Workbased Research: Properties, Methodologies and Outcomes

Sheila Cunningham, RN, PhD

Workbased research is practitioner driven and led research. It is argued to be one of the principal means of developing organisational learning and enhancing the effectiveness of individuals at work (Costley, et al., 2010). Researchers are 'insiders' or 'experts' in the sense they have awarenesses of professional work situations, understanding of its nuances and the local and wider political influences. Insider-researchers are influential in their own practice and can act as drivers or instigators for the issues that may impact as a result for example policy, structure of even knowledge surrounding the work. Purposes of workbased research may be broad. Costley and Lester (2012) classified work based research projects into four main groups. These are: practice and research (knowledge generation to create development or change); research within practice (to guide and inform practice); research for practice (outside immediate practice but with the capacity to inform or contribute to policy or strategic change or decisions); and synthesis (a combination intending to produce new knowledge, theories or insight). Differentiation between workbased learning (WBL) and workbased research (WBR) exists. Workman (2009) indicates WBL is the term being used to describe a class of university programmes that bring together universities and work organizations to create new learning opportunities in work places. Whereas Costly & Abukari (2015) argue WBR is a practitioner led enquiry that leads to new knowledge that has operational significance for that practice. The difference is not so subtle—work based learning may involve some work based research. Work-based research and development projects are usually the key element of work-based and professional studies awards. These awards sit in the transdisciplinary field of work-based learning (Costley & Abukari, 2015), and it involves carrying out a research and development project on an aspect of their work learners or researchers wish to develop further (Costley & Critten, 2012). The practitioner-researchers engage in solving highly contextualised problems and do this to develop their practice at work supported by high-level university support, learning and teaching. WBL is furthermore a field of study that cuts across subject disciplines and therefore there is a wide range of generic literature on WBL as well as some subject discipline-related literature, especially in the field of health and social care. Literature from within subject disciplines emphasises the generic concepts that underpin WBL for example: experiential learning, learning contracts, work-based projects and reflective practice. WBR furthermore also shares many of these features however it is key that insider researchers not only enhance skills and develop knowledge but also leadership to manage a system and organisation in order to effect outcomes and impact from their research and learning. Costley and Critten (2012) indicate the effect on organisations is potentially enormous and such learners aspire to higher positions or roles and thus exert broader influence. Underpinning this then are key features: reflection on process and methods for self and organisational learning and also recognising, articulating and planning for impact. This article will address two of these: reflection and the concept of impact.

Reflection, learning and change

Researching the 'natural world' is frequently referred to as 'fraught' with difficulties (Robson & McCartan, 2016; Cresswell, 2014). In that it is: complex, relatively poorly controlled and messy. Workbased research is equally as

Associate Professor, Middlesex University, UK

fraught (Costley, et al., 2010). As a consequence there is no single right method or strategy which addresses this type of research. In essence the selection of any one of a range of strategies under a particular paradigm will each hold its own specific advantages and disadvantages. More complex projects require students to really analyse their own beliefs and values and motivations for their workbased research project and how to undertake it. Transdiciplinarity emerges as a term within workbased research and purports to be a research strategy that crosses several disciplinary boundaries to create a holistic approach facilitating a systemic way of addressing a challenge. Uniquely it positions the 'worker-researcher' as the change agent. It also aims to elicit a process wherein researchers develop 'critical consciousness' through collective inquiry, reflection, and action (Toomey, et al., 2015). This way of doing research is also referred to as active and applied or participatory and as Mode-2 thinking, or co-produced knowledge offering wider societal impact. Furthermore one could add the Habermas-type interpretation: that knowledge is developed through critical or evaluative modes of thinking and leads towards the emancipation or transformation of personal, social or other situations (Helyer, 2015).

This leads to further challenge and questioning on the nature of knowing and terms like ontology, epistemology and methodology scares worker-researchers. However when positioned as how they think of their work and world and what they believe they are more open and receptive to how this informs and guides their projects. Of course this develops and informs over time and processes such as reflection enable and develop it. An important aspect of work based research is that it is within the researcher's own work practice or 'situated'. This concept of 'social situatedness' was originally put forward by Vygotsky (1934) , and developed by Lave and Wenger (1991) in terms of learning (Costley, et al., 2010). This then refers to the development of individual intelligence requiring both social and cultural influences, and the multiple perspectives needed for understanding which is provided by context (work/organisation). Situated-ness arises from the dynamic interaction between the 'agent' (the researcher), the 'situation' (circumstance and researcher position), and the 'context' (location and timing). The uniqueness and process therefore are evident. The issues and contexts vary whilst sharing these key features.

Within the work-based learning literature, there seem to be two features: the concept of reflective practice in work and the professions, and practical guides to reflective activities. In Schön's (1983) thinking, reflective practice was a way of reducing the gap, by unearthing the actual theory that is embedded in what professionals do, rather than merely what they say they do. In this sense reflective practice is essentially a way of improving practice. Reflection, on the other hand, is broader. It is a way of approaching an understanding of one's life, values and actions (Fook, 2015). Furthermore more 'reflexivity' develops and extends the former to emphasise the ability to look both inwards and outwards to recognize the connections with social and cultural understandings which involves the ability to recognize that all aspects of ourselves and our contexts influence the way we research (or create knowledge) (Fook, 2015).

Boud and Walker wrote early on reflection in relation to professional programmes or professional practice (Boud & Walker, 1998). They point out that reflection is poorly understood by educators within academic institutions and was equated with thinking, used in a 'rule bound' manner and thus failed to lead to real questioning of experience by student professionals. The range of reflective frameworks developed are often taken as the process of reflection confusing the full critical analytical stages of the reflective process. Kolb's experiential learning cycle (1984), with its 'reflective observation' stage, and Schön's notion of the reflective practitioner (1987) were the most frequently drawn on texts generating ideas of knowledge being derived from practitioners reflecting on practice. The literature around Schön's formulations argues that what is embodied as knowledge is revealed through reflection and deliberation either in action or after action. Together with experiential learning this ensures that reflection is key to transforming a passive experience within the workplace into active learning and change (Chisholm, et al., 2009).

Reflection however is more all encompassing than just "looking back". People do naturally reflect back over events, possibly to understand what happened or process and make sense of it; the idea of amending actions or learning arises so as not to repeat mistakes. Whilst limited to 'eliminating errors' this restricting approach potentially limits learning (if there is no error). A focus on understanding and making sense or learning from positive experiences also has a place. Schön (1983) referred to the process of looking back over events as, "reflecting on action", but also acknowledged that reflection is not restricted with looking back, it is possible to reflect on what is happening in the

present moment, within the context of thoughts and feelings as they occur. Schön summarizes this as, "reflection in action", and points out its immediacy in that "reflection in action is where we may reflect in the midst of action without interrupting it (Schön, 1983). Our thinking serves to reshape what we are doing while we are doing it" (Schön, 1987, p. 26).

The capacity to reflect-in-action allows the problem solver (researcher) to reveal their 'knowing in action' which refers to their hidden or 'tacit' knowledge associated with particular tasks or ways of working. Through reflecting differently, professionals can also process their reflection in other dimensions: before-action, in-action, on-action, and beyond-action in continuous cycles of deliberation and action as a means to expand and deepen their understanding of professional practice (Edwards, 2017). Furthermore, (Boud, 2010) suggests a development termed 'productive reflection', advocating reflection as an organisational rather than an individual pursuit. This then integrates with WBR perfectly so as to produce organisational awareness, change and development.

This links to the terms 'single- and double-loop learning' first introduced by organizational theorists Argyris and Schön (Argyris & Schön, 1974). These levels of organizational learning it is proposed correspond to degrees of change, commitment, and questioning within organisations and are core to worker researchers. Argyris (1999, p. 68) defines single-loop learning occurs 'whenever an error is detected and corrected without questioning or altering the underlying values of the system', and double-loop learning as 'when mismatches are corrected by first examining and altering the governing variables and then the subsequent actions' (figure1). The term 'triple loop learning' appears in some of the literature and is an extension of the first two types and reputed to involve higher level change. That is, if single-loop learning is focused on the nature of "doing" and figuring out the most effective way to accomplish something, and double-loop learning is concerned with the nature of "knowing" and challenging what the right aims and objectives are to be pursued, then triple-loop learning is related to the nature of "being" and reshaping one's intentions, purposes, and motives that influences the ways of knowing and doing (Kwon & Nicolaides, 2017).

It is argued that reflection is highly context specific connecting social and cultural concepts and caution is needed to avoid mere rhetoric of reflection for authentic professional learning and change (Helyer, 2015). This provides a useful lens to view the role of reflection and processes within WBR for effecting work and workers and points to ways of support for supervisors of work based researchers. In relation to supervision, one of the most important things that supervisors and facilitators of work based learning or research can do is develop good listening skills. This is to response sensitively, challenging, probing and encouragingly rather than imparting instructions for effective reflection. Work based or insider-researchers know their own workplace and issues; thus there is no point forcing ideas, plans and priorities on them.

In Bradbury et al's (2010) Beyond Reflective Practice: New Approaches to Professional Lifelong Learning, a strong critique is made of some current practices. Beyond reflection advocates a critical reflexive practice that incorporates the social context of reflection—both its relevance to organisational learning and its practical educational use in group
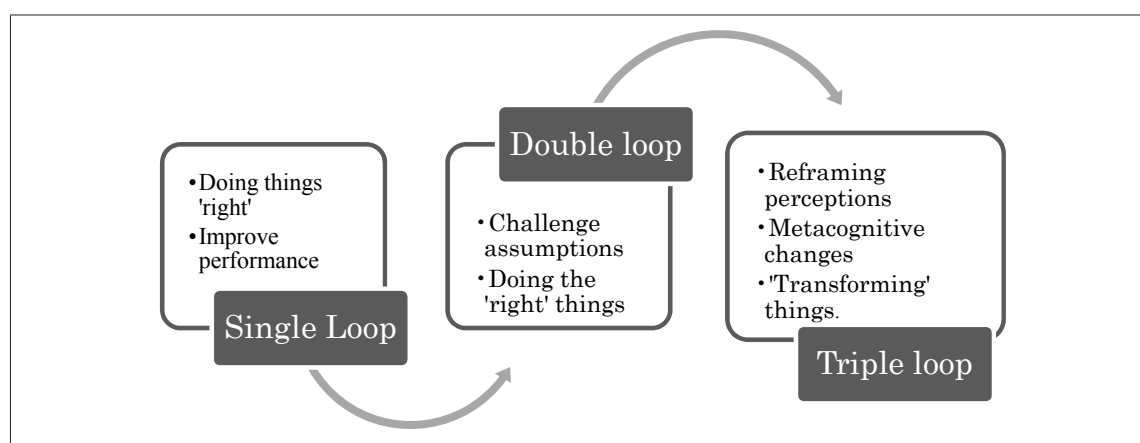
(Argyris, 1999; Flood and Rom, 1999: cited in Tosey, et al., 2012)

Figure 1: Triple loop learning and transformation within WBR

settings. There remains a lack of consensus about reflection and of theorising about it which is likely to affect the effectiveness of its application. Since reflection is now applied widely in WBL and WBR in some form, these are both important considerations for future work in the area. There are numerous methods by which insider-researchers may develop reflexivity and incorporate it into their research. Drake (2010) reveals her experience with doing workbased research and reflecting highlighting the role diaries and external perspectives play in stimulating reflexivity as a sort of "self-triangulation." Hellawell (2006) encourages his doctoral students to exercise reflexivity in their own research giving an example of how this may be accomplished through the writing of an extended methodology section of the thesis. In many reports of WBR this reflexive account of learning from doing is an element of the final report (for example Middlesex University DProf or MProf projects) to illustrate the journey of and breadth of impact on work, personal but also wider societal or professional domains. Furthermore in a report of WBL Impact (which can stretched to include WBR) the HEA (2008) indicated the reflective based approaches to learning were often mentioned by employees as critically important elements of the programmes which realised significant benefits at work.

Workbased Research-Impact and recognition

There is no doubt that work based research and researchers search for an approach to answer research questions that meet the needs of the organisation, themselves and the level of rigour required for recognition of the research by universities (Costley & Abukari, 2015). It is argued that it may not be possible to gain a precise measurement of the economic value of workbased research at postgraduate level however there is no doubt some of the projects are geared towards efficiency which has a financial implication (Costley & Abukari, 2015). Garnett et al (2008) draw upon knowledge management literature to argue that the key factors for such an evaluation of WBL, and by extension WBR should be the extent it focuses upon organisational objectives to ensure that the knowledge it develops has a performative (performance-like) edge. Such performative knowledge is likely to be expressed in terms of impact upon the systems, structures and procedures of the employer and thus contribute to what might be described as the structural capital of the organisation. This would be the primary focus of WBR partnership and would focus upon the roles within the partnership in knowledge recognition, creation, dissemination and use. Core to this process is the relationship between the researcher, employer and university. This is articulated in a variety of ways each to serve the specific needs of each 'partner' in a tripartite relationship. Thus organisations seek benefits to the organisation itself, whereas the researchers themselves may seek professional or personal fulfilment and development and the university a level of 'output' which reflects the desired academic level be it undergraduate, masters or doctoral level. Examples from real work based projects reflect this see examples previously published (Cunningham, 2017; Costley & Abukari, 2015).

The UK Economic and Social Research Council (ESRC, 2018, p. 1) states the impact of research is: 'the demonstrable contribution that excellent research makes to society and the economy'. This can involve academic impact, economic and societal impact or both (table1). This organisation principally funds research on economic and social issues supporting independent research which has an impact on business, the public sector and civil society. Increasingly the case studies published on their website point to a shift from the traditional academic focussed research towards more societal outcomes. In offering 'impact toolkits' the ESRC urges support at institutional level to locally define, plan for and discern impact generation. It offers suggestions for a range of impact types:

- Instrumental: influencing the development of policy, practice or service provision, shaping legislation, altering behaviour
- Conceptual: contributing to the understanding of policy issues, reframing debates
- Capacity building: through technical and personal skill development

All of which echoes WBR purposes and philosophy.

The Research Excellence Framework (REF) is the UK's system for assessing the excellence of research in higher education institutions. However, only focussing on higher education it is restrictive. It states: ' [impact is…] an effect

Table 1: Impact areas

Policy	Evidence base for decision making and resource management in health, education and social services. Influence those with power and control.
Societal	Addressing social challenges including issues of limited resources and sustainability, health, poverty, inequality and conflict in societies. Through international collaborations on climate change and fusion power, one could contribute to actions for a sustainable future (eg. Horizon 2020 pact)
Culture	Informing creative practice and contributes to activities in cultural institutions including national heritage sites and agencies, museums and galleries, theatres, media producers, libraries and archives—maybe not for healthcare but within WBR is an impact intention
Economic	Productivity, efficiency, resilience and sustainability—links to commercial value or best use of resources/interventions.
Environmental	Sustainability and resilience of our environment in a wide range of contexts eg. Disposable materials in wards/care environments
Community/Regional	As part of citizenship and wider influence—whatever initiatives may align eg. Equality for women, Pollution & Sustainability or just Innovation in practice—and sharing it widely to a national/international context.

on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia' (Research England, N.D).

The move towards the measurement of research impact globally has created ongoing tensions, for example, in relation to the UK's research measurement exercise (Wall, et al., 2017). The traditional academic routes to impact are principally publication, citations and conference representation. There are considered limiting particularly in that publication fits particular orthodoxies which do not challenge established methods or theories but merely report findings (*Ibid*). Evidence from the broad field of healthcare and medicine suggests that impact is "severely underestimated" in "applied" fields which may not be cited but which directly shape practice (van Eck, et al., 2013). These concerns are important in the context of workbased or applied research approaches, with their focus on applied, localised, and inter-disciplinary/trans-disciplinary nature (Costley, et al., 2010).

It is argued that much research is published however impact is not necessarily evident within this. This does point to the confusion which may be prevalent: the means to disseminate research and impact could be confused with the concept of impact alone (Jones & Kemp, 2016). However this could also be a flaw within those funding opportunities and metrics of quality such as 'measurement of output'.

The impact debate has largely focussed on the problems of the current system in prioritising publications and citations over other narratives of impact however Wall et al. (2017) highlight a more nuanced understanding of impact. These are 'pathways to impact', which include aspects such as the role of time in making sense of impact, discursive elements of research, the role of presence and non-action. This means:

- Discursive element: working with workplace respondents to explore their thoughts can trigger a deeper recognition of self and relationships to the environment, helping to determine future outcomes. Their role can shape behaviour with discussion extending to nuance mentoring and coaching-like interactions occurring within the research process.
- The role of presence: exerting influence through presence without discussion as in coaching approaches using non verbal means (which is arguably an action in itself). This can be a combination of power, influence but also Hawthorne effect.
- The role of time in making sense of impact: where an action may have limited effect over a finite time period but have resonance over a longer duration. This can be restricting for organisations who wish a return or 'evidence' of impact within shorter time frames.

It may also be argued the routes to impact are also complex and require careful consideration. Focussing on key questions of the what, how and who benefits from the research. This then involves an interplay with other partners: involving stakeholders (other workers, users, service personnel), engendering a sense of co-production, contextual leverage (i.e. government or local policy) identifying dissemination routes or mechanisms for exchange (reports, policy statements, guidance, debates etc) and implementing and evaluating outcomes for emphasising benefits to those who take this up.

Essentially it can be concluded that there appear to be a multiplicity of means to demonstrate impacts, in addition, these may change over different periods of time. This is particularly pertinent to work-applied settings with nuanced dynamics, power and organisational functioning. This links with the concept of reflective and reflexive practice to uncover and discern subtle types of impact. The nature of workbased research is such that is it is a complex and messy process without a linear answer to issues within and for practice. The levels of learning and change or transformational within a work situation then is fluid and by its nature not time limited. At higher levels of workbased learning or research (as in doctoral work) the complexities of 'border crossing' between academia and the workplace, for those who have studied a professional doctorate creates both connections and friction, constantly challenging values, professionalism and identity which is not restricted to professional fields (Burgess, et al., 2011; Hramiak, 2017).

Since WBR researchers are 'insiders' or 'experts' they have awarenesses of professional work situations and thus understanding of its intricacies and the local and wider political influences. Insider-researchers then are well placed to be influential in their own practice and can act as drivers or instigators for the issues that may impact as a result for example policy or structure of knowledge surrounding the work. Through drawing on processes for reflection, criticality and deepening their own and organisational learning they can effect impact. The impact however ought not be unplanned and whilst not easily defined is something that is key to address in the early stages which may pose problems for research approaches such as action research. As more nuanced aspects of impacts may result, the process for explanation and dialogue reflecting on these may ultimately raise conscious knowledge for organisational change—a core tenet of WBL and WBR.

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