Academic Development and Sustainability Education within Higher Education: Case Studies of Practice

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An Introduction to
ATINER's Conference Paper Series

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Abstract

Despite international calls for sustainability education, and the arguments for a transformation of education, the principles of sustainability education have not yet been integrated into mainstream curricula. This is especially critical in universities, as they have a responsibility to lead society towards a sustainable future. Academic development is a key way to create change in academic learning and teaching praxis. Currently there is a lack of support for the training, time and recognition from peers that would legitimise sustainability within universities.

This paper investigates how sustainability education is currently being implemented within universities and how we currently prepare our tertiary educators to teach and challenge students. Specifically, it researches three case studies of existing practice and identifies the features of academic development programs that are most likely to result in lasting change for sustainability. The paper concludes with the requirements of academic development programs which will provide educators with the capabilities to deliver sustainability education. The findings of this research are transferable to universities around the world, as well as to other institutions aiming to develop academic development programs in sustainability.

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Introduction: Sustainability education, universities and academic development

We are living in the Anthropocene Epoch; population growth and our lifestyle choices challenge our ability to live within the Earth’s carrying capacity (Brundtland 1987; Cortese 2003; UNEP 2005). This suggests that current behaviour threatens our ability to achieve the goal of meeting ‘the needs of the present generation without compromising the ability of future generations to meet their own needs’ (Brundtland 1987, p. 8). This goal will become less achievable without a dramatic change in our mindset and behaviours; formal education is one tool that shapes and informs how we think and act (Cortese 2003).

Education of this kind can only occur if ethics and values are re instituted into education and if learners are provided with the skills to critically reflect on and question the implications of their decisions (Henn & Andrews 1997). This has been reflected in the many calls for alternative approaches, such as environmental education, values education and multicultural education, and more recently sustainability education (Fien et al. 2004; Gough, 1997).

Sustainability Education

Given sustainability, sustainability development and related forms of education are contested and open to interpretation, the following presents the key characteristics, as derived by Sterling (2001), of the widely accepted typologies of education underpinned by a sustainability paradigm: Education about sustainability ‘learning as maintenance’ (p. 60), not challenging the current paradigm; Education for sustainability ‘an adaptive response that equates to second-order learning’ (p. 60), based on values and capability; Education as sustainability or sustainable education third-order learning and change – a creative and paradigmatic response to sustainability, ‘This is a transformative, epistemic education paradigm, which is increasingly able to facilitate a transformative learning experience’ (p. 61). This form of education is holistic, with learning approached as change requiring the engagement of the whole person and institution (Sterling 2001).

Sustainability Education is the preferred terminology and approach to education discussed in this paper and is underpinned by the concept of sustainability education praxis. Thus, requires educators to recognise that if the take up of learning and teaching is to develop the required graduate capabilities, educators must recognise that curriculum and learning and teaching methods are a subset of an educator’s pedagogy. A lack of reflection on one’s practice will fail to transcend practice into praxis, reinforcing the current reductionist, individual approach to education seen today.

The key elements of sustainability praxis include the following: Pedagogy: the awareness of our philosophical beliefs and the role these play in shaping our educational practice (Summers, Childs & Corney 2005). Learning & Teaching: Student learning must embody self-reflection and question
personal values and identity. Teaching strategies should include the advocacy of enquiry, involving investigation of differing viewpoints and value positions, discussion and debate, all of which should enable students to develop, express and justify their own views about sustainability issues (Huckle 2005; Sterling 2001; UNESCO 2005). Curriculum: How sustainability is understood and practised by the educator will influence the sustainability content that is considered relevant and important to disciplinary knowledge and practice.

Sustainability education, universities and academic development

Universities have a uniquely important role in the development of education for sustainability for the following reasons: universities produce those who will maintain the existing power structures; academics themselves create and run society’s political and social institutions that in theory underpin and run our capitalist economy, and educate our students; and universities are afforded a very privileged status by society (Jucker 2002a, p. 242).

The need for understanding change in universities at both learning and teaching and curriculum and organisational levels is paramount if education for sustainable development is to be successful. For sustainability education to become embedded in universities, a change in educational praxis is required, and a new learning culture (Kemmis 2009; Kemmis & Smith 2008) needs to be developed. This learning culture cannot be founded on academic tradition and principles of indoctrination, but needs to evolve out of an open-minded and participative process. Barth et al. (2007) call for professional training, coupled with the promotion of personal development, which gives learners the skills to cope with complex situations, to act upon reflection, to take responsibility, to consider ethical standards when acting and to be able to judge consequences.

Research Methodology

The research methodology adopted here is informed by a constructivist paradigm. Three case studies of globally recognised sustainability education programs for tertiary educators were undertaken. Data collection used both qualitative and quantitative research methods, including documentary research, semi-structured interviews and the use of student course evaluation forms. Case studies were selected to ensure that a range of different approaches to academic development were captured. Each case study captures the perspectives of program participants, staff and others associated with the program, exploring their experiences, their expectations and changes resulting from the experience. Outcomes of the academic development programs were examined by describing and assessing what happened after delivery of the program. The case studies include: Beyond Leather Patches Sustainability Education: RMIT University, Australia; Youth Encounter with Sustainability: Alliance for Global Sustainability, Swiss Federal Institute of Technology Zurich, Switzerland; Higher Education Partnerships for Sustainability: Forum for the Future, United Kingdom.
Case Studies  
The Beyond Leather Patches (BELP), RMIT University, Australia

A one-year action research project conducted at RMIT University in Melbourne, Australia, in 2005, with the aim to embed sustainability capabilities into core curricula at RMIT. The project was designed to create lasting change in both organisational structure and operations and curriculum content, and it sought to determine the key mechanisms required to turn sustainability curriculum innovation into embedded practice. The action research projects took place in the School of Property, Construction and Project Management and the School of Management.

The BELP project team comprised five academic staff from three schools at RMIT University. Two academic supervisors from the School of Global Studies, Social Science and Planning worked to achieve a wide level of engagement across the university and provided knowledge and experience of teaching sustainability. A project coordinator developed and coordinated the project methodology and assisted the project team. Within each School an academic champion was engaged to provide peer support. Their role was vital as they had insight into the culture of their school, an understanding of the discipline area and assisted in the identification of potential subjects for embedding sustainability content. Importantly, the champions supported staff from within, so the project was not seen as being orchestrated by outsiders.

The BELP project adopted an action learning methodology in three phases: sustainability course audits, action learning workshops, and action learning groups:

1. Sustainability course audit
   The champions in the Schools conducted audits to identify courses containing material focusing on sustainability, identifying opportunities for and barriers to including sustainability in the curriculum, and assessed the attitudes of staff towards sustainability education (Holdsworth, Bekessy & Thomas 2009).

2. Action learning workshops
   Workshops were held in each school to develop a broad understanding of the place of sustainability in the School’s programs and courses, and to develop approaches and strategies for implementing curriculum change. The workshops were run to engage academics in the topic of sustainability and to encourage the incorporation of sustainability concepts into existing content, or the development of new courses where relevant. The sessions were structured to provide academics with the opportunity to think about how they define sustainability in both their personal and professional practice and to explore how concepts of sustainability sit best within their subject material (Holdsworth, Bekessy & Thomas 2009).

3. Action learning groups
   To follow on from the activity generated by the workshops, an informal group was established in each school to expand the range of courses targeted for revision. The role of the action learning groups was to review...
generic and school-specific findings from the course audits with the aim of enhancing the adoption and integration of sustainability themes into the school’s programs and courses. The group work was facilitated by the academic champions from each school and assisted by the BELP project co-ordinator (Holdsworth et al. 2009).

BELP led to the modification or development of 16 courses in two contrasting discipline areas to provide a sustainability focus and the development of a flexible framework for curriculum change that other universities could draw upon. The framework was developed from the experiences of the project and can be used in totality, or sections can be used independently. Other outcomes of the project included sustainability concepts as a focus for reconnecting teaching and research, an increased profile of sustainability education within the university, and the link between teaching and research. The perception emerged that research on sustainability and disciplinary practice needed to be embedded into curriculum if it was to remain current with contemporary and future practice. The reasons cited for this shift in thinking included the leadership shown by the academic champion and the relevance of sustainability in current professional practice and policy development.

Several unique aspects of the project contributed to its success. Firstly, a highly collaborative, interdisciplinary project team was established, with full support from three heads of school. Secondly, a champion was appointed in the participating schools to facilitate the discussion about sustainability education and to assist other academics to change their curriculum. A critical aspect of their appointment was the buying out of some of their time, so that they could be involved in the project without the burden of its being ‘on top of’ their other work. Thirdly, a key element of the BELP project was the recognition that the program goal, that is curriculum revision, needed to fit within the culture of the organisation undergoing change. This also meant that the project needed to be owned and driven by the participants, and this was especially important when considering education for sustainability. The program recognised the inherently contested nature of sustainable development and believed that it could only be truly understood and seen as relevant if it was placed within a specific context – in this instance the curriculum of the specific discipline and program.

However, despite some isolated innovation, the BELP project did not substantially change approaches to sustainability education. The BELP approach to academic development was to assist academics to develop their own understanding of sustainability. The workshops were designed to give academics an opportunity to explore the principles of sustainability and the relationship to their own values, before positioning sustainability in their course materials. While the project effectively engaged academics, it did not result in academics taking ownership of their own learning. Reflection identified that there was not enough opportunity, support and guidance to enable individuals to revisit and revise the values, assumptions and understandings that predetermine our understanding and resultant behaviours
(Jucker 2002a). It was also recognised by those involved this the duration of the project was not adequate to have any real long-term impact within either of the schools, nor was one champion within each school adequate to develop the capacity required to create the level of desired change. A small group of change agents rather than an individual would have been more influential; another year of the project may have strengthened the team around the academic champion. This is especially important to consider when dealing with a culture that is heavily resistant to change.

The experiences of the BELP project indicate that for any sustainability education curriculum development project to be successful in the long term, there needs to be a dynamic approach to change management – one that recognises the importance of the culture of the organisation in assisting or blocking the proposed change. There is a need for training that allows individuals within an organisation to develop greater understanding of sustainability, including their personal and disciplinary assumptions and resulting practice. Support from authoritative figures in the university and high-level university policy is essential. Engagement with academic staff needs to be on their level, and change agents are essential to this for both leadership and encouragement. However, it is important to consider their, senior management’s, ability to develop, facilitate and empower a community, which needs to be willing and able to embrace change.

Educators Seminar on Teaching Sustainability (ESTS), ETHsustainability, Zurich

The ESTS Program, inititated by the Alliance for Global Sustainability (AGS) and run by ETH Sustainability\(^1\) is a one-week intensive short course for professors, researchers and lecturers at college and university level, held outside the university environment. The learning seminar is designed to help college and university lecturers incorporate the principles of sustainability pedagogy into their coursework with clearly defined concepts and content, instructional tools and methodologies for assessment and evaluation of learning.

ETHsustainability believes that education and raising awareness are the most effective ways to foster the ethical and moral values to guide behaviour to align better with the ideals of sustainability. However, they recognise that there is no set strategy or proven formula for achieving this goal, and it remains the most challenging component of ESD theory to implement. The content and pedagogy of their programs are kept open and flexible and tailored to the specific needs of different target groups.

The week-long interactive structure of the seminar encourages participants to share their diverse cultural and disciplinary experiences in incorporating sustainability principles and issues in their own teaching. The learning process includes lectures, student presentations, small group and plenary discussions with interdisciplinary and international faculty members,

\(^1\) In 2009 the new board at ETH Zurich ended its financial commitment to the YES courses. ETH Zurich still supports the course concept, but the associated activities are now part of an ‘ETH spin-off’ company, ACTIS (Activating Talent in Sustainability).
discussion with invited experts, cultural events, and field trips, creative activities, and small-group case study and project work.

The approach to sustainability educational praxis within the ESTS programs recognises the need for innovative didactical pedagogical methodologies to be embedded into learning and teaching practice. The program engages participants in new ways of seeing, thinking, learning and working by making connections to real-life situations through experiential learning. Consequently, participants explore the relationships between individuals, the environment, social systems and institutions, and they foster skills and values necessary to become active participants and decision makers in the change process.

Despite participants’ obvious motivation, interest and desire to increase their skills for such education, when facilitating the ESTS program the ETHsustainability team recognised the need for sensitivity in relation to teachers teaching other teachers. It was difficult to have academics engage and explore different disciplinary perspectives, to move away from their particular field of focus. Associated with this was the resistance to thinking about changing their approach to learning and teaching especially toward more constructivist approaches. The faculty members commented that some academics have been using the same approach for years – they consider it to be effective for their particular field – and are unwilling to change. Faculty members recognised the difficulty in educating educators, citing that participants did not like to be taught how to teach by academics from different disciplines, different universities and of lower academic positions. In addition; difficulty encountered was the difference in experiences and positions of the participants. Participants found it difficult to identify with others, as their experiences and positions were so varied.

When reflecting on the experience of the seminar, faculty members suggested there is a strong case for a discipline-based seminar. While the multidisciplinary nature of the program has value in exploring sustainability issues, it can also act as a barrier. During the ESTS program when participants tried to establish a shared definition of sustainable development and education, it was clear that there was no shared language to work from. The different assumptions and experiences between participants led to a lot of debate and the identification of fundamental differences. While a consensus was reached on some core elements, there was more agreement on approaches to education than on definitions of sustainable development. However, the faculty recognised that the very nature of sustainable development is multidisciplinary, and that it is critical to good educational practice to bring different disciplinary experiences together to create a rich learning experience. The interactive and multidisciplinary structure of the seminar encouraged participants to share their diverse cultural and disciplinary experiences in incorporating sustainability principles and issues in their own teaching. This allowed seminar participants to examine and explore economic, social and technical complexities in meeting the sustainability challenge and to gain better understanding of the need for multi-disciplinary perspectives for problem solving. It also provided
opportunity for participants to identify common challenges to the adoption of such approaches and to explore ways of meeting them. Additionally, participants found the interaction and learning from each other the most beneficial part of the course.

Consequently, the three areas of sustainability educational praxis were not equally developed in the educator’s seminar. The approach to learning and teaching recognised the need for innovative didactical and pedagogical methodologies. While this approach was practised by seminar faculty members, they were not successful in developing it adequately for participants to draw on these skills in their own practice. Sustainable development pedagogy as it relates to an individual’s praxis was not explored in detail with little deep discussion of disciplinary and personal practice and the relationship between the two. Given the level of resistance faced by participants in the areas of pedagogy and learning and teaching the faculty found it easier to focus on curriculum development. Consequently, real alternatives and commitment to a change in practice was not achieved.

Despite providing an intense uninterrupted learning experience, the seminar failed to initiate long-term change in education and sustainable development. Participants felt that there was a lack of understanding and exploration of cultural and disciplinary barriers participants would face in their home institution. This was at least partly because the seminar sat outside of the participants’ home institutions, was developed and facilitated by academics from other universities, was attended by participants from a range of disciplines, and was only one week in duration. By removing participants from the heart of their operations, the seminar failed to provide them with the skills to create change within their own professional practice, beyond what they were currently doing.

Forum for the Future, UK

Forum for the Future is one of the UK’s leading sustainable development charities, and works across all sectors of society through a range of partnerships and projects, with the aim of developing new policy and practices to meet sustainability challenges. From 1999 to 2003, Forum for the Future’s Education and Learning Department ran programs on organisational change and sustainability education, specifically, the Higher Education 21 (HE21) program (in 1999), and the Higher Educational Partnerships for Sustainability (HEPS) (2000–2003).

The aim of the HEPS program, built on the experience of HE21, was to establish partnerships with higher education institutions (HEIs) through positive engagement with the sustainable development agenda, and to generate the tools, guidance and inspiration that would encourage the rest of the sector

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1At the end of 2006 Forum for the Future was restructured, and the Education and Learning Department no longer exists. Some of the responsibilities and projects written about here are now the responsibility of the newly formed Public Sector Department; others are now defunct.
to do likewise (Forum for the Future 2004a, 2004c). The HEPS program resulted in the development of the HEPS Curriculum Design Toolkit as a means of assisting academics in the area of sustainability education. The approach recognised the need for the development of the basic literacy that an individual would need to be able to live and work sustainably. They believed that the most effective approach to sustainable development was to integrate sustainability literacy into the content and delivery of all courses in all disciplines, and that this must be done in the context of an institution with a clear strategic approach to sustainable development. Forum for the Future believed that a sustainability literate person would be expected to:

1. understand the need for change to a sustainable way of doing things, individually and collectively
2. have sufficient knowledge and skills to decide and act in a way that favours sustainable development
3. be able to recognise and reward other people’s decisions and actions that favour sustainable development (Forum for the Future 2004a, p. 9).

Five overarching principles were developed to guide innovative course design and good teaching:

- The ‘at the same time’ rule should be applied: ‘the learner should learn how to analyse issues and choices from an environmental, social and economic perspective at the same time, rather than separately’ (p. 18).
- A learner-centred approach works best.
- Ethics and values matter
- Sustainability literacy should be integrated into the content and delivery of all courses.
- Good learning practice is essential.

The HEPS Curriculum Design Toolkit was developed with the aim of providing transferable tools and guidance to support action by individuals and institutions, avoiding the ‘one-size-fits-all’ fallacy (Forum for the Future 2005a). The toolkit is a competency-based approach leading to transformative learning. It advocates for an analysis of the relationships and needs of the learner with regard to sustainability, and then looks at the basic knowledge and skills needed to establish a basis for learning. The toolkit then provides a spectrum of competencies that might need to be developed to deliver these outcomes. The associated methodology was based on a pedagogy that was, learner focused, holistic in nature, outcome led, and compatible with the learning (Johnston & Buckland 2002, p. 17).

The toolkit was designed to be appropriate for one-day training sessions, whole degrees, new or existing courses or continuing professional development programs. As part of the HEPS program, Forum for the Future’s Education and Learning team worked one-on-one and in small groups with academics to guide the implementation of the toolkit. However, the toolkit was developed so that it could be implemented by anyone without guidance and was freely available on Forum for the Future’s website.
In a critique of the approach to sustainability education used by Forum for the Future, Sterling and Scott (2008) recognise that it draws on the concept of sustainability praxis; the toolkit maps the context of the learner, and this includes a values audit to keep course development on track. They argue, however, that there is still confusion about the difference between ‘embedding sustainable development in education’ (p. 391), and reorientation towards ‘education for sustainable development’ as a more holistic response involving cultural change. Within HEIs in the UK, sustainability and ESD are perceived as a change in curricula content, rather than pedagogic change and renewal. Scott & Gough (2004) argue that this is a result of a number of issues relating to the development and delivery of the HEPS curriculum design toolkit:

- Elaborate pedagogies are not always necessary.
- People do not learn things just because educators think they are important.
- Social change must recognise the role of informal learning.
- There is a lack of guidance in interpreting and implementing the toolkit.

While the toolkit allowed for the development of sustainability knowledge and skills within a disciplinary context, because of its generic nature, the depth of take-up was dependent on an individual’s professional and personal situation (Murray & Murray 2007). Forum for the Future’s approach does not explicitly deal with the issue of motivation, but simply equipping individuals with the appropriate knowledge and skills does not guarantee that they will be fully utilised. Values and beliefs have a vitally important role in developing behaviour, yet we may not be as aware of our own attitudes, emotions and other internal states as we might like to think we are. Forum for the Future emphasises the relevance of values (Forum for the Future 2000, p. 8; Parkin et al. 2004, p. 18), but does not explore their role in sustainability education in depth. For academic development to occur in any subject as it relates to educational praxis, academics must experience confrontation and develop self-awareness if they are to recognise the limitations of current practice and identify and adopt alternative approaches (Ho 2000).

Sustainability education was not about definitions, but focused on the development of literacy and competencies that would result in sustainability literate graduates. However, if academic development is to be successful and enable change in educational praxis, academics must experience confrontation, self-awareness, availability of alternatives, and the building commitment to a new conception. It is very difficult for academics to experience these phases without intensive guidance. Despite being developed to be adapted to any discipline, it was considered by some to be too prescriptive. Furthermore, it was developed outside HEIs by non-academics, and this resulted in poor acceptance of the material. Consequently, the level of change in educational practice and praxis that resulted from the toolkit was limited.
Discussion

All three case studies recognised the limitations of enforcing a ‘one size fits all’ approach when working both with students and academics, and found that definitions of sustainability are most useful if they are informed by professional and personal experience. If a transformational change in practice is to result, participants must explore and understand the way they construct their definition and the limitations this has on their own praxis. Consequently, sustainability education requires that the links between pedagogy, learning and teaching practice, and curriculum development are recognised and critiqued against individuals’ own recognised worldview, values and assumptions. Each case study was grounded in constructivist pedagogies, resulting in an educational approach that was experiential, learner-centred, and required participants to think systemically and critically. Learning and teaching objectives of these programs identified both the need for sustainability skills/competencies/literacy and discipline-specific sustainability content. What varied significantly among the case studies was the ability of those delivering the programs to develop and use the skills they were fostering in the participants. This reflected a lack of focus (or ability) on the continuing development of their pedagogy and subsequent praxis. Approaching academic development from a sustainability education perspective requires educators (lecturers) to move out of their comfort zone and rethink their conceptions of learning and teaching, consistently engaging and developing their own pedagogy (Murray, Brown & Murray 2007).

The three academic development programs on sustainability education explored excelled in the area of learning and teaching and curriculum development identified. However they did not specifically focus on developing and exploring greater understanding of pedagogy and praxis and the implications for the improvement and understanding of learning and teaching and teaching practice, curriculum development and the development of their own pedagogical knowledge. The BELP project focused heavily on the development of learning and teaching skills, and the ability to select appropriate content. It did not have a strong focus on the explorations of disciplinary assumptions and the role they play in shaping praxis, that is, the development of a sustainability pedagogy, learning and teaching and curriculum development against an individual’s worldview. While the project asked academics to deliver materials that challenged students’ own assumptions and resulting practices, the program did not challenge the academics to do the same. The ESTS model attempted to embed learning and teaching and curriculum consistent with a sustainability education approach, but again failed to explore in detail the constructions of definitions relative to subsequent sustainability education praxis. The focus was predominantly on the development of sustainability knowledge rather than on professional practice and ongoing skills relating to reflective critical and systemic practice. Forum for the Future’s HEPS Sustainability Education Curriculum Toolkit paid particular attention to pedagogy, learning and teaching practice and the
development of curricular knowledge. However, the program was criticised for being overly prescriptive regarding predefined skills and capabilities.

It is essential for academic development programs to consider the ways in which academics in different disciplines develop their knowledge of teaching, learning, scholarship and research. Any academic development program should facilitate learning through the discipline’s base and draw on expertise from within the discipline. As such, programs should facilitate learning to the extent that academics begin to understand the scholarship of teaching within their discipline. The academic development programs examined here recognised the need to think about education and sustainability from a disciplinary perspective. However, intensive guidance is required if this is to be successfully achieved. BELP was the only program that worked closely with the academic participants to develop a group of committed individuals. However, this was unsuccessful in the long term because support was provided for only a finite period of time, and the groundswell diminished when the program ended. The experience of Forum for the Future was similar: the outcomes of the Curriculum Design Toolkit were limited because of the lack of discipline-specific guidance in its use and application. ESTS worked with a multidisciplinary group of participants, which provided the opportunity to share ideas from across disciplines and create a more holistic understanding of sustainability. However, the lack of support upon completion of the program meant that participants struggled to translate ideas to their own disciplines with the culture of their home institutions.

Conclusion

The question of how to embed sustainability principles and capabilities in our education systems has become increasingly important over the past two decades as research and action for sustainability has gained momentum (Graham 2000). Sustainability education requires students to develop meta-skills such as the ability to think critically about the nature of knowledge and about the ways in which knowledge is produced and validated. Skills and capabilities specific to each profession are also required. Educating for these new skills will require shifts in educational practice, pedagogy and the development of new curriculum. Academic development programs are needed to assist educators to develop sustainability educational praxis. This is where educators are aware of their disciplinary assumptions and traditions and recognise the priorities and values that are played out in the classroom (through the construction of curriculum, learning and teaching methods and the pedagogy that consciously informs this) that in turn influence their own and their students’ personal and professional practice.

From the case studies presented it can be deduced that for change to occur within higher education, the academic self and the academic community need to be considered. Academic development programs as vehicles of change must be supported from senior management and staff in the classroom, and
drivers of change must be identified and supported. Support is needed from senior management to establish a collaborative style, and demonstrate openness and a willingness to listen. It is also important to ensure the culture of the organisation is steered in the direction to support such changes, through initiatives that recognise and reward. However, simply changing structures, policies, and reward systems will not achieve change in educational praxis. Institutional changes also rely on outsiders to play important roles. External leadership is required from organisations that can influence curriculum and graduate outcomes in line with sustainability principles.

Change must also be supported from the bottom up; this requires empowered individuals and groups within organisations and can be guided by leadership at all levels where there are connections between people who share a concern, a problem or a passion and who want to deepen their knowledge and expertise in this area by interacting on an ongoing basis. Intensive and personalised support must be provided – time, resources and space that allows for employees to reflect, think systemically and shift to new mental models. Toolkits provided without facilitation will not be adopted.

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