Handbook of Research on Activating Middle Executives' Agency to Lead and Manage During Times of Crisis

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Chapter 15
Interdisciplinary Doctoral Education and Strategic Management in Crises:
Harnessing Agency With Praxis

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ABSTRACT

Interdisciplinary working within and between different professions is now commonplace, with the transferability of knowledge across situated contexts of implementation. Education at doctoral level can be one mechanism of ensuring that mid-career professionals are equipped with the skills needed to build the capacity and capability required to deal with crisis situations. Interdisciplinary professional doctoral pathways and their associated learning trajectories are now a recognised mechanism of operationalising translational research from the context of work-based praxis. The longstanding debates of how best to bridge the theory-practice nexus in the field of business remains a challenge, although the progressive development of professional doctorate programmes has seen a rise in the number of clinical and professional practice doctorates across Western educational providers. This theoretical chapter will provide an insight into the concept of translational research in the context of research-based practice/work-based praxis within organisations across the globe.

INTRODUCTION

Business in the context of the 21st Century knowledge economy is driven by the dynamics of policy, practice and the institutions and organisations which drive their capacity to function and develop professionally and in the context of applied research (Bogoviz, 2019). It is within these contexts that the emergence of

Professional Doctorate programmes, the Doctorate of Business Administration, in particular, which has forged a landscape of the need to address the professionalisation of knowledge, to acknowledge the agency that applied knowledge equips personnel with and how more traditional mechanisms of doctoral education are less suited to the application of theory to practice and more suited to theoretical emergence and academic contexts such as education (Cardoso et al, 2020). The gap between perceptions of usefulness and purposefulness of the two though, has narrowed in recent years (Aarnikoivu, 2021). The prospect of responding reflexively and adaptively to new events and key epiphanies such as crisis has ensured the visible and tangible impact of professional doctorate programmes in practice, reflecting a shift to greater respect for a different type of knowledge creation and replacing the contexts of validity and reliability in empirical research with those of trustworthiness and authenticity in applied praxis environments such as the workplace (Dirks and de Jong, 2021).The objectives of this chapter are fourfold in a) providing a theoretical basis for the facilitation of knowledge creation in work based settings and its translation into practice via optimal leadership b) Framing the translation of doctoral knowledge in crisis by mid-career professionals; c) The consideration of the complex ambiguity surrounding knowledge creation from a methodological perspective and d) Introducing transformative learning theory as a lens through which the need for cognitive, metacognitive and epistemic perspectives can be acknowledged and used to drive positive action in workplace crisis.

BACKGROUND

Reliance on transdisciplinary, interdisciplinary and the multiple perspective they bring to a civic society is also significant. In positioning the professional doctorate as a key indicator of change both situational and axiological in the latter parts of the 20th and early parts of the 21st Century, there ought also to be a consideration of how flexible these programmes are in equipping middle management to deal with the complex ambiguity of crisis scenarios, skills of reflexive responsiveness and the capacity to engage with reflection on key aspects of crises and how most importantly how lessons might best be learned for the future of industries and sectors where knowledge is the harness and staff are the key drivers of responsiveness in practice (Hancock, 2020). Alongside these contextual considerations, there is also the need to consider the situated nature in terms of the context and setting of the academic delivery of Professional Doctorate programmes in Continuing Professional Development practice (Karas et al, 2020). The vast array of professional doctorates now available to mid-career professionals in Western education, is demonstrative of the established need for professionals to move beyond just the context of advanced scholarship and knowledge acquisition that characterises doctoral programmes. In attuning educational delivery to needs led provision, rather than the creation of new knowledge for creation's sake, as is often the case in traditional PhD's, there has been a whole raft of debates on the concept of fitness for purpose in relation to 'real life' application in the world. One mechanism by which this has been evaluated is the way mid-career professional have influenced key aspects of economic generation, social change or influenced spheres of practice within or beyond their own disciplinary professional identities. Consequently, interdisciplinary professional doctorate programmes have afforded a generation of mid-career professionals the opportunity to challenge assumptions and key presuppositions which frame their current disciplinary and interdisciplinary praxis and to legitimise how their negotiation of complex ambiguity is credible and rooted in systematic and responsive change to the dynamic landscapes of research-based practice. Defining exactly what a knowledge economy is, is challenging for several

reasons, especially pertaining to doctoral level education. (Bolisani and Bratianu, 2018). Therefore, there are as many different versions as there are national and global economies. For the purposes of this chapter, however, the term knowledge economy will refer to an economy via which in the creation, harnessing and exploitation of knowledge is a significant indicator of consequent wealth, creativity, and innovation. Since the term now largely characterises most of organisational culture in the West, the term transcends the strategic and influences every aspect of operational practice in contemporary societies, with a new and focused culture on the accumulation of wealth and the expected norm of competition.

The impact of this definition on Higher Education over the last two decades is also reflective of the neoliberalist approaches to business organisational infrastructure and human capital which enables and facilitates them. The public are now an integral part of curriculum design and justification in the development of academic curricula in UK HEIs. This is undertaken by ensuring their representation at all stages of curriculum design, justification, and management. As a direct consequence of this the relevance of doctoral education and training has been hauled to account and has seen a shift in perception of professional doctorate candidates in comparison to their counterparts undertaking traditional Doctor of Philosophy programmes. This shift is reflective of the additional mechanisms of knowledge production and creation in praxis and their facilitation within the context of these programmes. The term 'real world' has also become a key differentiator between the type of knowledge creation when comparing the two doctoral pathway outcomes, with the work-based research focus of professional doctorates reflecting the shift away from theoretical hypothesising to interventional approaches within now more commonly executed research methodologies such as participatory action research, case study, theory of change, and ethnography. Within academic institutions delivering doctoral programmes the progression of knowledge-based economies has also driven the far clearer differentiation between academic impact and research impact. Alongside this the exponential increase in digital technologies have fuelled the progressive application of knowledge to practice and the necessary re-shaping and refining of workforce skills and development (de Araujo et al, 2021). Because of this, professional doctorates have become progressively intersectional, embracing, and incorporating interprofessional practice as an integral part of multi and interprofessional delivery mechanisms, where signature pedagogies and disciplines can be embraced at an epistemological level.

INTEGRATING ACADEMIC AND PROFESSIONAL PRACTICE

It has been argued that the intersectionality between academic disciplines and signature pedagogies in the creation and application of knowledge characterises its major strengths. A historical overview of the emergence of professional doctorate pathways provides an insight into how this has become operationalized in practice across disciplines which predominantly surround education, business, medicine, and allied healthcare alongside contemporary additions in engineering and computing. Stemming from the need to extend boundaries within and between professional disciplines and the emergence of more student, person, patient, and client centred approaches in the context of multi-disciplinary teamwork across all professions, accounts for the rise in popularity of programmes with a specific focus on knowledge creation and implementation in practice. At a macro level, onus on the requirement for needs led knowledge creation was introduced by governments whose work with educational agencies and employers had examined the concept of fitness to practice, upon completion of academic education and training programmes throughout Western education. Consequently, emphasis was placed on bridging the theory

practice gap and how academic institutions could directly contribute towards providing students with the skills to work in competitive, productive organisations, where knowledge translation into practice at the front line of international workforces could have tangible impact and evidence of contribution to changing 'real world' policy and practice.

TRANSFORMATIVE LEARNING IN CRISES LEADERSHIP

The concept of transformative learning as metatheory has direct relevance to time, context and culture, all of which are relevant and influence contribution to the knowledge at the front line of work-based praxis. All concepts of transformative learning can be aligned with the complex ambiguity of the workplace, since they begin with the recognition of disorienting dilemmas that characterise the 'real world'. Since being able to challenge presupposition and longstanding assumptions that are directly associated with having worked within the same professional context as a mid-career professional entails leads to the opportunity for a new perspective or reference frame, this also provides an opportunity to contemplate and negotiate the need for change. Reconciling meaning from lived experience enables new frames of reference to be established of direct relevance to multifaceted variables that frame human interaction, dialogue, and communication alongside additional complexities of the workplace. Within the context of a cycle of ongoing monitoring and evaluation, when applied this leads to the further identification of disorienting dilemmas and the opportunity to reframe multiple perspectives. In the context of acute times of crises where all these things can be temporally exacerbated and the speed of decision making is crucial to optimal outcomes, then transformative learning becomes a tool in the armory of professional leaders and managers.

In the clear delineation between the concept of transformation and transformative learning as a process it is critical introspection as part of reflective practice which can lead to profound change on both an individual and collective contribution to professional practice. Critical introspection engages both conscious and unconscious parts of the psyche and frames ontological positioning of worldview and consequent ways of knowing and making meaning of experience in practice-based settings. From the pedagogic perspective of teaching and facilitating generic skills of transformative learning, it is imperative that educators delineate between the perspective transformation described seminally by Mezirow and transformative learning as a metatheory, within which several different approaches can be subsumed. The contextual significance of education and training for mid-career professional often engages them in being proactive learners, via various teaching methodologies such as problem-based learning approaches, which are essentially transformative in that they permit the introduction of complex ambiguity and encourage higher order critical thinking and, consequently, incorporate higher order learning outcomes as part of discernment in processes of decision making.

Transformative learning as a metatheory provides educators with a lens through which they can view student learning and ascertain the need for both functional and emotional change. Central to this is the role of reflection which consequently develops into a capacity for critical reflexivity.

Transformative learning is desirable on several counts within the context of management and leadership in practice, particularly in relation to the domain specificity and conscientisation of education for applied practice. Learning that has the capacity to transform frames of reference and assumptions to make them more discriminating, open, reflexive and emotionally able to change. This offers a deeper structural or paradigmatic shift that alters capacity for negotiating the world and forever altering perceptions of it. In this sense it is important to consider the structural and agentic properties of teaching and learning as a process.

INTEGRATING REFLEXIVITY

How core concepts of performativity, transformative learning, and the potential to measure the impact of knowledge translation at the front line of person-centred care can all influence crisis management continues to be of particular significance throughout the Global Covid-19 Pandemic. The potential to educate staff capable of leading through the complex ambiguity and series of unknown outcomes that need to be negotiated in such circumstances is the central focus of how best crises can and ought to be managed in practice-based settings such as the workplace and across wider society. Indeed, it is this complex ambiguity of the world, which ensures work- based research undertaken inside professions by those with culturally and temporally marked identities of their own professionalism, ought always to be acknowledged in relation to the concepts of both truth and verisimilitude.

HISTORICAL PERSPECTIVES

The relatively expedited process of relationship building in the needs led knowledge base of the Nineteen Nineties ensured a lasting and dynamic change was imposed on institutional relationship development between stakeholders, academic institutions, and the need to equip personnel with the skills of systematic research were identified as paramount to definitions of success (Peters, 2020a). With prevailing politics and the consequent polemic change which occurred as a direct consequence, Neoliberalism prevailed across Higher Education where existing criticism of 'ivory tower' teaching, learning and research was highlighted and shunned. The PhD was posited as having little relevance to the 'real world' identification of gaps in research and the ability to bridge the theory-practice gap was high on the agenda for progressive change. Being able to critically evaluate the current and extant literature in the process of informed clinical decision making and deliberative policy analysis became a core skill in the armoury of all professionals and within contexts such as the UK National Health Service also served as a means of being able to prioritise resources, with the face of healthcare management being totally modernised so that management versus leadership came to the fore in terms of how progression, development and sustainability of the NHS might best be achieved. Of course, this has specific relevance to how the same culture can continue to be shaped in times of crises.

Emphasis focused on the new genesis of professionals who could actively recognise the need for different modes of learning and consequently gave credence to the ever-increasing number of curriculum designers who embraced the concept of stakeholder input in the initial justification of formal academic curricula at doctoral level. As a means of addressing the 'real-world' issues faced within the context of crisis this has ensured a very specific focus on the situational contexts of doctoral level learning, the need for critical reflexivity in relation to epistemic bias and cognition and a direct contribution to the emergent knowledge economy of the 21st Century. The liminal shift between what has historically constituted education versus training developed into widespread debate, with knowledge translation from academic learning to applied praxis, featuring heavily within it. Consequently, definitions of knowledge and in particular the knowledge underpinning applied practice at the front line of professions across society became a new agenda, at a point when traditional hierarchies of business were themselves being challenged in practice, as a means of ensuring that interprofessional working could be optimally delivered. Alongside optimal delivery, the polemic impact of these considerations also raised a whole array of accompanying political and feminist debates in relation to women in business environments and

professions across modern society. Whilst it is not the purpose of this chapter to explore this facet of the knowledge economy emergence, it remains an important legacy of the time and it is now that these issues are being addressed directly through equality, diversity, and inclusion initiatives across Western society.

STRATEGIC MANAGEMENT IN CRISIS

In terms of strategic management in crises situations and being reflective of the modern economic demands exacerbated by the COVID-19 Pandemic, the emergence of digital technology and technology enhanced learning has shaped the face of HEI educational delivery and commitment to progressive change. (Herbst et al, 2021). This has seen an accompanying series of investments in equipment which has served to further separate and create systemic inequalities in the knowledge production capacity and capability on a global level, making the gap between developing countries and their Western counterparts even wider. In congruence with this HEIs have taken advantage of this somewhat enforced paradigmatic shift in the creation of knowledge and in keeping with neoliberalist perspectives have designed, developed, and sustained a competitive stance in the process of developing and brokering knowledge across an array of crisis stricken Covid economies.

Empowerment Application for Crises in Action

See Table 1.

Table 1. Empowerment for crisis in action: doctoral learning pathways

	Doctoral Learning Pathways
Generic Skill Sets for Crisis Management	• Develops the ability to address complex management problems and to present advanced work-based solutions • Develops the ability to develop effective leadership capacity in the context of professional management fields • Ability to develop a critical perspective in fields of professional management practice
Situational Specificity and Contextual Relevance in Crisis Situations	• Ability to make ethically sound judgements within social, professional and legal frameworks • Ability to personally manage reflective practice within ethical and moral standards frameworks • Ability to frame decisions and make judgements in ways which recognise and respond to concerns for social and environmental sustainability • Negotiating complex ambiguity and navigating uncertainty • Implementation and management of responsive chage
Higher Level Learning Outcomes in Crisis	• Ability to apply knowledge and diagnose complex and paradoxical situations • Ability to address and solve problems using well developed skills, competencies, capabilities, and knowledge • Ability to formulate and communicate complex solutions in simple practical ways • Ability to address strategic and operational implications of proposed solutions
Bridging the Theory and Practice Nexus in Crisis	• Ability to select, analyse and synthesise data at an advanced conceptual level • Ability to establish new ideas. Build conceptual models, clarify understandings, and determine new arenas of thought of an intrinsically practical nature • Ability to demonstrate critical, imaginative, integrative, and analytical thinking
Communities of Practice and Collective Intersectionality in Crisis	• Ability to work efficiently and co-operatively as a member of a community of scholars to contribute to the growth of knowledge of others and to develop group learning skills • Ability to foster a learning environment that motivates research progress, stimulates thinking and helps to create new and responsive ideas
Critical Reflexivity and Challenging of Presupposition and Assumption in Crisis	• Conceptual frameworks to practice and research processes and to inform and develop enhanced 'deep' management knowledge • Ability to reflect on lived experience

The History of Knowledge Economies in Crisis Management

The relatively expedited process of relationship building in the needs led knowledge that came from the late nineties, had an impact on the overall dynamic between stakeholders, academic institutions, and the need to equip personnel with the skills of systematic research (Peters, 2020a). Amidst this polemic change and the emergence of a neoliberalist system of Higher Education, there had been longstanding criticism of the relevance of traditional, theoretical doctoral programmes such as the PhD, which bore little relevance to the bridging of the theory-practice nexus. Next, the emphasis on developing the concept of the 'researching professional' versus the 'professional researcher' was compounded in the context of the allied health professions as a legacy of the 1980's preliminary introduction of 'evidence-based practice', arguably the forefather of the rationale for all degree professionals across the sector. This need to be able to critically evaluate the current and extant literature in the process of informed clinical decision making and deliberative policy analysis became a core skill in the armoury of healthcare providers and was also arguably used as a means of rationing resources and eliminating the anecdotal evidence base of several allied health professions in the UK. As a direct consequence of these cultural changes Higher Education Institutions (HEIs) have responded with the provision of Continuing Professional Development (CPD) pathways, aimed specifically at mid-career professionals for whom knowledge and skills enhancement became the norm (Nancarrow and Borthwick, 2021). The new genesis of practitioners who could actively recognise the need for different modes of learning, gave credence to the ever-increasing number of curriculum designers who embraced the concept of stakeholder input in the initial justification of formal academic curricula at doctoral level (Singe et al, 2021). As a means of addressing the 'real-world' issues faced within the context of mid-career professionals this brought a specific focus to the situational contexts of doctoral level learning, the need for critical reflexivity in relation to epistemic bias and cognition and a direct contribution to the emergent knowledge economy. The liminal shift between what constituted education versus training became a widespread debate, with knowledge translation from academic learning to applied praxis, featuring heavily within it. As a consequence, definitions of knowledge and in particular the knowledge underpinning applied practice at the front line of patient centred care became a new agenda, at a point when traditional hierarchies of care were themselves being challenged in practice, as a means of ensuring that multi-disciplinary team approaches could be optimally delivered and the concept of 'patient centred care' became less tokenistic and as a consequence the need to move away from traditional pyramidal knowledge relationships within and between allied health professions and medical staff became apparent. Indeed, it was from this stage of knowledge economy emergence that allied health professions became titled as such instead of the old moniker, the professions allied to medicine, where the pyramidal organisational structures within which healthcare was delivered, largely determined the capacity of allied health professionals to have an input into clinical decision making or discussion when a member of medical staff was present. This raised a whole array of accompanying political and feminist debates in relation to female dominated professions such as nursing and allied health, versus medicine, which was then, largely male dominated. Whilst it is not the purpose of this chapter to explore this facet of the knowledge economy emergence, it remains an important legacy of the time and it is now that these issues are being addressed directly through equality, diversity and inclusion initiatives across both allied health and medical care professions.

The Credible Acquisition of Crisis Management Skills

In terms of strategic development and reflective of the modern economic demands exacerbated by the COVID-19 Pandemic, the emergence of digital technology and technology enhanced learning is shaping the educational delivery mechanisms of HEIs (Herbst et al, 2021). This has seen an accompanying series of investments in equipment which has served to further separate and create systemic inequalities in the knowledge production capacity and capability on a global level, making the gap between developing countries and their Western counterparts even wider. In congruence with this HEIs have taken advantage of this paradigmatic shift in the creation of knowledge and in keeping with neoliberalist perspectives have designed, developed, and sustained a competitive stance in the process of developing and brokering knowledge across an array of economies (Bielak et al, 2008). In relation to doctoral level learning, this has ensured that the specialised nature of doctoral learning pathways for the individuals partaking in them has impacted too, on the need to create communities of practice and a broadscale acknowledgement of learning 'in situ'. Historically, research undertaken about mid-career professionals was about elevating the status of the academic institutions from where the research came, rather than impacting on person centred care at the front line of healthcare (Pols, 2014). The changing perspectives and accompanying narratives surrounding doctoral level learning, have changed this dynamic and correspondingly doctorates have become a mechanism of equipping organisational learning, rather than paving a way out for the most academically capable and often the most clinically capable mid-career professionals (Thomas et al, 2014).

Knowledge Translation for Crisis Management

Recent adaptations to Higher Education doctoral provision now recognise the need to reframe a society's dominant methodological position in terms of their paradigmatic insufficiency and their potential for the breakdown of barriers. Seminal delineations of Mode 1 and Mode 2 knowledge still serves as a useful point of departure in terms of the distinction between theoretical and situated research (Rigolot et al, 2021). They posited that Mode 1 knowledge provided discipline specificity and explanatory methodological approaches which aimed to address the development of knowledge without specific stakeholder need – rather as an approach of doing research for research's sake. The alternative, Mode 2 knowledge, was context specific, designed specifically to solve a problem linked to the workplace and characterised by critical reflexivity and an awareness of the knowledge economy within which it is produced (Gibbons & Nowotny, 2001). This work served to underpin the whole basis of design for Western professional doctorate programmes in the latter part of the 20th Century and still pervades in the new emergent peri-pandemic world we currently exist within. It is more an issue of strategic relevance than resonance which pervades the academic debates surrounding which is 'better', a traditional PhD or a Prof Doc in practice. Contemporary lenses now frame the two as being equal but different and having an inherent degree of overlap, which before now was largely ignored or overlooked. This is usually linked to misconceived perceptions of relative quality of the two programmes with the Prof Doc often being denigrated as a poor runner up (Becton et al, 2020). This originally stemmed from the difficulty HEIs had in establishing the metric evaluation of systematised knowledge and the academic rigour underpinning it. The legitimacy of knowledge has also been contested in relation to situation and context with a longstanding tradition that knowledge had to emanate from universities to have any degree of credibility. Often though, the so termed knowledge produced in the 'ivory towers' of academic was not transferable into practice since

its legitimacy lacks the degree of authenticity and trustworthiness that can only be reconciled from purposive experiential evidence (Chapman, Colvin &., & Cosentino, 2020). Professional Doctorates and interdisciplinary professional doctorates have afforded the difference between purist knowledge and scholarship to be legitimised within the context of clinical and professional practice (Coates et al, 2020).

Performativity in Crisis

The term performativity has particular significance to the overall execution and delivery of Professional Doctorate education and how the programme is perceived, relative to its traditional counterpart, the Doctor of Philosophy. Performative research is that which integrates the need for address of issues in practice, with the process of undertaking that change as an integral part of the process (Aguilar & Gué-nette, 2021; Østern et al, 2021). It is here that the greatest potential confusion for professional doctorate candidates occurs, since the complex ambiguity of research context, research question or issue and the researcher are blurred by the lens of professional practice they are examined through. The integration of knowledge production and applied praxis also has implications for the concept of tacit knowledge, which is historically challenging to metrify or make tangible, yet has a profound impact on clinical mastery and the notion of proficiency in clinical and professional practice (Ding, Aoyama & Choi, 2020). Whilst traditional narratives highlighting this have been subsumed into the Neoliberalist knowledge economies of European and Western universities, there still remains a tension between how the quality and rigor of AHP professional doctorates, where knowledge is produced at the front line of person-centred care and integrated back into practice as a process, reflexively and often intuitively, rather than just as a posited emergent theoretical outcome (Peters, 2020b). Within this degree and level of performativity, the concept of transdisciplinarity also comes to the fore. It is here where so many aspects of disciplinary praxis merge into one at an epistemological level that the gradual silos of education and training are pragmatically redundant and the transcendence of disciplinarity ensures that knowledge produced in action, from all manner of academic signature pedagogies and academic disciplines becomes one at the centre of person-centred care (Hayes & Smith, 2020). The scope of the interdisciplinary doctorate acts as a catalyst for optimal and intuitive clinical decision making at the heart of patient centred care but is heavily reliant on the experiential learning of practitioners within their everyday role and the critical reflexivity they apply to these lived experiences, critical epiphanies and everyday interactions (Graff & Von Wehrden, 2021).

Responsive Disciplinarity in Crisis

It is institutionalised attitudes towards investigation and analysis that is modernist in nature. The inaccessible lexicon of the fields of disciplines and studies has ensured they have remained largely inaccessible to researcher with a broader perspective on positionality. Signature pedagogies and academic disciplines, rather than contexts of interprofessional working are often seen as the point of departure in doctoral education pathways (Shulman, 2005). The emphasis placed on interdisciplinary professional doctorate study focuses around research which contributes to a community of practice, is methodologically systematic and which is theoretically underpinned. In the context of the workplaces within which mid-career professionals work, it also affords doctoral candidates to move beyond reductionist approaches to binary answers or the testability of knowledge to the unpicking of the complex ambiguity with people, which is often a basis of contention. An embed-

ded part of this complex ambiguity is the disciplinary tradition that frames cultural contexts and practice and therefore can often overshadow the potential for epistemological congruence. Hayes and Smith (2020) highlighted the reconnection of academic disciplines and signature pedagogies at an epistemological level. This has implications for both clinical and professional practice within mid-career professionals since their practice has a fundamentally uniquely applied origin and consequently so do DProfs originating in this field. This contrasts with traditional PhD study and has become as source of contention for those stalwarts of PhD delivery for whom a clear operational definition of rigour is paramount within the context of practice (work-based) research initiatives. It is the values, attitudes, and behavioural responses that professionals of different disciplinary career trajectories project, which can unduly frame collective and individual professional identity. Whereas a contingent framework or lens through which professional practice can be regarded is important, the analysis of individual disciplines is something which has temporal resonance alongside cultural longevity. It is here that disciplinary expertise serves to delineate and provide liminal shifts within and between professional disciplines, but which also frames the challenges of interdisciplinary and multidisciplinary education. The notion of performativity is central to the capacity of being able to bridge disciplines via work-based praxis (Macfarlane, 2021). Alongside functional tasks, AHP candidates are also afforded the opportunity to use creativity as a bridge to innovation in patient centred care in providing solution focused responses to key areas of research in their respective disciplinary fields of healthcare. Moving away from the taught element of Professional Doctorate programmes through to the supervisory phase, necessitates educationalists moving away from operationalising practice as facilitators but move to the role of supervisor, which changes the dynamic of the learning relationship between doctoral candidate and educationalist to one of project manager and critical friend.

## TRANSLATIONAL RESEARCH IN THE WORKPLACE

Characterised by postmodernism facets of hermeneutics, deconstruction and social constructivist and constructionist perspectives now frame translational research. This enables epistemic standpoints or perspectives in the world of the workplace to be considered, whilst at the same time acknowledging epistemic bias and researcher positionality. Translational research in terms of operational definition, focuses on the way research findings can be applied to practice. It has a direct impact on the phases of research design and methodological approaches that are integrated into the process of implementation science (Lundgren-Resenterra & Kahn, 2019). The actual research-based innovations that emanate because of translational research, stem from the successful connectivity of these differing elements of the research process and ultimately, within the professionalism context, how these either directly or indirectly contribute to research for patient benefit. Usually within the context of professional settings, these are collaborative projects with an interdisciplinary focus, led by people from within the representative professions and managed formally via steering groups and committees who monitor the quality and progress of research funded by the public purse or charitable donations. As part of the process of inclusion and an ethos of patient centred care, there has been an increase in the incorporation of the 'patient voice' into the earliest stages of research design and methodology. This has been an attempt to ensure that beyond tokenism, patient experience and the critical reflexivity that occur because of being

a patient can be integrated into areas for illumination and responsive action. This has also been echoed across strategic curriculum development within HEIs where tripartite relationships in curriculum design and justification the processual norm are now. this is a clear and fundamental acknowledgement that alongside systematic scientific knowledge of processes in allied healthcare provision, that the experience of patients, too has a value in terms of need and focus of what people have lived through in their healthcare trajectories.

FRAMING HUMAN KNOWLEDGE IN CRISIS

The transdisciplinary reach of Professional Doctorate study crosses philosophy, social science, medical science, education, and includes and incorporates performativity, memory, language, imagination, emotion, intuition, reasoning, perception and experience. Aristotle, (350 BCE) posited, 'knowledge is an achievement that involves reaching the truth through cognitive ability', (Greco, 2020; Sosa, 2007). Defining knowledge beyond the context of abstract philosophy for applied praxis remains challenging, even. At a philosophical level, the nature of man's search for 'what is knowledge' is the epistemological debate has endured if human curiosity, from which all rationality for research emanates. The complexity of knowledge is one which transcends disciplinary perspectives, and which is contextualised within experiential learning and work-based praxis. Perspectives from the Chicago School of functionalism and instrumentalism on the logic and theory of knowledge was developed by the pragmatist philosopher and psychologist Dewey, whose work was at the time in complete contrast to traditional forms of understanding truth and knowledge. (Hook 2008). Within practice-based settings, the concept of epistemology and epistemic cognition is the basis upon which the disruptive transformative learning can best be implemented (Hayes & Smith, 2020). In challenging assumptions about the situated nature of work-based practice, this begins with the proposition of two questions, firstly, 'What is knowledge?' and secondly, 'What is it possible to know?' in the context of making meaning and sense making in the world. On an individualised basis and in the construction of areas for address via practice-based research, facilitation and discourse enable engagement with higher order thinking. This develops and facilitates skills of reflection and an accompanying capacity for reflexive practice (Frick, 2021). This then leads to recognition of and claim to a fundamentally unique contribution to the existing knowledge base.

Figure 1. Constructive Alignment in Epistemological Stance
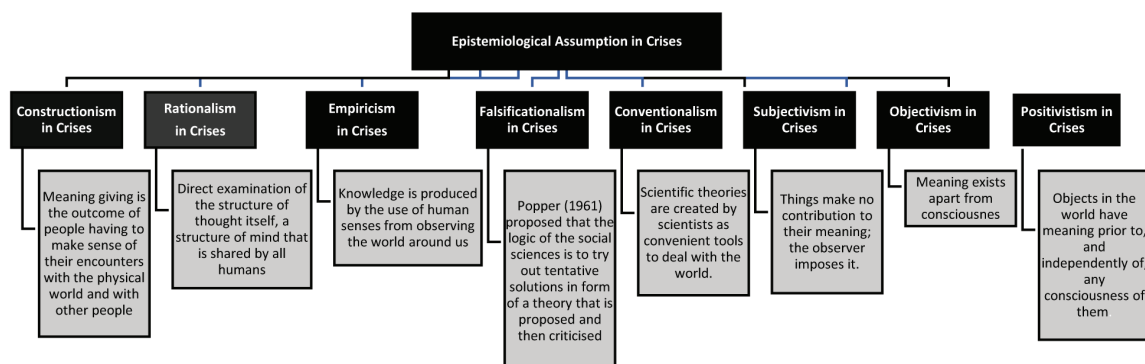
THE HISTORICAL INFLUENCES OF OPERATIONAL ANALYSIS

Operational research emanated from the military after the Second World War (WW2) as an outcome of the union of modernist scientific thinking and the ancient military arts. It was originally termed Operational Analysis – which was largely positivist in approach and theoretically justified via the need to make effective executive actions based on certified metric evidence. Operational Analysis then entered and merged into the civilian world and became the fundamental basis of management science, most of which is still largely recognisable as such. Originally rooted in mathematical conjecture the process of making meaning and understanding perceived and actual reality has progressed to the more postmodern perspectives and the paradigmatic sufficiency that interpretivism offers.

POSTMODERNISM AND REFLEXIVITY

It would be unfair to badge and label Operational Analysis purely under a quantitative banner since it also facilitated and enabled the application of unbiased reasoning and rational problem structuring to complement the wisdom and intuition of the military. Postmodernism as opposed to purist modernism is overly sensitive to the subtle ambiguities of a complex world and diffusion into the civilian community has been painfully slow. The notion of Researcher Positionality within work-based research transcends the aggregation of two distinct perspectives, the first of which is derived from insider knowledge and the perspectives of those at the front line of work-based research. Secondly the research may be driven or motivated by active response to policy, guidelines, or changes in practice. It is here that historically issues about the potential for generalisability are usually brought into question, when designing research that is taking place somewhere so contextually specific. What the postmodern turn permits, however, is the change to illuminative studies, whose focus is placed more on the potential of transferability of findings to other situations and contexts that are identifiable with the original in terms of these given situations and contexts. Cultures are shaped by human assumption, whereas formalised research agendas are rarely aligned to multi-agency motivations and preconceived notions of the need-to-know certain aspects of professional or clinical praxis (Reed et al, 2021). The sense of critical reflexivity underpinning the work in these contexts is rooted in the pragmatism of the need to undertake optimal professional practice in accordance with the expected norms of person-centred care and the raft of Professional and Statutory Regulatory Bodies governing them. The complex ambiguity that frames AHP practice, is shaped by capacity for active reflexivity and the challenge of everyday assumption, which in turn can lead to the unlocking of complexity laden solutions to practical work-based research questions. In positing mid-career professionals as researchers as opposed to clinicians, there lies another area of contention. The temporal nature of practice-based research means it provides a 'slice of time' illumination into the 'real world', however it does little to justify what improvement is and how it can be benchmarked and normalised from everyday norms. It is post-structuralism, which offers the opportunity to avoid rigidly systematising knowledge in the sense of reductionist approach and accompanying it with a degree of reflexivity, which sometimes serves merely to cheerlead a noble but subjective cause or axe grind against objective realities (Boud et al, 2021). It is here that it then becomes a possibility to reveal truth, rather than simply disseminate what people ought to believe about the world as it appears through the lens of the epistemically biased.

REFECTION AND REFLEXIVE PRAXIS

Understanding reflection (and the multitude of definitions appertaining to it) is a core threshold concept in transformative learning, many researching professionals have minimal experience of sustainable reflective practice, and in my experience do not place value on the process and the valuable impact of reflection. The starting point for this learning with mid-career professional students is them cognising introspection, how they reflect on their innermost thoughts' feelings and memories, sometimes characterised as informal reflection. Once this threshold concept is understood the disruptive facilitation moves along the continuum to more advanced forms of reflection, such as that of Schön's (1983) work linking reflection to the context of them as mid-career professionals in the workplace with 'reflection-in-action' and 'reflection-on-action'. Dewey's (1939) reflective thought, the bridge of meaning that connects one experience to the next, gives direction and impetus to growth, moving the learner from a disturbing state of perplexity (referred to as disequilibrium) to a harmonious state of settledness (equilibrium), this links to Piaget's (1977) theory of cognitive development discussed above. Rogers (2002) provided a contemporary interpretation on Dewey's phases of reflection in relation to the process of 'intellectualisation' or 'locating the problem'. Positing that this stage is of fundamental significance in facilitating the reflector's move from their impressionistic formulation of the problem to the articulation of an idea which can provide a sense of relief. This relief stems from the process of reflection and hence processes of sense making and meaning making beginning. Even so, this has been laid open to critique in relation to the complex ambiguity of terminology surrounding the two constructs, particularly the degree of insecurity that lies within the construction of reflection-in-action (Moon, 1999). More recently geopolitics and the stage of Neoliberalism have largely addressed some of these issues but Schön's work remains a vital threshold concept to enable the professional development of mid-career professionals from a diverse array of healthcare backgrounds (Rasi et al, 2014).

A Transformative Reflection and Reflexive Model proposed by Lawson et al (2014) was derived from Kolb's (1984) experiential learning cycle, itself founded on, (1) concrete experience; (2) reflective observations; (3) abstract conceptualisation; (4) active experimentation, and which forms a conceptual self-reflective process for use in the facilitation of transformative learning in professional practice. The process was designed to focus in on the reflection stage and extend it into a liminal space within which critical experiences can be critically reflected on from alternative perspectives. This provides greater insight and an increased understanding of the underlying assumptions held in relation to how sense and meaning from experience is made.

Mid-career professional students' cognisance of their uncritically acquired tacit knowledge performs an important role in the professional workplace, it is the instantly accessed often relied on repository of knowledge of others that is liable to be biased (discussed above) and self-confirming. Smith (2001) posits that tacit knowledge is created through two opposing processes, the first is routinisation, where explicit procedural knowledge is converted to tacit knowledge through repetition. The second is in Kolb's model of reflection, deriving explicit knowledge through reflection that would have otherwise remained in episodic memory to be used tacitly. Cognition of tacit knowledge is a key threshold concept in working with mid-career professional students engaged in disruptive transformative learning, it is the automatic innate ability for facilitators to draw on critically assimilated experience, Smith (2001), which suggests this is an unconscious skill. The disruptive pedagogical framework focusses on developing and elaborating this unconscious skill that mid-career professional students already possess, this is the same pool of untapped self-knowledge that the transformative coaching model elicits with mid-career professional

students. The 'reflective judgement model' posited by King and Kitchener (2004a) is applied within teaching and facilitation to support student's intellectual development through questioning their beliefs regarding the nature and certainty of knowledge, through leveraging their fluid intelligence. King and Kitchener's (2004a, 2004b) work on reflective judgement has extended the body of evidence in cognitive psychology, and the understanding of Mezirow's epistemic assumptions about knowledge and knowing, it is what they describe as '*complex reasoning*', King and Kitchener (2004b). Their reflective judgement model is grounded in the seminal work of John Dewey (1933), and the cognitive-development tradition from Piaget's (1965) schema theory, previously discussed above.

INTERDISCIPLINARY RELEVANCE TO TRANSFORMATION IN CRISIS

The integration of work in the brain, and its capacity for transformative impact, is largely dependent on bringing together the fields of psychology and neuropsychology. Operationally defining this is challenging, with an array of published literature framing this subtly but significantly differently—for example MacLean (1990) described anxious and curious brain states and Taylor and Marienau (2016) reflective and reflexive practice. Sims (2017), Etherington (2004), and Pollner (1991) underpinned the concept of reflective judgement, King and Kitchener (2004) critical self-reflection. Cattell (1963) posited meta-cognitive processes, performance, and self-monitoring whereas Stankov (2000, 2003; Stankov et al, 2006) provided key insights into curriculum justification and design. These can be clearly constructively aligned to the seminal work of Mezirow's on transformation through the 'ten phases of transformative learning' and epistemic questioning (Mezirow, 1990, 2000, Mezirow & Taylor, 2009).

It is during the intellectual processes of thinking about what is known, that critical judgement, Connolly (2000), can be identified as one of the mental processes used to decision make, this may involve thoughts and emotions, (either or both), depending on philosophical beliefs. This links to the work of Hogarth (1987) who offered a conceptual model of judgement occurring within a system composed of three elements: (1) the person; (2) the task and the environment; and (3) the action that results from the judgements and which can subsequently affect both the person and the task environment, and by definition this was normally the starting point for the persons learning journey as they were sitting in front of me having volunteered or been volunteered for an education program with me. The judgement occurs in the so-called task environment, the operations that lead to the judgement are acquisition of information with; the processing of information; and the output which feeds back into the schema and then the action, and outcome. The question of how equilibration, heuristics and bias can have an effect in operation the acquisition, is an important element, and may be the point at which transformation could occur.

In relation to the disciplinary context of teaching and learning, as Mezirow and Taylor (2009) indicate, this transformation can be epochal with a sudden and dramatic reorienting insight or incremental, involving a progressive series of transformations and related points of view that culminate in a transformation in habit of mind (Carvalho & Cardoso, 2020). This provides an explanatory basis to the process of acquisition, processing and outputs of decision making. Overall, this provides a foundational metaphorical platform for the application of Mezirow's theory in the support of critical reflective thinking and consequently change.

Mezirow challenged traditional established psychologists who regarded adult learning through the lens of predominantly behavioural or psychoanalytical perspectives and the whole notion of experientialism. Modern criticism of Mezirow posits that that his theory ought to incorporate far more social

context and be fundamentally aligned to the needs of the individual. Mezirow may have tacitly taken for granted that this was at the core of his purpose by referring to himself as a social action educator. This is also supported by his early life experiences as an adult educator, where his early fostering of democratic social action through community development and adult literacy programs in the USA and abroad in developing countries, became a core characteristic of his contribution to professional practice. Merriam and Brockett (2011) debated whether one must already be at a mature level of cognitive functioning to engage in any transformational learning process, which had not been questioned previously. As they posited, for transformational learning to occur, one must be able to critically reflect and engage in rational discourse; and both activities are characteristic of higher levels of cognitive functioning.

MEASURING IMPACT IN TRANSLATIONAL RESEARCH

The Doctoral Impact Translational Research Assessor Framework has been developed to support a tripartite evaluation of research impact with institutional adopters of research, academic institutions, and researchers. The framework focuses around eight key areas of research activity undertaken within the context of Professional Doctoral study, incorporating, and embedding core principles of equality, diversity and inclusion for all representative mid-career professionals and their professional members.

The eight areas of designated research activity focused on within the framework are:

1. Interdisciplinary leadership, governance, and accountability.
2. Membership and professional registration of the UK Health and Care Professions Council and their global equivalents.
3. Capacity for wider dissemination, capacity building and uptake of knowledge creation in multidisciplinary and interprofessional knowledge sharing.
4. Impact on processes, mechanisms and methodologies, initial education, training and teaching of mid-career professionals in professional and clinical practice.
5. External, peer reviewed recognition for contribution to professional or clinical practice attributable to the research contribution in work-based praxis.
6. Potential for accreditation of education and training, either as Continuing Professional Development or as an addition or enhancement to student learning at recognised AHP provider institutions.
7. Evidence of influence on AHP outreach and formal engagement initiatives.
8. Tangible Contribution to opportunities for employment, the career development, and trajectories of existing mid-career professionals and positive influence on the attraction, recruitment, and retention capability of future mid- career professionals.

The five accompanying levels of overarching good practice are:

- Level 1: Transfer and Adoption of Principles of Work Based Practice.
- Level 2: Development and Integration of Initiative into Work Based Practice.
- Level 3: Societal Engagement
- Level 4: Transformation Potential
- Level 5: Sustainability Potential

To complete the impact evaluation framework, those organisations where the research has been implemented in practice are asked to self-assess their ongoing progress across each of the eight designated categories on a straightforward Excel database. The range of self-assessment scores are an opportunity to grade the level of impact within the organisation from 0 – 10 where 0 is least impactful and 10 is of maximal impact. This makes it possible for all the outcomes from participating organisations and the mid-career professions represented to be combined in establishing shared perspectives or differences in experience of the implementation in practice (Laver-Fawcett & Cox,2021).

Appleby and Pilkington's (2014) conceptual framework is utilised with mid-career professional students to examine their own critical professionalism within their work environment, communities of professional practice, and identity. The disruptive pedagogical facilitation supports mid-career professional students to understand how their meaning perspectives, frames of reference and habits of mind are constructed and de-constructed, during the critical-reflection process.

CRITICAL PROFESSIONAL CONCEPTUAL FRAMEWORK

Appleby and Pilkington identified reflection as being one of the fundamental components of professional learning, drawing on the work of Dewey's (1938) sense making, and Habermas' (1974), insight into knowledge generation through reflection. They explicate the work of Brookfield (1985) who posited that professionals need to move 'beyond self-referential approaches' to reflection and widen their view to include the perspectives of others and the external environment. They make an important distinction in the role of a dialogic approach to reflection in communities a professional practice, where there is a role for 'the peer', 'the facilitator', 'the mentor', and 'the critical friend'. This aligns with my praxis and Mezirow's discourse, which links to the development of dialectical and critically reflective thinking. The facilitator and critical friend enable a critical approach to the co-construction of knowledge and understanding with the mid-career professional students. In praxis, mid-career professional students are challenged to recognise and examine the precursors of critical professionalism and demonstrate the required thinking and knowledge to demonstrate their own praxis. This is followed by them determining how they identify and then share their assumptions about their own critically professional behaviours. In the disruptive pedagogical facilitation, this framework aligns the theoretical concepts from the first four sections of this chapter an integrates them visually and verbally, illuminating to the mid-career professional students the challenges of perspective transformation when viewed through the lens of their professional behaviours. Critical self-awareness of a mid-career professional student's own cognitive performance and emotional intelligence can impact on their ability to engage in the affective aspect of perspective transformation and is a key threshold concept for mid-career professional students to engage with (Tyndall et al, 2021).

Practice-Based Research Action Research

One of the most popular methodological approaches rationalized by Professional Doctorate students is Action Research. The whole ethos of the approach is to make a functional and pragmatic difference to the challenges of work-based praxis, which can consequently be studied through the lens of experiential learning and the resultant outcomes of experience in practice. It has been posited as a liminal boundary between theory and practice in terms of its academic rigour.

Insider Research and Epistemic Positionality

Action Research, for most work-based practitioners affords them the chance to build and iteratively develop their practice, whilst still working at the front line of patient centred care in the mid-career professionals. This may pertain to the progressive development of their role or form a fundamental part of their progressive development. Action Research has been implemented in the context of social justice as a mechanism of addressing systemic inequalities in organisations and the agency they afford their employees, whether deliberately or subconsciously. The duality of Action Research as being a valuable source of organisational improvement and a mechanism of ensuring that the concept of epistemic positionality is not of detriment to the research process but acknowledged as an embedded part of it. The overall sense of operational analysis and address that action research facilitates is one of the factors which provides a means of acknowledging and addressing power imbalances both on a personal and a professional level.

Complexity Theory in Translational Action Research

Pluralist stances towards situated methodological development are actively encouraged. Organisations currently are encouraged to wholly reject the long held prevailing paradigm of mechanistic efficiency driven hierarchical command and control organisations. It also ought to be noted that recent philosophy defines the natural world as being definitively different to the social world. Consequently, complexity theories were designed to fit the natural world rather than the social world although language and discourse have triggered)0relevant insights into the behaviour of the social world (Brister, Frodeman, & Briggle, 2020). We are far less complex than the complexity of the universe and therefore can only ever view or experience reality through categorical man-made frameworks that allow us to make sense and meaning of the world humanity occupies and experiences. Complexity theories do see boundaries that divide the hard from the soft and the natural from the social in terms of what they really are – artificial and arbitrary.

Complexity based thinking is not a one size fix all and the importance of question led research rather than methods driven approaches remain paramount if research is to remain authentic and trustworthy in the context of the workplace – nor does it denigrate the perspectives of empirical methodologies, which ought to be characterised by validity and reliability.

What the professional doctorate offers allied health professionals is the opportunity to undertake and develop context-specific challenges to core questions of issue from their practice and the overlapping disciplinary contexts of their colleagues from interprofessional working and multidisciplinary teamwork.

Complexity theory is one lens through which the emergence of the knowledge economy within the context of mid-career professionals can be regarded. Both intrinsic and extrinsic factors impinging on the effectiveness of organisational hierarchies to share common goals within patient centred care can be examined in terms of their parameters and scope of individual professional and clinical practice. By definition the organisations within AHP practice is undertaken are subject to the need for complicated adaptation in unpredictable and ambiguous contexts. The interrelationships of professional working within healthcare settings necessitate that each individual clinical discipline and hence collective rather than individual professional identity of each worker, is such that it can be largely self-organised and responsive to need as and when required in person centred care (Mavri, Ioannou & Loizides, 2021).

Within the context of practice based doctoral research, there is a need to consider models of research utilisation and their overlapping relationship with complex ambiguity in professional practice. Translational research is an operational necessity to achieve a substantive level of impact with research interventions or investigations which have occurred, often at a local level. There are fundamental challenges and barriers to the effective identification and introduction of evaluative frameworks which can evaluate the effectiveness or impact of translational research in practice-based settings.

An integrative framework capturing the effective implementation and translation of research into practice for allied healthcare professional doctorate candidates can be achieved by the adaptation of the Ottowa Model of Research Utilisation (OMRU). The model affords context specific adaptation and recognition of the situated nature of practice-based research. This specifically adapted doctoral knowledge translation model also ensures that processes of knowledge translation can be actively guided so that evidence from the extant literature can become an embedded part of the process alongside the acknowledgement, consolidation or refuting of the potential for implementation of research findings evaluated to date. The following suggested framework makes two additions to the six current recommended outcomes of the formal OMRU framework. These have been added to accommodate the individualised situational specificity and signature disciplines or pedagogies of professional identities represented in the context of workplace professional practice (Shulman, 2005).

FUTURE RESEARCH DIRECTIONS

Some of the barriers outlined across this chapter may be common across all contexts doctoral study. Unlike empirically based research, work-based research is situated in the complex ambiguity of non- controlled environments where the unpredictability of unfolding events in cultures, contexts and is subject to political turbulence and change at macro, meso and micro levels. This can correspondingly impact on the processes of research, design, iterative developmental progression, implementation and consequently the outcomes of research and its impact in practice. Whereas practice-based research is stringently methodologically designed, it cannot be framed on the premises of linear causation, eliminate epistemic bias or function purely in a reductionist sense. In this respect this provides an ideal insight into potential future areas of research, which seek to address dynamic elements of crisis management. Attributing causality is therefore not something that falls within the remit of professional doctorate research in the context of education since the complexity and multifaceted basis of embedded research issues are such that they cannot be split into causal variables, since they are so interdependent and meaning making would be lost in an attempt to extract and singularly study or account for them.

As the systematic framework (Table 1: The Crisis Management Complexity Framework - Transformative Dimensions & Characteristics) emphasises translation of knowledge to academic and clinical communities within the context of client centred care, it has been straightforwardly titled 'The Crisis Management Framework', since implementation is largely dependent on the collation of complex ambiguity, multi levels of causation, and characterised by spontaneous change. The framework emphasises an incremental, capacity building approach which integrates numerous qualitative and mixed methods approaches in the context of mid-career professional research (Berreta, 2021).

CONCLUSION

Mid-career professional doctorate research is often characterised by a strong emphasis on participatory access and engagement with multiple stakeholders, with whom the candidate often works in the context of their mid-career professional practice (Armsby, Costley, & Weller, 2021). The broad capacity that this context provides for progressive evaluation and feedback, makes it an ideal means of achieving strategic and operational practice. Workplace environments are often influenced by local, regional, and national politics at macro, meso and micro levels where polemic and cultural impacts are most tangible in practice. Tailoring evidence-based practice alongside the demographic profiling of the area is central to participatory implementation across local, regional and national workforce providers (Kelly et al, 2021). This facilitates organisational capability and capacity building as a central by-product and the development of a contextualised, authentic, and trustworthy evidence base. In a world where the only constant is change, doctoral education provides a means of addressing the need for dynamic responsiveness that the COVID-19 pandemic has exacerbated and highlighted a strategic need for.

Table 2. The crisis management complexity framework - transformative dimensions and characteristics

Transformative Dimensions	Characteristics
Adopter, Public and Private Stakeholder Dimensions	These complementary dimensions incorporate those organisations and organisational staff, i.e., the human capital, who will adopt and implement research-based practice at the front line of societal and civic contribution.
Adoption Related Dimensions	These dimensions frame the potential use and transferability of research-based practice and practice-based research 'in situ' and the modifications that may need to be made as a consequence, which in turn may impact on both the intended and unintended integration of research.
Contextual, Ergonomic, Ecological and Environmental Dimensions	These dimensions actively incorporate core facets of societal service provision, including the impact of structure and agency within organisational environments where transformative knowledge can be translated into practice.
Implementation Dimensions	Linking directly to the process of implementation, these dimensions account for mechanisms of operational knowledge transfer, which can ensure transformative knowledge from research-based practice can be effectively implemented beyond the point of theorising.
Situationally Specific Dimensions	These extends beyond context and environmental dimensions to the individual and context based individual experiences of the workers involved. These are impacted upon by the level of assumption and epistemic bias with which people operate and frame transformational knowledge in practice.
Signature Disciplinary Identity Dimensions	Linking to Shulman's (2005) seminal recognition of signature pedagogies and disciplinary boundaries, this dimension considers the active delineation of collective and individual professional identities.
Research Implementation or Intervention Dimensions	This set of dimensions links directly to the nature and design of the research intervention and implementation process. Functional by design, this dimension incorporates quality management, functional operationalisation of the research project and the mechanisms and impact of engagement this has with the rest of the organisational dimensions (Reynolds, 2021).
Outcome Related Dimensions	In terms of an outcomes-based approach to the integration and translation of transformation in practice, outcome related dimensions are aligned with those resulting directly from implementation of the research project intervention or implementation process (Sin, Soares & Tavares, 2020).

In considering the challenges faced by HEIs across the globe in providing doctoral research pathways that are both fit for purpose, and which address the longstanding capacity for the knowledge they generate to be applied at the forefront of crisis, lack of capacity to evaluate impact has been a distinct issue. This chapter has considered the various factors impacting on these processes and made some preliminary suggestions as to how both transformative learning and impact evaluation might be managed and implemented in practice. Interdisciplinary learning opportunities extend both the pragmatic and academic reach of mid-career professionals within clinical and professional praxis, building further their capacity and capability and their perception as credible and dependable researchers, 'in situ'. The chapter has emphasised the challenges of working in cultures and contexts with longstanding issues stemming largely from misplaced assumption and pre-supposition, which when aligned with the published extant evidence based shows the liminal tension between theory, praxis and illuminates the potential to address anecdotal experience and to provide a degree of credibility for a systematic and analytical insight. Optimal crisis responses and their consequent outcomes are undoubtedly dependent upon it.

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KEY TERMS AND DEFINITIONS

Action Research: Also, often, and interchangeably termed Participatory Action Research (PAR), co-operative enquiry and action learning is a research approach focused on the systematic improvement and positive change of the structure and agency afforded to people within context specific settings.

Disruptive Innovation: Refers to the innovation that transforms previously inaccessible products and ensures their availability to wider more generalised populations.

Impact: Something that has a marked effect or influence.

Knowledge Transfer: Is a diverse range of activities used in the support of mutually beneficial collaborations within and between universities, businesses, and the public sector for the civic benefit of society.

Performativity: A philosophical means of describing the power of language to effect change in the world.

Transformative Learning: A process of individually or collectively changing perspectives, which has three distinguishable dimensions of psychological response, convictional attitude, and behavioural change.