

Engaging in mixed sector scholarly practice: scholarship on the edge

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Abstract

Following on from earlier research that examined the scholarship of teaching and learning in three Australian tertiary settings (Williams, Goulding & Seddon 2013), this paper explores a broader range of scholarship in mixed-sector institutions.

Ernest Boyer (1990) originally proposed four separate, yet overlapping functions of scholarship: discovery, integration, teaching and application – or engagement as it later came to be known (Rice 2002). Although it is readily recognised as a ‘natural fit’ for mixed-sector institutions with their close industry ties, little is known in the scholarly community about the scholarship of engagement in these settings because it is often either undocumented or published in industry journals. Other forms of mixed-sector scholarship are similarly under-represented in the scholarly literature.

This small-scale case study research examines three narratives about scholarly practice in Victorian public mixed-sector institutions, focusing on the scholarship of engagement. But in each example, the scholarships of discovery, integration and teaching are also evident. Each narrative was accompanied by a reflective commentary, based on a set of indicators of quality scholarly practice that was developed in the earlier research. The cases were analysed to identify the distinguishing features of mixed-sector scholarly engagement and to further refine understandings of ‘quality scholarly practice’.

Introduction

There is a regulatory requirement for teachers delivering higher education qualifications in Australian non-university settings to engage in scholarship that informs their teaching and learning (DIISRTE 2011). However, UK and Australian research has shown that there are significant structural, cultural and personal impediments to undertaking this form of academic activity in mixed-sector institutions (Goulding & Seddon 2011; Harwood & Harwood 2004; Kelly, Wheelahan & Billet 2009; Moodie 2010; Moodie et al. 2009; Moodie et al. 2011; Parry 2009; Wheelahan et al. 2009; Williams, Goulding & Seddon 2013; Young 2002). Moodie (2012) argues that this is partly because ‘there is no clear understanding of what such scholarship might be’ (p. 3).

Transplanting traditional university understandings of scholarship to mixed-sector contexts is problematic because, as we found in our earlier study, the knowledge generated through scholarly practice is shaped by the specific terms and conditions under which it is produced. (Williams, Goulding & Seddon 2013). In that study we set out to develop a clearer understanding of the forms and practices of knowledge building across the Australian tertiary

sector, focusing primarily on the scholarship of teaching as a common point of comparison. But the study confirmed the views of other commentators and regulatory authorities that applied research (in Boyer's terms, the scholarship of application or engagement) is a 'natural fit' for mixed-sector institutions because of the applied focus of their higher education courses, their close ties with industry and their engagement in community-based projects (AUQA 2010; Wheelahan et al. 2009; Williams, Goulding & Seddon 2013).

However, this form of scholarship is relatively unknown in the scholarly literature because it is more typically published in trade journals or undocumented altogether. The current study sought to find out more about the scholarship of engagement in order to further refine understandings about 'quality scholarly practice'. This paper focuses on just three aspects of that research: how scholarly engagement is understood and practised in mixed-sector institutions; what makes it distinctive; and what makes it scholarly.

Defining 'engagement'

In view of the small scale of this research, the discussion of the literature is limited to four key texts: Boyer's two original works (Boyer 1990, 1996), a review of the legacy of these works by one of his collaborators at the Carnegie Institute (Rice 2002), and an autoethnographic examination of the scholarship of engagement (Fear et al. 2006).

In his hugely influential work *Scholarship reconsidered: priorities of the professoriate* Ernest Boyer (1990) advocated breaking out of what he considered had become a restricted conception of scholarship, in which 'basic research has come to be viewed as the first and most essential form of scholarly activity', with other functions such as publishing, teaching and service emanating from scholarship, but not considered a part of it (p.15). He proposed a more flexible definition comprising four separate, yet overlapping functions of scholarship: discovery (inquiry: pure research); integration (synthesising: making cross-disciplinary connections, placing in context, educating non-specialists); teaching (to be intellectually engaged and steeped in disciplinary knowledge, and to extend that knowledge through teaching); and application (service, interaction between theory and practice). He saw the scholarship of application as scholarly service, which is tied directly to the scholar's specialist field and flows out of this professional activity; a function which both applies and contributes to human knowledge (p. 22-23).

In an address shortly before his death in 1995, Boyer extended his discussion of this aspect of scholarship, which he renamed 'the scholarship of engagement' (Boyer 1996). He endorsed Schön's (1983) notion of the 'reflective practitioner', 'moving from theory to practice, and from practice back to theory'. Boyer argued for the application of knowledge to avoid irrelevance and to make it useful, by which he meant 'everything from building better bridges to building better lives' (Boyer 1996, p. 28).

Rice (2002) contends that the notion of 'engagement' has moved beyond Boyer's original conception of the scholarship of application. Echoing Schön (1995), he suggests that it involves a fundamental epistemological challenge to the traditional ways of generating knowledge in universities, which requires 'going beyond the "expert" model that both

informs and gets in the way of constructive university-community collaboration' (Rice 2002, p. 13).

Rice identifies three aspects of more recent work in this domain: engaged pedagogy, community-based research and collaborative practice. He cites notions of service-learning and learning communities as examples of engaged pedagogy, in which learning is social and contextual and therefore requires a fundamental change in traditional assumptions about teaching and teachers' relationships with students.

Rice describes community-based research as synonymous with participatory action research, in which:

the most knowledgeable peers might well be representatives of the local community and not of the academy. [It] calls for shared expertise and challenges established academic criteria. It also needs to be collaborative and requires that the learning be multi-directional, not university-centred and campus-bound. (Rice 2002, pp. 14-5)

Rice's third aspect, collaborative practice, is described in terms of university-community partnerships focusing on 'concrete, protracted community-based problems' (p.15). This flows directly out of Boyer's original appeal for social problems themselves to define an agenda for scholarly investigation (Boyer 1990).

However, in their book titled *Coming to critical engagement* Fear, Rosaen, Bawden and Foster-Fishman (2006) critique Boyer's forms of scholarship. They claim that the categories modernise rather than transform traditional understandings and fail to bring about a deeper understanding of engagement work. They raise four key objections.

First, they contest the notion of separate forms of scholarship, instead seeing all of their work as a scholarly expression that is conceived as a *way of approaching scholarship*, rather than a designated activity. Second, they contend that this focus on activity allows form (the activity called engagement) to drive function (the scholarship of engagement), which reifies the activity and can create scholarly silos. Third, they found frequent examples from their own scholarly work that cut across and connected more than one form of scholarship. They saw this as desirable, citing a need for 'coherent, connected programs of scholarship: teaching, research and service activities connected dynamically' (p.59). Finally, they question the utility of describing scholarship by categorisation, concluding that engagement 'can also be a form of, and an opportunity for, discovery, [...] learning and integration' (Fear et al. 2006, p. 60).

These understandings of scholarly engagement informed the selection of the cases for this research and the analysis of the findings.

Methodology

This study followed a similar research design to that employed in our earlier project (Williams, Goulding & Seddon 2013) because we found it a useful way of producing case study material on a very small scale. Three narratives about scholarly engagement,

accompanied by a reflective commentary, were commissioned from higher education scholars in mixed-sector institutions.

A call for narratives was issued at a symposium of Melbourne metropolitan public mixed-sector institutions and via my own professional networks, which eventually yielded three narratives about the scholarly engagement in the food and gastronomy, information technology (IT) and wine industry discipline areas.

The questions guiding the development of the narratives and reflective commentaries were informed by a draft set of indicators of scholarly practice which originated as standards for scholarly work developed by Glassick, Huber and Maeroff (1997). These standards had been refined at a forum of approximately 50 Australian tertiary education stakeholders that formed part of our earlier research (Williams, Goulding & Seddon 2013).

The narratives and reflective commentaries were analysed using grounded theory to allow themes to emerge. The themes were compared and contrasted across the three narratives and mapped to the literature to draw conclusions about the forms and practices of scholarly engagement in mixed-sector institutions and to provide further insight as to what constitutes 'quality scholarly practice' in these settings.

The cases

Case 1: The carbon-cacher

The case described in this narrative involved an applied research project to develop a prototype apparatus that would expand the well-established concept and practice of capturing carbon dioxide from fermenting wine. Its innovation consisted in including the utilisation of other by-products of fermentation for purification and sale as bio-chemicals, or for reintroduction to the wine as flavour enhancers. This latter option could potentially reduce energy consumption through a diminished need for refrigeration. The mixed-sector institution partnered with an interstate company which was already experimenting with a prototype apparatus. In exchange for access to the apparatus, the company gained access to the institute's production and analytical facilities.

The project was fully integrated into the teaching program as an embedded practical component, which meant that students in all three years of the bachelor degree in viticulture and wine making were involved in carrying out the research at levels appropriate to their progression through the course.

The point at which the institution's research imperatives diverged from those of the partner company, namely in the search for alternative uses for the diverted carbon dioxide, engendered a further innovation. Students in the aquaculture program were brought in to investigate how the carbon dioxide could be used to grow algae for subsequent bio-fuel production. This opened an opportunity for the involvement of a different industry partner in this aspect of the project and maximised both the institution's investment and the benefits to

students through having the one experimental research project span more than one teaching program.

Case 2: Tablet to table

The food and gastronomy case described an ongoing collaborative project involving academics, industry professionals and the community. Original research is undertaken by the scholar using the institute's archives as primary source material to identify historical recipes based on a particular theme. These recipes are given to professional chefs to interpret in a contemporary way, and then passed to domestic cooks in the community to make the recipes for their families and to provide feedback.

Each instance is written up as a scholarly feature article and published in a themed, bi-monthly e-publication focusing on culinary heritage. Embedded in the e-publication are the video comments of academics and/or chefs, in addition to video footage of the community cooks making the interpreted recipes in their homes and offering comments. The e-publication is distributed by subscription to Australian public libraries, shortly to be extended to the UK, and with the help of social media, soon also to be expanded to other platforms. The use of social media enables the reading public to provide comment and feedback. At the end of the first 12 issues the institute plans to have the feature articles peer reviewed by an academic panel.

Case 3: Professional textbook writing as scholarship

In this case the scholarship was undertaken in the scholar's own unpaid time, involving the development of Open Source software to improve the performance of Karaoke computer programs. Although not related directly to the narrator's teaching program, it formed part his continuing professional development as a software engineer needing regularly to practice and extend his discipline skills. Being unable to find cohesive literature about sound systems on the Linux operating system, the narrator set out to document as many aspects of sound under Linux as possible. This entailed developing a framework, documenting the different components within this framework, posting the documentation on the Internet for feedback from the online community, refining it in light of the feedback and so on, in a spiral development model involving iterative cycles of design, building, distribution and evaluation. His object was to develop coherent documentation of a complex framework, in order that others might better understand and use the components of the framework for their professional practice or research.

How is scholarly engagement understood and practised?

In the wine industry case scholarly engagement is understood as 'applied research', defined as 'working on currently commercial or near-commercial technology or practices' to solve industry problems. In this sense it fits Boyer's notion of a dynamic interaction between theory and practice, with knowledge being applied in a useful way (Boyer 1990, 1996).

Yet this example of scholarly engagement represents much more than a conventional model of applied research. Scholarly engagement is understood and practised in a holistic way, integrating elements of discovery, integration and teaching in a partnership between academics, industry and undergraduate students. While it incorporates several customary elements, it turns them on their head. For instance, rather than discovering knowledge then applying it, intellectual discovery, in the form of how flavours develop under certain conditions, emanates from the practical work. Integration in the sense of multi-disciplinary collaboration also has a twist in that different discipline teams work on the same overarching experimental process (the production, capture and use of carbon dioxide and other by-products of wine fermentation) but instead of bringing their disciplinary insights to bear on the one problem, they each investigate completely separate problems relevant to their own industry discipline areas (enhancing flavours and improving the production efficiency of wine on the one hand and growing algae for bio-fuel production on the other).

The integration of the research into the teaching program illustrates Rice's (2002) conception of 'engaged learning' in what the narrator describes as 'a compromise between full scientific rigour and inclusiveness', which requires the change in assumptions about teaching and teachers' relationships with students that Rice describes. In contrast to conventional applied courses, in which advanced year students undertake a special project, here the research drives the curriculum and the students are research partners. In a complex process the research tasks were analysed, graded and mapped to appropriate subjects in the curriculum, then embedded as that year's practical activities. In a further twist, a similar process was followed for the aquaculture course, exploiting the full potential of the collaboration to achieve both research and teaching outcomes across multiple programs.

'Applied research' is also the starting point for the food and gastronomy narrative about scholarly engagement, but exactly what is meant by this term has not been clarified by the institute. The narrator describes her case as having a 'scholarly' and an 'applied' aspect. In common with the wine industry narrative, this case contains elements of the scholarships of discovery, integration as well as engagement. The archival research conforms with Boyer's notion of discovery as inquiry or pure research, written up as a scholarly feature article (the narrator's 'scholarly' aspect). The narrator's 'applied' aspect consists in the contemporary interpretation and making of the original recipe by professional chefs and community cooks. This may be considered as an example of integration, illustrating Boyer's (1990) concept of placing knowledge in context and educating non-specialists.

The interpretation and cooking of the recipes exemplifies the dynamic relationship between theory and practice that is characteristic of Boyer's scholarship of engagement. The inclusion of community cooks in the trialling and evaluation of the recipes reveals evidence of some aspects of Rice's (2002) conception of engagement as community-based research, such as the multi-directional building and exchange of knowledge between academics, industry and lay persons as peers. This notion is extended through the distribution of the scholarly articles via social media, which allows comment and feedback from the reading public. It is unclear as to whether these latter contributions will be incorporated before the articles are submitted for

peer review, but the narrator's questioning of their contribution to scholarly value implies that there is some intent to use them as an input to knowledge building.

In the IT case, aspects of the scholarships of engagement and integration are intertwined. The processes used are those of engagement: the spiral development cycles of design, building, distribution and evaluation involving the community as peers echo Rice's (2002) description of community-based research and epitomise Boyer's dynamic interaction between theory and practice (Boyer 1990, 1996).

Although lacking a multi-disciplinary dimension, which Boyer certainly had in mind when explicating the scholarship of integration, the outcome portrayed in the IT case study conforms with Boyer's notion of integration as 'giving meaning to isolated facts, putting them in perspective...placing specialities in larger context, illuminating data in a revealing way, often educating nonspecialists, too' (Boyer 1990, p. 18). The narrator describes the problem as 'how to understand prior work and ...recast knowledge in a coherent format suitable for others'. He makes no claim to generating new knowledge, perhaps too modestly, but points out that his bringing together existing 'weak and scattered' literature and presenting it in a thorough and coherent manner opens up new avenues for original work.

What makes mixed-sector scholarly engagement distinctive?

In keeping with our earlier findings (Williams, Goulding & Seddon 2013), the scholarship portrayed in each of the narratives is shaped significantly by the organisational terms and conditions under which it is carried out. In all three narratives, the lack of access to research grants such as those available to universities, is a significant influence on the way in which scholarship is conceived and practised.

In the wine industry case only applied projects that could include an industry partner and be readily integrated into teaching programs were considered suitable. Integration into teaching was the primary mechanism for financing and justifying the research (in addition to a small seed grant from the institute), thereby 'reduc[ing] the stigma attached to research activities within a TAFE environment...where it can be viewed as an unnecessary drain on resources...'. Not only is funding research through teaching a novel approach, but the requirement for teaching to lend legitimacy to research is a direct reversal of conventional university priorities. However, a drawback of this strategy is the additional challenge that the casualised teaching workforce and staffing pressures create for continuity and time for research. Hence, an additional strategy is in place to publish a series of low-impact scientific journal articles to help build momentum and a track record which will improve eligibility for government and industry research grants in the future.

In the IT case, the narrator is pursuing scholarship outside of his paid time and institutional environment. This means that he is free to select a topic of personal interest which is, at best, only marginally connected with his academic duties. In another break with scholarly conventions, some funding has been contributed through presumably unsolicited 'crowdsourcing' – the practice of obtaining contributions from large groups of people, such as an online community, rather than from traditional sources.

This narrator also self-publishes on the Internet, a process at variance with traditional scholarly publishing. Yet he believes that previous work published in this way, which was subsequently picked up by a commercial publisher, contributed significantly to his professional reputation and thence to his prior associate-professorial appointment at a sandstone university. Nevertheless, by his account, it is the narrator's current mixed-sector institution's intellectual property policies, which deny copyright to the author and appear to restrict the open sharing of knowledge, that have driven him to work in this way in this instance.

The use of unconventional publishing platforms also plays a role in the democratisation of access to knowledge in the food and gastronomy case, with a similar ethos of open involvement by the community evident in this narrative. Aside from industry and community participation in the research itself, there is a concerted attempt to break down the inaccessibility of scholarly work to the general public. This occurs through 'cross-over' articles (described as 'written for the lay person with the robust standards applied to research'); through the embedding of video demonstration in the publications; and through the use of social media which allows the general public to 'read, watch, cook and comment'.

What makes mixed-sector engagement scholarly?

In view of the limited scope of this paper, in addressing the question of 'quality scholarly practice', I shall focus on how the knowledge in each of the cases was produced and justified.

In the wine industry case, the knowledge was built in collaboration with and between students within the framework of the teaching program. The narrator also discussed the science and technical details with colleagues at international conferences and with the industry oversight panel. The narrator also sought to justify the new knowledge building by visiting research centres in Europe and the US which are attempting similar technical advances. The intellectual discovery of the way flavours develop under particular conditions will be written up for publication in a peer-reviewed scientific journal, while the analysis of the commercial product will be made available to the commercial partners and the industry more generally through trade publications.

The food and gastronomy case relied in the first instance on submission guidelines for scholarly feature articles to address the question of scholarly quality. These guidelines were developed in conjunction with a visiting professor from an interstate university. They stipulate the need for articles to be "original", referenced, use primary materials and resources, and [...] be peer reviewed'. As already mentioned, the knowledge is produced in a multi-directional collaboration between academics, industry professionals and members of the general community. There is an intention to compile the feature articles for a formal academic peer review process once the first volume is complete.

The narrator of the IT case raises many questions about how scholarship is measured, being fully cognisant of the challenges the self-publishing, Internet-based, spiral-development model presents to scholarly conventions. Yet many features of his work accord with notions of scholarly engagement in the literature. For instance, the work is tied directly to the

narrator's specialist field and flows out of this professional activity as a software engineer (Boyer 1990). Further, his method has an in-built peer review process, with peers defined as 'like-minded people throughout the world accessible by Web and email'. However, in contrast to the conventional selection of 'qualified experts' as peer reviewers, as Rice (2002) correctly identifies, 'the most knowledgeable peers might well be representatives of the local community and not of the academy' (p. 14). But in this case 'community' is redefined in global terms and there is no editorial control over, or indeed explicit knowledge of, the expertise the reviewer brings to bear.

Finally, the narrator claims that his work to date meets most of the Higher Education Research Data Collection (HERDC) criteria for 'substantial scholarly activity' and will meet all of them when complete. According to this definition 'substantial scholarly activity' is evidenced by 'discussion of the relevant literature, an awareness of the history and antecedents of work described, and provided in a format which allows the reader to trace sources of the work, including through citations and footnotes' (DIISRTE 2012, p. 9).

Conclusions

First, Boyer's (1990) four forms of scholarship appear at face value to provide a useful classification of scholarly practice in mixed-sector institutions (Williams, Goulding & Seddon 2013). However, in keeping with the findings of Fear and his colleagues (2006), a closer examination suggests that it is more useful as an analytical framework which illuminates different aspects of a unitary notion of scholarship, than as a categorising mechanism. Different admixtures of discovery, integration and teaching were evident, and in some instances inextricably intertwined, in each of the case examples of mixed-sector scholarly engagement in this study.

Second, consistent with earlier research findings (Goulding & Seddon 2011; Wheelahan et al. 2009; Williams, Goulding & Seddon 2013), the knowledge developed through the scholarly engagement described in these narratives is shaped by the institutional contexts in which it was produced, including organisational policies, attitudes and the terms and conditions of employment. While the lack of access to the same sources of research funding as universities is widely acknowledged as an inhibitor of scholarship in mixed-sector institutions, it is also a driver of the highly innovative practices that are evident in each of the cases described. As the narrator of the food and gastronomy case points out, not being constrained by university research processes and outputs that are tied to government research funding leaves mixed-sector institutions free to pursue innovative approaches that create an opportunity 'to leverage connectivity with industry and the community to broaden the scope of scholarship'. This may truly be considered as 'scholarship on the edge'.

Third, the democratisation of the processes of knowledge production and of access to that knowledge is a distinctive feature of all three cases described. In the words of the wine industry narrator this takes the form of 'releasing the reins of both research activities and, to a certain extent, research ideas, to regular undergraduate students'. In both the food and

gastronomy narrative and the IT case, it involves engaging the wider community as peer reviewers and contributors to the knowledge-building process.

Fourth, considerations of scholarly quality and attention to the justification of the knowledge produced through scholarly engagement were evident in each narrative. Peer review was the premier mechanism for ensuring scholarly quality, but in two of the cases it is understood and applied differently from conventional university understandings. The HERDC specifications (2012), define peer review as ‘an assessment or review of the research publication in its entirety before publication by independent, qualified experts.’ In each of the food and IT cases, the publication is released *prior* to formal peer review; in the IT case it is reviewed piecemeal and without the capacity to establish the expertise or indeed, independence, of the reviewer. It is a moot point as to whether the public feedback in this and the food and gastronomy case constitutes peer review or collaborative knowledge building.

Ultimately however, aided by the systematic processes of inquiry evident in the narratives, quality scholarly engagement resides in the intellectual work of the scholars: in their reflection and dialogue with others; in their sense-making and expert evaluation of incoming feedback; in their capacity to synthesise that information with other literature, their own findings and expert knowledge; and in their capacity to articulate that synthesis of knowledges in a way that allows others to benefit from, and build upon it.

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