

Chapter 2

The Practices of Using and Integrating Practice-Based Learning in Higher Education

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Abstract This chapter commences the discussion that then continues across the contributions of this monograph regarding how practice-based learning experiences (i.e. those in the circumstances of practice and usually outside of university settings) can be utilised and integrated within higher education courses in effective and sustainable ways. This discussion acknowledges that students' learning through engagement in practice-based experiences is now and increasingly seen as being an essential component of higher education programs that are preparing graduates for entry into targeted occupations. The need for informed bases of teaching and learning to meet this demand grows as many of the existing concepts and practices within educational science cannot adequately inform the effective utilisation of students' learning experiences outside of educational programs and institutions, nor their integration. Hence, teachers in universities have to develop and reflexively advance the capacities (i.e. understandings, procedures and dispositions) required for effectively utilising and integrating such experiences. Through doing so, these teachers and their practices can inform others and, in turn, educational science. This proposition, its premises and case is advanced here through a discussion about the nature and contributions of learning through practice, how they might best be aligned with higher education provisions and in ways that are sustainable and effective. It does this by drawing upon the processes and findings of a recent national teaching fellowship that comprised 20 projects that focused on the integration of practice experiences within higher education programmes across a range of disciplines within six Australian universities.

Keywords Affordances · Agentic learners · Cognition · Curriculum practices · Employability · Graduate employability · Guidance · Integration of experiences · Job ready graduates · Learner intentionality · Limits of educational science · Occupational knowledge · Occupational specific education · Pedagogies practices · Practice-based education · Practice-based experiences · Practicum · Student engagement · Time jealous students · Work integrated learning · Workplace experiences

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Practice Based Experiences and Higher Education

This chapter, like the other contributions to this monograph, seeks to inform about how practice-based experiences can be utilised and integrated as part of a wide range of higher education programs. As noted in the introductory chapter and as referred to in other contributions, the provision of practice-based experiences (e.g. workplaces) is now becoming an almost a universal element of those higher education programs whose focus is preparing graduates for specific occupations (Organisation for Economic Co-operation and Development 2010). One of the editors and contributors to this volume refers to the practice 'bandwagon' (Corradi et al. 2010) that is now being jumped upon and perhaps also driven by those from industry, the professions, government and education administrators and practitioners, as well as by passengers such as researchers, teachers and students. Of course, the provision of practice based experiences has long been a part of higher education provisions, and traditions such as co-operative, education, internships, sandwich degrees and more recently, foundation degrees. Yet, whereas once these kinds of provisions were largely restricted to the major professions and key occupations such as in medicine, law, physiotherapy, nursing and teaching, they are now seen as being a necessary element of all higher education programs aiming to develop the kinds of capacities required for students ability to immediately and effectively practice their occupations upon graduation (Department of Innovation Universities and Skills 2008; Universities Australia 2008). Indeed, across a range of countries with advanced industrial economies it seems that there is an increased engagement by professional bodies and industry representatives who are quite consistently requesting particular kinds of learning outcomes (i.e. graduates are having a smooth transition to practice) and also stipulating the kinds of experiences that students need to access and learn from to develop the required capacities to make that these transitions. Central to their concerns is that students need more time engaging with and participating in authentic experiences within the occupational practice that is the focus of their studies and that these experiences should be central elements of the educational program, their assessment and also the accreditation of those programs. The demands of such bodies and their representatives are often supported by government and are consistent with their policies concerned generally with the nation state's economic and social robustness and, particularly whenever employment is a central element, and, more specifically, with aligning publicly funded education provisions to meeting key social and economic goals. Yet, it is not only voices external higher education institutions that are demanding practice-based experiences, as students are also often increasingly keen to engage in these kinds of experiences because they want to develop capacities that will enhance their employability and lead to desirable employment and advancement in their working lives beyond higher education.

It follows, therefore, that there are heightened expectations by and growing interest from sources external to universities in the form of government, professional bodies, industry groups and students that higher education provisions in countries such as Australia, the United Kingdom and Canada and possibly elsewhere that

these provisions will include a range of effective practice-based experiences aimed at enhance students' employability upon graduation. These expectations are also being exercised by students who increasingly are self-sponsoring their higher education and seeking a viable return on their investment. However, despite the generation of these expectations, it is unusual to hear of funding from external bodies and agencies to adequately support the costs of such arrangements, unless there is a particular and pressing priority (e.g. rural medical students, shortage of graduates for the extractive industries). Instead, the exercise of advice and expectations is often best characterised as being all care and no responsibility. For instance, often professional and regulatory bodies stipulate the quantum of practice experiences required for certification or membership, yet without taking any responsibility to assist educational institutions or students within them access and secure placements. Consequently, although imperatives about having such experiences are being proposed and expectations about their contributions and worth are being heightened, the resources for and expertise to ensure their adequate enactment will usually need to be found within higher education institutions, and, increasingly it seems by students themselves. Given the demands to secure these experiences it becomes doubly important that they are used effectively and deployed maximally.

Therefore, this chapter discusses and advances some ways how practice-based learning experiences can be utilised within higher education programs preparing graduates for specific occupations. In doing so, it draws upon the processes and findings of a recent national teaching fellowship program involving 20 projects from across a range of disciplines that were hosted by six Australian universities (Billett 2011a). A key promise for this fellowship was that learning experiences in practice settings are an essential component of higher education programs preparing graduates for their chosen occupations. Yet, how those experiences are organised and enacted, and integrated with the other experiences that collectively comprise students' curriculum is central to the quality of the learning outcomes secured for those students, along with how students elect to engage with the experiences provided in both practice and higher education settings. Indeed, beyond a consideration of curriculum and pedagogic practices, concerns about students' personal epistemologies, their development and enactment are also seen here, as being key educational goals. Moreover, given the complexity of some of these arrangements and need for localised action, it is proposed that those teaching in universities need to develop scholarly teaching practice to effectively engage students with, support that engagements and integrate these contributions arising from their experiences in practice settings. This informing practice is also required because existing concepts and practices within educational science may not always be helpful in guiding the effective utilisation of these kinds of experiences in higher educational programs, including meeting the requirements of the diversity of workplaces in which graduates will be employed in enacting their occupational practice. Therefore, teachers in higher education may need to develop further their understandings about and competence with practices that utilise and integrate practice-based based experiences. Yet, all of this needs to occur in ways that are suitable for their disciplines, educational goals and occupational requirements. As noted, through such developments it

may be possible to inform and extend the current bases of educational science. The case here is made here through considering the nature and contributions of learning through practice, how that relates to the provision of professional education and ways in which the utilisation of these experiences can be sustainable and effective.

The Learning of Occupations Within Practice Settings

The process of learning of occupations through experiences in the circumstances of practice is well and highly proven and has stood the test of time. Across human history it comprises the most enduring, common and sustainable mode of supporting learning for occupations. That is, the family business, community based work or organised workplace setting were the most predominant mode of occupational preparation until industrialisation in European nation states and elsewhere (Billett 2011b). The provision of educational programs specifically aimed at supporting occupational development in Western traditions was for a long time quite limited to a few major professions up until relatively recently. Although medicine, law and sometimes architecture, have been the focus of educational programs in ancient universities in Europe and before them in places such as Greece in Hellenic times (Lodge 1947), all of the other occupations upon which human existence and advancement rely have largely been developed in the circumstances of practice. Moreover, there is much to suggest that the innovations and development of the technologies, processes and practices that have advanced these occupations also largely arose through activities in practice settings (Epstein 1998). So, it is the case that practice-based learning experiences are largely those that have brought humanity to this point of its development. The point here is that the development of occupational competence and the generation of new ideas and responses to emerging issues have not depended upon specialised programs within educational institutions or research within universities. Instead, the development of occupational capacities across millennia and the advancement of the knowledge which is utilised in those occupations has arisen through practice-based experiences and through individuals learning by engagement in those experiences (Greinhart 2002).

It is also noteworthy that learning through practice has long been held as being highly valued, often even more so than expediencies in educational settings, which have been seen by some as being at best substitute for actual practice. Anatomy classes, for instance, were introduced into medical training in Hellenic Greece because medical students or novices were unable to secure the kinds of medical experiences that provided the required level of understanding of anatomy (Clarke 1971). Before their introduction into the university medical curriculum, these experiences had been provided through these novices working alongside more experienced doctors as they performed various procedures and operations. However, in circumstances curiously reminiscent of those in present times, the lack of access the adequate range of experiences to develop an understanding of anatomy led to the need for substitute experiences being enacted in the educational institution. Moreover, it

seems the advent of the textbook was also a product of this lack of opportunity for these students to learn from more experienced practitioners and knowledge of medicine in the circumstances of practice (Clarke 1971). Perhaps surprisingly to many, textbooks were apparently introduced as a means to capture and codify the medical knowledge that doctors possessed and which was having difficulty being accessed adequately by novices and students because of limits in their access to practice experiences and close engagements with experienced practitioners. Furthermore, the broader provision of occupational specific education is relatively recent. Only since the various industrial revolutions in Europe and elsewhere and the formation of modern nation states brought about needs for vocational education provisions and the development of the skills of a far wider range of occupations within universities, which grew in size and scope accordingly (Billett 2011b). It was the demise of the family businesses, often referred to as 'cottage industry', through the processes of industrialisation and that had been so generative of the development of occupational skills which necessitated the development of a broad range of educational provisions to generate skilled workers with the depth of skills and the numbers required to sustain growing and competing industrial economies (Gonon 2009).

Yet, are such historical accounts relevant and helpful? It is sometimes suggested that the requirements of modern workplaces are no longer of the kind which can be accommodated by learning through the circumstances of practice. There is likely to be some truth in this proposition, particularly given the kinds of knowledge required for much of contemporary work and these forms of knowledge being difficult to experience and access and, therefore, learn (Martin and Scribner 1991; Zuboff 1988). However, on its own terms, there is no reason why conceptual knowledge cannot be learnt through practice settings. There have always been forms of these kinds of knowledge that individuals have had to learn, albeit perhaps in a less abstracted forms than in current times. However, there are forms of knowledge and means for the learning of that knowledge are probably best addressed within intentional experiences in educational institutions and through organised experiences for students. Examples of these include finding ways to understand the canonical concepts and propositions associated with bodies of professional or other knowledge that may not be explicit or easy to engage with in practice settings (as in anatomy, the workings of a computer, vector factors and formulate). Further, there also may be the need to develop sets of understanding and practices that reflect something of the diversity of circumstances, values and practices associated with the enactment of occupations. This is because occupational practice when manifested in particular circumstances and the meeting localised needs inevitably has diverse goals and processes (Billett 2001). Moreover, understanding the kind of ethical considerations for professional practice might best be undertaken initially within an environment that exposes learners to a range of considerations associated with them prior to these learners having access to the operation of those practices in a particular workplace setting. So, clearly there is a need to consider the kinds of learning that are unlikely to be secured through experiences in the circumstances of practice and for other arrangements to be made to support that learning.

Conversely, the preparation of occupational skills within educational institutions alone is rendered very difficult because the experiences (i.e. activities and interactions) provided in such settings are quite distinct in terms of their goals, procedures, imperatives, and bases of evaluation from those in authentic circumstances in which those occupations are practised (Raizen 1991). Further, the requirements for learning effective occupational practice is more than simply understanding and being aware of contextual factors. Recent accounts of learning emphasise the importance of the learning being informed and enriched by the range of environmental factors that shape and mediate the nature of human performance (Barsalou 2009; Billett 1994; Brown et al. 1989). Put simply, learning how to nurse a patient in a mock hospital ward using other students as pretend patients and engaging in pretend procedures, is not just a poor substitute for authentic engagement in nursing activities, it fundamentally lacks the physical and social context in which these activities are enacted, which shape how this work is performed, what constitutes effective performance and how that is to be judged by others as well as the norms of the workplace in which it is enacted. In part because of these limitations, concerns have arisen across a range of occupations that higher education graduates are not able to enjoy a smooth transition to practice the occupations for which they have been prepared (Department of Education Science and Training 2002; Department of Innovation Universities and Skills 2008; Universities Australia 2008). Therefore, it follows there is growing interest in providing higher education students with practice-based experiences that can be generative of these kinds of capacities and will assist them be able to practice more effectively upon graduation. So, although the provision of experiences in the circumstances of practice can be seen as merely responding to an external request to prepare 'job ready' graduates, there is also a concern that educators must organise appropriate experiences for their students to develop the capacities to actually enact the occupational tasks for which they are being prepared.

Yet, amidst a consideration of the requirement for university students to be job ready on graduation, it is necessary to be reminded that the expectations now being directed towards higher education programs by industry, professional bodies and students are very difficult to fulfil. It is one thing to be able to prepare graduates to possess the canonical concepts and practices required for occupational practice (i.e. those that every practitioner would be expected to be able to know and do) as stipulated by a professional body or regulatory agency. However, it is quite another to be able to prepare graduates for the particular requirements of workplaces which may not be known until the time when they find employment within them. The point here is that occupational practice and the requirements are reflective practice are as diverse as the circumstances in which it is enacted. While the canonical principles and practices that underpin the occupation inform the nature of performance in practice settings and how it should be proceeded with, the actual requirements for securing effective practice are quite diverse across practice settings, often for very good reasons. So, each of these circumstances, have their own range of complications, variations and specific requirements. Yet, these are very difficult to predict or know about without understanding the range of contextual factors and the requirements of the circumstances in which they are to be practised. So, teachers in higher education

are confronting a difficult and demanding task associated with preparing graduates who can smoothly engage in and become immediately effective in practice settings, which often cannot be known about before the graduates are employed.

Yet, it follows here that it is important for these teachers to develop a scholarly practice directed towards developing students' capacities both in this way within their own teaching and through supporting their engagement in and assisting them reconcile their experiences in practice settings. One reason for teachers to develop these kinds of capacities is that educational science may not be particularly helpful in informing about how learning experiences outside of educational institutions might best be organised and enacted.

Constituting Effective Educational Provisions and Practices

There are good reasons why those teaching in higher education may need to develop a more informed scholarly practice about utilising and integrating practice-based experiences within their programs. These reasons are at least six fold and have been largely brought about by a lack of development within educational science.

Firstly, educational science and informed practice of education are still in their relative infancy. Unlike many other disciplines, this science is relatively recent and nascent and is not the product of sustained enquiry over a long period of time. For instance, educational psychology as a field that might be expected to inform how learning arises across different settings is still relatively new with its foundations only extending back to the 1930s. Also, the majority of the work in this discipline has focused upon the education of children and their learning and development. Much less emphasis has been placed upon adults learning and development. Moreover, understandings about curriculum and pedagogic concepts and practices are still relatively immature. Certainly, the work that been done in this discipline is also very much premised upon what occurs within schools and through schooling. Little attention has been given to considerations of curriculum in practice settings, for instance (Billett 2006). All of this is perhaps not surprising, because the disciplinary knowledge associated with these practices is still relatively nascent. Tyler's book on curriculum which is often seen as being a seminal text on curriculum and curriculum development was first published in 1949 (Tyler 1949). In addition, key journals in the field such as the *Journal of Curriculum Studies* had its first issue only in 1967.

Secondly, the understanding and accounts of the knowledge to be learnt through educational programs and the processes through which this knowledge is learnt are still the subject of much debate and, changing views and emphases. So for instance, taxonomies of knowledge advanced by Bloom (Bloom et al. 1956) in the late 1950s have been overturned and transformed by findings from cognitive science within the 1970s and 1980s. These changes are quite fundamental and, in particular, have

a range of implications for the kinds of procedural learning that is important for occupations. Whereas Bloom et al referred to these as psychomotor skills, more recent accounts from the expertise literature present these as being a set of procedures that have dimensions of specific through to highly strategic procedures that are analogous to higher orders of cognitive thinking under Bloom. Yet, such is the purchase of Bloom's taxonomy that it can be found as being the foundation which is used for identifying the goals to be learned for occupational practices in contemporary times.

Thirdly, the means by which the knowledge required for occupations is to be developed (i.e. learnt) has also transformed, including considerations of what has been referred to previously as transfer. Previously, there were strong beliefs about the development of highly transferable concepts arising from programs in educational institutions which would then be adapted (transferred) to particular circumstances of practice. However, current accounts suggest that quite the opposite approach is required for adaptability to occur. That is, rather than the transfer of knowledge being top-down with canonical occupational knowledge being applied confidently to different circumstances, instead the capacity to adapt is premised upon adapting that knowledge to the particular requirements of the particular circumstances where human performance is required. Lave (1988) reminds us that the process of adaptability is not analogous to a frog leaping from lily-pad to lily-pad to catch the fly (i.e. achieve the goal). The central point here is that the processes being labelled as transfer comprises a process of experiencing something, making sense of that experience, and then responding to it (i.e. perception and action), albeit in ways described as dis-embedding and re-embedding or de-contextualising and re-contextualising from situational experiences, not the application of profound canonical knowledge. To put it simply, we have moved the situation where it was suggested that higher-order capacities could manage the process of transfer through to a situation in which it is suggested that localised knowledge and understandings of contexts, circumstances and requirements is likely to be necessary for effective adaptability. All of this shapes how we prepare students to engage in the particular instance of practice that they encounter upon graduation.

Fourthly, many of the concepts that commonly inform educational practice remain underdeveloped. In particular, current distinctions between theory and practice, and the divide between them that is frequently mentioned in relation to the inadequacy of experiences and educational settings and the need for those in practice settings are still largely based on the idea that theory (i.e. conceptual knowledge) is learnt in classrooms and practice (i.e. procedural knowledge) is that which is best developed in the circumstances of practice. However, these very premises are quite erroneous. Individuals learn concepts, propositions, causal links, and factual knowledge (i.e. theory) across different kinds of settings, including workplaces (Billett 1994). Then, the learning of how to do things (i.e. procedural learning) which is analogous to the term 'practice' also arises within educational settings as it does within settings where people engage in practice and applying knowledge in ways that secure goals. Consequently, important premises such as these that are used as part of the everyday educational discourse in higher education, by external institutions and agencies and which are used to shape and inform considerations of the

quality of provision of learning experiences in practice settings and their integration within higher education programs. It follows therefore that these kinds of conceptual foundations may not be helpful in adequately addressing how best to utilise and integrate different kinds of experiences within higher education programs.

Fifthly, there still remains considerable uncertainty about what kinds of experiences are generative what kinds of knowledge. That is, if there are particular forms of knowledge which need to be learned for people to practice occupations effectively (i.e. domain specific conceptual, procedural and dispositional knowledge), these forms of knowledge need to be identified and consideration given to how best these kinds of learning is can be secured. Clearly, the kinds of learning that are derived from sitting in a lecture theatre listening to a lecture and observing images as part of a presentation will not lead to the same kind of outcomes as when students are engaged in activities within practice settings. It is not a simple question that one is good or bad, because as stated above, there are particular strengths and limitations to experiences in both practice and educational settings. More importantly, there needs to be a greater alignment between the kinds of knowledge which need to be learnt and the kinds of experiences that are provided across higher education programs and within both educational and practice settings. Consequently, it is difficult to proceed with any confidence with particular pedagogic strategies or the sequencing of experience in practice-based settings unless these are informed about the ways in which the particular experiences which are selected for students are generative of the kinds of knowledge which need to be learnt. Moreover, we need to be mindful that the kinds of knowledge which are required in contemporary workplaces may not be the same as in earlier times and the kind of frameworks were used to understanding it in the past may now be inadequate. As Scribner informed a quarter of a century ago

... new cultural means are being elaborated at an accelerating rate in industrialised nations. Hardly have we approached the problem of understanding the intellectual impact of the printing press, than we are urged to confront the psychological implications of computerisation (Scribner 1985, p. 138)

Sixthly, as noted the focus of much of the efforts within educational science are not well aligned with informing about how younger or older adults learning in and across settings outside of educational institutions. Instead, its efforts have largely been directed towards the education of young children and in schooling settings. Indeed, educational science seems rather confused in its engagement with consideration of learning anywhere other than educational institutions, which it often uncritically privileges over other settings. Learning in the workplace settings is often referred to as informal, ad hoc and non-formal forms of learning or education, for instance. Yet, such a set of descriptors is neither helpful, accurate or are likely to provide the bases for informing effective educational provisions that would utilise and integrate these experiences to assist students become able to practice their occupation in particular settings beyond graduation.

Consequently, given these limitations, it is important that teachers develop their own scholarly practice which informs how their teaching and learning progresses

and how, they provide, enact, enrich and evaluate experiences in practice settings and then seek to integrate those with students' experiences within the overall course curriculum.

Towards an Effective Integration of Practice Experiences

To propose how students' experiences in practice-based settings might best be integrated with other experiences within higher education programs, the findings of an Australian national teaching fellowship (Billett 2011a) are drawn upon here. This Fellowship comprised 20 projects across a range of academic disciplines that each sought to enrich higher education students' experiences through the integration of their experiences in practice settings. The findings from these reports are used to propose means by which teachers in universities can both engage in practice-based scholarly work and be informed how to proceed to effectively integrate those experiences. Through those projects, individual or teams of university educators used a range of approaches in attempt to enrich students' experiences and then appraised the outcomes of those efforts. Subsequently, through considerations and evaluations of their projects, much was learnt about how provide those experiences to often large cohorts of students, and what kinds of curriculum and pedagogic practices might be planned for and enacted to aligned with when securing effective integrations, and in ways that are sustainable. Below some findings are provided in summary about the different array of options for providing practice-based experiences. Following this, some pedagogic practices that support the integration of students' experiences across educational and practice settings are advanced as means of achieving these kinds of outcomes.

Providing Practice-Based Experiences

Often, a single model of providing students' access to practice-based experiences is proposed when considering how best to meet the kind of educational purposes outlined above. These are supervised placements in which a student is assigned to activities in a workplace and is directly supervised by a more experienced worker. However, whereas supervised placements are perhaps essential when dealing with sick people (i.e. in nurse and medical education situations) or young children (i.e. for school teacher development), they are not always required or are applicable in other fields. Organising, supporting and funding supervised placements can be extremely resource intensive (i.e. high cost). As the need for provisions of practice-based experiences increases and for a wider range of occupations, and a greater percentage of students, the resource implications of providing students in all programs with supervised placements grow and become enormous. Moreover, beyond issues of resourcing alone, these kinds of experiences may not always be the most

effective means of supporting student learning in practice settings for all occupations. Therefore, and with a consideration of generating sustainable practice, it is worthwhile considering options other than supervised placements for providing authentic experiences. Options include utilising students existing or past employment experiences, engaging in work activities associated with the chosen occupation and, also indirectly.

Many higher education students are already employed in and work in the occupational fields for which they are being prepared. That employment can provide a set of authentic workplace and occupational experiences that are of the kind that can meet a range of purposes such as engaging in, appraising and comparing practice experiences. So, alignment between the students paid work and their occupation, that practice-based experiences might be capitalised upon and these are available freely to the student, do not require any organisation on the part of the higher education institution, and are well aligned with the students' program of study. Similarly, using students' paid part-time work can also provide experiences which can inform their studies. Although this option will be more or less applicable to the specific discipline they are studying, this paid work experience may well serve as a useful basis for informing in either a general way about the nature of working life, or can have more occupationally specific applications. For instance, students' engaged in business and commerce courses, many of whom are engaged in paid part-time work can use their paid part-time work experiences to understand more fully practices associated with their degrees, such as marketing, supervision, business management, human resource management, interviewing etc. Of course, this will not work for all occupations, but again it offers a set of work experiences in which students are engaged and authentically as employees and which do not require much in the way of organisation by the educational institution. An associated issue here is that students who are engaged in paid part-time work as well as their studies are often quite short of time: they are time jealous (Billett 2011a). Therefore, using their paid work experiences as a platform to understand aspects of their chosen occupational practice may well be a better option for the management of their time and resources. Then, there are also the opportunities provided by observing occupations in action. For instance, law students used to attend court proceedings to understand court processes and also the performance of legal officers. This kind of observation was then followed by a structured experience to help understand and reflect what had been observed. Similar kinds of experiences might be applicable in other occupations and, importantly, do not require the resourcing necessary when supervised placements are enacted. Also, some students have had extensive work experience before they came to higher education, and these experiences may well constitute an effective resource for them to draw upon and engage with the content of their programs. For instance, many postgraduate students and older adult students in higher education are either currently employed or will have had access to these kinds of experiences earlier and these can be used as a platform of experiences to augment those afforded in the educational institution. There are also other opportunities that arise from substitute for simulation type activities which can be helpful. For instance, some aspects of work performance are very difficult to access and,

not always desired. So, for example, managing confronting customers or clients or situations can be prepared for through substitute or simulated activities that can assist students develop the requirements of occupational practice which are best not learned in the circumstances of practice.

Of course, these options will be more or less applicable to the program's outcomes depending upon the discipline, the circumstances of practice and the kinds of opportunities that are available for the students given their location, contacts and resources. The point here though is that there are other and sustainable options for providing practice-based experiences than through supervised practicums. However, regardless of which particular option is adopted it is likely that there will need to be actions on the part of teachers to fully utilise the learning potential of these experiences and students' learning within them and then for them to integrate that learning into the overall course provision. Consequently, in the next section, some consideration is given to the kinds of pedagogic practices which teachers in higher education institutions can enact in order to enrich and secure an integration of students' experiences.

Pedagogic Practices for Integrating Practice Experiences Within Higher Education Courses

In the fellowship mentioned above (Billett 2011a), and an earlier smaller scale fellowship (Billett 2009) identified three key and identifiable moments when teachers in higher education can enrich students' experiences in practice settings and also assist their integration within their courses of study. These moments are: (a) before, (b) during and (c) after the students' practice-based experiences. Discreet purposes and processes were identified for each one of these three moments and these are outlined briefly here.

Before Practice-Based Experiences It was found across these projects that before students went to and engaged in practice-based experiences and settings, it is helpful to: (i) orientate them to the requirements for effectively engaging in the practice setting and the occupational tasks they were likely to have to undertake; (ii) be clear and explicit about the purposes of their participation and the responsibilities that they had, and which others have towards them; (iii) prepare the students to be active and engaged in their work activities and as agentic (i.e. proactive and engaged) learners during those experiences; (iv) provide them with any procedural capacities (e.g. specific skills) that they might need during that practicum and also (v) prepare students for any contestations or confrontations they may encounter in the workplace settings, including suggesting how they might come to respond productively to such experiences. So, much of the focus here is associated with enhancing the readiness of the students to participate in the practice settings in ways which are aligned to achieving the kinds of goals which are intended. Part of this preparation is also associated with developing their capacity to be active and engage learners (i.e. agentic learners). This is particularly important because, on the one

hand, the students will find themselves in situations where largely it will be their own efforts in engaging in activities and interactions that will come to constitute the richness of the learning process and outcomes for them. It is not a teacher-led process, but rather one that the students need to lead and take responsibility for. On the other hand, this capacity to be agentic and self-monitoring is an attribute required of professional practitioners across their working lives. This is one of those kinds of attributes that transcends the specific domain of expertise and is a requirement for ongoing professional practice and learning across working life.

During Practice-Based Experiences It was found that it is important for the students to: (i) engage effectively with and be guided by more experienced workers and thereby learn through and from them; (ii) to identify and engage with effort any activities that might be seen as being particularly helpful to their learning (i.e. pedagogically rich activities); (iii) find ways of engaging with peers and use these interactions to inform, consolidate and extend what they are learning in their practice experiences; and (iv) engage actively and purposefully during these experiences to maximise the learning potential of the opportunities afforded them in these practice settings. The common thread here is about learner action and agency and the students taking responsibility for managing their participation in the practice setting and, as a consequence, their learning. So, again, we need to be reminded here that during these practice-based experiences much of the quality of the learning will be dependent upon the students' personal epistemologies that include their capacities and also their intentionalities associated with engaging intentionally in learning during these experiences. Consequently, the kind of preparatory work undertaken before students engage in their practice-based experiences is essential.

After Practice-Based Experiences When the students have completed their practice-based experiences is important that they have an opportunity to share what they have experienced and learnt with others. It was found an important to bring groups of students together so that they can share their experiences and learn from each other's. More than learning about variations in the occupations in which they participated, which is important for them to appreciate and understand about, these experiences open up other options and also can assist those whose experiences were not particularly positive or productive secure good learning outcomes. Further, through these processes of sharing, when students have had negative experiences they were able to share and learn from others and, in many instances appreciate that the problems they had encountered were not theirs alone. Others have had either similar or contrasting experiences all of which helped explain what had happened to them and what they had encountered. This process of bringing the students together is also helpful as it permits them collectively to identify links between what they had been taught in their programs and what they had experienced in the practice setting. Oftentimes, this may not be always apparent and may even need to be drawn out by the intervention of an educator. This kind of guided process was found to also assist them reconcile the experiences across the two settings and to identify and realise the worth of contributions from both settings. For instance, there is a tendency for students who have returned from experiences in practice settings to claim

that they learned more during those experiences than in the entire degree program. Such claims probably reflect more about the impact of the immediate experience and emphasise the need for students to exercise reflexivity and criticality more generally in reconciling and appraising what they experience.

Furthermore, through sharing and reconciling experiences students have had in the two settings and with this reconciliation being guided carefully there is the prospect of securing the kinds of learning the students need that allows them to understand the importance of contributions from both settings in assisting them be able to learn and practice. It was also found that opportunities to share experiences assisted students appreciate that their experiences and approaches to work are in many ways subjective, rather than being wholly dependent upon the situation. That is, there are values and mores as well as technique associated with effective occupational practice and this is revealed in their considerations of the experiences they had and what they see as being productive and positive is not always shared across the cohort. Finally, these opportunities to come together and share experiences often permit criticality of productive kind, rather than a negative kind, when individuals are processing unsatisfactory or confronting experiences. The opportunities to share, comment upon and elaborate others and one's own experiences can lead to productive experiences and outcomes. One particularly important aspect of the outcomes of these post-experience meetings is to assist students to realise that there are different premises by which their chosen occupation is enacted, goals for that enactment and acknowledge that there are quite different bases deemed as being effective.

Perhaps not surprisingly, the importance of these post-experience reconciliations was identified long ago within higher education. Early in the history of the co-operative education movement in North America, those implementing it realised it was necessary to capture, share and reconcile with the programs' intended educational goals the experiences the students had been having during their co-op placements. Hence, the co-op seminar was introduced for students as they returned for their practicum experiences (Grubb and Badway 1998). These seminars sought to engage students in making explicit links between their experiences and their program goals, to identify learning that where of general applicability and a set of concerns about the broader outcomes of development for the learners. Such processes are sometimes included in net education programs. However, they were shown to be effective within this project in areas such as journalism, public relations and chiropractic. Seemingly, there are no barriers to the occupational preparation which could not benefit from students having such experiences.

A key element of the pedagogic practices outlined above is that they were intended and probably are in fact sustainable and realistic within the contemporary higher education environment. That is, they are the sorts of practices which can be enacted by busy academics and without reliance upon additional support from their university. Instead, they constitute a set of practices which individual or groups of teachers can implement and in doing so engage students in processes which assist them become effective agentic learners, which is one quality they ultimately need to practise.

The Practices of Practice-Based Education

It has been proposed above that practice-based learning experiences are likely to be essential mail for the majority of higher education students. Consideration of the worth and enactment of these experiences needs to be considered in the context of their own purposes, worth and legitimacy. Simply because they are not experiences to be had within the educational institution, closely monitored and shaped by teachers and outside the direct control of the curriculum, these experiences are seen to be less valuable than those had within the higher education institution. What is important is that these experiences have the potential to provide outcomes of the students which are quite distinct in many ways from those that are afforded with educational institutions. So, they are complementary to what experiences are being had within the higher education institution as well as being essential in their own right. Of course, not all of the learning that will arise through these experiences would be seen as being desirable, or appropriate. Moreover, as indicated throughout, there is a greater dependency upon the student as a learner who is able to engage independently and direct and manage their own learning in these circumstances. That, in some ways, is necessary because it is very much a student rather than teacher led learning process. Nevertheless, to maximise the learning, utilise the experiences and secure effective learning outcomes it may well be necessary for teachers in higher education to engage in processes that prepare students for these experiences (i.e. before practice-based experiences), ensure that student readiness extends into effective practice and learning during those practice-based experiences and then importantly, have activities within the educational setting in which the students come to share, compare and reconcile their learning experiences and those of others.

In closing, it is important to be reminded that the ideas presented above about pedagogic practices were those that were developed through scholarly engagements by busy academics working with their students and in their programs. Indeed, these ideas arose from a group of such higher education teachers seeking to enact and refine particular sets of experiences for their students, considering the consequences of those enactments and also appraising the worth of what they did, and the consequences for their students. It was not always easy or straightforward but, these ideas arose from considered engagement by academics with teaching related issues they were addressing within their courses. Together, what they propose a helpful set of principles and practices which are applicable in different ways within higher education programs. Whilst dealt with in overview here, a more fulsome consideration of these ideas may well be helpful for informing practice (Billett 2011a). Yet, there is another important finding here, and that is that it was through these projects that the teachers came to develop their capacities and share their insights in ways that they reported informed and developed their practice. Hence, this suggests that there are real possibilities for higher education teacher development that model the very processes of practice-based learning experiences that universities provide for their students.

References

- Barsalou, L. W. (2009). Simulation, situated conceptualisation, and prediction. *Philosophical Transactions of the Royal Society B*, 364, 1281–1289.
- Billett, S. (1994). Situated learning—a workplace experience. *Australian Journal of Adult and Community Education*, 34(2), 112–130.
- Billett, S. (2001). Knowing in practice: Re-conceptualising vocational expertise. *Learning and Instruction*, 11(6), 431–452.
- Billett, S. (2006). Constituting the workplace curriculum. *Journal of Curriculum Studies*, 38(1), 31–48.
- Billett, S. (2009). *Developing agentic professionals through practice-based pedagogies*. Sydney: Australian Learning and Teaching Council.
- Billett, S. (2011a). *Curriculum and pedagogic bases for effectively integrating practice-based experiences*. Sydney: Australian Learning and Teaching Council.
- Billett, S. (2011b). *Vocational education: Purposes, traditions and prospects*. Dordrecht: Springer.
- Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of educational objectives: the classification of educational goals*. New York: Longmans.
- Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32–34.
- Clarke, M. L. (1971). *Higher education in the ancient world*. London: Routledge & Kegan Paul.
- Corradi, G., Gherardi, S., & Verzelloni, L. (2010). Through the practice lens: Where is the bandwagon of practice-based studies heading? *Management Learning*, 41(3), 265–283.
- Department of Education Science and Training. (2002). *Employability skills for the future*. Canberra: Department of Education Science and Training, Commonwealth of Australia.
- Department of Innovation Universities and Skills. (2008). *Higher Education at Work: High Skills: High Value*.
- Epstein, S. R. (1998). Craft guilds, apprenticeship, and technological change in preindustrial Europe. *The Journal of Economic History*, 58(3), 684–713.
- Gonon, P. (2009). *The quest for modern vocational education: Georg Kerschensteiner between Dewey, Weber and Simmel* (Vol. 9). New York: Peter Lang.
- Greinhart, W.-D. (2002). European and vocational training systems: the theoretical context of historical development. Paper presented at the Towards a history of vocational education and training (VET) in Europe in a comparative perspective, Florence.
- Grubb, W. N., & Badway, N. (1998). *Linking school-based and work-based learning: the implications of la Guardia's co-op seminars for school-to-work programs*. Berkeley: National Center for Research in Vocational Education.
- Lave, J. (1988). *Cognition in practice: Mind, mathematics and culture in everyday life*. Cambridge: Cambridge University Press.
- Lodge, R. C. (1947). *Plato's theory of education*. London: Kegan Paul, Trench, Trubner.
- Martin, L. M. W., & Scribner, S. (1991). Laboratory for cognitive studies of work: A case study of the intellectual implications of a new technology. *Teachers College Record*, 92(4), 582–602.
- Organisation for Economic Co-operation and Development. (2010). *Learning for jobs*. Paris: OECD.
- Raizen, S. A. (1991). *Learning and work: The research base. Vocational education and training for youth: Towards coherent policy and practice*. Paris: OECD.
- Scribner, S. (1985). Knowledge at work. *Anthropology and Education Quarterly*, 16, 199–206.
- Tyler, R. W. (1949). *Basic principles of curriculum and instruction*. Chicago: University of Chicago Press.
- Universities Australia. (2008). *A national internship scheme: Enhancing the skills and work-readiness of Australian university graduates*. Canberra: Universities Australia.
- Zuboff, S. (1988). *In the age of the smart machine: The future of work and power*. New York: Basic Books.