WORK-BASED LEARNING AND RESEARCH FOR MID-CAREER PROFESSIONALS: PROFESSIONAL STUDIES IN AUSTRALIA

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ABSTRACT

Aim/Purpose	Work-based learning has been identified in the literature, and is established in academia and in the global worlds of work; however, an examination of work-based research, particularly at the doctoral level, has been less well articulated. Moreover, a paucity of published literature on either work-based research or Professional Studies means little is known about the dynamics and drivers of these domains. This study aims to begin addressing the shortfall in literature on work-based research and Professional Studies programs, using the program at University of Southern Queensland as an example.
Background	This paper examines work-based research in the context of the Professional Studies program at University of Southern Queensland in Australia, with which the authors are affiliated.
Methodology	Analysis of work-based research includes discussion of 'messy' research environments and the changing nature of workplaces, along with the opportunities and challenges such environments pose for action researchers.
Contribution	In addition to addressing a shortfall in the published literature on work-based research, the paper also contributes insight into the mechanisms used to promote reflective practice and the generation of professional artefacts.
Findings	Often driven by altruism, work-based research as implemented in the Professional Studies program results in a so-called 'triple dividend', designed to benefit the individual researcher, work environment, and community of practice.

Recommendations for Practitioners	To be successful contributors to work-based research, practitioners need to reflect carefully and deeply on experience, planning and outcomes, using what in this paper we call 'micro-reflective' (personal) and 'macro-reflective' (program) cycles of reflection.
Recommendation for Researchers	In addition to generating new knowledge and expanding the frontiers of workplaces, work-based research is often motivated by complicated and wide-reaching imperatives; work-based researchers therefore need to consider the goals, objectives, priorities and vision of their work environments, as well as understand issues related to bias, ethical practice and the nature of insider research.
Impact on Society	Work-based learning and research address the complexities, challenges and future demands of Australian workplaces along with the work, mobility and personal development needs of mid- to senior-career professionals.
Future Research	In addition to the multitude of action research programs possible in workplaces in Australia, more research is needed to understand higher education work-based learning and its relation to, and impact on, work-based research, particularly when applying mixed methods research to work environments.
Keywords	work-based learning, work-based research, professional studies, reflective practice, mixed methods research, action research

INTRODUCTION

Modes of learning and teaching in many countries have undergone dramatic change over the last 25 years. Abandoned are the days of wise teachers serving as 'agents of learning' and 'transmitters of knowledge' and students as 'passive and empty receptacles' waiting patiently to absorb dispensed wisdom. Teachers are now 'facilitators' of individualised learning programs and, for well-established reasons, students increasingly self-direct their own study, a lot of which is often experience-based (Reece & Walker, 2016).

This shift in learning and teaching has led to initiatives like "work-integrated learning" (Kaider & Hains-Wesson, 2016), "community-based learning" (Hart & Akhurst, 2017), and "blended learning" (De Vriendt, 2015), and calls for greater integration of workplace learning into higher education and of higher education into the workplace (e.g., Yankelovich, 2006) and the rise of alternate forms of learning in the workplace (e.g., Bingham & Connor, 2015; Cross, 2012; Jennings, 2012; Vaughan, O'Neil, & Cameron, 2011). Against this general social landscape and educational backdrop, a significant corpus of published literature also suggests an international trend away from a focus on enrolment in formal, discipline-based, tertiary education programs toward more broadly applied definitions and applications of knowledge and curricula to include work-based learning. Some educational theorists have suggested that this phenomenon is due to a growing disconnect between "the knowledge needed at work and the knowledge and skills produced through formal education" (Tynjälä, 2008, p. 131). (In this paper, we make the distinction between '*workplace* learning and research', which may occur in one's 'workplace', and the preferable and more contemporary concept of '*work-based* learning and research', which may occur in one's workplace but may also occur in one's wider work environment, and is often therefore not associated with a 'place' of work *per se* but a 'domain of practice'—a professional sphere in which one works—irrespective of the specific location in which one's work is carried out.)

During this same period, the global world of work has confronted similar seismic shifts as those documented in learning and teaching. Theorists earlier in the century maintained that such fundamental transformations have the potential to "change the face of work and industry, and establish new economic and political powers on the global scene" (Silberglitt, Anton, Howell, & Wong, 2006, p. 1). As a result, according to Cross (2012, p. 3), the workplace has "changed

inexorably [in the last 20 years]. Business has become unpredictable. Results are asymmetric. Everyone's connected. Value has migrated to intangibles. Organisations are becoming organic. Talent choses where to work. Power is shifting from suppliers to customers. Learning and work are converging. Time has sped up."

Many of the knowledges and skills needed to successfully navigate and thrive in such rapidly changing technological work and knowledge environments can't be picked up in books or learned in classrooms because workers acquire most of what they know "through doing rather than through knowing. Added to this there is an emerging appreciation of the important role that context plays in any learning" (Jennings, 2012, p. 1). Thus, work-based learning has arisen to address some of these concerns by integrating 'work experience' with practice, scholarship and research, and by "exploiting the limited time and [training] budgets available to organisations so they can realise increased performance improvement, greater employee development opportunities and improved flexibility in the provision of learning opportunities to the workforce" (Jennings, 2012, p. 1).

Lester and Costley (2010, p. 562) point out that work-based learning is not only "situated in the workplace [but] arises directly out of workplace concerns". In fact, Tynjälä (2008) has argued that the aforementioned changes in education are a direct consequence of the technological upheavals occurring in society and the world of work as a whole when she points out that:

> [T]he rapid development of information and communications technology, the growing production of knowledge in the economy, increasing internationalization and globalization as well as changes in occupational structures and in the contents and organisation of work have challenged not only educational institutions but also work organisations to develop new ways of ensuring that the level of competence of the workforce meets these challenges. Thus, continuous learning has become important both for individuals operating in the learning society and for organizations competing in international markets (p. 131).

Work-based learning is distinguished by what it is not: it is not training; it is not formal; it is not focused narrowly on skills; it is not about individuals; it is not disconnected from the needs and interests of society; and it is not a mere relocation of learning from the classroom to the workplace—it represents a complete rethinking of "shared meanings, ideas, behaviours and attitudes" (Manuti, Pastore, Scardigno, Giancaspro, & Morciano, 2015, p. 2). The three basic axioms of work-based learning can, according to Manuti et al. (2015, p. 3), therefore be defined as: (1) workplaces are legitimate and worthy sites at which learning can occur; (2) workplaces should be seen as learning environments; and (3) learning and working are inextricably linked. This recognition differs from the traditional and standard paradigm of learning, which: (a) emphasises individual mind as the primary vehicle through which cognitive power and meanings are acquired and accumulated; (b) elevates the 'interiority' of the mind as separate and superior to the outside world; and (c) accentuates the uniformity of formal, codified aims and measurable outcomes (Tynjälä, 2008, p. 131).

Work-based learning, particularly as it is encouraged in higher education when professionals enter the academic world, complements these elements with not only a paradigm of 'learning through action' (as discussed below in more detail) but also configures learning as a contextual, informal, and social phenomenon that generates new forms of tacit, yet integrated, knowledge. In this sense, work-based learning, Tynjälä (2008, p. 132) argues, can be "characterised as creating new modes of action, new practices, new procedures and new products", and thereafter she makes a persuasive case for the learning of groups, the learning of communities, the learning of organisations, and the inter-organisational learning of networks and regions.

The purpose of this study is to specifically examine work-based learning in relation to work-based research, and to identify evidence of both in the Professional Studies Program as conceived and implemented at the University of Southern Queensland (USQ) in Australia (a second, companion

paper will separately consider two research case studies currently being conducted in the Australian work-based learning and research context (Fergusson, L., Allred, T., Dux, T., & Muianga, 2018)).

The paper is, therefore, organised into two main sections: an explanation of work-based research; and a description of the Professional Studies Program at USQ and its relation to work-based learning and research.

WORK-BASED RESEARCH

Work-based research is similar to other approaches to gaining knowledge when applying the scientific method; it, too, represents the systematic study of materials and phenomena in order to answer questions, establish facts, and reach new conclusions. However, several distinctly unique features identify the work-based approach.

For example, unlike research environments in which variables can be controlled and tested in order to make reliable and definitive statements, work-based research is usually conducted in complex (what some practitioners call "messy" [e.g., O'Leary & Hunt, 2016, p. 10]) work and organisational environments, and these may be constantly changing; oftentimes this complexity and change suggest new challenges and opportunities, but may also pose new, unforeseen risks. Moreover, such research settings are generally occupied by multiple stakeholders, including managers, board members, peers, suppliers, and consultants, each of whom may affect context and outcomes. Together, these factors make work-based research dynamic, innovative and above all 'applied', in the sense that it is 'change-oriented research'.

Thus, work-based research is usually classified as 'action research', which is most generally defined as research carried out in the course of an activity or work aimed at improving the methods and approaches of those involved in the activity or occupation, often in the context of providing data to form the basis of rational, informed, evidence-based decision making. More recent interpretations expand this definition to suggest that "unlike conventional social science, [the purpose of action research] is not primarily or solely to understand social arrangements, but also to effect desired change as a path to generating knowledge and empowering stakeholders" (Huang, 2010, p. 93). In this section, we summarise the basic elements and unique features of work-based research, drawing from O'Leary and Hunt (2016) and others (e.g., Treadwell, 2010).

REASONS FOR CONDUCTING RESEARCH

The traditional purpose of conducting research is to generate new knowledge and thereby expand the frontiers of a discipline. In work-based research, the underlying motivation for conducting research is more complicated and wide-reaching. Teddlie and Tashakkori (2009) point to the example of transformative researchers whose purpose is to help oppressed and marginalised groups gain greater social justice rather than merely generate knowledge (they may generate new knowledge, but it is not their primary mission).

The authors therefore advance a number of theories that explain and motivate work-based research, including personal reasons such as career development and satisfying curiosity about complex phenomena, and societal reasons such as improving society and its institutions and empowering disadvantaged groups or constituencies (Teddlie & Tashakkori, 2009, pp. 113-115). To this list we can add organisational reasons, including a desire to improve performance or other outcomes of a company, peer group or government agency, and a desire to test innovations and develop causal explanations for, and correlational examples of, workplace phenomena.

COMPREHENDING THE WORKPLACE AND WORK SPACE

An understanding of the workplace and the practice domain of one's work are essential for work-based research. This includes a fluency with both the organisational structure and culture of one's

workplace. Being familiar with not only one's own job responsibilities and place in the organisation but with those around us (such as one's manager), as well as how the organisation is structured (e.g., functionally or divisionally), are considered essential. However, an understanding of organisational culture is equally important. For example, what are the core values held by the organisation, what assumptions underlie those values, and what behaviours and attitudes characterise and define the workplace? These might find expression in the way language between management and staff is applied (i.e., formal or informal usage), the way decisions are made (i.e., consensually or by edict), how the value of 'learning' and 'knowledge acquisition' is viewed, and how human resource issues, such as responsibility and accountability, are conceived and enacted. Similarly, for the work-based researcher, knowing where the 'power' in the organisation lies and what the organisation's frustrations, goals, objectives, priorities and vision for the future are (particularly when it comes to developing an agenda and plan for research in the workplace), are considered crucial. Understanding the goals, objectives, priorities and vision in particular provides considerable research potential.

WORKPLACE AND PRACTICE DOMAIN ISSUES

O'Leary and Hunt (2016) highlight the need to identify organisational 'issues' before asking questions. Their focus is on understanding the types and extent of issues an organisation faces and where research might contribute to addressing and resolving these issues. However, issues extend beyond the organisation and include problems, needs, challenges and opportunities in the wider practice domain or profession (i.e., the work 'space'), which may also motivate a researcher to embed a program within a specific organisation while addressing higher order or discipline-wide issues. In both cases, it is important for the researcher to distinguish between the urgency, importance and scale of issues. Distinctions need to be made between issues which are merely urgent (but not necessarily important or substantial) and those that are strategically fundamental, mission-critical, or of an order of magnitude that threaten the sustainability or survival of the organisation.

These latter types of issues may be more amenable to research, although pressing issues may receive more attention in the short-term. Moreover, particularly in small-scale workplace research, it is imperative to look critically at the organisation and to examine the practice domain outside the organisation, not simply hear the 'dominant voice' in which the researcher unquestioningly aligns personal thoughts to those of the organisation without due reflection and critical thought. In short, developing an understanding of the legitimate frustrations and priorities of an organisation, and then asking: 'what can I contribute?' potentially lead to valuable research questions being advanced.

DEVELOPING RESEARCH QUESTIONS AND APPLIED RESEARCH PLANS

Having identified a relevant workplace issue (which is either specific to one's own organisation or applicable to the wider practice domain) and thereby setting a possible direction for work-based research, certain foundational questions may be asked. In this sense, research questions define the investigation, set the boundaries of investigation, provide a direction for investigation, and act as a frame of reference for evaluating the research program (O'Leary & Hunt, 2016, p. 46). Research questions are different to hypotheses or null-hypotheses in that they generally do not propose on the basis of logical conjecture and under strictly controlled conditions to test the existence (or absence) of a relationship between two or more variables. Like hypotheses, research questions are often advanced on the basis of a hunch or educated guess, and are equally specific, testable and realistic.

However, research questions differ from hypotheses because of their penchant for generating broad (although not always generalizable) understandings and conclusions, their sometimes lack of clearly defined variables, their emphasis on an 'experience' rather than an 'observation' of social and organisational phenomena, their proclivity for developing 'rich' data, and their oft-declared aim of engaging in collaborative change (O'Leary & Hunt, 2016, p. 47).

Having developed one or more research questions, a plan is developed on the basis of several factors. The first of these, as is the case with many forms of research, a review of the literature and development of a research model. Such a review would typically address such topics as: what do I know about this topic and how can I find out more; how do I develop a convincing rationale for the study; what frameworks, models, and/or theory will help the study; and what research has already been conducted in this area?

In addition to analysing the published academic literature on the discipline, reviews of this type might also envelop government white papers and policy documents, company annual reports, competency models, trade journals, and so-called "grey literature" (i.e., literature that exists outside standard academic and commercial domains, such as less public or unpublished organisational data), and may extend to root cause analysis or public policy analysis (e.g., Dunn, 2015).

As is also the case with hypotheses in experimental, quasi-experimental, time-series, correlational and other forms of empirical research, research questions (what I want to know), which logically follow from the problem being investigated, also logically necessitate a method (how I am going to know it), and therefore developing a research plan is somewhat straightforward, because the population type, size and conditions, along with any instruments and designs (e.g., longitudinal or cross-sectional), logically follow from the question. O'Leary and Hunt (2016, pp. 81-82) call the next phase of research going from "questions to methods" because "decision-making relating to methods [in work-based research] is question-driven".

Moreover, due to the nature of work-based research, the development of an appropriate method and research design can be more challenging. For example, while the question may be narrowly defined, its goals can be open-ended and the context, as stated above, can sometimes be messy. O'Leary and Hunt (2016) therefore point out that work-based research generally aims to fulfil one or more of the following: (1) understand a problem; (2) find a workable solution to the problem; and/or (3) evaluate the success or failure of an 'intervention'. Thus, a work-based research plan may be evaluative in nature and will usually include: significance and scope of the problem; purpose and merits of the research (including purpose, aims, and objectives) and possible benefits to the organisation or practice domain; merits of the research question; merits and trustworthiness of the researcher (including qualifications, gender, age, position, ethnicity, and so forth); merits and description of the proposed research method; timelines, budgets and funding (if applicable); and ethical considerations (including consideration of insider-research controls, consents and privacy).

ACTION RESEARCH AND MIXED METHODS

Work-based research favours a variety of different forms of mixed methods, because they have the scope and flexibility to investigate complex phenomena in a wide variety of practice domains, such as those observed in work environments, although all methods are embraced on a 'best-fit' basis by workplace researchers depending on the problem and research question under investigation.

Mixed methods are discussed in detail by Creswell (2003), Creswell and Plano Clark (2011) and Teddlie and Tashakkori (2009), but have their origins in "multiple methods" of the late 1980s, as described, for example, by Mark and Shotland (1987), and constitute what Teddlie and Tashakkori (2009, p. 3) call the "third research community" after quantitative (positivist and post-positivist paradigms) and qualitative (constructivist paradigm) methods. Table 1 summarises the relation of each research community. (We have not attempted to provide an in-depth analytical comparison of each of the three research communities, but present this Table 1 to show their relation and the relevance of mixed methods to action work-based research and subsequently to Professional Studies.)

Table 1. Dimensions of qualitative, mixed methods and quantitative research designs (adapted from Teddlie & Tashakkori, 2009, p. 22 and p. 162)

Dimension	Qualitative (QUAL)	Mixed Methods	Quantitative (QUAN)
Paradigm	Constructivist (and variants)	Pragmatist; transformative perspective	Positivist; post-positivist
Research Questions	QUAL research questions	Mixed method research questions (QUAN and QUAL)	QUAN research questions; null hypothesis; hypothesis
Form of Data	Most typically, although not exclusively, narrative and descriptive	Narrative, descriptive and numeric	Most typically, although not exclusively, numeric
Purpose of Research	(Often) exploratory plus confirmatory	Confirmatory (i.e., explanatory) plus exploratory	(Often) confirmatory plus exploratory
Role of Theory and Logic	Grounded theory; inductive logic	Both inductive and deductive logic; inductive-deductive research cycle	Rooted in conceptual framework or theory; hypothetico-deductive model
Typical Studies or Designs	Ethnographic research designs and others (e.g., case studies); mono-method multi-strand designs (i.e., parallel mono-method = QUAL + QUAL; sequential mono-method = QUAL > QUAL)	Mixed method exploratory (QUAL > QUAN), explanatory (QUAN > QUAL), converged or triangulated (QUAL + QUAN), and embedded (QUAN[qual] or QUAL[quan]); quasi-mixed mono-strand designs (i.e., sequential, parallel, multi-level)	Experimental, quasi-experimental, correlational, time-series, survey, etc.; mono-method multi-strand designs (i.e., parallel mono-method = QUAN + QUAN; sequential mono-method = QUAN > QUAN)
Sampling	Mostly purposive	Probability, purposive, and mixed methods sampling (such as parallel mixed methods sampling, sequential mixed methods sampling, and multilevel mixed method sampling)	Mostly probability
Data Analysis	Thematic strategies; categorical and contextualising	Integration of thematic and statistical; data conversion	Statistical analyses; descriptive and inferential
Validity and Trustworthiness	Trustworthy; credible; transferable	Inferential quality; inferentially transferable	Internally valid; externally valid

Thus, Creswell and Plano Clark (2011, p. 4) suggest mixed methods can be viewed "more as a methodology that span[s] viewpoints" rather than a strict research method; in short, they maintain that mixed methods are both a method and a philosophical orientation when they say:

> Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis and the mixture of qualitative and quantitative approaches in many phases of the research process. As a method, it focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches, in combination, provides a better understanding of research problems that either approach alone (Creswell & Plano Clark, 2011, p. 5).

Creswell and Plano Clark (2011, pp. 8-11) go on to explain that mixed methods are most applicable in research when one data source is insufficient to represent and explain a phenomenon, when initial quantitative results need to be explained, when exploratory qualitative findings need to be generalised, when one study needs to be enhanced by a second method, when a theory needs to be embedded in multiple data strands, and when a research objective needs to be understood in the context of multiple research phases. Given the often exploratory and abductive nature of workplace research, each of these needs and research scenarios frequently arise.

MANAGING DATA

A variety of data types are common in workplace research, including historical and existing private- and public-sector data. For example, private sector data may include databases, reports, catalogues, safety records, sales figures, human resource records, and client records. However, public sector data might also include data held by international organisations, like the World Health Organisation (WHO) or the Organisation for Economic Cooperation and Development (OECD), national data held by governments, non-governmental organisation data, archival data, and policy documents. Workplace research may also include online data, which raises a number of other data management challenges.

Each of these data types is commonly dealt with in workplace research (O'Leary & Hunt, 2016). Similarly, primary data are generated in workplace research, and because of the mixed method commonly employed, the volume of data can be exhaustive. Primary data are collected by the investigator specifically in response to asking the research question, and can include data generated from interviews, surveys, observations and focus groups. How data is gathered, interrogated and used in workplace research is relevant to the veracity and usefulness of the research outcome; however, how data are managed in workplace research does not vary significantly from other forms of research.

GENERATING A DELIVERABLE

Depending on the audience, a work-based research deliverable may take the form of a report, policy document, presentation or essay for professionals or specialist practitioners (what below in the context of the Professional Studies Program we term an 'artefact') when referring to the practice domain. In the case of scholarship, a deliverable can take the form of a thesis, dissertation or journal article written primarily for an academic or specialist audience. In both cases, the deliverable is designed to address the problem under investigation, although an emphasis on recommendations and action steps may feature more predominantly in the former rather than the latter artefact. As shown in Table 2, O'Leary and Hunt (2016) distinguish deliverables of work-based research according to the following summary. In each case, O'Leary & Hunt (2016, p. 224) argue that work-based research should, irrespective of its audience, be problem focused, analysis driven, and evidence based, and should always offer viable recommendations.

Table 2. Work-based research deliverables matrix
(adapted from O'Leary & Hunt, 2016, p. 224)

Dimension	Professional	Academic
Main Point	Recommendations; action plan; report; white paper; manual; training program	Thesis; dissertation; argument; knowledge development
Purpose	Persuade; influence organisational decision-making and direction	Inform; contribute to bodies of knowledge
Content	Problem-solving; action-oriented; organisational data	Theory generation; meaning construction; theory testing
Audience	Generalists; practice-domain specialists; 'pracademics'	Experts; scholars; academics
Dissemination	Circulation; in-house; industry-specific	Publishing; peer-review
Readership	Large (including the general public)	Limited, specialised

As discussed in the following section, there are two deliverables required for the award of doctorate in Professional Studies program at University of Southern Queensland: as a result of the professional journey and a work-based project, participants generate an artefact; and as a result of the academic journey participants generate a dissertation. Both of these conform to the O'Leary and Hunt deliverables matrix in Table 2.

PROFESSIONAL STUDIES PROGRAM

A fundamental conclusion about the value of work-based learning and research is the recognition by governments and industry, and by society more generally, that there is a definite and measurable shortage of 'advanced practice professionals' in Australian workplaces. To this end, upskilling and training of the workforce are national priorities (e.g., Minerals Council of Australia, 2014). Indeed, as early as 2000, successive Australian governments have tried to address this shortage (e.g., Connell & Burgess, 2001), and practice domains such as medicine and nursing have been specifically targeted (McGrath, 2004). As a result, it has long been recognised that in order to enjoy a "sustainable workforce", Australia must develop "skills ecosystems" (Hall & Lansbury, 2006) as well as more generally enhanced work-based learning and research. Thus, advanced practice professionals are those contributors who significantly extend knowledge and skills within a practical environment (such as a workplace), and thereby make a valuable difference to productivity and organisational output, and to society as a whole.

Advanced practice professionals (in oncological primary care nursing, for example, they are referred to as Advanced Practice Nurses [Sayers, DiGiacomo, & Davidson, 2011], but may have other names in different professions) have what some call 'super-skills'. Super-skills often refer to highly specialised skills, such as those required in medical, construction, information technology and financial services professions, but can also relate to advanced practice in general, whereby professionals need not only specialist training in a discipline, but also need to develop problem-solving, field-independent and other cognitive and affective capabilities necessary to function effectively and efficiently in a rapidly changing, global world of work.

Professional Studies Programs (PSP), like the one at University of Southern Queensland (which we abbreviate to USQPSP), have been conceived and implemented precisely to address the need for more advanced practice professionals in the Australian workplace, specifically for mid-career professionals (MCP) with a particular focus on equity and access (van der Laan & Neary, 2016). We define a MCP as a middle or senior manager or practitioner with more than ten years' professional

experience in their practice domain (a generally accepted definition, such as that held by the U.S. Office of Personal Management). MCPs may want diversity and challenge in their workplace and the people with whom they work. It is said that after proving themselves earlier in their careers, MCPs often also want to focus on the cultural values of their organization, and may want to add value to their workplace. In the USQPSP, MCPs are generally passionate about learning and are almost always motivated by altruism.

Like work-based learning, 'Professional Studies' is a term used to describe academic programs that emphasise applied and non-traditional modes of knowledge and skills acquisition in higher education, and therefore these types of programs embrace formal, non-formal and informal pathways of learning. Lester and Costley (2010, p. 562) suggest it is a "transdisciplinary field that sits outside of subject frameworks and has its own set of norms and practices". The first of these features is predicated largely on the so-called 'learning-by-doing' principle (Reece, 2011) and, as cited above, encourages action research (the principle is also referred to as "knowledge-by-action" and "knowing-by-practice" [e.g., Thistlethwaite, 2013]).

As Reece (2011, p. 1) points out, the principle of learning-by-doing means "learning from experiences resulting directly from one's own actions, as contrasted with learning from watching others perform, reading others' instructions or descriptions, or listening to others' instructions or lectures", an approach embedded in history (he specifically cites approaches like "discovery-versus-investigation", the "practice-theory-practice" cycle, and "proof-upon-practice", emphasising the relevance of the word "practice" to mean both repetition and praxis [p. 1] which is intrinsic to PSPs). To this end, PSPs also recognise and embrace concepts of 'self-directed learning' and 'life-long learning', principles embedded in theories and frameworks of competency and capability (a topic discussed, for example, by psychologists [e.g., Wise et al., 2010]). In these ways, PSPs are highly individualised and designed to meet the specific personal and professional needs of each student and the workplaces to which they contribute.

However, to qualify at the highest level of education, these approaches must also be structurally sound and academically rigorous. For this reason, students in PSPs must also maintain the highest standards of research literacy and scholarship (for example, degrees in the USQPSP meet the Australian Qualifications Framework [AQF] standards for Level 9 [Masters] and Level 10 [PhD/Doctorate], as do other post-graduate programs in Australia, which state for Level 10: "graduates at this level will have systematic and critical understanding of a complex field of learning and specialised research skills for the advancement of learning and/or for professional practice" [Australian Qualifications Framework Council, 2013, p. 13]). Thus, PSPs offer the same qualification recognition and standard as traditional programs, but would argue they possibly provide more relevant outcomes with a focus on real-time, real-world challenges and opportunities.

LEARNING AND REFLECTION

At the core of PSPs is 'reflective practice', a process well documented and encouraged in nursing and education (e.g., Sherwood & Horton-Deutsch, 2011) but also applied in the workplace to enhance organisational learning (e.g., Hilden & Tikkamäki, 2013). As shown in Figure 1(A) from Kolb's (1984) model, professional reflection involves four main iterative steps: (1) having a concrete, real-world experience (be it educational or work-related) > (2) reflecting on the experience by reviewing it critically and thereby possibly (and hopefully) learning from it > (3) planning and trying out something new at work on the basis of what one has learned (what some call 'active experimentation') > (4) having a concrete experience, and so on.

We call this a 'micro-reflective cycle', because it happens on the personal level within individuals and is therefore intimate to personal learning. Others, such as O'Connor and Diggins (2002), advocate different approaches but with the same essential structure leading to the same intended learning outcome. Kolb and others also recommend cycling through these steps more than once to increase

learning in a process called 'double-loop learning' (e.g., Hilden & Tikkamäki, 2013, p. 79). While some theorists worry about what they call a "dearth of evidence-based publications [in reflective practice]", they also acknowledge that in education, for example, reflection is "recognised as a practice for enhancing and potentially deepening learning across the academy, nationally and internationally" (Harvey, 2016, p. 1), a view held by many others in related fields (e.g., Ryan, 2011).
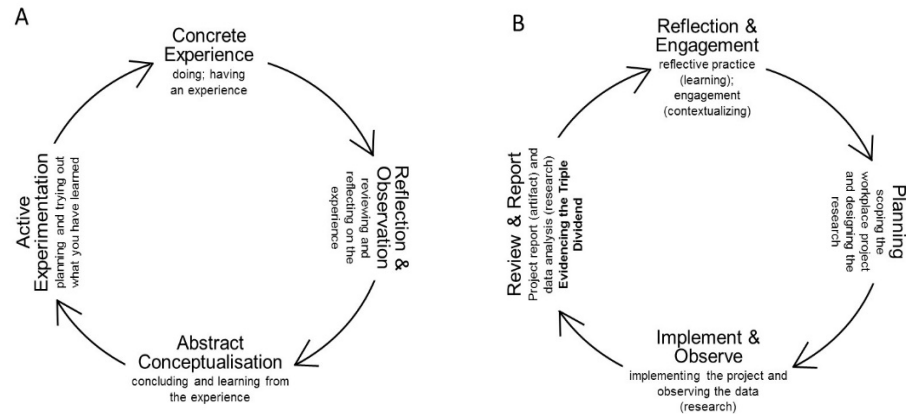

Figure 1. Kolb's (micro) reflective cycle, as it is practiced by the MCP (A), and the workplace project and research (macro) reflective cycle (B), as they apply to the USQPSP

As shown in Figure 1(B), reflective learning can also occur at larger time and distance scales, in this case at the program level, thus the reference to a 'macro-reflective cycle'. In this process, the entire learning and research journey in the USQPSP can be mapped onto and integrated with Kolb's cycle. As a result of the 'micro-reflective cycle' (A), each MCP in (B): (1) reflects, learns and engages in the program, thereby dovetailing the 'micro-reflective cycle' with Reflection & Engagement > and, as a result, (2) is in a better position to scope and plan a work-based or workplace project, along with developing a research component (to be discussed in more detail below) > resulting in (3) a report (what we refer to below as an 'artefact' in the context of the USQPSP), thereby evidencing the triple dividend (also described below) > which in turn leads to (4) further reflection and engagement, and thereby more learning and understanding about oneself, one's workplace, and one's professional practice domain.

However, it is also important to acknowledge that these two reflective cycles, as practiced in the USQPSP, have been carefully designed to avoid the ethical pitfalls identified by Hobbs (2007), particularly those related to assessment and privacy. In the USQPSP, innovative tools and procedures have been specifically developed to aid the macro-reflective cycle (including the so-called 'CV Tool', the subject of a separate forthcoming research paper). More work around integrating these tools and procedures with macro-reflective cycles are under development, but include integrating learning objectives with research questions, for example, and evidence of reflective practice for MCP has been provided in the aforementioned accompanying paper.

PROFESSIONAL PRACTICE AND WORK-BASED RESEARCH

Building upon these two cycles, the USQPSP doctoral program has designed two integral and parallel strands to the MCP doctoral journey—a professional pathway of learning and project planning and implementation that is unique to the program, and a research pathway that includes the recognisable components of a standard applied research program, including use of the scientific method as it applies to action research—as shown in Figure 2.

Professional Practice

| Reflective Practice | → | Learning Profile | → | Learning Objectives | → | Work-Based Project | → | Artefact |

Work-based Research

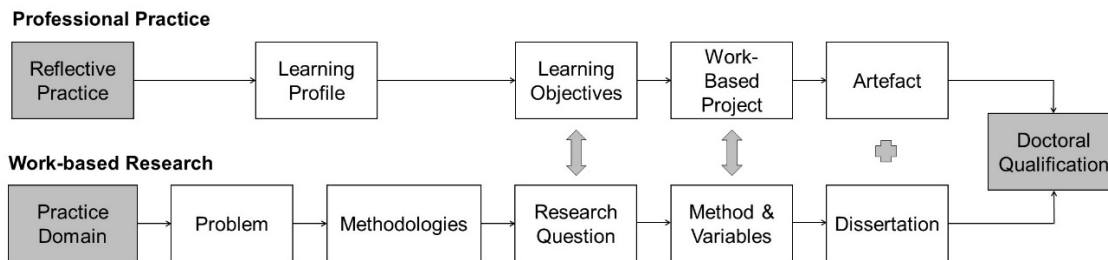| Practice Domain | → | Problem | → | Methodologies | → | Research Question | → | Method & Variables | → | Dissertation |

Doctoral Qualification

Figure 2. Steps in the professional journey and in the research journey of the MCP in the USQPSP doctoral program, showing their relationship and ultimate convergence in the doctoral qualification

The first is the professional practice journey shown at the top of Figure 2, which begins with the MCPs micro-reflective cycle, including consideration of what s/he has done so far as a professional and what s/he has learned as a result of doing it. This process, after several iterative reflective cycles, results in the development of a learning profile, organised into taxonomic learning classes, such as analytical skills, problem solving, critical judgement, and emotional intelligence. After prioritisation and ranking, these learning classes are then used to form a 'learning profile' of professional capability, which helps the MCP identify key learning areas to bridge the gap between what has been learned and future learning aspirations. Based on this profile, the MCP then identifies key learning objectives that will enhance professional (and research) development.

These learning objectives, often developed in consultation with peers or seniors in the workplace, also begin to narrow the needs and opportunities suited to both the learner and the workplace. Hence, the MCP, having developed an understanding of their own personal and professional competencies and capabilities as well as a deeper understanding of their world of work in conjunction and consultation with their workplace, peers, supervisors and broader practice domain, is in a formidable position to plan and implement a 'work-based project', the result of which is an artefact, such as a framework, training manual, report, white paper, or other documentation of the project.

An example of this process might be as follows. Micro-reflective practice by the MCP revealed that, as a result of project managing a regional network of non-government organisations (NGOs), 'I learnt how to manage a small team of staff and how to provide workload allocations and professional development support to members of the team' and 'I learnt how to utilise Queensland State Government protocols to influence government decisions and budget allocations', which can be identified with the learning classes of 'communication-related capabilities' and 'personal and social capabilities'. Along with a series of other professional traits and capabilities identified through reflective practice, these learning classes suggest that, while I am a good communicator and organiser, my ability to resolve conflict in the workplace and my knowledge of data gathering and analysis are limited (i.e., 'I have developed a learning profile'). Therefore, 'I need to enhance my problem-solving ability and social flexibility in pursing possible workplace solutions, along with a need to improve the quality of critical analysis and effectiveness of research strategies I employ'. The work-based project derived from such analysis could assess, for example, a new NGO management development program in organisational leadership and communications to be implemented in three regional Queensland NGOs with the participation of ten senior managers. The artefact for a work-based project of this type might be a management training manual.

Running in parallel to professional practice is the work-based research journey, which begins in the Queensland NGO practice domain. As a result of both reflection and a review of the literature, the MCP identifies a 'problem' for the domain, which may include a gap in the literature, a need or opportunity for improvement, or a recommendation from prior research. The problem may be a documented lack of effective NGO management training in the areas of communication and

planning. In conjunction with this preliminary analysis, the MCP also begins a study, through coursework and online activities and reading, of methodologies and paradigms, and those principles and concepts that underpin and ground theory for the practice domain; developing skills in research methods, logic, and critical thinking, critical reading and critical writing, form a part of the research journey.

As a result of this process, the MCP develops a research question to address the problem statement. An example of a research question in the present context might be: What is the impact of training X over a 12-month period on the communication performance and problem-solving abilities of senior NGO managers in Queensland? At this time, an iterative correlation and synchronicity begins to form between the learning objectives developed in the professional journey and the research question, with research questions leading the MCP to identify and isolate relevant variables and workplace research methods, as described in the previous section of this paper, which are suitable to test and evaluate her/his work-based project. The final outcome of the research journey, as is the case with other PhD and doctoral programs, is a dissertation of research, which, when converged with the artefact, results in the qualification of Doctor of Professional Studies (DPRS). In summary then, in the context of a work environment, the reflective cycle and research in the USQPSP includes selecting a problem focus, clarifying theories, identifying research questions, collecting data, analysing data, reporting results in an artefact and dissertation, and ultimately taking an informed, evidence-based action to address or solve a specific workplace problem.

The overall outcome from the USQPSP learning contract, which combines a work-based project with a research component for each MCP, is what is called the 'triple dividend', meaning benefit for: (1) the individual; (2) the organisation; and (3) the profession (not to be confused with the "triple bottom line" of profit, people and planet). The individual dividend is in self-development; the work-based project, and the research study that evaluates it, contributes to the MCP's self-development, both professionally and personally, by achieving her/his pre-agreed overall learning goals. The goals usually include improving communication skills, critical thinking skills, and research skills, coupled with gaining new knowledge, but may be as basic as improving the chances of job promotion or career advancement.

The organisational dividend is benefit to the workplace or practice domain. The work-based project and the research study that evaluates it, provide measurable and significant contributions to workplace or organisational improvement through innovation, problem solving, new data and analysis, product development and/or strategic insight. Other dividends may include aiding the development of practice, programs, policy and corporate culture. The professional dividend is to academia and practice: the work-based project and the research study that evaluates it contribute to professional practice as supported by academically sound evidence and observations in terms of a rigorous research design.

Tensions and conflict can exist between demands in the workplace and the need to develop capable and relevant practice while supporting personal development and maintaining academic rigour and validity in research (e.g., Amah, 2014; Lepine, Podsakoff, & Lepine, 2005). These may even manifest in MCP ill-health, sleep disturbance and reduced productivity (e.g., Lizano & Mor Barak, 2012). However, universities are beginning to engage with these issues at a deeper level than suggested by simple notions of employer engagement and skills development, and evidence indicates that well-designed work-based programs are both effective and robust when addressing these concerns and challenges (Lester & Costley, 2010).

CONCLUSION

In this paper, we have considered work-based learning in relation to work-based research, and have sought to identify evidence of both in the Professional Studies Program as conceived and implemented at the University of Southern Queensland in Australia. One of the basic conclusions

of this paper is that research and scholarship are both important to and integral in work-based learning, and we have shown how, through the Professional Studies Program, these two elements of work-based learning have been incorporated into the doctoral program for mid-career professionals.

Specifically, we have identified the MCP's ongoing professional work-based practice that develops in the Program to a work-based project, such as an organisational improvement or management development program for administrators of NGOs as one leg of the professional research journey. Such practice results in a deliverable, what we have called an 'artefact', such as a report, model, framework, or other tangible output of the work-based project.

The other element of the Program is the work-based research developed around the project to measure, test, assess or evaluate its impact on the workplace or practice domain. In the context of the USQ doctoral Professional Studies Program, students develop quantitative, qualitative or mixed method research designs which after implementation result in the generation of a dissertation. Taken together, the artefact and dissertation form the basis upon which MCPs in the Program are assessed for competence and capability to operate as 'scholarly professionals'.

We suggest that work-based learning and work-based research address the complexities, challenges and future demands of Australian workplaces along with the work, mobility and personal development needs of mid-career professionals. By examining two case studies in the Australian work-place learning and research context, in an accompanying paper (Fergusson et al., 2018) we provide further evidence of how 'advanced practice professionals' conceive and execute mixed method work-based research in the USQPSP doctoral program; one in the field of authenitic safety leadership and its role in workplace health, safety and wellness, and a second that investigates the professional identity of investigators in the Australian Public Service.

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