		3.43	5
7. Growing pressure to generate new income	3.52	7		2.78	15
8. Declining status of tertiary work	3.00	16		1.91	22
9. Increased focus on filling enrolment targets	3.03	14		2.88	13
10. Catering for an increasingly diverse range of students	3.16	13		3.08	11
11. Student retention	2.76	18		2.99	12
12. A growing risk of litigation	2.57	21		2.69	17
13. Finding and retaining high quality staff	3.60	4		3.82	3

14. Having to engage more with surrounding community groups and agencies	3.01	15		2.46	20
15. Having to engage more with business and industry	2.68	19		2.61	18
16. Managing pressures for continuous change	3.95	2		4.05	1
17. Having to handle the unexpected	3.47	9		4.03	2
18. Increasing difficulty in balancing work and family life	3.95	1		3.42	6
19. Local institutional culture	3.36	11		3.65	4
20. Managing difficult staff	3.22	12		3.22	8
21. Lack of strategic direction	3.52	6		2.51	19
22. Slow administrative processes	3.59	5		3.16	10

Personal capabilities: Importance

How important do you believe each of the following personal capabilities are for effective performance in your current role?	ALTC overall (N = 513)		ATEM overall (N = 159)	
	Mean	Rank	Mean	Rank
1. Admitting to and learning from my errors	4.49	5	4.44	7
2. Understanding my personal strengths and limitations	4.56	3	4.58	2
3. Being confident to take calculated risks	4.24	12	4.29	11
4. Being able to remain calm when under pressure, when things go wrong or when events take an unexpected turn	4.59	2	4.71	1
5. Deferring judgment and not jumping in too quickly to resolve a problem	4.25	11	4.27	12
6. Energy, passion and enthusiasm for learning and teaching	4.54	4	4.36	9
7. A willingness to persevere when things are not working out as anticipated	4.36	8	4.37	8
8. Wanting to achieve the best outcome possible	4.48	6	4.46	6
9. Take responsibility for programs, including how they turn out	4.31	10	4.18	13
10. An ability to make a hard decision	4.43	7	4.55	3
11. Pitching in and undertaking menial tasks when needed	3.96	14	3.99	14
13. Being able to bounce back from adversity	4.31	9	4.49	4
14. Tolerating ambiguity and uncertainty	4.12	13	4.29	10
15. Being true to one's personal values and ethics	4.61	1	4.47	5

Extent of assistance to develop your capability in this area

What level of assistance have you received to develop each capability?	Mean	Rank	Mean	Rank
To what extent has your leadership development to date focused on personal capabilities like those listed above?	3.72	1	3.78	1
To what extent have leadership selection or promotion processes in which you have been involved focused on personal capabilities like those listed above?	2.66	2	3.18	2

Interpersonal capabilities: Importance

How important do you believe each of the following interpersonal capabilities are for effective performance in your current role?	ALTC overall (N = 513)		ATEM overall (N = 159)	
	Mean	Rank	Mean	Rank
1. Empathising and working productively with staff and other key players from a wide range of backgrounds	4.58	2	4.49	3
2. Influencing people's behaviour and decisions in effective ways	4.28	4	4.49	3
3. Empathising and working productively with students from a wide range of backgrounds	3.99	10	2.83	10
4. Developing and using networks of colleagues to solve key workplace problems	4.21	7	4.16	9

5. Understanding how the different groups that make up my university operate and influence different situations	4.13	8		4.28	6
6. Working with very senior people within and beyond my university without being intimidated	4.07	9		4.23	7
7. Giving and receiving constructive feedback to/from work colleagues and others	4.22	6		4.20	8
8. Motivating others to achieve positive outcomes	4.45	3		4.50	2
9. Developing and contributing positively to team-based programs	4.25	5		4.29	5
10. Being transparent and honest in dealings with others	4.72	1		4.71	1

Extent of assistance to develop your capability in this area

What level of assistance have you received to develop each capability?	Mean	Rank		Mean	Rank
To what extent has your leadership development to date focused on interpersonal capabilities like those listed above?	3.70	1		3.70	1
To what extent have leadership selection or promotion processes in which you have been involved focused on interpersonal capabilities like those listed above?	2.77	2		3.23	2

Intellectual capabilities: Importance

How important do you believe each of the following intellectual capabilities are for effective performance in your current role?	ALTC overall (N = 513)			ATEM overall (N = 159)	
	Mean	Rank		Mean	Rank
1. Seeing the best way to respond to a perplexing situation	4.33	6		4.49	2
2. Knowing that there is never a fixed set of steps for solving workplace problems	4.20	7		4.27	7
3. Thinking creatively and laterally	4.49	2		4.33	5
4. Having a clear, justified and achievable direction in my area of responsibility	4.33	5		4.26	9
5. Seeing and then acting on an opportunity for a new direction	4.17	9		4.10	11
6. Using previous experience to figure out what's going on when a current situation takes an unexpected turn	4.13	10		4.27	8
7. Diagnosing the underlying causes of a problem and taking appropriate action to address it	4.48	3		4.50	1
8. Tracing out and assessing the likely consequences of alternative courses of action	4.18	8		4.30	6
9. Adjusting a plan of action in response to problems that are identified during its implementation	4.40	4		4.44	3
10. Recognising how seemingly unconnected activities are linked	4.08	11		4.18	10
11. Setting and justifying priorities for my daily work	4.06	12		4.03	12
12. Making sense of and learning from experience	4.50	1		4.38	4

Extent of assistance to develop your capability in this area

What level of assistance have you received to develop each capability?	Mean	Rank		Mean	Rank
To what extent has your leadership development to date focused on intellectual capabilities like those listed above?	3.52	1		3.58	1
To what extent have leadership selection or promotion processes in which you have been involved focused on intellectual capabilities like those listed above?	2.72	2		3.31	2

Skills and knowledge: Importance

How important do you believe each of the following skills and knowledge are for effective performance in your current role?	ALTC overall (N = 513)			ATEM overall (N = 159)	
	Mean	Rank		Mean	Rank
1. Understanding how universities operate	4.20	3		4.41	2

2. Understanding the role of risk management and litigation in current professional work	3.35	11		3.65	11
3. Understanding of industrial relations issues and processes as they apply to higher education	3.17	12		3.42	12
4. Being able to use IT effectively to communicate and perform key work functions	3.98	8		4.03	5
5. Being able to manage my own ongoing professional learning and development	3.78	10		3.84	7
6. Being able to help my staff learn how to deliver necessary changes effectively	4.08	7		4.25	4
7. An ability to effectively chair meetings	4.10	6		3.80	8
8. Being able to make effective presentations to a range of different groups	4.15	4		3.86	6
9. Being able to organise my work and manage time effectively	4.56	1		4.44	1
10. Having sound administrative and resource management skills	4.24	2		4.35	3
15. Understanding how to develop and implement programs	4.13	5		3.79	9
17. Having high-level, up-to-date knowledge of relevant current developments in other tertiary education institutions.	3.92	9		3.72	10

Extent of assistance to develop your capability in this area

What level of assistance have you received to develop each skill/knowledge?	Mean	Rank		Mean	Rank
To what extent has your leadership development to date focused on skills and knowledge like those listed above?	3.60	1		3.49	1
To what extent have leadership selection or promotion processes in which you have been involved focused on skills and knowledge like those listed above?	2.88	2		3.47	2

Support for your leadership development: Importance

How effective have you found the following learning programs, experiences and activities in developing your capabilities as a leader?	ALTC overall (N = 513)			ATEM overall (N = 159)	
	Mean	Rank		Mean	Rank
1. Attending conferences/seminars	2.95	7		3.49	6
2. Attending conferences/seminars on leadership in higher education	2.96	6		3.47	9
3. Browsing the internet to find information	2.17	17		2.89	16
5. Participating in your institution's leadership program/s	2.79	10		3.61	4
6. Participating in leadership programs outside your institution	2.67	14		3.48	8
7. Completion of a relevant formal qualification	2.89	8		3.67	3
8. Participation in peer networks within your institution	3.45	3		3.48	7
9. Participation in peer networks beyond your institution	3.19	5		3.61	5
10. Informal conversations with people in similar roles	3.59	2		3.78	2
11. Completion of 360 degree feedback	2.73	13		3.35	14
12. Participation in an annual performance review	2.75	12		3.43	11
13. Participation in a formal mentoring/coaching program	2.66	15		3.35	13
14. Informal mentoring	3.26	4		3.43	12
16. Learning 'on the job' through experiencing and resolving challenges	4.09	1		4.25	1
18. Participation in professional associations or leadership groups	2.76	11		3.44	10
19. Undertaking staff exchanges	2.22	16		2.49	17
20. Site visits to other institutions	2.87	9		3.15	15

Attachment Four

Indicative recommendations for action by universities identified at the Phase 2 workshops

Indicative recommendations for action by universities

A more strategic, supported sense of value of staff/faculty who teach/organize/build partnerships rather than research/publish

Appoint a senior full time academic responsible for EfS in HE

Better networking with other colleges similar to ours that are also focused on EfS to see how they address issues unique to our type of colleges.

Clarify the roles and responsibilities around the University

Clear leadership from VC downwards

Create more space and incentives for interdisciplinary activities

Demonstrate that it is good for business

Develop a network of engagement of people teaching and researching in the area

Develop resources and standards for use across the state university system

Development of a EfS leadership program targeting key staff in departments and schools

Establish mentoring programs

Establishing leadership programs for EfS leaders

Formally bring together interdisciplinary faculty who share this interest and support their participation in EfS work at national level

Fund attendance at a peer-based leadership programme tailored towards EfS or similar kinds of educational innovation

Give this high profile in all Faculty and School policies in order to encourage program innovation across the curriculum

Have at least one member of the SMT who is genuinely commitment to EfS.

Hold a conference

Include EfS contribution as a criterion in the promotions process

Match expectations for campus as living laboratory and our various high level sustainability commitments and strategies, with resources to implement them.

More time/space for reflection and learning from our practice.

Put resources into this activity and not leave it to academics to find the time.

Reward success in EfS ...

Show that the university leadership cares. We need to walk the talk.

Universities in Austria are strongly driven by the influence of federal ministries. Universities together would need to call the ministries for more funding in the field of EfS and recognize EfS as a future topic

We are an institution for teachers training. Developing the teachers EfS competencies is one of key steps.

Establish regular informal meetings of peers to discuss issues/challenges (we all get so busy it's difficult to connect & learn from each other consistently)

A clear statement of the rector

A directive from the vice chancellor

A vision and strategy wherein EfS is incorporated

Appoint a director of sustainability or a coordinator who can attend to needs across all functional areas.

Bring to prominence electives, majors and sub majors of interest to students and staff alike. Consider sending a staff member to class or a subject to expand deeper understanding

Have it embedded in strategic goal and mandatory part of new course development

Make it a mandatory graduate attribute

Have it embedded in strategic goal and mandatory part of new course development

Provide greater support for staff interested in EfS; encourage interdisciplinary communities of practice to exchange information on sustainability issues, write grant applications for research on EfS, develop integrated curricula embedding sustainability.

Recognise success when it happens

Support triple bottom line entrepreneurs in our city and hold them up as models for the future

To establish a formal leadership position of the highest possible order within the administration via a deputy vice-chancellorship

Attachment Five
Briefing for Universities Australia
July 2012

Sustainability in Australian Higher Education

Introduction

An international Higher Education Treaty on Education for Sustainability (EfS) was endorsed at the June 2012 UN Conference on Sustainable Development – ‘Rio+20’. In February 2012 UA endorsed the commitment of Sustainable Practices of Higher Education Institutions building on its 2006 commitment to the UN Decade of Education for Sustainable Development 2005-14.

It is internationally agreed that pursuing a sustainability agenda in higher education includes not only ‘greening’ the operations of our universities but also building a focus on the four pillars of social, cultural, economic and environmental sustainability into their curriculum, research, and engagement activities.

This document summarises the current context and identifies some potentially relevant options for action by Universities Australia.

The Existing U.A. Commitment

In February, 2012 [Universities Australia \(UA\) endorsed](#) the 'Commitment of Sustainable Practices of Higher Education Institutions on the Occasion of the United Nations Conference on Sustainable Development in Rio 2012'.

“Under the United Nations Commitment, UA agree to the following principles:

- Teach sustainable development concepts, ensuring that they form a part of the core curriculum across all disciplines so that future higher education graduates develop skills necessary to enter sustainable development workforces and have an explicit understanding of how to achieve a society that values people, the planet and profits in a manner that respects the finite resource boundaries of the earth. Higher Education Institutions are also encouraged to provide sustainability training to professionals and practitioners.
- Encourage research on sustainable development issues, to improve scientific understanding through exchanges of scientific and technological knowledge, enhancing the development, adaptation, diffusion and transfer of knowledge, including new and innovative technologies.
- Green our campuses by:
 - i) reducing the environmental footprint through energy, water and material resource efficiencies in our buildings and facilities;
 - ii) adopting sustainable procurement practices in our supply chains and catering services;
 - iii) providing sustainable mobility options for students and faculty;
 - iv) adopting effective programmes for waste minimization, recycling and reuse; and
 - v) encouraging more sustainable lifestyles.
- Support sustainability efforts in the communities in which we reside, working with local authorities and civil society to foster more liveable, resource-efficient communities that are socially inclusive and have small environmental footprints.
- Engage with and share results through international frameworks, such as the UN Decade of Education for Sustainable Development, led by UNESCO, the UN University system, the UN Academic Impact, the Global Compact, the UN-supported Principles for Responsible Management Education initiative and the UN Environment Programme's Environmental Education and Training initiatives, in order to exchange knowledge and experiences and to report regularly on progress and challenges.”

This builds on the commitments to Education for Sustainable Development (ESD) given by UA when called the AVCC in August 2006.

Current Context

An interlocked set of national and international developments and policy initiatives have reinforced the core leadership role which universities need to take to help their nations address the challenges of social, economic and environmental sustainability. Below is a summary of some of the more recent ones:

The National Action Plan

The Australian Government's 2009 [*National Action Plan for Education for Sustainability*](#) calls for reorienting education systems towards adopting the principles of sustainability by focusing on:

..achieving a culture of sustainability in which teaching and learning for sustainability are reinforced by continuous improvement in the sustainability of campus management ... (and) .. to improve community and practitioners' access to knowledge and tools (pg 5)... building individual and organisational capacity and motivation to innovate and implement solutions.. (and) .. re-orient the way we live and work (pg 8).

This plan (pg 9) identifies the following principles upon which action around Education for Sustainability (EfS) should be based:

Transformation and change

Education for sustainability is not simply about providing information but involves equipping people with the skills, capacity and motivation to plan and manage change towards sustainability within an organisation, industry or community.

Education for all and lifelong learning

Education for sustainability is driven by a broad understanding of education and learning that includes people of all ages and backgrounds and at all stages of life and takes place within all possible learning spaces, formal and informal, in schools, workplaces, homes and communities.

Systems thinking

Education for sustainability aims to equip people to understand connections between environmental, economic, social and political systems.

Envisioning a better future

Education for sustainability engages people in developing a shared vision for a sustainable future.

Critical thinking and reflection

Education for sustainability values the capacity of individuals and groups to reflect on personal experiences and world views and to challenge accepted ways of interpreting and engaging with the world.

Participation

Education for sustainability recognises participation as critical for engaging groups and individuals in sustainability.

Partnerships for change

Education for sustainability focuses on the use of genuine partnerships to build networks and relationships, and improve communication between different sectors of society.

The National Action Plan lists four specific areas for university-focused action (Section 2.2):

- 2.2.1 The development of whole-of-institution approaches to sustainability '*including research, teaching and learning, and campus management*';
- 2.2.2 The Department of Environment, Water, Heritage & the Arts and the Department of Education, Employment & Workplace Relations will examine whether it is feasible and appropriate to provide incentives including funding, grants, award schemes and practical support to implement the EfS policy of Universities Australia;
- 2.2.3 Sustainability networks will be supported to improve coordination, share best practice and communicate the concepts of sustainability in universities. Actions will aim to raise the profile and reach of these networks through tools such as websites, forums and conferences.

- 2.2.4 The Australian Government will work with appropriate partners to promote integration of sustainability into professional learning qualifications and university degree accreditation. This project will research incorporating sustainability into university courses for key professions such as engineering, accountancy, economics, law, architecture, planning and teaching. Priority will be given to those professions with the greatest and most immediate impact on sustainability outcomes. This work will build on the existing work of the Australian Research Institute in Education for Sustainability with business schools and teacher education institutions.

International Developments

The 2011 international survey of sustainability in Higher Education by [the Global Universities Network for Innovation](#) (GUNI) found that considerable progress has taken place in building sustainability into campus operations but that far less has been achieved in terms of embedding sustainability into the curriculum of our universities.

The Club of Rome's [Blue Economy](#) strategy and the green growth initiatives now advocated by the International Monetary Fund, the Asia-Pacific Economic Cooperation Forum, The Group of Twenty, the World Bank and the International Energy Agency are all giving an increasingly important role to universities in leading the way in terms of inventing, testing and teaching about new approaches for dealing with the challenges of social, economic and environmental sustainability.

In a related initiative in preparation for the Rio +20 meeting the UN Environment Program, CSIRO (Australia), the Energy & Resources Institute and the Institute for Global Environment Strategies (Japan) produced a [joint report](#) which notes that the Asia-Pacific accounts for more than half the world's total resource use. It predicts that, without decoupling GDP growth from resource use, the region will be using 80 billion tonnes of materials by 2050. The report concludes:

“What is required is a new industrial revolution that provides food, housing, mobility, energy and water with only 20% of the per-capita resource use and emissions found in current systems”.

Over 400 Universities across the world, 20 of which are Australian, are, as part of the Association of University Leaders for a Sustainable Future, listed as signatories to the [Talloires Declaration](#).

Internationally, there are mixed signals about willingness to engage with the “big picture” issues underlying the principles of sustainability. On the one hand, there is increasing interest in indices of human achievement and well-being being shown by Governments to inform their national planning instruments that do not rely only, or principally, on measures of material progress and consumption. International business leaders, including in industries that are resource intensive, are adopting the language of sustainability in response to changes in consumer and shareholder sentiment. Alongside this, there is also an emerging weariness (and wariness) evident among many parts of civil society about the failure of Governments to address these issues, as evidenced by the response to the low-key outcomes of the Copenhagen process.

Taking up leadership positions in this context is fraught with political and economic challenges, and this is where Universities collectively can play a seminal role nationally as well as being a beacon in their own geographic regions and among their broader communities of interest. The need to address these challenges provides Australia's universities with a unique leadership opportunity to link and leverage their interdisciplinary research and teaching capability.

As the President of [the Copernicus Alliance](#) – the European Network on HE for Sustainability - has recently noted, there are important opportunities to engage in integrated, transdisciplinary research and teaching to address the above challenges and opportunities:

' In recent years sustainability has become an increasingly fashionable research topic, the focus of new inter-disciplinary research funding streams and a powerful attractor for the next generation of

researchers... It is widely acknowledged that the complexities of sustainability require forms of research activity that challenge boundaries at several interfaces, not least between academic disciplines, across professional roles and in relation to personal values’.

Recent national developments

Recent Australian reviews of emerging jobs in social, economic and environmental sustainability identify an increasing range of opportunities and roles that relate to developing the Blue Economy (making money from waste) and sought-after sustainability specialisations across all of the professions.

Universities have a distinctive opportunity to work reciprocally, as part of what the Bradley Report called their ‘third mission’, with the businesses, government groups, NGOs, community groups and other sectors of education in their region to foster community learning and action to address key regional issues of social, economic and environmental sustainability. At present the [United Nations University](#) has acknowledged some 100 Regional Centres of Expertise in ESD around the world to address this agenda. Australia has three of these – RCE-Greater Western Sydney in NSW; RCE-Gippsland in Victoria; and RCE-Western Australia. Each RCE is associated with one or more universities in the region concerned.

The 2010 National Tertiary Education Union’s report: [The Functional Dynamics of Green Universities](#) observes:

We contend that Australian universities generally are being shaped by global and community concerns: they are responding to rather than defining and leading the debate (pg 30).

The Australian Education for Sustainability Alliance (AESA) brings together the Australian Youth Climate Coalition with a range of teacher, parent and environmental groups. [AESA](#) aims ‘to build a sustainable Australia by ensuring all Australians have access to sustainability education through school, tertiary education and professional development’.

On Tuesday 20th March 2012 AESA launched its report [The State of Education for Sustainability in Australia](#), in Canberra at a press conference and, in a meeting with over 20 Federal Ministers, MPs and Senators, including Education Minister Garrett, Environment Minister Burke and shadow Environment Minister Hunt. This report recommends that all tertiary education institutions are “catalysed... to better equip students with the skills to build a sustainable economy and to integrate sustainability principles across all disciplines and practices”.

The Australian Curriculum, Assessment & Reporting Authority ([ACARA](#)) has set sustainability as a priority theme from K-12 in Australian schools and there is now an opportunity for universities to develop the in-service and pre-service programs to ensure this curriculum is consistently and effectively delivered. As the AESA report (2012:2) notes:

It is critical that federal funding is allocated to develop high quality teaching resources for sustainability and provide teachers with professional development in integrating sustainability in their classrooms.

The Australian Government’s [Green Skills Agreement Implementation Group](#) has built a sustainability module into every one of Australia’s Training Packages and it is reported that currently 4 of the 11 Industry Councils have made these compulsory. The GSAIG has identified the need to produce university graduates who can see the strategic and financial merit in using tradespeople with these skills. Swinburne University has developed a [Graduate Certificate in Education & Training for Sustainability](#) to facilitate the development of VET teachers to deliver the modules. A parallel national initiative is, as already noted, needed in university school teacher education programs.

Australasian Campuses towards Sustainability ([ACTS](#)) is taking a national leadership role in bringing together activities in post-secondary and higher education across the country. It runs an annual conference, has introduced a national tracking tool for the area – the Learning in

Future Environments ([LiFE](#)) index and runs the [Green Gown Awards Australasia](#) in association with the UK's Environmental Association for Universities and Colleges (EAUC) and the Higher Education Environmental Improvement (HEEPI) initiative.

Two relevant projects have been funded in recent years by the Australian Government and the results are available to Universities Australia.

- An international study of 188 experienced leaders of sustainability in Australian, New Zealand, U.S., Canadian, UK and European Universities. This project entitled 'Turnaround Leadership for Sustainability in HE' (TLSHE) has identified the key approaches to successful change management for the area and profiled the key capabilities of successful leaders.
- A national stocktake of sustainability in the curriculum of every Australian University was completed in 2010. The results are available in an interactive curriculum, resource and leadership website at: <http://sustainability.edu.au/>.

Challenges

Establishing whole-of-institution approaches to sustainability.

At present there is some confusion about the concept "sustainability", with some people seeing it as being mainly about 'greening' campus operations. The current international framework incorporates a focus on social, cultural, economic and environmental sustainability in universities' curriculum, research and engagement activities, not just on 'greening' institutional operations.

As noted earlier, the recent Global Universities Network of Innovation stocktake of sustainability in higher education around the world noted far more progress in addressing sustainability initiatives in campus operations area than in the core activities of universities.

Engaging with the professions, especially those involved with curriculum development and accreditation.

Universities can influence the professions through their networks and through clearly articulating the concept of EfS, the need for it, and the benefits it brings to business, industry and the wider community.

One problem with the existing rhetoric in sustainability is that it is seen as an all encompassing concept. As one University President recently noted: "Once enthusiasts get gripped with it, sustainability can become everything. We really do need to make clear what it is that is distinctively different from simply re-labelling everything in current practice as sustainability". It is important, for example, to sort out where equity initiatives fit into the social and economic development components of sustainability.

Finally, universities are uniquely placed to engage and influence their business/ commercial partners and co-investors in research, as well as a wider audience through community outreach activities. These issues cannot be addressed effectively without wide acceptance of the need for concerted action.

Building capacity

Capacity is best built through a range of strategies such as leadership development, promoting networks and the sharing of best practice, and through the provisions of incentive programs.

The 2012 international study of leadership for sustainability in higher education (Scott, Tilbury, Sharp & Deane, forthcoming) has identified the key capabilities of leaders in the area of EfS and the need for targeted incentives to support a more systematic approach to the area. The latter include government grants; giving recognition to trans-disciplinary research on sustainability issues in ERA, incorporating evidence of successful innovation in the area in promotion policies and in the appointment and performance targets of leaders, along with a more systematic approach to alerting staff to successful L&T initiatives, approaches and resources.

Options for UA action

All of the following options have been suggested in national and international consultations on what might achieve a systematic and productive approach to national higher education leadership for the area:

- Undertake a stocktake of action taken on the 2012 UA commitment to ESD.
- From a consolidated analysis of all of the above sources and, with reference to benchmarking with equivalent peak university bodies in other countries, produce:
 - an enhanced and updated U.A. action plan to the area;
 - a small number of overall areas for sector development in terms of research, curriculum, operations and community engagement around issues of social, economic and environmental sustainability;
 - an agreed set of targets for sector action and monitoring. In this regard tracking systems like LiFE can help make this process systematic and efficient.
- Give oversight to the development of a national quality management system for sustainability in higher education, building on the parallel initiative now underway nationally in the U.K.
- Work with TEQSA and the AQF to provide a focus for the sector which builds on what has already been put in place in School Education and in VET.
- Seek agreement from the Australian Government to:
 - Establish national awards/recognition and incentives for achievements against this agenda;
 - Recognise cross disciplinary, inter-disciplinary and linkage research in ERA;
 - Use UA to help shape national policy for the area;
 - Fund universities to take a central leadership role in assisting business and society manage in a carbon constrained economy.
- Set up a more coherent way to work across, link and learn from the different education sectors within Australia and internationally via established HE sustainability networks like Copernicus in Europe, ACTS in Australia and AASHE in North America.
- Establish a National UA Steering committee chaired by a VC and including a range of DVCs from different UA groups with an accountability to:
 - Monitor what is happening – this could include establishing a key set of benchmarks for the sector and commissioning a national stocktake of university activity around social, economic and environmental sustainability in higher education courses, research, engagement and operations.
 - Identify ways in which action in the area is saving/making money.
 - Identify areas for national awards.
 - Engage with peak business and community bodies active in the area.
 - Liaise with peak bodies in School Education (ACARA) and VET (GSAIG) in order to foster a more integrated approach and set of pathways.
 - Liaise with peak VC groups in other countries which are giving active support for the implementation of sustainability across all their university activities.
 - Commission, enhance, and/or endorse new national projects of benefit to the sector as a whole and identify funding sources for these initiatives in partnership with bodies like the [Office for Learning & Teaching](#). Such initiatives could include:
 - The production of nationally shared modules on ‘hot issues in sustainability’ for each profession/discipline developed with key professional groups and updated annually. Each module could be developed by a different university in order to share the work-load;
 - Convening a national working group to discuss, coordinate and share developments in sustainability initiatives in HE research, curriculum, operations and engagement activities; and run a workshop on this work as a side event at each annual UA Conference.

- Sponsoring an annual, national stocktake of progress against the revised commitment's areas and targets. This can build on the stocktake undertaken for the government in 2010 on sustainability in the curriculum and extend it to successful practice in building sustainability into and between research, operations and engagement.
 - Identifying and disseminating exactly where professional job opportunities in sustainability currently exist and where they are likely to emerge over the next 5-10 years.
 - Fostering productive models of multi-sector linkages and pathways (in this regard consolidating the experience of multi-sector universities could be worth considering).
 - Sponsoring a national leadership of sustainability in HE program based on the findings of the TLSHE project.
- Give oversight to the development of national quality criteria and subject benchmarks, building on the parallel initiative underway in the U.K.
- Track progress on implementing the UA commitment to sustainability in HE given in the lead-up the 2012 UN Conference on sustainability as a standing item in both the DVCs (Academic) and the DVCs (Research) groups of UA.
- Identify, support, recognise and promote the curriculum, research, engagement and facilities' initiatives already being undertaken by the ATN, IRU, G08 and other Universities Australia networks.
- Support international fellowships/exchanges in this area so that Australia showcases existing good practice as well as learns from leading overseas institutions.
- Engage with business and community leaders and peak bodies active in this area.

Prepared by

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 July, 2012

Attachment Six
External Evaluation Report for the Project
Emeritus Professor Mark Tennant

Turnaround Leadership for Sustainability in Higher Education

Project Information

Year Funded: 2011
Project Reference: LE11-1978
Program: Leadership for Excellence
Project Discipline: EDUCATION - Teacher Education
Project Keywords: Capabilities, Leadership, Sustainability

Lead Institution

University of Western Sydney

Partner Institutions

Sustainable Futures Leadership Academy (SFLA), The Australian National University

Project Team

Professor Geoffrey Scott (Project Leader), Professor Elizabeth Deane, Professor Daniella Tilbury, Ms Leith Sharp

Evaluator

Emeritus Professor Mark Tennant¹⁶

Introduction

This project was funded by the Office of Learning and Teaching (OLT)¹⁷ under the Leadership for Excellence in Learning and Teaching Program, which is a competitive grants scheme. A key focus of this program is leadership capacity building through promoting systematic, structured support for academic leadership. The stated aim of the current project is *to define the capabilities which make an educationally effective*

¹⁶ Mark Tennant is an Emeritus Professor in 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.

¹⁷ The OLT is the new location for the functions of the Australian Learning and Teaching Council (ALTC), which has now been disbanded. The OLT sits within the Department of Industry, Innovation, Science, Research and Tertiary Education. The project was originally funded by the ALTC.

higher education leader for sustainability, and produce resources to develop and monitor these leadership capabilities.

Context for the evaluation

This project has already been subjected to an assessment process against a set of criteria in the Guidelines for the program. In addition to being assessed against the criteria, all proposals for grants for projects have been assessed for their contribution to the mission and objectives of the OLT and for their synergy with the OLT's values and principles for action. The OLT requires an independent evaluation, with a focus on the quality of the project and the extent to which it meets its stated aims, outcomes/outputs and deliverables. This is a 'fit for purpose' evaluation, but the evaluation also needs to comment on the extent to which the project reflects the mission, objectives, values and principles of the OLT.

The OLT has also expressed a particular view about the evaluation process and the role of the evaluator. That is, the evaluation is both formative and summative. In its formative aspect the evaluator is positioned as a critical friend providing feedback and commentary during the project on such matters as the clarity of documents, ethics approvals, the analysis of data, the theoretical framework or model being applied, the research design and data gathering process, the interpretation of data, the construction of resources, and dissemination/networking strategies. The summative aspect comprises a report at the conclusion of the project. The report has three principal functions: firstly, it has a quality assurance and auditing function for the funding agency (OLT); secondly, it recommends procedural and policy implications to the funding agency; and finally it provides feedback to the project team and others who are planning to undertake similar research.

Evaluation approach

It is worth noting that the project team members are also configured as evaluators in this project, very much engaged in the iterative process of critique and commentary. This also applies to the participants who were given an opportunity to comment on and critique the findings of the research and their implications for practice. This is also true of the Steering Committee. As such, most of the data feeding into the evaluation was generated through the normal processes of conducting the project. As the evaluator of this project I have drawn on the following sources:

- Participation in the project as a critical friend
- Documents and documented processes
- Steering Committee members' comments
- Workshops with participants/end users
- Interviews with the project leader
- Team members' critical reflection on the project.

While being mindful of the range and scope of questions that can be asked in any evaluation (see the OLT grants scheme evaluation plan) I am also conscious of the need to be reasonably focused and succinct. To this end I have organized the report around four key questions:

1. Did the approach taken give effect to the values and principles of the OLT?
2. Was the research design put into effect as planned?
3. What outcomes were achieved?
4. What can be learned from this project?

Did the approach taken give effect to the values and principles of the OLT?

The values and principles of the OLT¹⁸ refer variously to:

- Inclusiveness – through the development of networks and communities which support higher education learning and teaching.
- Long term change – through a focus on systemic change and capacity building and the promotion and support of strategic change
- Diversity – by recognising and valuing institutional and discipline differences and similarities, and by ensuring an appropriate balance between generic and disciplinary approaches to the enhancement of learning and teaching.
- Collaboration – through the programs it funds and in its work practices, respecting the existing strengths of the systems and of the people within the higher education sector nationally and internationally.
- High Impact - through projects that support strategic change and maximise dissemination and embedding of exemplary institutional and/or individual practice in learning and teaching in higher education.
- Future Looking - through projects that address emerging issues for learning and teaching in higher education and projects of the type which provide new approaches; build on, and embed systemically approaches already developed in new contexts; build capacity; or focus on changed understandings and practices to promote and advance learning and teaching.

Commentary

The most obvious feature of this project is the way it engages a network of people who have an interest and role in education for sustainability (EfS). This is not just local engagement, it is global. This engagement collectively addresses the values and principles outlined above.

The survey had a 47% response rate with 188 respondents from Australia, New Zealand, USA, Canada, UK, mainland Europe, Africa, Mexico and Russia. It is important to note that the survey participants were all leaders of sustainability in their respective colleges and universities. They were therefore not only informants but end-users who were in a position to implement changes, thus maximizing the potential impact of the project. Moreover the survey instrument itself asked participants to reflect on their role, satisfactions and challenges, influences, leadership capabilities, effectiveness indicators, and supports for leadership development. In effect the survey instrument, through the questions it poses, can be seen as a professional development tool.

¹⁸ These values and principles were taken from ALTC documents given that it was the ALTC that originally funded the project.

Two types of workshops were conducted throughout the project. The earlier formative workshops were aimed at the higher education sector broadly, the later more summative workshops were designed for participants and other stakeholders in the project, many of whom were identified by the project team as people who need to be engaged because of their positional power. In both cases the intent was to elaborate on the content of the survey, to discuss the preliminary results, and to identify the implications for leadership development and other strategies to advance the effectiveness of EfS. Given that the HE sector workshops included key global organisations and leaders in EfS, they also served an important collaborative networking function, maximizing the impact of the project. Some examples are set out below:

- Kerkrade - Presentation & feedback on the project by the project leader at the international meeting of directors of Regional Centres of Expertise in Education for Sustainable Development
- Kerkrade - Presentation & feedback on the project by the project leader at the meeting of the leaders of sustainability in the 40 European Universities that make up the Copernicus Network
- Capetown - Presentation & feedback on the project at the meeting of leaders of sustainability at Universities of Cape Town, Stellenbosch, Western Cape & Cape University of Technology
- Presentation and invitation to participate by project team member at the 2011 AASHE (Association for the Advancement of Sustainability in Higher Education) Annual Conference, Chicago.
- Vancouver - Presentation on the project and a workshop on its interim results at the 8th International conference on sustainability, Vancouver January 2011
- Sustainable Futures Leadership Academy, Salzburg - Three day summit with key world leaders of sustainability in HE including VCs, Presidents, UNESCO chairs & the Director of the International Association of Universities
- National workshop at the University of Gloucestershire – this brought together peak body leaders from across the UK.
- Los Angeles – review meeting with the key leaders of sustainability at UCLA
- San Diego – review meeting with key leaders, including student leaders, of sustainability at San Diego State University
- Saskatchewan – large scale review meetings with senior executives, staff and students on the study’s findings at the University of Saskatchewan and the University of Regina.
- Two webinars by project team member Leith Sharp to review survey findings and draft report recommendations - 28 participants from across USA and Canada.
- Presentation and workshop on survey findings including EfS academic and student leaders from East coast of USA. Baltimore, USA.

The participant and sector leader workshops on the final project results were held in London, Sydney, Melbourne, Perth, Brisbane, Canberra, Wellington,

Dunedin and Auckland, along with a national webinar of senior leaders of the area in U.S. higher education. They comprised some 300 leaders in EfS talking about the project, commenting on the validity of the data, sometimes critiquing it (more later), but also using it to engage more broadly in issues beyond the scope of the project. As such the workshops were in effect a collaborative network or community of practice in the area of EfS – simultaneously a site for feedback, dissemination, and the formation of strategies. This is evident from the breadth of attendance at the workshops, which comprised:

- University staff in roles ranging from Vice-Chancellor to local leader;
- Participants from
 - 30 Australian & NZ universities
 - 22 USA & Canadian Universities
 - 9 UK & European Universities
- Senior representatives from a range of key peak groups representatives including the executive of ACTS, representatives from government, and, in the UK, from HEFCE Leadership Foundation for Higher Education and a range of relevant NGOs; and in the US from 2nd Nature and AASHE.

Other evidence of impact includes:

- Influencing the drafting of the Sustainability Treaty on Higher Education Towards Sustainable Development Rio+20. The treaty process was lead by the Copernicus Alliance, whose president is Professor Daniella Tilbury (project team member).
- Requests to replicate the research in developing countries starting with Malaysia
- The publication of the results and possibility of workshops by the International Association of Universities
- The results of the study will be posted in the portal www.sustainability.edu.au (built by UWS and ALTC)
- A range of positive media coverage – e.g. in the Australian Financial Review
- Requests to replicate the study by lead organisations,
- Local application of the findings at places like UWS
- Incorporation of the key findings in the UA EfS options document and recommendations - UA has signed a commitment to Rio +20.
- Interest by the UK HE Leadership Foundation for Higher Education in developing actions from the results
- Provision of a training session on the project's key findings for the 90 VET leaders of EfS who are facilitating the implementation of the sustainability modules now built into every Australian industry training package

In summary, the project is certainly future-looking in that it addresses an important emerging issue (EfS and sustainability more generally) and seeks to build capacity. It is also designed and implemented in a way which draws on a collaborative network of leaders in EfS, highlights the diversity apparent in the sector, and maximises the potential for impact and long term change.

Was the research design put into effect as planned?

The research design is set out in detail in the Final Report. The conceptual framework and methodology are based on earlier OLT funded projects *Learning Leaders in Times of Change* and the ATEM/LH Martin sponsored *Leading Professionals in Australian Tertiary Education*

Scope of the project

A narrow view of the scope of this project is that it focuses solely on the capabilities (personal, interpersonal, cognitive) and competencies (role specific and generic) of effective leaders in the area of EfS. A criticism of the project which came from at least one of the Stage 2 workshops, was that the study was too narrowly focused on the psychological qualities of leaders with an assumed model of change which simply reproduced these qualities in different EfS sites. The Leadership Capability Framework which informs the project does indeed focus on the behaviours, skills and traits of individual leaders – an approach which is described elsewhere as the ‘structural/positional approach’. There are of course other theories which take into account power, culture, systems, language, and collective capabilities; and no doubt the project can be critiqued from these different theoretical positions.

But this would be missing the broader scope of the project, which is about building networks and communities of practice at institutional, national and global levels. It is about agenda building, raising the profile of sustainability, circulating ideas, and ultimately strengthening the power base of sustainability and effective change leadership for the area. The theoretical framework largely serves as a heuristic device to trigger dialogue, debate and action. As such the project is not primarily about validating a particular theoretical framework (although this has been done) – it is more oriented towards action. In fact if one were to infer an implicit theory from the way in which the project was conducted it would be a distributed leadership theory. This is largely evident through the range of formal and informal ‘leaders’ involved who had many levels and types of engagement with EfS. Also throughout the project there was recognition of the situationally specific nature of leadership, the existence of systemic resistance and how to address it, the role of positional power, and the need for transformative change. Thus the Leadership Capability Framework should not be seen as proposing a static view of capability and competence as if these qualities were independent of context.

The Research Design

The research design had the following elements:

- The application of a Leadership Capability Framework

- The identification of effective leaders in EfS as potential participants in the project
- The conduct of formative sector-wide workshops in a range of countries
- An online survey comprising a rating of leadership capabilities and other items relating to the role of an EfS leader.
- Interviews to follow up on qualitative data
- Participant/stakeholder summative workshops to validate and guide learning resources and strategies.

All these elements were put into place and were part of the original design with the exception that the workshops replaced the proposed interviews (It should be noted that 1:1 interviews were often held prior to these workshops with key leaders. This happened, for example, at UCLA, ECU, CDU, London South Bank University and San Diego State University). I should stress here that the workshops were typically between two and 3 hours long so there was plenty of time for participants to raise issues.

The above elements were directed towards addressing a number of target questions. I have set out below the original target questions with some corresponding commentary on how these questions were addressed.

Target questions	Evidence they were addressed
1. What should be the key areas of focus in the work of senior and local university leaders of EfS?	Ratings of important areas of focus Table 8.2
2. How do successful leaders in this area judge that they are performing effectively?	Ratings of indicators Table 8.4.
3. What professional capabilities underpin effective practice in this role?	Rating of leadership capabilities Table 8.6.
4. To what extent do the leadership capabilities identified in the earlier OLT <i>Learning Leaders in Times of Change</i> research align with those for leaders of EfS?	See commentary in Section 8.6.
5. To what extent are the roles, effectiveness indicators and capabilities identified common across countries and higher education systems?	See 'Significant Differences in Ratings x Region' for each of the results in the Findings Section.
6. What forms of professional learning and support are most or least productive for leaders of EfS in our colleges and universities?	Ratings of supports table 8.8.1.
7. What resources can be used to develop and enhance effective academic leadership in higher education?	Ratings and Indicative comments Table 8.8.
8. What are the implications of this research for the recruitment, promotion, development and performance management	See effectiveness commentary Section 8.4 concerning performance management also Section 8.7

systems for leaders of EfS in our universities?	commentary.
9. In what ways can Australia learn and build upon best practice and experience internationally to leverage the application of the results?	See the 10 Key Findings and Recommendations in the Executive Summary.
10. How can university students and other stakeholders be most productively engaged in EfS initiatives?	See Box 1 in Executive summary on learning outcomes plus the learning strategies in the Professional Leadership Development Framework Diagram 8.8.2 eg. use of the campus as a living laboratory. See also the indicators in Attachment 2 of the Final Report.

There was ongoing discussion among both the team and the National Steering Committee concerning whether the leadership capabilities and competencies identified are generic or whether there are some capabilities that are specific to EfS. This is related to the question of whether EfS is distinctive in its position within HE institutions. Although this issue was not specifically addressed in the project plan (although it is partially implied in Target Question 4 above), the Final Report does address the issue in a section entitled Distinctive Challenges in EfS Leadership, which is followed by a list of strategies for managing those challenges.

What outcomes were achieved?

Deliverable/Outcome	Evidence
A summary report on the key outcomes of the project for wide dissemination	See Executive Summary and two page summary of key recommendations for action.
An internationally validated framework for understanding and tracking how higher education institutions can address, support and assure the quality of substantial developments in EfS	See 8.4 Judging one's effectiveness as an EfS Leader and 8.7 Relative importance ratings of different capabilities for effective performance as an EfS Leader in higher education. The large majority of the capability items attracted and importance rating of 4/5 or more, thereby validating the framework.
A clear profile of the key areas of focus, performance indicators and capabilities necessary for effective change leadership in this area, benchmarked against the earlier OLT Learning Leaders findings	See 8.2 Important areas of focus in EfS leaders' activities.
An identified set of core dilemmas and	See 8.3 Key satisfactions & challenges

challenges that come with leadership in this area and suggestions from experienced leaders on how they can be most productively addressed	as an EfS leader and 8.5 Influences shaping the work of EfS Leaders.
A learning system for effective leadership of EfS innovations for application within and beyond Australia	See 8.8 Relative importance of a range of EfS leadership learning strategies and resources. See Diagram 8.8.2 Professional Leadership Development Framework
A set of workshops on the project's outcomes	Stage 2 workshops - slides available plus a video and guide on how to use them in local follow-up workshops. Subsequent to the project a set of role specific 'skinnies' can be produced.
A set of national and international conference papers and publications	IAU article (Vol 18, no 2) on the Sustainable Futures Leadership Academy (Scott,Tibury,Sharp) plus – evaluation system for United Nations University, and a forthcoming paper in the International Journal of Sustainability in HE, once the project is finalised. The project is the subject of keynote addresses at the September 2012 Australian Campuses Towards Sustainability (ACTS), the October 2012 International Conference on University Leadership for Integrating Knowledge Diversity for Sustainability in Malaysia and the November 2012 IAU Global Meeting in Puerto Rico.
International recognition of the work of OLT in this area via the Sustainable Futures Academy	The Salzburg Global Seminar hosted the meeting of the Fellows of the Sustainable Futures Leadership Academy (SFLA) to discuss the results and the development of an international program for senior university leaders in February 2012. The acknowledgement of the significance of the project was seen in the fact that the SGS fully funded this 3-day meeting.
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 EfS.	The SFLA and the International Association of Universities along with national networks like ACTS have all taken up the results and are promoting international networking in the EfS

	leadership area.
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.	The Report summarises the methodology that has been successfully applied in the context of developing countries. The Malaysian HE system has offered to pilot the methodology in that country as a first step for wider application.

What can be learned from this project?

1. The value of a strong project team and National Steering Committee

For this project to be successful it was necessary to engage as participants a wide range of leaders in EfS with different roles, working in different institutions in Australia and around the world. The project team was ideally situated to foster this engagement. Prof Geoff Scott, as the Executive Director of Sustainability at UWS and a record of similar projects on leadership and quality in higher education was well placed to lead the team. Prof Tilbury, Chair of the UN's Global Monitoring and Evaluation Group on the UN Decade in Education for Sustainable Development (DESD) & President of the Copernicus Network and Ms Leith Sharp - Chair of Sustainable Futures Academy, founding director of Harvard's Green Campus Initiative were both well placed to enhance the global reach of this project. Professor Elizabeth Deane as PVC (Students) at the Australian National University is in a strong positional leadership role in a key university.

In addition to the project team the National Steering Committee comprised one Vice-Chancellor (Kerry Cox Edith Cowan University), a TEQSA Commissioner (Ian Hawke), Professor Carol Adams, the PVC Sustainability at La Trobe University, and Professor Sharon Bell, DVC at Charles Darwin University.

Of course it is not always necessary or possible to have a team of such senior academics but in this instance it suited the purpose and approach of the project.

2. The value of engaging an existing community of practice – EfS

An existing community of practice was identified and recruited to the project. Moreover others outside the EfS community, but in leadership and management roles in universities, were also engaged in a way that helped them to better understand and act upon the issues identified as being important for taking a more systematic approach to embedding EfS into our universities and colleges.

3. The value of recruiting participants who were also end-users.

The participants did not just passively provide data for the project team – they were also end users already engaged with issues that mattered to them. As such they became important players in providing initial data, validating the results, and disseminating the findings.

4. Leverage from previous projects.

The conceptual framework and methodology for this project were based on earlier OLT funded projects *Learning Leaders in Times of Change* and the ATEM-LH Martin supported *Leading Professionals in Australian Tertiary Education*. This obviated the need for debate about alternative frameworks and methodologies so the project team could focus very clearly on recruiting participants, running workshops, planning strategies and interpreting the data.

5. Open and frequent communication among the project team

There was a constant stream of emails among the project team on matters of substance having to do with the project. There were also some 30 real time meetings via skype, teleconference, or face-to-face, and the various members of the project team linked up at workshops and conferences throughout the project. The Steering Committee was also well involved in the project throughout.

6. A broad view about the agenda being addressed

While the project team focused on the aims and outcomes of the project they saw this in the context of the much broader agenda of raising the profile of sustainability in the HE sector and beyond. For example the Report, in the section on Context, brings together global challenges, the particular issues facing higher education, the important place of EfS in HE and how it fits in with international and national visions, policies, and actions as exemplified in the myriad treaties, charters coalitions, declarations, centre programs and consortia relating to sustainability. This is then linked very specifically to graduate attributes and curriculum (including pedagogy) such as the need to be sustainability literate, and the need to develop a transdisciplinary approach to solving real world problems.

7. The value of having a multi-level project which operated at the local, institutional, national and international levels.

The diversity in the roles of participants, the geographic spread of institutions and the global reach of the workshops and seminars provided a foundation for making recommendations at different levels of EfS – for example specific institutionally based reforms, workplace performance management, leadership training frameworks, policy initiatives and more systemic changes to the HE sector. The international scope of the project has built a firm foundation for benchmarking and learning about effective approaches to change leadership for EfS in higher education.

Recommendations relating to the role of OLT

1. The OLT endorse ‘sustainability’ and ‘leadership’ as important strategic priorities.

The *Higher Education Learning and Teaching Review*, which in many ways is the foundation document for the operation of the OLT (especially given that the Minister has endorsed all 17 recommendations), does not have sustainability as one of its strategic areas. Also, even though there are funds set aside for leadership grants there is no mention of leadership among the strategic priorities. This project and its precursors clearly demonstrate that leadership is crucial for innovation and change in higher education.

2. The OLT build international partnerships in specific strategic areas outside generic peak HE bodies (see those mentioned in the *Review*)

In particular, in keeping with the focus of this project we recommend that OLT establish partnerships with the Sustainable Futures Leadership Academy, AASHE, ACTS, Copernicus, and Second Nature.

3. Branding OLT as a leader in learning and teaching and as an end-user of project results and outcomes.

The *Review* recommended that the distinctive branding of the OLT should be a focus on learning and teaching excellence in higher education. In this sense the OLT has a leadership role. We urge the OLT to reconfigure its role as one of leadership and consider the implications of this for the way it connects with the projects it supports – in particular the way in which the OLT supports the long term impact of its funded projects. It is also recommended that OLT lead key areas for national higher education development in areas of importance to the future of Australia – including EfS.

4. The OLT offer to work with Universities Australia to develop cost-effective strategies that would facilitate take-up of the proposals in Attachment 5

Attachment 5 sets out a number of actions that could be undertaken by UA

5. The OLT to convene a group of grant recipients in the area of leadership in HE.

The *Review* noted ‘there was also some confusion expressed about the purpose of leadership grants as there is no coherent definition of what leadership means in the context of learning and teaching. There was, however, support for retention of this strand due to its potential for transformational change within institutions, particularly in relation to developing a better understanding of distributed leadership and its relevance to further the enhancement of the learning and teaching agenda. (p.10). This project and others like it can come together to develop a comprehensive framework which can integrate all OLT funded projects in this area.

6. The OLT convene a meeting of OLT project evaluators to discuss their experiences and suggestions for improving the grant evaluation process.

In the *Review* there is a comment about the role of the evaluator to the effect that the current evaluation process should be reviewed. In response to this there is a need to clarify the intent of evaluation and to evaluate the grants program as a whole. There are some issues in the evaluation process such as how to manage being a ‘critical friend’

while at the same time maintaining a ‘critical distance’, how to maintain an ‘independent’ stance while being employed by the project team and while working to its established evaluation process. And finally there is the issue of the relationship between the project team as evaluators and the officially appointed evaluator.

It is also recommended that OLT adopt a quality and standards framework for its projects based on the L&T quality and standards framework endorsed at the national meeting of Vice-Chancellors and TEQSA in 2011.

7. The OLT, as part of its leadership role, develop strong links with professional and industry associations/employers – especially those who have registration requirements and who shape curriculum developments.

Discussion among the team members in this project included the issue of the importance of professional and industry associations/employers as end-users, given their influence over curriculum. While professional and industry input was not part of the project proposal, engaging the professions and industry was identified as important to long-term impact. This is a role that OLT can play.

8. The key principles of sustainability should underpin any future studies of sustainability in HE.

Many of the key principles of sustainability were incorporated into the principles and values of the ALTC, such as being inclusive and futures oriented, but it is not clear that these have been carried forward to the OLT. Other principles include positioning end-users as both sources of data and as participants who help guide analysis and interpretation; being socially critical in recognising that the transformation of education systems is vital to address unsustainable practices; and being systems oriented and recognising the complexity and connectivity of all stakeholders.