Chapter 13
Sustainability Focused CoP: Enabling Transformative Education

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Abstract This chapter describes the Sustainability Focused Community of Practice (SFCoP) at the University of the Sunshine Coast, Australia. The SFCoP is a diverse group of academics committed to teaching and assessing a complex and contested concept. The SFCoP emerged in response to an institutional requirement that graduates from all programs needed to demonstrate the graduate attribute of sustainability focused. A single convener used course outlines to identify the community of academics that taught and assessed sustainability and invited them to join the SFCoP. The intention of formally creating a SFCoP was to negotiate the boundaries of the domain, consolidate the body of knowledge that was disaggregated across the university, and to enlarge the set of best practice materials for common use. In addition to outlining the origins of the CoP, this chapter provides practitioner accounts of the role that the SFCoP played in enhancing the incorporation of sustainability content in the fields of English literature, environmental economics, public health, sustainability and planning. The different academic voices highlight how individuals drew benefit from this alternative social learning space. Common elements included a reduced sense of isolation, an expanded understanding of the domain, and the enlargement and fortification of a permissible space in which to explore how to best teach a difficult concept.

Keywords Sustainability · Education · Graduate attributes · Permissible spaces · Learning and teaching

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13.1   Introduction

Communities of practice (CoP) are complex social learning phenomena that develop through different impetuses and serve a variety of purposes, some closely aligned with larger institutional goals and others more peripheral. Early work by anthropologist Jean Lave and social learning theorist Etienne Wenger named and framed this informal practice and gave a picture of collaborative and situated learning that occurs outside formal classrooms and training environments (Lave and Wenger 1991). This chapter describes how the fundamental elements of a CoP first outlined by Lave and Wenger were enacted in an institutional space enabling the emergence, growth and maintenance of an interdisciplinary group of academics with a common interest in sustainability learning, teaching, research and advocacy. These collected stories, representing the disciplines of English literature, environmental economics, public health, sustainability, and planning elaborate on a style of social learning that afforded new ways of thinking, assembled individuals in new multi-disciplinary configurations, and led to innovation.

13.2   SFCoP Structures: Domain, Community and Practice

The central elements commonly associated with Communities of Practice (CoP) include: a set of common interests/issues/knowledge areas across which explorations occur and activities, outcomes or projects are mapped (*domain*); collaborative and professional, yet often informal relationship between members who are assembled in the domain (*community*); and an atlas of definitions, activities, ideas and theoretical landscapes that is codified and communicated between members and with others (*practice*) (Wenger et al. 2002a).

Our SFCoP is nested within a larger community of interest around the topic of sustainability; however, at the core, membership in this CoP is demarcated by the focus on learning and teaching applications and research at USC. We have found these three elements combine to create an 'ideal knowledge structure' (Wenger et al. 2002a) where learning and practice around teaching sustainability has grown.

Our SFCoP created a permissible space for innovating around 'Sustainably Focused', a newly defined graduate attribute at USC. The term 'permissible' may seem an unusual choice, but it is used to capture a way of being in which sites of multidisciplinary community learning—idea sharing and storytelling—act to prompt and give permission to break traditional academic silos and to explore new interdisciplinary learning and teaching opportunities. This participation enabled new configurations and expanded practice. All members of the USC SFCoP were predisposed to and already practicing some form of sustainability pedagogy. The USC SFCoP meetings, workshops and idea sharing enabled and validated these isolated practitioners' actions and allowed for further development. Permissible

spaces in this context relate to the notion of learners and learning that is unbarred, creative and self-supporting through the lived experience of sharing sustainability pedagogical narratives.

13.3 Origins of the Sustainability Focused Community of Practice

13.3.1 Emergence of the Domain

The SFCoP relates to a specific institutional strategic goal and a specific graduate attribute—Sustainability Focused (SF). The origins of the SFCoP are multifaceted as many actors including academics, administrators and governing boards were working towards advancing sustainability in operational and educational spaces throughout the university's sphere of influence. Sustainability has been a key priority for USC since the establishment of the Sustainability Research Centre and a major and minor curriculum offering in 2007. Later in 2009, the enactment of the *Sustainability Governing Policy* pushed the expectations of sustainability teaching and research across the institution as a whole. This policy document established the role of sustainability through the core activities of research, teaching and engagement. As a result, the Sustainability major and minor took on increased importance. In addition, the need for a new graduate attribute—Sustainability Focussed (SF)—was identified.

In 2010, the University established SF as a required graduate attribute that all programs had to ensure students could demonstrate. The challenge of how all current and new programs and courses addressed this *curriculum* focus was both complex and complicated. The specific undertaking for academics involved in curriculum delivery was to "produce graduates who are able to contribute to a knowledge economy and sustainable futures" (USC Sustainability Governing Policy 2009). As this policy applied equally across programs in the Arts, Science, Business or Applied Health Fields, the institutional level definition and framing of this concept needed to be high level, inclusive, and meaningful to all disciplines. To accommodate this disciplinary diversity, the graduate attribute was defined broadly to encapsulate the thinking and considerations around the interconnectedness between and within economic, social and environmental systems:

> …It requires the comparison of alternative actions against social, economic and ecological objectives with the goal of achieving a balance that would provide for the needs of both current and future generations. Achieving sustainable outcomes necessitates a process of iterative analysis and decision making, often in the face of considerable uncertainty and with limited information. It is value-based and is informed by ethical frameworks whether they are explicit or implied. (USC, curriculum support materials 2011)

From this broad definition of SF the institution moved to produce more specific guides for academics at course level. These were not mandated but included

examples of how students could demonstrate their learning such as: considering and comparing actions and outcomes; problem solving; and analysing decisions within ethical and value based frameworks. These documents along with academics' pre-existing notions of SF framed the domain for this community of practice. The course level learning outcomes (Table 13.1) were designed to illustrate a clear sense of increasing standards and complexity to ensure graduates have the capacity to think critically, innovatively and to create and justify solutions. The table below outlines the sample student learning outcomes for SF for a bachelor degree program (Australian Qualification Framework 7) and was provided to aid discussions around the SFCoP domain.

Table 13.1 Standards for measuring proficiency in "Sustainability focused"

Introductory AQF 7	Is familiar with the terms used in describing sustainability in their field of study
	Understands the basic objectives of sustainability in their field of study and can recognise obvious interactions, contradictions and imbalances between economic, social and environmental outcomes
	Links discipline knowledge/practice to ecological, social and economic issues
	Demonstrates an understanding of the greater context of the discipline and how the discipline connects to one or all of the three realms: social, environmental and economic
Developing AQF 7	Has the ability to frame discipline specific issues in the context of sustainable development
	Has the ability to use established methods to evaluate how alternative actions contribute to or impede explicit sustainability objectives
	Recognises some of the differences between how sustainability is viewed in different fields of study and in different cultural contexts
	Considers the impact of the specific medium of communication and how social, cultural, economic, environmental values are implicit in its construction
Graduate AQF7	Collaborates across disciplines to revise and expand methods against which sustainability will be measured
	Identifies and describes barriers to sustainable practice in a discipline
	Recognises the contested nature of sustainable development definitions and interpretations
	Develops solutions based on adaptive principles that anticipate and overcome barriers to the introduction of sustainable practices, considering all associated ecological, social and economic factors
	Identifies path dependent decision points and ensures that future sustainable outcomes will not be impeded by current decisions
	Makes sophisticated linkages between discipline and wider sociocultural and environmental contexts

The table is included in its entirety here because it was used by academics as a litmus test to help them determine whether their assessment items were potentially related to the SF graduate attribute. Academics could then either opt in (adapting assessment tasks) or opt out (determining that sustainability would not be a key alignment for that particular assessment). This quite basic 'dialogue opening' table assisted in the identification of those people that might be interested in joining the SFCoP

13.3.2 Uncovering the Community

The curriculum spaces that developed and assessed SF content were revealed through an institution-wide *natural mapping process* where all course coordinators at USC considered the broad descriptions of the six new graduate attributes (SF was just one of them) and then identified which attributes were related to the learning outcomes in their courses using guides such as Table one above. After all courses were aligned with the new graduate attributes framework a clear picture arose regarding the limited spaces in which SF was taught and assessed. In total, 26 % of all courses at USC were aligned with SF, which appears substantial. However, when course outlines were reviewed at a more granular level we found that only 8 % of all course learning outcomes were SF, and very often these learning outcome alignments were peripheral and not the focus of the summative assignment tasks. Many courses addressed sustainability but typically in a limited way that often did not include assessing student competencies regarding complex problem solving or inter-disciplinary thinking. It was in response to this apparent deficit, that the academic developer invited all course coordinators across the university who indicated that they taught and assessed SF to join a discussion to establish if a community of practice structure could be used to discuss how to expand and improve teaching SF.

The first meeting of the SFCoP was held on September 27, 2013 in the Sustainability Research Centre on campus. In total, 19 academics attended this first gathering and 17 more indicated that they were interested but unable to attend. The gathering had a number of objectives including giving space for academics from different disciplines to introduce themselves and talk about their work with SF content, teaching and research. The meeting clarified the *domain* and *practice* of the group and a sense of *community* emerged. Some of the first activities included: the Sustainability Research Centre (SRC) sharing their OLT project plans on a CoP for Transformative Climate Change Education; creating a platform to share resources and establishing a guest lecture list in specialist areas. There was a pervasive enthusiasm to share methods of communicating the concepts in different contexts and assessing student learning outcomes. The attendance list testified to the diversity of curriculum interest in the *domain* of this attribute and the culture of collaboration and (co)learning was significant.

13.3.3 Solidifying the Practice

Consistent with the implementation of the SF graduate attribute, academics from the SRC commenced a project to develop a Regional Community of Practice for Transformative Climate Change Education supported by a Commonwealth grant (Office of Learning and Teaching 2013). The grant brought knowledge and experience from the University of Tasmania which had developed a community of

practice across four universities in three states (see Pharo et al. 2014). These experiences informed USC's effort to develop a strategy that would build long-term connections across faculties and between educational organisations on the Sunshine Coast. To this end, OLT grant resources were used to support a project facilitator and workshops to bring sustainability educators from other regional universities and TAFE, students and regional employers of sustainability graduates together. Sustainability/climate change teaching offerings across the region were identified. This information was complemented by a survey of industry practitioners and USC staff (academic and non-academic) to draw out understandings of the sustainability domain and employers' expectations of sustainability graduates. The workshops provided an excellent opportunity to share learning around the USC SF graduate attribute and talk about some of the SFCoP academics who were working in this area. Ultimately, the workshops acted as a platform to inform and promote the unique characteristics of USC's sustainability teaching program, in particular and the university wide curricular focus on sustainability through the SF graduate attribute.

The results of the OLT extension grant included a regional Sustainability Community of Practice for Educators (SCOPE) group. SCOPE was embraced by the sustainability industry on the Sunshine Coast whose participation in interviews and workshops provided opportunities for academic staff and students to reflect and consider their personal and professional impact on the future generations. Products created as a result of this project included a newsletter, short videos on key sustainability concepts to be used in classrooms and the knowledge of the success and richness of working in multidisciplinary teams. Workshops also identified specific areas for improvement in the communication and coordination of sustainability objectives across corporate and academic departments.

The relationship of SCOPE and the SFCoP is close and mutually informing but clearly differentiated by SFCoP's truncated domain (only focusing on learning and teaching issues with the USC SF graduate attribute), smaller community—only USC academics, and a more focused and localised practice. The energy and resources harnessed from SCOPE facilitated the development of instructional videos and online content that became available to the SFCoP as part of a common toolkit for practitioners.

13.4 Multi-disciplinary Voices of the SFCoP

This section shares six short narratives by USC academics who have been a part of the SFCoP since its inception. These stories demonstrate the diversity of perspectives and experiences that can occur within a community of practice. They also illustrate how the domain of Sustainability Focused became a permissible site for (co)curricular and pedagogical innovations in learning and teaching practice. Formerly the domain was fragmented and confined within discipline boundaries.

Research (Tilbury et al. 2005) indicates that ad hoc approaches to embedding a sustainability focus into the university curriculum often lead to disjointed, unconnected and short-term effects that are sidelined from the strategic directions of the institution. At the same time committed sustainability educators (and advocates in other university sectors) often report feelings of isolation and frustration at their inability to effect broader, more long-lived changes within their institutions (Hammond and Churchman 2008). Such a sense of isolation can endanger their continued pursuit of this area of interest. The following voices from academics who are part of the SFCoP clearly indicate that building connections between isolated academics across the university provides much needed motivation and social support. This leads to more strategic systemic sustainability innovations.

These narratives reflect the range of our community's practice, from broad program level interests to individual course level activities in the fields of English literature, environmental economics, public health, sustainability and planning.

13.4.1 English Literature: Expanding Eco-Criticism Through Permission to Explore New Curricular Landscapes

Clare Archer-Lean

My entry into the evolving Community of Practice began in early 2013 when I met Theresa Ashford (then curriculum consultant assessing the embedding of graduate attributes in courses across the two faculties). Theresa was particularly focused on the presence or lack thereof of sustainability literacy embedded in the pedagogical goals for graduates in diverse disciplines. My own research in critical animal studies and eco-criticism placed questions of cultural and ecological sustainability centre-field. I was continually researching eco-critical readings of literary works and also exploring the social change involved in story telling (such as book clubs). But I had not made questions of environmental, non-human animals, and sustainability central to my teaching. This is not unusual in English literature. There are a few graduate programmes in the US that feature devoted eco-critical courses (such as Boston University, University of Minnesota, University of Wisconsin, University of Michigan, and the University of Idaho). The University of Oregon now has an undergraduate course in the area. In the UK, the University of Bath Spa has a Writing and Environment research centre and teaches eco-critical courses. The explicit teaching of sustainability issues in English literature (eco-criticism) is even rarer in the Australian context. Theresa's critical questioning prompted my own critical reflection on teaching sustainability in English literature curriculum. In April 2013 I developed a short honours course: The Human and the Land in eco-criticism. I taught it in second semester 2013.

13.4.1.1 Practice Enabled by Community

Half way through teaching this course, I attended an early meeting of the emerging SFCoP. We became very quickly a *community* as described by Wenger et al. (2002a), open to collaborative yet informal action. The stories of other educators validated my decision to integrate a core eco-critical unit into the honours programme in English. And yet, the community enabled more than simply a validation of actions already taken. I felt that our shared stories were *figures* of co-shaping change in the way Donna Haraway describes in her book When Species Meet (2007). The cross-disciplinary focus of the discussions (hearing innovations such as gardening in nutrition studies or founding learning in economics, education or heath in sustainability) permitted me to extend my thoughts on how I was teaching the honours course. I was most excited to learn about the devoted sustainability courses and programmes I had not previously been aware of. As I result, I reflected that I had been teaching the honours course through a debates approach, exposing students to detractors and advocates of the eco-critical approach and assessing students' critical and researched arguments on their own literary readings through this lens. I was treating sustainability as unusual and not normative. I had been involved and invested in the expression of graduate attributes and began to appreciate them as clearly articulated guide to practice, an atlas of definitions and ideas. While my approach met with the graduate attribute aim of 'recognising how sustainability is viewed and contested in different fields of study' it was not facilitating a full appreciation of the 'sophisticated linkages between discipline and environmental contexts'. The SFCoP provided me with an authorising context; a community to treat sustainability questions as entirely necessary and chance to use the practice atlas of the graduate attributes to change curriculum accordingly. I adapted the course to a thematic tropes approach. Now students explore the six tropes of eco-critical literature identified by Garrard: pastoral, wilderness, apocalyptic, animals, dwelling and gaia (Garrard 2012). All these narrative forms evoke, foster or challenge readers to notions of human sustainability and the shift in approach allowed students more complex and sophisticated critical arguments on the meaning and significance of fiction.

In February 2014 I attended the *Transformative Climate Change and Sustainability Teaching and Learning Workshop,* part of USC Sustainability OLT CoP's developing activity. One of the discussions was on what we assess and how. I returned from the workshop with renewed enthusiasm for the necessity for sustainability-focus within my own pedagogy. Our goal of articulating the actual wording in the graduate attributes of sustainability constructed a clear domain to enable agreed on and innovative practices. Supported by a community and equipped with clear definitions and an atlas of practices I critically reflected on assessment, reconsidering why I had limited eco-critical considerations to advanced level honours coursework. I revised all undergraduate courses within USC's English major to ensure students were given the option to construct critical

arguments on the significance of fictional texts' representation of non-human animals, nature and place beyond setting and developed the teaching content to facilitate development of thinking on sustainability and culture. I taught these developments throughout 2014 and students responded enthusiastically. I also now have an additional required course in the English major devoted to ways of Reading Indigenous and Torres Strait Islander Literature, developed in consultation with Indigenous academic experts and community members. The marked changes in curriculum, upon reflection, construe a domain: a project of mapped change. While this is not pervasive in the larger university community it is intensive and marked within the USC SFCoP and enabled by practice and community.

13.4.1.2 Beyond the Precision of Domain: The Unexpected Results of Community and Practice

I continue to teach the honours course. In addition to (and likely because of) the course work option, I have now supervised five honours students to complete specifically eco-critical dissertations. All but one received high-level first class honours. One continued in an eco-critical APA funded PhD research at University of Queensland. Another joined community aid abroad development work. One works for an environmental advocacy group interstate. The other two are studying or have studied to become teachers and I am certain they will take their sustainability graduate outcomes into their future interactions with high school students. I also now have two HDR students conducting specifically eco-critical work. These unanticipated successes occur outside the community of the SFCoP, but they substantiate the ways in which SFCoP can enable innovative personal practises.

The experience of sharing stories of curriculum development and of ideas for tangibly bringing SF gave me permission to move my eco-critical research into an increasingly embedded aspect of my pedagogical practice. I found such activities do construct 'figures' of change, as Haraway (2007) would put it. And they also enact clear community (Wenger et al. 2002b). By this it is meant the SFCoP meetings assisted in permitting and enabling clearly defined practices. The outcomes extend beyond precise domains of mapped and intended projects. There are positive unintended acts of co-shaping, such as the localised movement to a sustainability research in USC's English Literature area through a focused honours and HDR contingent in English Literature. Even though the changes in my pedagogical practice were enacted in my own discipline in isolation, their driving force were the support from and reflections of my community in the SFCoP. We all implicitly co-shaped each other. There are also moments where community members actively and explicitly shape each other's pedagogy and embarked on mapped and intended projects of collaborative sustainability assessment: these are truly inspiring.

13.4.2 Environmental Economics: Harnessing Cross Curricular Spaces for Learning

Graham Ashford

Overview

One of the activities facilitated by the SFCoP was the Product Packaging Roundtable Project, a collaborative assessment task involving students from ENS300 Environmental and Resource Economics and DES213 Packaging Design. The initiative was designed to provide an opportunity for students to engage in learning activities that cut across course and faculty boundaries. The aim of the project was to develop student awareness of outside factors that influence strategy and decision-making within their own disciplines through an activity that mirrored what might occur in a government-industry policy design and consultation process. A collaboration of this nature had not previously been attempted between courses within a similar program, let alone across faculties with students pursuing very different career pathways. Notwithstanding the challenges involved, the experience was enriching for both the course coordinators and the students involved as elaborated in this example of the role that the SFCoP played in fostering an environment where innovation and risk taking were encouraged.

A Practitioner/Advocate in an Academic Setting: Feelings of Isolation and Uncertainty

My practical explorations of the concept of sustainability, particularly its economic dimensions, predated my academic career. Prior to becoming a university lecturer I spent a decade managing international research projects around poverty alleviation, trade, resource management, environmental reporting and climate change for a large institution with a mandate to promote sustainable development. The experience of working with governments, communities and industry groups, often in very impoverished countries, gave me an appreciation of the complexity of the issues involved. Although many of the fundamental precepts of sustainable development were shared, the pathways and priorities to those ends were often not. Consequently, for some groups the terms retained their aspirational nature, whereas other groups felt the terms had been co-opted to imply a goal of sustained growth and continuous economic expansion.

The contested nature of the term sustainability was confirmed when I began teaching environmental economics courses to university students, many of whom perceived economics to be the source of the problem and therefore antithetical to the goal of sustainability. As an economist this suspicion was not new to me, but as a lecturer I wondered whether putting forward such a lofty goal for the future of humanity and requiring students to critically evaluate the dominant economic paradigm transgressed some unspoken boundary between objectivity to advocacy. Besides feeling generally isolated operating within a school of science that revolved around labs and beakers, I was unsure whether I was teaching in what would be considered a permissible space, despite receiving excellent student feedback.

Therefore, when the University established an institutional priority that all programs needed to produce graduates that were SF, I was both relieved and encouraged. The definition of "sustainability focused" and the criteria by which it could be assessed were both nuanced and expansive and I felt that my practice fell comfortably within the boundaries. The recognition of the importance of path dependencies, cross-cultural realities, governance and institutional arrangements, capacity building, irreversible consequences, and long-term planning horizons were particularly relevant to how I taught environmental economics.

A Community for Innovation and Risk Taking

The first formal meeting of the SFCoP established that the group of academics that taught and assessed sustainability was large and diverse and came from all of the major discipline areas. It was exciting and validating to feel part of a community of academics with a common purpose and an interest in sharing ideas and learning from each other. It was clear that when we measured ourselves against our own graduate attribute standards we performed at an advanced level. For instance, as individuals we had the ability to frame discipline specific issues in the context of sustainable development and as a group we had the ability to collaborate across disciples to revise and expand methods against which sustainability could be measured. We knew our domain well. Nonetheless, in the absence of a similar community of practice at the level of students, I wondered how we could fully achieve our goals such as introducing a multidisciplinary perspective into our teaching. Encouraged by the feeling of mutual support at the meeting, I expressed my longstanding interest in developing a collaborative learning task that brought together students from entirely different disciplines. The outcome was the *Product Packaging Roundtable* a collaboration between ENS300 Environmental and Resource Economics and DES213 Packaging Design.

It is worth noting explicitly the role that the community of practice played in facilitating this outcome. First, it brought together the subset of academics who might be responsive to the idea. Second, it fostered a desire to innovate that led my colleagues Irene Visser and Phyllis Araneo to see an opportunity and enthusiastically take up the challenge of attempting something that had never been tried before; despite the risk that it might result in negative student feedback. Third, it added legitimacy to the initiative; which subsequently led to the support of the Executive Dean of the Faculty of Science and the University's curriculum support staff.

The Product Packaging Roundtable

The intention of the *Product Packaging Roundtable* was to provide an authentic problem based learning activity for students that modelled real government policy development and stakeholder engagement processes. For environmental economics students, the primary learning objectives included (1) how to undertake a rapid multi-criteria assessment of the environmental impacts of different packaging materials through the cycle of production, consumption and recovery; (2) how to design an integrated set of policies (incentives, disincentives, regulations and standards, and awareness campaigns) to achieve a policy objective, in this case

improving environmental outcomes related to product packaging; and (3) how to consult with stakeholders and incorporate their concerns in a policy review and revision process. For Design students studying packaging, the learning objectives included: (1) developing a greater understanding of how government regulation could influence packing design, in particular the choice and volume of material used; and (2) how to communicate the specific roles that particular materials played in the function or aesthetic of product packaging and to advocate for reasonable amendments to the policies in the interests of their clients. The task was summative for economics students (15 % of their total grade) and formative for design students.

Environmental Economics students self-organised into their own consulting company groups and received a very official looking cover letter and terms of reference for the task from the "Minister for the Environment". Each group of consultants (economics students) had their own group space set up on Blackboard where they could share materials and discuss the task. Each group member was also allocated an area of expertise and was given time to meet with members of other groups with the same expertise—the jigsaw method. The lecturers facilitated discussion and planning with each group during tutorials. Economics students worked for 3 weeks during tutorials before submitting their draft findings and policy framework to the design students for feedback using a set of questions developed by the lecturers. Differences in the timing of the classes required that communication occurred electronically. The economics students revised their findings and policy proposals and presented them to a panel which included the Minister for the Environment and his advisors: me, Irene and Phyllis respectively.

The feedback from students was largely positive with many students indicating that they like the "real world" feeling of the task as well as the collaboration within and between groups. Students indicated that the cross-course element added "a bit of magic" to the whole task. It was something unusual for students and it meant that they had to submit their work into something of a black box. The fact that the interactions came from such different perspectives made the task seem like it was part of something bigger than their own course and gave them a sense of what they might encounter in their careers.

The collaboration was not without its challenges. The task required a significant amount of planning between the lecturers to overcome the barriers associated with merging very different learning outcomes and activities. The comment "this is so hard" came up regularly in the planning and execution but was met with the response "that is why we never do these things" and a renewed determination to overcome the obstacles. In many ways neither the lecturers nor the students were sure what to expect. Students were aware that it was the first time that the activity was being run and that some aspects of it were being developed "on the fly" which made the task appear disorganised at times. There were wide differences in the quality of the feedback that economics students received on their proposed policies. Although the task was intentionally given a small weight for economics students due to its untested nature, some students felt that at the time the task should have been a higher percentage of their overall grade given the time and effort involved.

Notwithstanding its challenges, the authentic simulation based nature of the task proved to be a very engaging and often entertaining way to both teach and learn and has been revised and retained as a part of both courses. The task achieved its objective of introducing multidisciplinary perspectives consistent with sustainability-focused practices. The lessons learned during the collaboration were shared with the Community of Practice and the wider academic community through a seminar at the University's teaching practice week. The project was also nominated for a University Advancing Quality Teaching Award for engaging students in rich and transformative tasks that substantially improve their learning experiences. The Sustainability Focused Community of Practice deserves much of the credit for facilitating these outcomes.

13.4.3   Public Health: Refining the Domain and Practice at the Program Level

Jane Taylor

My discipline is public health, which is about protecting and creating resources to support the health and wellbeing of the population now and into the future. It involves research, and the development, implementation and evaluation of policies and programs that contribute to sustainable health and wellbeing outcomes for people (Baum 2008). Sustainability therefore is a key aspect of public health curricula, a focus explicitly enabled across USC public health programs via the Sustainability-focused Graduate Attribute.

Over 2013 I led the public health curriculum renewal process to embed the new USC GA's into public health program curricula. The public health academic team in partnership with the Graduate Attributes Academic Developer (Theresa Ashford) undertook this work. Programs renewed included the Master of Health Promotion, Bachelor of Environmental Health Science and Bachelor of Health Promotion. In the first instance the curriculum renewal process required the academic team to consider how each GA might be interpreted, represented, taught and assessed within these programs.

With respect to the SF GA, the public health team first engaged in conversation that explored what sustainability meant from their discipline perspective, i.e. sustainability as an important public health outcome and the need to engage in sustainable public health practices. This conversation served to identify convergences and divergences in interpretations of sustainability within the team. It also facilitated consideration of how sustainability had been represented and addressed in USC public health programs to date, and how moving forward it might be augmented through the curriculum renewal outputs. Curriculum renewal outputs were then generated and included explicit SF program and course level learning

outcomes, and assessment tasks and criteria that augmented these learning outcomes. For example, the Master of Health Promotion sustainability-focused program learning outcomes are for graduates to be able to: *Argue persuasively for the value and importance of healthy and sustainable futures* which is outcome focused; and *advocate for greater investment in health promotion infrastructure and resources across multiple sectors* which is practice focused. At a broader level explicating the SF GA in this program renewal practice brought forward and raised the profile of sustainability within public health programs. It also enabled the explicit rather than implicit integration of sustainability focused content and processes into the curriculum. Finally it provided evidence that public health program graduate s are equipped for sustainability aspects of public health practice.

My first engagement with other USC academics interested in sustainability was very near the completion of this curriculum renewal activity at the on-campus sustainability forum in September 2013. I mostly recall the buzz and energy in the room—similar to arriving home to see family or meeting up with old friends after time away. I remember thinking that there were all these other people doing great work in this space and that I had not noticed—which I now attribute to ignorance and in part to institutional siloing. I got excited by the potential collaborative cross disciplinary opportunities that became apparent in the facilitated small group conversation I participated in, which included some co-authors of this chapter, and whom I had not previously met. I recognised that the curriculum renewal work I had been leading at the time to better explicate the SF GA at a programmatic level was part of a much larger movement at USC. This knowledge served to validate the programmatic work that I felt at the time was charting new territory. I could also see that the greater dialogue with likeminded academics and researchers provided a source of learning and support for unknown next steps in this journey. The subsequent establishment of the SFCoP, which brought USC colleagues together, has provided an avenue for me to make more connections, explore sustainability curriculum ideas, practices and resources. I participate as often as I can in the SFCoP. I most appreciate the sense of connection to a community of learning, the opportunity to learn from others about sustainability, and the resource sharing that the SFCoP facilitates.

13.4.4 Sustainability Education I: Finding Trans-Disciplinary Learning in the Disciplinary Setting

Noni Keys and Dana Thomsen
Being part of a community of practice at the regional (i.e. SCOPE) and organisational (i.e. SFCoP) scales has had a very constructive influence on our teaching and learning in the Sustainability Program at USC and has heightened our awareness of future potential collaborations and outcomes. Thus far, these experiences and

relationships have provided a stimulus for the creation of online teaching materials and the development of new, sustainability courses, including an applied capstone course (SUS310) where students can work on project areas identified by industry representatives and researchers. In a system sense, the larger multi-institutional Sustainability CoP (SCOPE) that we developed through an Australian Government, Office for Learning and Teaching Grant functioned as a boundary organization and facilitated the convening, collaborating, translating and mediating of interpretations and applications of sustainability by regional practitioners back to the SFCoP (Cash et al. 2006). Within USC, both SCOPE and SFCoP have made visible the agents of change in other components of this organisation system; making collaboration across courses and disciplines possible and creating permissible spaces and places to (co)develop our practice. There are exciting opportunities for these novel collaborations across disciplines to act as models for other educators and for scaling up efforts across the organisation and the region more broadly. At the level of personal sustainability, belonging to a group with the shared objective of enhancing sustainability learning has also counteracted feelings of isolation and futility from 'battling' for change within the institutional setting. Thus, we have found that belonging to SCOPE and SFCoP has afforded:

Stimulus—for the development of novel teaching materials with broad appeal and the development of new, outcomes-focused sustainability courses with project areas identified by industry representatives & researchers.
Invisible made visible—in a system sense, being part of communities of practice made visible the agents of change in other components of the organisation, and also extended this visibility to other agents in the region and the institution of education for sustainability more broadly. Awareness of the others' existence makes collaboration across courses, disciplines and organisations possible.
Strategic niches of change—through enhanced communication across disciplines regarding sustainability pedagogies and support networks for scaling up efforts beyond collaboration between courses to the wider institution.
Community and personal sustainability—In addition to sharing ideas about course content and learning activities, belonging to a group with a common objective of enhancing sustainability learning counteracts feelings of isolation and raises awareness of a much greater range of possibilities.

13.4.5 Sustainability Education II: Finding Trans-Disciplinary Learning in the Disciplinary Setting

Lisa Ryan

Unlike other members of our SFCoP, who are challenged in finding ways to integrate and incorporate the SF domain into their pedagogical practice, my discipline *is*

sustainability. I teach the Foundations course of a four course Minor and an eight course Major in sustainability, which can be incorporated into many of the degree programs offered USC. So while I don't have to search for how I can incorporate the domain of relevant sustainability content into my discipline, I do have to work to ensure students can see the value being sustainability-focused can bring to their 'home' discipline. This requires me to focus less on teaching content and more on teaching students. It also necessitates incursions into other disciplines to ensure that SF is not an additional add-on but is a specific perspective that can contribute meaningfully to the partner discipline. The story I want to tell here is how the CoP has impacted on both the curriculum design of my course—SUS101—and my own pedagogical practice.

Theresa Ashford, an Academic Developer from CSALT, facilitates our SFCoP and this offers a measure of institutional support and resourcing. The SFCoP provides a space to discuss how the graduate attribute of SF is being incorporated into our disciplines and make plans for how we can integrate SF more seamlessly into our work. Prior to the SFCoP, academic staff remained isolated from the broader institutional GA work. As is typical in many higher education institutions there are informal disciplinary and departmental silos in operation that have the unintended effect of restricting collaboration and relationships between different work areas. So while many academics were supportive of the adoption of a SF graduate attribute we had little input into the mechanisms around that initiative. The SFCoP created new spaces to (co)develop ideas and practice around this domain.

Working in a CoP with CSALT has had several significant on-ground outcomes for my own pedagogical practice. It provided a clear statement on the institutional importance of the SF domain, and it also relieved the pressure experienced by existing sustainability educators of supporting and energising a myriad of other peripheral piecemeal sustainability initiatives. The SFCoP in effect rescued sustainability from the margins of the teaching space where it was seen as mainly the domain of sustainability educators and relocated it squarely within the institution's key educational priorities.

Freed from the margins, and freed from other ad hoc sustainability initiatives, the SFCoP provided the permissive space to focus on developing my own pedagogical *practice* through professional conversations within a supportive environment. To give an example, in our SFCoP there has been considerable dialogue around the development of a campus garden called "Moving Feast" proposed and developed by the Nutrition academic staff and students. The discussions evolved into considering how this garden might form a resource and a space for learning in other courses. This semester, my students, will have the opportunity to utilise the garden both as a tutorial resource where Nutrition students will peer tutor my students on the need and role of gardens in addressing food security in local contexts, and secondly as a real-life and relevant stimulus for their first assessment task: a poster on an environmental issue (possible topics could be food security, obesity, industrial agricultural systems etc.). Posters produced by students on the causes and consequences of unsustainable food-related practices may in turn be utilised by the "Moving Feast" student group as interpretive signage furthering the work of

Nutrition students in promoting healthy eating options within the university and local community. In this way through the SFCoP, the garden is becoming sutured into the culture and fabric of the university. Although these plans are yet to be realised fully, I look forward to working with my SFCoP Nutrition colleagues to build upon this initiative.

Another key area I have been able to develop through the SFCoP participation is a sensitivity to and knowledge of other discipline areas and their framing, knowledge and understanding of SF topics and issues. This exposure to other disciplinary perspectives allows me to see to some extent through my students' eyes. Through conversations with Health, Creative Industries and Business academics, about the current sustainability issues and challenges of these fields, I am better able to find points of convergence with sustainability for my students from these different fields. Often these points are obscure and not immediately obvious. Last year one of my students enrolled in a Bachelor of Creative Industries wrote her Task 2 assessment (a magazine article outlining the sustainability implications of a work or leisure-related practice), on the misogynistic and violent culture of gaming as exposed in the recent 'gamergate' scandal. Without the SFCoP to keep me informed of current trends in other disciplines, I may not have been able to negotiate such cutting edge relevant topics with my students, and valuable opportunities to engage students would have been lost.

The SFCoP has for me become an important teaching resource, both as a source of ideas and inspiration about what SF means in other disciplines as well as providing a sense of community with a shared interest in pursuing projects and ideas that can contribute to an institutional focus on sustainability.

13.4.6 Planning: Participating on the Sidelines—Productive Peripheral Participation

Claudia Baldwin

My work and participation in the SFCoP is best classified as 'legitimate peripheral' due to my tendency to over-commit. I try to attend as many of the gatherings as possible as I strongly share this domain and practice with the body of academics that collaborate in this area. My key program of interest is the Bachelor of Regional and Urban Planning, which aims to 'contribute to responsible and sustainable development'. Unlike some other disciplines, which might stretch their usual boundaries to interpret or apply sustainability in their courses, planning is all about sustainability, incorporating fundamentals such as triple bottom line sustainability and intergenerational equity in developing liveable and just communities for the future. These values are aptly encapsulated by the Planning Institute of Australia's description of planning as:

developing strategies and designing the communities in which we live, work and play. Balancing the built and natural environment, community needs, cultural significance, and economic sustainability, planners aim to improve our quality of life and create vibrant communities.'…Planners are 'gaining increasing recognition as communities place greater emphasis on 'liveability', environmental sustainability, the design and feel of places and public space. People and decision-makers are also increasingly interested in managing urban growth effectively in order to build a nation worth inheriting for future generations (PIA 2015).

When I first developed the fourth year course in Advanced Planning Practice, I struggled with how to structure it in a coherent way to cover the diverse range of topics needed for a capstone course. Initially attempting to deliver on the university's strategic direction of regional sustainability, I wove the topics around a triple bottom line sustainability theme that was unconvincingly related to our overall planning program. The introduction of the sustainability focused GA legitimised my attempt, allowed me to map, embed and normalise this way of thinking into the program. The positive reinforcement of the Academic Developer encouraged me to further develop and finesse the theme of this particular course curriculum.

I find it exciting and fascinating to see how others in the SFCoP interpret sustainability in their courses, and it helps me to negotiate the multi-disciplinary nature of this field, however my participation is secondary to my focus on engaging with planning practitioners external to the university. Having worked for government and in consulting prior to academia, I am familiar with the trade-offs that often occur when trying to achieve a sustainable outcome. I want students to appreciate and be inspired by the challenge and not be discouraged or overwhelmed by it. So I incorporate experiential learning in my teaching to expose students to real world issues and how to foster exploration and evaluation of possible solutions. As a result, a key feature of the course is to invite, at different times, six practitioners to give guest lectures to my students, about their work, its challenges, and their own journey to becoming a professional planner. The rationale is to introduce students to the bumpy reality of planning issues, with all its technical, interpersonal/social, political and ethical complexities. An additional aim is to have students start to identify as professionals with an ongoing need for lifelong learning which most of the guest lecturers demonstrate through their further study and as professional institute members. This requires that I engage with our professional guests ahead of time to discuss how sustainability can be a core message. Through reflecting and negotiating about ways of engaging the students in interpreting and achieving sustainability, we mutually build on the curriculum I had envisaged. Likewise guests are exposed to and re-evaluate a different way of framing their issues. As an example, I initially presented aspects of policy development simplistically around social, environmental and economic sustainability themes in separate lessons. Social policy looked at affordable housing in one lesson; environmental policy referred to acid sulphate soil constraints on land use in another; and economic was about efficient land development, each with a different speaker. With the guest lecturers and other colleagues, the course evolved to take a more integrated approach to each, better reflecting the interconnectedness between economic, social

and environmental systems, the essence of sustainability. For example, long-term costs of environmentally sustainable neighbourhood and house design features (north-facing lots, natural light and ventilation, solar power and rainwater tanks) contribute to longer term housing affordability, thus illustrating the social, economic and environmental nexus. The precautionary principle and inter-generational equity emerged from discussions on the rationale for constraining development in inappropriate or poorly understood locations such as low-lying coastal areas, reinforced by examples from a guest planner.

So for me, the informal social learning and collaborative relationships developed in the SFCoP as well as the professional connections nurtured outside the university have provided a broader community of practice which has validated sustainability as an absolutely critical domain, for me, my colleagues, and students. In the process, it has advanced the sophistication of my teaching. The opportunities to lightly participate, to manage my own learning, participation and commitments within the USC and broader community has enabled and supported my integration of sustainability into practice, rather than as just an ideology.

13.5   Closing Reflections—A Conveners' Voice

Theresa Ashford

In the process of writing this chapter, I reflect that I had a strong ethical commitment to the notion of the SFCoP as an organic, self-determining social learning structure and the production of this chapter would be part of the CoP practice rather than a product in and of itself. This chapter is a testament to all of our members both peripheral and fully participating, as it is their voices, interactions and engagement that have changed who we are. I have been cautious in the convener role not to overstep but to support and become part of the community. My initial goal in bringing academics together was in response to my realization of the siloed and marginal place of explicit SF learning and teaching within the university. My role as an academic developer gave me the birds' eye view to see the fractured spaces of SF across the university and a mandate to invite these academics to gather and discuss this curriculum imperative. However, my role has evolved to become a co-participant while at the same time supporting this community through planning and communicating our bi-annual meetings as well as supporting the smaller sub groups that gather regarding specific SF academic issues and initiatives. I see the real SFCoP emerged through the prolonged engagement of academics, the continued projects and ideas that are supported by the SFCoP and the continued energy and excitement when we get together. Through collaboration and the formation of the CoP we have been able to find areas amenable to multi-disciplinary practice. Many of the comments in the above practitioner reflections indicate this. The quotes below articulate some of the most overt benefits of participation in the SFCoP:

> Connecting with and subsequent participation to date in the SFCoP highlighted the need to link with academics in other programs and from other disciplines that also valued sustainability. I recognised that I needed to and could learn from others about how sustainability-focused graduate attributes are being realised in other programs. I also identified potential collaborative opportunities to enhance my own sustainability-focused learning and practice that in turn influenced the learning experiences I create for public health students. Participation in the SFCoP has provided this learning and collaborative space. Dr Jane Taylor Public Health

This quote clearly highlights the benefits of collaborative participation in a CoP structure and the transformative experience this 'collective, relational and social process' (Omidvar and Kislov 2013) can elicit.

> In my experience the CoP was absolutely vital: it validated my existing activities and gave me inspiration and critical reflection to action meaningful change. This CoP was both informal and collaborative in the implicit co-shaping sense. Dr Clare Archer-Lean

The common threads evidenced by these quotations concern safe collaboration leading to validation of existing practice and transformative inspiration for new practice. This chapter also evidences the heterogeneous lived experiences of the SFCoP as each member draws out something different for their own practice. Permissible spaces in this context relate to the notion of learners and learning that is unbarred, creative and self-supporting through the lived experience of sharing sustainability pedagogical narratives. This ensures both that pedagogical development is not happening in isolation but also that SF is beginning to be institutionally normalised.

Different forms of participation in the SFCoP clearly emerged in our collective reflection in writing this chapter. For example, as the literature (Lave and Wenger 1991) suggests there can be legitimate peripheral participation in a CoP that has quite different benefits to that of more core or ongoing membership. This can be seen in the contrasting the experiences of the academic in English Literature from that of the academic in Planning. The former receiving more specific benefits in terms of transformation, curriculum expansion and spaces of permissiveness while the latter, developed an increased depth in sophistication of SF and a cross-disciplinary interest rather than a transformation in practice. In this case, the peripheral participation may be in part due to the fact that, like other academics in the SFCoP, their fields were already steeped in SF. Yet all benefitted from the social learning and mutual support that is integral to a community of practice.

This benefit and mutual support also impacted my practice as an academic developer, which is inherently a difficult and contested space in the tertiary landscape. My practice is entirely learning and teaching focussed and much of the work concerns "engaging academics in thinking about their teaching with the aim of improving student learning" (Barrow and Grant 2012, p. 466). This is often a challenging space and one that must be negotiated with care, openness to learn and evidenced based practice. The fact that I was aware of the spaces of innovation in the individual disciplines was due to my one-on-one work with these academics. The bringing together of these academics into the space of a CoP allowed for the decentring of my practice, and to draw on the power of the groups interest. I was

initially nervous about some of the potential tensions that might occur including the extent I may have to intervene, encourage or drive the participatory processes in the operation of the CoP. I felt that there may be attendant risks in reducing group capacity and agency, thereby making the CoP dependent on a single driver. This has not been the case and I can genuinely say that these SFCoP meetings are something I look forward to as they have a warm, collegial and inspiring learning centred atmosphere.

As echoed in the other chapters of this book, Communities of Practice are exciting spaces for social learning and collaboration. The fact that there can be multiple ways for CoPs to form, operate and prosper is a testament to the robustness of the theoretical construct. We have found the successful role of the SFCoP in supporting the operationalisation of complex educational objectives all relate back to the strength of the key elements within the community of practice: Domain, Community, and Practice (Wenger et al. 2002a). In summary, the theoretical construct of CoP has been realized in USC's SFCoP in the following ways.

Firstly, the domain was demarcated through the development of USC's SF graduate attribute. The Sustainability Governing Policy and various curriculum tools such as Table 13.1, facilitated the explicit rather than implicit integration of sustainability concepts into courses. An OLT project assisted the further emergence of the domain, through providing workshops and activities across the university on climate change and the consideration of regional employers' needs and expectations of sustainability graduates.

These various activities highlighted the need for a community to redress siloing and to capture and exploit exemplary work being done in SF pedagogy. Our SFCoP brought together disciplinary practitioners with sustainability related expertise and interest. This community has been successful in supporting academic staff most visibly associated with SF in courses and programs and has opened up their meetings to members from facilities management, the Buranga Centre, and other community engagement units at the university.

The practice of the SFCoP has included the development of sustainability related course materials and expanded the capacity to produce them. Multidisciplinary perspectives have become more common in courses with interesting cross course learning and assessment practices sponsored. Pedagogical models and cross disciplinary (co)learning and collaboration are now becoming more common. The practices have, in effect, enabled systemic and pedagogical approaches to the embedding of SF at different levels: institution, program, course, and assessment.

This work is continuing and new and interesting projects are in development. In terms of my own goals as academic developer to redress (a) siloing and separation and (b) a marginal place of explicit SF within curriculum across the university, this chapter is testimony to the success of the former much more than the latter. That being said, the USC SFCoP has a critical mass. Its membership is growing and its activities and outputs cycle through periods of intensity and dormancy depending on the workloads of the participants and the need to collaborate to advance specific external projects or university initiatives. A significant number of practical resources have been developed for common use. An important outcome has been an

expansion and fortification of the permissible space within which practitioners perceive that they can work owing to the vitality of their collaborative inquiry and the critical mass of their community.

References

Barrow, M., & Grant, B. (2012). The 'truth' of academic development: How did it get to be about 'teaching and learning'? *Higher Education Research and Development, 31*(4), 465–477. doi:10.1080/07294360.2011.602393

Baum, F. (2008). *The New Public Health* (3rd ed.). South Melbourne: Oxford University Press.

Cash, D. W., Borck, J. C., & Patt, A. G. (2006). Countering the loading-dock approach to linking science and decision making comparative analysis of El Niño/Southern Oscillation (ENSO) forecasting systems. *Science, Technology and Human Values, 31*(4), 465–494.

Garrard, G. (2012). *Ecocriticism*. New York: Routlege.

Hammond, C., & Churchman, D. (2008). Sustaining academic life: A case for applying principles of social sustainability to the academic profession. *International Journal of Sustainability in Higher Education, 9*(3), 235–245. doi:10.1108/14676370810885862

Haraway, D. (2007). *When species meet*. Minnieapolis: University of Minnesota Press.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.

Office of Learning and Teaching (2013). *Extension grants/University of the Sunshine Coast/Developing a regional community of practice for transformative climate change education*. http://www.olt.gov.au/system/files/ExtensionGrantsRoundOne2013_0.pdf Accessed 11 Feb 2015.

Omidvar, O., & Kislov, R. (2013). The evolution of the communities of practice approach: Toward knowledgeability in a landscape of practice—An interview with Etienne Wenger-Trayner. *Journal of Management Inquiry 23*(3), 266–275.

Pharo, E., Davison, A., McGregor, H., Warr, K., & Brown, P. (2014). Using communities of practice to enhance interdisciplinary teaching: Lessons from four Australian institutions. *Higher Education Research & Development, 33*(2), 341–354.

PIA, P. I. A. (2015). *What is Planning*. February 24, 2015.

Tilbury, D., Adams, K., & Keogh, A. (2005). *A National review of environmental education and its contribution to sustainability in Australia: Further and higher education. Australian Research Institute in Education for Sustainability*. Canburra: Australian Government Department of the Environment and Heritage.

Wenger, E., McDermott, R. A., & Snyder, W. (2002a). *Cultivating communities of practice: A guide to managing knowledge*. Boston, Mass: Harvard Business School Press.

Wenger, E., McDermott, Richard A., & Snyder, W. (2002b). *Cultivating communities of practice: A guide to managing knowledge*. Boston, Mass: Harvard Business School Press.