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Applied Practice:
Theoretical and Pedagogical
Foundations

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& Lisa Helmling**

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By Jay Hays and Lisa Helmling

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Abstract

Applied Practice is an overarching term embracing a wide range of pedagogies that employ one or more forms of work experience for learning, including cooperative education (or co-op), professional practice, internships and apprenticeships, service learning, and many versions of Work-Integrated Learning (WIL). As used here, Applied Practice encompasses the theories, principles, approaches and programs that govern and inform the development of professional practices and practitioners across disciplines, and, in so doing, build individual, organisational, and community capacity to sustainably transform.

As this monograph reveals, Applied Practice is a defensible means for building capabilities and dispositions demanded by the complex, global world of the twenty-first century. It achieves this by narrowing the theory–practice divide for which higher education has long been criticised. Narrowing of this gap is made possible by more fully integrating theory and practice, attained through pedagogies that mutually exploit the learning and experiences in academic study and practical work experience.

Applied Practice and the various affiliated work experience for learning and Work-Integrated Learning programs are under-theorised and remain under-researched. Herein, the authors draw on a wide range of studies and scholarly literature, and attempt to bring together what can be ascertained with respect to applicable theory and pedagogy. The result of this synthesis is a four-pillar model, each of the four pillars representing a substantial theory stream and important foundation of Applied Practice: Adult Learning Theory (ALT), Experiential Learning Theory (ELT), Transformational Learning Theory (TLT), and Workplace Learning Theory (WLT).

Knowing is always becoming and is a permanent state of discovery.[1]

If practice learning has been misunderstood previously as 'doing a placement' it can be no longer.[2]

Introduction

Higher Education has been criticised for producing graduates who are not work-ready (D'Abate et al., 2009; Hays, 2013b). Curricula have been assessed as irrelevant and archaic, disadvantaging students and failing to meet the needs of the global marketplace (Carson & Fisher, 2006; Cunningham, 1999; Hays, 2015a; Lynch, 1999). There appears to be an increasing gap between the conventional and insular academic teaching and learning environment and the realities of the dynamic, complex world into which students are thrown upon graduation (Burns, 2002; Carson & Fisher, 2006; Cunningham, 1999; Dumas, 2002; Hays, 2013b; Madsen & Turnbull, 2006; Marsick, 1998; Schwandt, 2005). This is referred to as the theory–practice divide: a persistent gap between academic studies and the work students will be called upon to do when they graduate. Kumar (2006) speaks of "the chasm between theory and practice" (p. 247). As early as 25 years ago, Brown and Duguid (1991) criticised classroom teaching and training for their separation of learning and working, and advocated "learning-in-working". This strong critique of the typical delivery of higher education underlies justification to advance innovative education strategies.

One strategy that has gained considerable currency is Applied Practice. Applied Practice is an overarching term that embraces a wide range of pedagogies that employ one or more forms of work experience for learning. While there may be some disagreement as to what is within or outside the scope of Applied Practice, typical approaches include cooperative education (or co-op), professional practice, internships and apprenticeships, service learning, and many versions of Work-Integrated Learning (Ferns et al., 2014). These sometimes go by titles such as Work-Based Learning (WBL) or Industry Engaged Learning (IEL), as have been discussed in Clements and Hays (2012) and elsewhere.

The proliferation of Work-Integrated Learning and other forms of work experience for learning programs makes a lot of sense, as it appears to be commonly assumed that these complement academic studies and may more practically prepare students for the workaday world they will confront upon graduation (Poortman et al., 2011). Affiliated with institutions of higher education in North America, the Asia Pacific region and the Middle East, the authors have first-hand experience with a variety of such programs. At one campus, in particular, the entire curriculum of undergraduate and post-graduate studies has been restructured. In theory, every course incorporates Applied Practice elements, and degrees have been relabelled to reflect the transformation.

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1   Yielder (2004, p. 65), drawing on Freire.
2   Nixon and Murr (2006, p. 799).

No doubt such programs contribute to maturation, skill development, and other attributes of work readiness, as has been convincingly portrayed in the literature (see, indicatively, Dressler & Keeling, 2011; Jackson, 2013; Trede, 2012). However, the authors of this monograph will argue that, while of substantial practical value and serving to complement academic studies, such programs do not, in and of themselves, bridge the theory–practice gap and ensure students are gaining the most from their studies.

Despite the common-sense appeal of work experience for learning programs, they often develop or are delivered with tenuous theoretical grounding. In a grave paradox, it seems that in pursuit of strategies to make tertiary study[3] more practical, we have dismissed criteria on which academic study and research so rely – theory, principle, critique and evidence. The authors will no doubt be soundly admonished and, hopefully, proven wrong; but, for the purposes of this monograph, we begin with a provocative assertion: the theory, philosophy and pedagogy of Applied Practice models are inconsistent, contestable, elusive, and hinged on assumption and opinion. There are a number of factors that contribute to this, some introduced in this monograph.

Having stated our position, we must acknowledge that theorising and empirical research into learning for work programs is burgeoning. Collectively, around the globe, we have made substantial progress, as evidenced by publications such as Coll and Zegwaard's (2011) *International Handbook for Cooperative and Work-Integrated Education: International Perspectives on Theory, Research, and Practice.* Gains notwithstanding, there remains a need for strengthening the theory and research foundations of work experience for learning programs. This will be increasingly important as more institutions undertake to develop related programs.

One example of this is Auckland, New Zealand's Unitec Institute of Technology, which is in the process of revising existing postgraduate qualifications and developing new ones under its Applied Practice banner. In this framework, all students will undertake industry or community projects related to their course of study. These projects must contribute in a tangible way to improvements in the individual's practice, presumably in turn bettering some aspect of organisational functioning or community flourishing. A masters thesis, for example, will no longer be a research masters of solely academic interest, but a practical project bearing on and likely engaging community stakeholders. Optimising the shared learning and other value of these projects will present great opportunities for applied research.

To stimulate much-needed research and strengthening of the theoretical and pedagogical foundations of work experience for learning programs, we present a model we developed having widely explored relevant literature (see Figure 1). This was important to us as we have both worked in areas where students are placed in or otherwise engaged with organisations and communities where they are meant to apply theory learned in the classroom in practical contexts and develop professional capabilities, dispositions and identities.

Too often we have seen an unnecessary and awkward disconnect between the two environments; one that undermines the potential learning and other advantages such arrangements might confer. Whether or not, and how, this disconnect is resolved could bear significantly on the learning of all involved and on the viability of the program.

Our literature review enabled us to synthesise four major theoretical streams for Work-Integrated Learning and related programs. We envisaged these four streams as foundations or pillars upon which work experience

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3   The authors use various terms interchangeably in this monograph – higher education, university, tertiary, college – to represent the level of study with which we are most concerned. Our context for Applied Practice (while not excluding high schools and vocational-technical schools) is primarily post-secondary and career-preparation study. While many distinctions might apply, we do not differentiate here amongst institutions or programs. It may be true, for example, that research-intensive universities have their elite focus, but most of our points apply (at least potentially) in that context as well.

for learning and, ultimately, Applied Practice solidly rest. Note that Figure 1 depicts four pillars upon a base of academic study, supporting a roof of practical learning. The space between base and roof signifies the theory–practice divide alluded to earlier. The pillars are intended to serve to narrow the gap by providing defensible strategies for integrating theory and practice. You will also note that the pillars are surrounded or connected by a golden chain, symbolising reflection, which accounts for a linking and leveraging of the four theory streams, or pillars.

The bulk of this monograph explains the four pillars, their interrelationship, and how they work synergetically with reflection. We begin with a description of Applied Practice. This is followed by explanation and positioning of important concepts such as context, transfer, deep learning, learning through participation, and the counterintuitive nature of learning from experience. We note that Work-Integrated Learning and associated models represent practice in search of theory. To assist practitioners in building or revising programs, we provide a set of guiding principles. Finally, we conclude that Applied Practice is an essential complement to academic study, and may be further integrated into tertiary curricula. However, programs can be strengthened by greater adoption of established teaching and learning theory, and opportunities for additional research are outlined.

Applied Practice

For a variety of reasons, classroom-taught education is quickly becoming a thing of the past (Altbach et al., 2009; Cranmer, 2006). Such conventional education can often be one-way instruction, sometimes referred to as 'teacher-centred' or teacher-directed learning (O'Shea, 2003; Sparrow et al., 2000). No matter how much students study and learn facts, concepts, principles and theories, they cannot necessarily transfer or apply these to real-world problems (Hager & Hodkinson, 2009). And it is our observation that, whilst perhaps instilling important discipline, such a focus on academics may actually mislead students (and their parents) into believing they are adequately prepared for professional roles in industry and the community,[4] and, possibly, undermine their performance once there. Success in studies is not the same as success in practical and professional endeavours. Applied Practice supports students to transform their theoretical knowledge from within an academic environment and apply it through engagement with real-world problems in real-world settings (Hays, 2015).

Apply *and* practice. The concept of Applied Practice merges two terms that are very similar in meaning and, yet, when combined imply something more profound than merely "apply" or "practice". Clearly, the intent of the title Applied Practice in the educational context means to apply or *put into practice* theory, principles, concepts, tools, processes – in general, the knowledge and skill learnt in the academic environment – in real-world settings.[5] This is not to say that real-world settings cannot be on campuses or affiliated with educational institutions. Clinics, labs, working farms, and other production facilities can all be classed as providing authentic work and authentic learning if such operations employ the tools of the trade and its craft knowledge, serve genuine customers, and, as with any real-world endeavour, present some measure of risk and uncertainty (Oblinger, 2007). Richer settings would demand of learners (and build) adaptability, resourcefulness, initiative, autonomy, responsibility, teamwork, and other meta-abilities (Gulikers et al., 2005; Hays, 2015; Meldrum & Atkinson, 1998) and dispositions, including but not limited to communications, leadership, professionalism and ethics.

Breaking the term Applied Practice down even further: *Apply* has connotations of being relevant, appropriate, and applicable; more directly, to bring to bear, draw on, and put into play, effect, practice, operation, service or action. *Applied* embodies such terms and meanings as practical, functional, useful, helpful, constructive, effective, purposeful, sensible and realistic – generally "of use".

Practice has two distinct, important, relevant, and related meanings. In the action sense, practice means exercise, preparation, training and development. Here, the grounding, foundations and basis for a trade, occupation or profession; and, more generally, to equip learners for a meaningful lifetime of fulfilment of civic duty and contribution to community or society. Practice is also the site where one's occupation is conducted along with all the skills, knowledge, and ways of being and acting embodying that occupation – professional practice – as described below.

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4   We explain and contextualise the terms "professional" and "professional practice" just below, but note that we use the term professional not in the *profession* sense (doctor, lawyer, engineer), but in the *being* sense, in that anyone can be professional in their ethical and responsible conduct, irrespective of profession or occupation. There are admittedly problems with our definition and stance, but we contend that a mandate of institutions of higher education is to build professionalism. We further contend that professionalism will be evidenced in the level of an individual's engagement and service in community and civic affairs. As such, Applied Practice, in our view, is most complete and moral when it equips not only those destined for professions but prepares all students for professional lives.

5   The authors wish to acknowledge that these ideas are not entirely new. While the title Applied Practice may be contemporary, it embodies and enacts principles deriving from a rich educational and philosophical heritage. In particular, we recognise the work of Paolo Freire (1970) (see, also, Hyslop-Margison and Naseem, 2007, and Yielder, 2004) and his notions of praxis. We do no expound on the term, but readers might appreciate the linkages to scholars who have previously articulated purposes and strategies for putting into practice – the "doing" – of what is learned, particularly in service of bettering society, and, elsewhere herein, the importance of critical thinking and reflecting.

Professional practice. Educational institutions are responsible for preparing graduates for productive roles in society. Work experience for learning programs enhance such readiness (Milley & Kovinthan, 2014). Professional practice encompasses concepts that embody (in theory) the entirety of a given discipline, vocation, occupation or career. It also includes the site/location and unit/organisation where these roles and functions are carried out, such as clinics, studios and shopfronts. In this sense, professional practice is the nature of the work *and* the context in which work is performed (Daley, 2002). This includes the people involved and the culture. A profession or discipline will have its general culture at a macro level, say, medicine, and every individual practice group, such as a community general practice, will have its own distinctive culture. Professional practice cultures entail standards, customs, routines, conventions, norms, systems, tools, rules and regulations. They will have a shared language and, not discounting the presence and value of diversity and heterogeneity, will have similar ways of understanding and relating to the world (Bloor & Dawson, 1994; Lombardi, 2007).

Exposure to and cultivation within these worlds of application and practice are what Applied Practice is all about. While preparation *for* professional careers is also an apposite objective, educating for and about a given career field must not be limited to learning in the abstract. In locating aspiring professionals in authentic workplace settings, Applied Practice provides a critical supplement to academic study. As will be stressed, however, work outside the academic environment, per se, does not necessarily lead to enriching or relevant learning experiences. Learning can and should be enhanced by tight coupling between educational programs and placements in industry, community and field.

Ultimately, Applied Practice is designed to equip learners with the capabilities, dispositions, focus, direction and strategy for making a positive contribution to their community or place of work or practice area. It strives to achieve this through tailored education programs that blend instruction, projects, and advisement in real-world work in jobs or roles students already have (or in career fields students aspire to upon graduation). These programs have some or all of the characteristics and principles listed in Table 1, as distilled from the authors' first-hand experience, observation, dialogue with practitioners, and the extant literature.

General Characteristics of Applied Practice
Practical learning experiences in a real-world context structured to exercise skills and knowledge acquired through formal study and to provide learning complementary to that possible in the classroom.
Tailored instruction and coaching to support and guide the work the student is doing in his or her industry or community role.
Levels of supervision sufficient to make the most of the practical learning experience, including helping the student make connections and find the relevance between what is learned in the classroom and what is done while on placement.
Active engagement in a variety of authentic problems, tasks, and with people, organisations/sites relevant to the student's major/course of study and career aspirations. Increasing levels of responsibility and autonomy.
Placement focus is on student learning and development. Performance feedback is formative, helping the student to identify and overcome impediments to learning and greater performance effectiveness.
Formalised and effective partnership amongst host organisation (especially supervisors), student, teaching faculty, academic supervisors/mentors, and program administrators.

Table 1. Key features of Applied Practice work-experience learning programs.

Applied Practice programs may have objectives and requirements that exceed those general characteristics, or that emphasise other aspects. An example might be a service-learning program that stresses social justice, empowerment or citizenship, and intentionally tries to promote the development of a service ethic in students.

Despite program preferences, requirements and local differences, one would hope that Applied Practice proponents agree in principle that the focus of placements and other guided experiences in industry and the community is student learning, and preparation for career and professional life.

Introduction to the Applied Practice Model

Applied Practice is an umbrella term embracing programs that integrate formal study and its application in real-world settings. Applied Practice transforms learning gained through engagement with theory in the academic environment and engagement with experience through contributing in real-world professional settings.

Pedagogical program examples under the Applied Practice Model include, but are not limited to, Cooperative Education (co-op), Work-Integrated Learning (WIL), Work-Based Learning, Professional Practice, Industry Placement, service learning and clinical practicums. Problem-Based Learning and Project-Based Learning (both referred to as PBL) would be considered Applied Practice when and if they occur at work sites, with or for genuine clients or members of the community with a stake in the problem and its resolution. Students, in each program example, will be using tools, processes and theory relevant to their designated field (or, in some cases, more global aspirations such as service and citizenship, or generic skills such as leadership and teamwork).

Four key learning theories contribute to the Applied Practice Model: adult learning theory, or andragogy;[6] experiential learning theory; transformative, or transformational, learning theory and workplace learning theory. These are abbreviated as ALT, ELT, TLT, and WLT, respectively, at various points in this monograph. Together, these theories are envisaged as the pillars of Applied Practice (see Figure 1); together they bridge theory and practice, integrating, complementing and supporting each other to provide imposing foundations for both theory and practice.
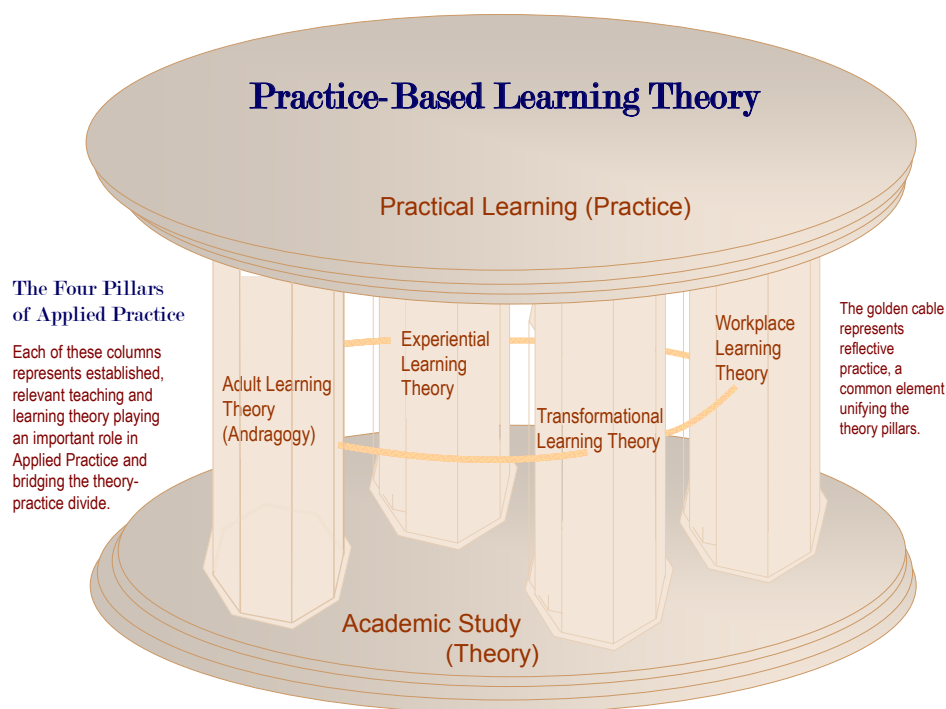
Figure 1. The Applied Practice Model, showing the four theory pillars and reflective practice as the unifying linkage.

Text within the figure:

Practice-Based Learning Theory

Practical Learning (Practice)

The Four Pillars of Applied Practice

Each of these columns represents established, relevant teaching and learning theory playing an important role in Applied Practice and bridging the theory-practice divide.

Adult Learning Theory (Andragogy)

Experiential Learning Theory

Transformational Learning Theory

Workplace Learning Theory

The golden cable represents reflective practice, a common element unifying the theory pillars.

Academic Study (Theory)

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6   See Merriam (2001) for an introduction to andragogy, popularised earlier by Malcom Knowles, also cited herein (Knowles, 1980; Knowles et al., 1998).

Extant literature has demonstrated strong support for each of these pillars, although none independently is sufficient to support the theory and pedagogy of Applied Practice alone. The two authors of this monograph did not set out to establish pillars, per se, or any particular theory streams for that matter. Both educators, however, with three decades' combined experience in one form or another of work experience for learning programs, provided grounding in theory of teaching and learning, and suggested theoretical and pedagogical directions for further inquiry. With strategic institutional shift toward Applied Practice education, the authors felt it necessary to explore further the foundations, principles and theory underlying the intent of such shift, which we interpreted as educating a citizenry capable of making, and disposed to make, a positive contribution in their communities. (We include places of work in our concept of community.)

Given what we understood of Applied Practice at the point of its inception – that it, for example, largely happens outside the classroom, is, by nature, practical and applied, and focuses on real concerns to business and communities – the authors sought literature realms that at least broached these concepts and contexts. Over the course of three years we immersed ourselves in seas of literature, diving into tempting pools of diverse thought and emerging on occasion with pearls, beads loosely strung together. These started to take form. Other times we emerged empty-handed or concluding that a seductive area had little to offer, save explaining, in part, how certain work experience for learning programs were evolving. Some of the larger bays we traversed are listed in Table 3, further on, along with the more prominent scholars associated with them.

While we may be criticised for our "method", we felt then, and still believe, that too little is known about practice-based education and what makes it work – its theory and pedagogy. If higher education institutions were going to go down that path, as trends seemed to indicate, then Applied Practice needed to be better "unpacked", understood, and defensible in order to exploit its potential. Thus, we cast our nets widely and, over time, we began to see themes in the literature emerging and how they tended to migrate toward categories, which we ultimately classified into our four pillars.

Our extensive review of the literature, of which some 200 of the more relevant references are included herein, reveals that linkages have been drawn between and amongst independent theory pillars of the model, but no evidence has been found to date suggesting that adult, experiential, transformational and workplace learning theories have previously been integrated or unified.

The Four Pillars Model of Applied Practice

Figure 1 shows the conceptual model representing the integration of four major theory pillars in the teaching and learning literature most relevant to Applied Practice. This is referred to as the four pillars model of Applied Practice. The four pillars bridge the theory–practice divide, represented by the base and crown respectively.

Each of the four pillars comprises an independent established and significant learning theory stream or conceptual foundation. The four are adult/andragogy (hereafter referred to as adult), experiential, workplace and transformational. The significant originators and proponents of these theoretical and conceptual bases drawn upon for the model are encapsulated in Table 2, overleaf.

It is our interpretation of these four literature sets that each is assumed (if not claimed) to deepen and extend traditional teaching and learning practices, making them more practical, relevant and transferrable, particularly for more mature students, including those in professional practice or pursuing professional preparation. From experience and observation, we agree. Each makes a solid contribution as it focuses on particular aspects of learning and development. At the same time, we sense in the emphasising of one approach over others that the whole learner may be underserved, which is especially important given the requirement to educate for the complex, global world of the twenty-first century (Hays, 2015a).

Adult/Andragogy	Experiential
Brookfield (1977); Burns (2002); Caffarella (2002); Kegan (1982; 1994); Knowles (1980); Knowles et al. (1998); Holton and Merriam (2001); Merriam and Caffarella (1999); Mezirow (1991; 2000); Nicolaides and Yorks (2008); Taylor (2008).	Boud and Walker (1991); Boud et al. (1993); Dewey (1938); Kolb (1984); Kolb and Kolb (2005); Heron (1992); see, also: Haddara and Skanes (2007); Nicolaides and Yorks (2008); Quay (2003); Yorks and Kasl (2002).
Transformational	Workplace
Freire (1970); Harris et al. (2008); Hays (2008; 2013b); Marsick (1998); Meuser and Lapp (2004); Mezirow (1991; 1997; 2000); Taylor (2008); Taylor and Cranton (2012); Wilhelmson (2006).	Boud (2001b); Boud and Middleton (2003); Brown et al. (1998); Carson and Fisher (2006); Collier and McManus (2005); Engestrom (2001); Fuller and Unwin (2002); Lynch et al. (2006); Mumford (1995); Reynolds (1998); van Woerkom (2004); Wenger (1998); Wenger et al. (2002).

Table 2. The four major theoretical and conceptual foundations of Applied Practice, and selected key reference sources.

It should be clear, following thorough discussion of each pillar below, how application of the model serves to close the theory–practice gap. The main idea, however, is that while each pillar (or independent theory and pedagogy stream) contributes to learning and development, this effect is multiplied when strategies are enacted that combine and integrate best practices. This is especially pertinent when focus of the learning endeavour is not merely basic skills development or specific content knowledge, but deep, transformational learning (Hays, 2008; 2013a). This is the level of learning needed to contend with multi-stakeholder, complex problems in novel situations under conditions of uncertainty and contestability. Learners must experience such circumstances, make decisions and determine courses of actions both responsively and responsibly. This happens in the community and in the workplace, not in the classroom, so what is learned and how differ dramatically, as do the consequences of one's decisions and actions.

Preparation for and learning from these experiences is enhanced through the discipline of reflective practice, as is clear from many of the scholars writing on experiential, adult, workplace and transformational learning. Reflection is the essential link cutting through and integrating the four theory and pedagogy streams. It is our contention that any Applied Practice program will be more effective to the degree that it builds skills in and dispositions toward critical reflection.

The Four Pillars

Adult learning theory. Adult learning theory (ALT) essentially suggests that adult learners bring abundant life experience, including knowledge and skills, to the learning endeavour. This is to be respected and drawn upon in learning activities. Adult learners are also assumed to be goal-directed in their learning – they learn for particular reasons and may be very motivated. Sceptical of imposed learning or training on offer, they may also be uninterested and unmotivated (Cercone, 2008).

Implicit, if not explicit, objectives of adult learning programs include empowering and enabling the learner to become more self-directing, autonomous and efficacious. A typical adult learning assumption is that learners benefit from, if not prefer, learning with others. ALT practitioners are much more likely to facilitate learning and employ student-centred learning strategies than they are to teach directly. It would not be uncommon to see reflective practice incorporated into adult learning approaches. A key ingredient in ALT is choice: adults choose whether they will learn, as well as what, when, where, why and how.

The authors believe that the largest majority of university-aged students may be considered adult learners: they are either already demonstrating adult learning behaviours or are capable of developing adult learning competencies and dispositions with careful guidance.

Experiential learning theory. Experiential learning theory (ELT) asserts that people learn through experience and that experience can enrich learning that might otherwise be abstract, theoretical, and devoid of context and meaning. Experience is the doing, practice and application. It is not merely the physical doing of something – theory-applied – but a fuller experience and sensory engagement, including feelings. It is thought that the richer and fuller the experience, the greater the learning. This is one area where holistic learning (Shrivastava, 2010) is brought to bear. It is very common to see reflection and reflective practice employed in experiential learning (Henderson, 2002). This is to get the most out of the experience, for, as has been acknowledged, experience alone cannot guarantee that what is experienced automatically converts to learning or that what is learned from the experience is the most productive and valuable of lessons (Brehmer, 1980; Hays, 2015a).

Transformational learning theory. Transformational learning theory (TLT) strives to promote deep learning and fundamental change, not merely incremental accumulation of knowledge or improvements in skill levels. It accepts that learning is not just about knowledge and skill, but about identity as well – it is not just about doing, but being, and can involve personality change (Sandlin et al, 2011; Schwandt, 2005). TLT concerns the way individuals see the world and their role within it, and asks them to consider whether or not they are satisfied with the way things are. TLT may be the most value-laden theory or approach to learning. While TLT practitioners do not impose their own views or ideals onto learners, they facilitate learning processes designed to develop awareness, the capacity to question and challenge the ways things are, and to instil a sense of responsibility and efficacy to change themselves and the world around them for the better (Hays, 2008 and 2013a; Henderson, 2002). Many proponents of transformational learning theory are concerned with overcoming oppression and achieving equality, and work toward empowerment, emancipation, democracy and citizenship (see, for example, Hays, 2015b).

TLT is especially relevant for Applied Practice as it governs the transition of student, youth and dependent to contributing adult professional demonstrating initiative and autonomy.

Workplace learning theory. Workplace learning theory (WLT) combines philosophies and practices of teaching and learning more generally and the training and development that has long been part of industrial and corporate life. Rather than being a distinct theory, it draws heavily on adult and experiential learning theories, and, to a somewhat lesser degree, transformational learning theory. Since the 1990s, workplace learning and organisational learning have been practically synonymous or at least mutually informing (see, for example, Illeris, 2004).

Workplace learning has two divisions: formal training and informal learning. Formal training is sponsored, planned and goal-directed, while informal learning recognises that not all learning is purposely designed and delivered, and may occur quite organically. With respect to informal workplace learning, there seem to be two trends: one incorporates the notions of situated learning and communities of practice, embodying informal learning through interaction with others. The second is transcendent, incorporating aspirations of transformation, expansion, criticality and significance; "the learner in some way transcends his or her existing limits or self" (Illeris, 2003, p. 169). Workplace learning must always contend with the interests and requirements of employees *and* the organisation. By nature, it involves learning *and* working. One may learn at work and in work. One may also learn for work, but if this occurs outside the workplace it would not be considered workplace learning.

Implication. While each of these distinct pillars is important, none individually accounts for the potential learning that can (and, it might be argued, should) occur in work experience for learning programs – Applied Practice. These four theory pillars have greater power to explain and predict learning when intertwined. They are synergetic.

Relationships and Synergies Between the Theory Pillars

There has been little attempt to research or elaborate on these individual theory sets as a collective. That said, there are numerous loose linkages drawn in the literature between the pillars. For example, in their recent instructive book on Work Integrated Learning, Cooper, Orrell and Bowden (2010) strongly indicate that experiential learning theory (Dewey, 1938; Kolb, 1984) and situated learning (Lave & Wenger, 1991) are of high relevance to workplace learning.

Adult learning. Each of the four theory pillars applies directly, if not exclusively, to adult learners. What this means, if nothing else, is that learning objectives and strategies have to be developed with adult learners in mind, probably best in collaboration with them. Adults generally possess the skills, knowledge, and confidence to participate in the design and delivery of learning. Such participation increases the probability that they will accept learning objectives and approaches and that they will be more motivated to learn. This emphasis is in keeping with student-centred approaches to learning, which are becoming more prominent (Boström & Lassen, 2006; Boud & Walker, 1991). Learners could choose, for example, the instructional mode they prefer or believe works best for them from a range of options. In the workplace, they could choose from a raft of relevant 'deliverables' that are of real value to the organisation or its customers, to demonstrate their learning progress or achievement.

Participative and collaborative process. Participation offers the advantage of learning *through the process* in addition to just the target knowledge or skill (Petts, 2007). This explains, at least in part, the popularity of approaches such as Action Learning and Participatory Action Research (Grauerholz, 2001; Sankaran & Brown, 2012). Engestrom (2001) emphasises social and organisational context over individual learning. Important points include that problem solving and learning occur in lateral interactions amongst peers; and that people learn from one another, particularly in unique situations where no set process or solution exists. This is an important foundation of Applied Practice and is prevalent in all of the pillars. It is our contention that people will learn more from participation when they reflect upon and critique the process leading to a particular outcome, especially when done collectively.

The notion of participation, or engagement, lies at the heart of experiential learning. People learn in, through and from experience, and experience affords richer, more complete learning than mere intellectual or cognitive learning. Experience provides context for theory and abstract ideas. It is where ideas meet reality, where theory and practice connect. However, it is not the experience that matters so much as what the learner takes away from that experience. Thus, reflective practice helps make sense of the experience and enriches the impact of what is learnt through the experience. The idea of meaning making is essential to each of the four pillars, and reflection links them together (Nicolaides & Yorks, 2008; Yorks & Kasl, 2002).

Meaning-making, or making sense of events and situations and getting the most learning and understanding from them, is largely a social, interactive and collaborative process (Allard-Poese, 2005; Woo & Reeves, 2007). Such meaning is not easily taught, but can be learned – or earned – through working with others. Thus, dialogue is central. Fink (2003) observes that interaction and sharing of experiences leads to construction of deeper levels of meaning and enhanced learning outcomes. Nicolaides and Yorks' (2008) discussion of Constructive Developmental Theory (à la Kegan, 1982; 1994) is important and relevant, as it describes "how

adults develop more complex and comprehensive ways of making sense of themselves and their experience" (p. 53). Mezirow (1997) integrates transformational learning with discovery, autonomy, self-direction and adult learning.

While learning styles and preferences differ, many adults value working and learning with peers, especially on real problems and tasks they face at work (Marsick & Watkins, 2015). Collaborative approaches to problem solving, especially when structured to promote learning, lead to discoveries. What people discover (that they find out themselves) may be of more interest, relevance, and have greater utility than things that they are told. What people discover themselves they tend to better understand and be able to contextualise (see Alfieri et al., 2011, and Mayer, 2004, for background and critique). Thus, they learn more deeply, and what they learn has greater transfer.

Experience and criticality. A simplistic interpretation of workplace and experiential learning, and of the idea of discovery learning, is that people automatically learn from the experience or process. However, they may not learn or acquire the desired knowledge and skill for any number of reasons, not least of which are time constraints and pressures to produce. Two related factors considered essential to learning from experience are critical thinking and critical reflection (Hays & Mehta, 2016; Mann et al., 2009). One who is not critically conscious, reflexive and inquiring is unlikely to glean the most productive lessons from experience. Further, drawing productive lessons from experience may require ongoing facilitation, a skill and orientation that not all teachers and supervisors have (Dirkx, 1992; Hmelo-Silver & Barrows, 2006; Mangena & Chabeli, 2005; van Maurik, 1994; Warihay, 1992).

Authenticity. The idea of real work is important. Adults want to see the relevance of what they are doing and learning to their jobs or life. They want to see that their efforts have a point. Wherever possible, learning activities should entail and bear upon real work and its challenges, aspirations and rewards (Herrington et al., 2014). That's the context where learning and other endeavours matter. This is the crux of the principles and practices of situated learning (Korthagen, 2010) and the notions of embeddedness and immersion (Winn, 2003). A training room or classroom can never be entirely real, no matter how hard one tries to simulate or replicate the workplace and its dynamics. Authenticity is a critical element cutting across the four theory pillars of Applied Practice.

Implications

These four theories share the assumption that adults can and do learn from each other. One does not have to be a designated teacher, trainer or supervisor. Everyone shares in the responsibility to learn and, perhaps, to assist others to learn. One of the chief objectives of facilitation is to create environments where such learning can flourish. This often means empowering and enabling individuals to participate fully, sharing in the learning obligations and privileges of membership or citizenship. Transformational Learning Theory in particular strives to help individuals create better lives for themselves and make their organisations and communities better places to work and live. If that does not give people meaning, then little else will (Nicolaides & Yorks, 2008; Quay, 2003).

Ample research supports the view that programs and pedagogies that integrate formal studies and their applications confer benefits to students, as well as to the host organisations that employ them (Cooper et al., 2010; Patrick et al., 2008). A common parallel benefit found in studies is the increased employability of graduates and the recruitment advantage afforded host organisations when they 'try before they buy'. Both students and employers generally express satisfaction with the experience, and attest to the value of the placement in terms of student learning and development (Freudenberg & Brimble, 2011; Morse, 2006). A

consistent finding is that students mature during the course of their placement. They may develop leadership, teamwork and other professional skills, in addition to deepening specific knowledge and skills in their major or course of study (Smith & Worsfold, 2015).

Learning and change. Continuous, enduring and productive change would appear to have particular advantages for organisations (though it is no doubt the case that some places of work or communities don't really want to change). Organisations know that they must be responsive, adaptive and innovative to survive. Becoming resilient and proactive are goals of organisational learning (Hays, 2013a). Achieving and sustaining these capacities may call for fundamental change – transformation – thus TLT has much to offer.

That people, organisations and communities change is interesting. How and why they change are much more important. This is where the notions of meta-learning (Boström & Lassen, 2006; Davies & Nutley, 2000) and lifelong learning (Jiusto & DiBlasio, 2006) come into play. Learning and change are not one-time events – or, if they are, demise has already begun. Learning and change are processes that can be understood, evaluated and improved.

Learning how to learn (Pol, 2012; Roberts, 2010) is a unifying theme across the pillars, and this can be a collective process through shared reflection and inquiry. In her article "Know Thyself," Brown (2002) links adult learning with experiential learning, transformational learning and workplace learning, and emphasises student-centred learning, the importance of self-knowledge through reflection, and the value of a lifelong learning orientation: "understanding of what, why, and how they learned throughout their careers" (p. 228). Brown (2002) has linked many elements of central concern to Applied Practice. While she was not attempting to develop a theory, but ground portfolio development in the relevant literature, she has provided perhaps the most encompassing support for the four-pillars model yet located.

Nicolaides and Yorks (2008) link experiential and lifelong learning; they also stress the importance of constructivism (à la Kegan, 1982; 1994) and the autonomous learner. Overall, this is a good source on epistemology and relationship to organisational learning. The Hyslop-Margison and Naseem (2007) article centres on lifelong learning, empowerment and agency. They emphasise the "unfinished" nature of people and society and that they are always undergoing evolution and transformation (see, also, Hays and Reinders, under review).

Learning in community. We have already signalled the importance of participation and engagement, and noted the need for dialogue, collaboration, and shared reflection and inquiry. A related idea is that of learning communities, sometimes depicted as Communities of Practice in the literature (Hays, 2009). For all that it might or might not be, the essence of a learning community is that its members can and do learn from one other, support and stimulate one another, provoke and challenge one another, try things out on and with each other, and share in struggles and successes with respect to learning. They provide a safe place for exploring ideas and trialling solutions. Generally outside of their 'chain of command' and formal working roles and relationships, participants are freer to be themselves and to explore issues that they feel are important, rather than focusing entirely on the organisational agenda or worrying about office politics.

Gherardi et al. (1998) provide insight into learning through participation in Communities of Practice. Plack (2006) explores a theme quite relevant to Applied Practice: how one becomes a professional practitioner. "Becoming a [professional] is more than simply applying knowledge amassed in school," she asserts (p. 44). It is a negotiation of acceptable ways of being and interacting amongst fellow professionals and in the larger community, and identifying with and being accepted as a professional by fellow practitioners. See Chapman et al. (2005) for a thoughtful treatment of the contribution of community, collaboration, dialogue

and shared reflection to deep learning – a constructivist approach. They also underscore the importance of dialogue and interaction in producing critical thinking and problem-solving skills. Hays (2009) provides a thorough analysis of Communities of Practice, and highlights their contribution to knowledge and knowing, learning and professional development, organisational effectiveness and change, and leadership, amongst other themes.

Factors deduced as important for workplace learning by Cooper et al. (2010) from Smith and Blake's work, underscore student centred, self-directed, adult, and constructivist learning theories and approaches:

- Opportunities for students to collaborate and negotiate in determining their learning and assessment processes.
- Recognition of students' previous learning and life experiences as valuable foundations for constructing new knowledge and skill sets.
- Recognition of learners as 'co-producers' of new knowledge and skills.
- Flexible teaching approaches that address the different learning styles, cultures and experiences of students (p. 89).
- Cooper et al. (2010) identify as an important factor "a strong emphasis in the workplace on providing a meaningful context for learning where problems are framed by the workplace context" (p. 89).

Distinct but Related and Complementary Topics in the Literature

Distinct from, though often linked to one or more of the four theory pillars, ALT, ELT, TLT and WLT, is a raft of pedagogical strategies or schools of thought, each important in its own right and having its own adherents. For simplicity, the more common ones are listed in Table 3, below, along with major proponents. Those included here appear as themes running through much of relevant literature reviewed as part of the theory-building process.

Deep Learning Biggs and Tang (2007); Chapman et al. (2005); Grauerholz (2001).	**Lifelong Learning** Brown (2002); Dumas (2002); Marsick (1998); Nicolaides and Yorks (2008); Schwandt (2005).	**Organisational Learning** Applebaum and Goransson (1997); Argyris (1982; 1993); Argyris and Schön (1996); Thomas et al. (2001).
Active / Action Learning Cunningham (1999); Fleming and Ferkins (2008); Grauerholz (2001); Groenewald (2009); Hendry (1996); Loo and Thorpe (2002); Marsick and O'Neil (1999); Pedler (1997); Revans (1991); Reynolds (1998).	**Situated Learning, Embeddedness and Importance of Context** Boud and Middleton (2003); Cooper et al. (2010); Gherardi et al. (1998); Handley et al. (2007); Hutchison and Bosacki (2000); Kempster (2006); Lave and Wenger (1991); Lynch et al. (2006); Quay (2003); Zimitat (2007).	**Participation and Engagement** Bandura (1977); Boud (2001a); Chapman et al. (2005); Fink (2003); Gherardi et al. (1998); Handley et al. (2007); Hara and Schwen (2006); Kolb and Kolb (2005); Lynch (1999); Mead (1934); Quay (2003); Taylor, P (2008); Winchester-Seeto et al. (2010); Vygotsky (1978); Yorks and Kasl (2002).
Autonomy and Self-Direction Kolb and Kolb (2005); Kessels and Poell (2004); Loo and Thorpe (2002); Mezirow (1997); Nicolaides and Yorks (2008).	**Service Learning** Dumas (2002); Grauerholz (2001); Hays and Clements (2012); Madsen and Turnbull (2006); Williams and Gilchrist (2004).	**Communities of Practice** Boud and Middleton (2003); Gherardi et al. (1998); Hara and Schwen (2006); Hays (2009); Hendry (1996); Wenger et al. (2002); Zimitat (2007).
Discovery Learning Kumar (2006); Lynch (1999); Mezirow (1997).	**Student-Centred** Cunningham (1999); Cornelius-White (2007); Kumar (2006); Nicolaides and Yorks (2008).	**Agency and Self-Efficacy** Bandura (1999; 2006); Boström and Lassen (2006)
Emancipation and Democracy Carson and Fisher (2006); Kessels and Poell (2004); Quay (2003); Reynolds (1998); Taylor, E (2008); Taylor, P (2008); Williams and Gilchrist (2004).	**Constructivism** Chapman et al. (2005); Cunningham (1999); Nicolaides and Yorks (2008); Kumar (2006).	**Holistic Learning / Whole Learner** Grauerholz (2001); Hutchison and Bosacki (2000); Kolb and Kolb (2005); Quay (2003); Taylor, E. (2008); Yorks and Kasl (2002).
Meta-Learning Boström and Lassen (2006); Dumas (2002); Hays (2015a); Kumar (2006); Marsick (1998).	**Learning Styles** Boström and Lassen (2006); Cooper et al. (2010); Varner and Peck (2003).	**Authentic Work and Learning** Billett (1994); Herrington and Wehlage (1993); Lee et al. (2010); Ross (1998).
Identify formation and becoming a professional practitioner Grauerholz (2001); Handley et al. (2007); Hays (2015a); Kempster (2006); Meuser and Lapp (2004); Plack (2006); van Woerkom (2004).		
Reflection Bandura (2006); Boström and Lassen (2006); Boud (2001b); Brown (2002); Carson and Fisher (2006); Chapman et al. (2005); Doel (2009); Grauerholz (2001); Groenewald (2009); Grossman (2005); Haddara and Skanes (2007); Harvey et al. (2010); Hutchison and Bosacki (2000); Kessels and Poell (2004); Kolb (1984); Loo and Thorpe (2002); Lyon and Brew (2003); Marsick and O'Neil (1999); Meuser and Lapp (2004); Reynolds (1998); Schön (1983; 1987); Schwandt (2005); Shutte (2007); Taylor (2008); van Woerkom (2004); Varner and Peck (2003); Winchester-Seeto et al. (2010).		

Table 3. Common themes that characterise and cut across the relevant literature.

This review of the literature brought to the surface other scholars whose works lend legitimacy to the four pillars model. The brief details provided below suggest convergence occurring in the scholarship of teaching and learning of relevance to Applied Practice. The items highlight the linkages across and emphases of respective theories and practices that have been made to date by various authors, each bearing on one or more of the pillars. Illustrative examples include:

(a) Bandura (1999; 2006), the chief proponent of agency, qualifies learners who are agentic as "self-organizing, proactive, self-regulating, and self-reflecting" (Bandura, 2006, p. 164).

(b) Fleming and Ferkins (2008) and Groenewald (2009), who both link Action Learning to Cooperative Education (the former) and Work-Integrated Learning (the latter), both of which are forms of Applied Practice.

(c) Grauerholz (2001), who does an impressive job of explaining and relating holistic and deep learning. She underscores that holistic learning requires active learning, appeals to all modalities, including feelings, and is transformational; thus, impacts on learner identity. She further asserts that reflection is needed to prompt transformation. Grauerholz also contrasts internalising to "learning about": internalising is a facet of deep learning, where "learning about" is superficial. She defines service learning, which we see as a form of Applied Practice, as a holistic, deep learning strategy.

(d) Harris et al. (2008) link learning transfer with transformative learning theories. They relate "what we know" to learning for information and "how we know" to learning for transformation. As we have discussed, Applied Practice is more concerned with how and why than what.

(e) Hutchison and Bosacki (2000) discuss the synergies between holistic and experiential learning. Of interest, they propose a hierarchy ascending from transmission (teacher-centred), through transactional (constructivist + context and experience), to transformational (organic, interdependent, non-linear, holistic). Hutchison and Bosacki's highest form of learning approaches transcendence (see Hays, 2013a or Illeris, 2003).

(f) Illeris (2003) clearly links adult and transformational learning theories to workplace learning theory. He identifies two trends in workplace learning: situated learning and Communities of Practice; and transcendent learning, which, relating it to other theorists, he describes as transformational, expansive, significant and critical. Though lofty sounding, notions of transcendence of relevance to organisational learning and leadership appear to be gaining currency (see Scharmer, 2001 and 2009).

(g) Kirby et al. (2003) convincingly argue that deep learning results in better transfer and greater performance. When something is learned deeply, it becomes internalised – part of one's repertoire of skills and knowledge. It extends merely knowing *about* or *that* to knowing how, why, when and where. Thus, such learning is transferrable and adaptable to new circumstances and different problems. Deep learning comes about as one actively finds and constructs connections between what is being learned and past, present or future tasks, problems and opportunities – that is, as individuals *apply* the learning.

(h) Kolb and Kolb (2005) emphasise the important objective of education to promote self-direction and self-authorship, to focus on the whole learner, and create diverse learning opportunities that allow learners to interact with their environments and test out their learning. Applied Practice is likely to be able to achieve this more effectively than classroom learning.

(i) Kessels and Poell (2004) stress the relationship between emancipation and self-direction, noting also that critical reflection is a necessary element. Emancipation essentially means freedom – not under someone else's power and control. It also implies autonomy or self-governing. One cannot be effectively self-directing without being firstly autonomous. Autonomy and self-direction require – in addition to freedom from external control (opportunity) – both competence and confidence, promoted, it is believed, through Applied Practice, that is, work experience for learning, notions tied together neatly in Henschke's (2011) doctoral thesis.

(j) Lee et al. (2010) discuss context, deep learning, authentic, workplace learning, and experiential learning in their paper on group Work-Based Learning. WBL and other forms of Applied Practice provide students with real-world experience in roles and performing tasks with professionals in their designated practice fields. This means the work they do while fulfilling these roles is authentic, with and for real people in genuine contexts. Such work proceeds in circumstances and presents consequences classroom learning simply cannot provide (see Bosco & Ferns, 2014, and Eames & Coll, 2010).

(k) Much work has been done on organisational learning, and this is quite relevant to our fourth pillar, workplace learning. Relevant and useful references include: Argyris (1982; 1993); Argyris and Schön (1996); Garvin (1993); Nicolaides and Yorks (2008); Nixon and Murr (2006); van Woerkom (2004). Learning is necessary for innovation and change in organisations and communities, which are key objectives of producing capable professional practitioners and citizens through Applied Practice

Applebaum and Goransson (1997) entertain the key themes of transformational and adaptive learning in their article on organisational learning. Hong and Kuo (1999) refer to three levels of learning (borrowed from Bowonder and Miyake) that are useful in framing organisational learning: maintenance, adaptive and creative. The creative level might be likened to the transcendent level described by Illeris (2003). Hays (2013a) explores transformational learning and organisational transformation in his chapter on wise leaders and organisations. He suggests that transcending one's limits is possible and desirable, and may be the best way to survive and thrive in a complex, tumultuous world. Thomas et al. (2001) look at how people in organisations collectively make sense and learn for strategic benefit. Continual learning and adaptation are central in the organisational learning literature. Learning together through collective and collaborative effort and distributing the learning in one area to others are key to organisational and community survival. Presumably, students in Applied Practice work experience for learning positions become exposed to the need for and process of continuous learning and change and discover, first hand, that learning is not exclusively an academic affair.

Hendry (1996), though not writing explicitly about organisational learning, examines the role of learning [theory] in organisational change and capacity building. He situates this within Communities of Practice and Action Research, referring to, though not explicating, experiential, adult and learner-centred strategies. We believe that Applied Practice involves learning in and through communities *and* working to change them; decidedly collective endeavours.

(l) Cornelius-White (2007) undertakes the topic of learner-centred approaches, which he claims have as their beginnings Carl Rogers and his client-centred therapy. This paper presents an impressive study on impact of learner-centred education, the methodology of which might inform continuing research into Applied Practice. It also provides good background on relationships between learner-centred approaches and development of "the whole and fully functioning person, who is a citizen and leader in a democratic society" (p. 114), and promoting such qualities as initiative and self-direction, adaptability, and resourcefulness – all of which are relevant to the objectives of Applied Practice.

(m) Yorks and Kasl (2002) link experiential, holistic and adult learning, which all occur within the context of participation and interaction. It is probably the case that learning is more multidimensional, collaborative, and engaging of multiple modalities in the workplace than in the insulated spaces of academic classrooms and laboratories with their prescribed procedures, narrowly-defined tasks and individual assessment. Workplace learning generally allows, if not calls for, creativity, initiative, spontaneity and collective action. The nature of such effort and its outcomes is unpredictable. Conventional classrooms do not equip individuals for such an environment, contributing to the theory–practice gap. Applied Practice is one strategy for reducing the gap and better preparing graduates for the real world.

Reflection – a common theme and unifying element. Referring to Figure 1 and Table 3, we see that reflection and reflective practice play a key linking role through the four teaching and learning theory pillars (Boud, 2001b; Boud & Walker, 1991; Schön, 1983; 1987). It is essentially a universal canon of work experience for learning programs that reflection and reflective practice are key features, if not the main learning strategy. Reflection is a critical element of Kolb's (1984) experiential learning cycle, and usually accompanies discussion of experiential learning (see, as examples, Brown, 2002; Lee et al., 2010; Marsick & O'Neil, 1999). Persuasive evidence exists that reflection on practice (experience) enhances the learning potential resident in that practice, credible claims made by many of the references included in the reflection block of Table 3. More recently, Hays and Reinders (under review) emphasise the crucial role of critical reflection in sustainable learning and innovation.

Extensive discussion on reflection and reflective practice are beyond the scope of this monograph. Fortunately, there are numerous studies on the topics. Particularly instructive sources include: Carson and Fisher (2006); Grossman (2009); Harvey et al. (2010); Hutchison and Bosacki (2000); Lyon and Brew (2003); and van Woerkom (2004).

In the next section, we examine more closely some of the main themes and relationships arising from our extensive review of the literature as identified above, including deep learning, the importance of context and transfer, transformational learning, participation, and the counter-intuitive nature of learning from experience. Each represents a significant aspect of and contribution to Applied Practice.

The Relationship of the Four Pillars Model of Applied Practice to Learning

Surface Learning

There are numerous problems and undesirable consequences associated with conventional approaches to university education, including and notably surface learning (Chapman et al., 2005; Grauerholz, 2001; Havard et al., 2005; Kirby et al., 2003). Surface learning is a shallow or superficial learning, generally insufficient to solving the complex problems people face in organisations and elsewhere. In explaining the importance of experimentation in organisational learning, Garvin (1993) stated:

> All forms of experimentation seek the same end: moving from superficial knowledge to deep understanding. At its simplest, the distinction is between knowing why things are done and knowing why they occur. Knowing how is partial knowledge; it is rooted in norms of behavior, standards of practice, and settings of equipment. Knowing why is more fundamental: it captures underlying cause-and-effect relationships and accommodates exceptions, adaptations, and unforeseen events. (pp. 84-85)

Surface learning might be knowledge of a fact or a memorised concept with no context – tantamount to a bullet item on a PowerPoint slide. The learner may register the 'bullet' but not know why it is important, what it relates to, or how, when or where it is used. The knowledge may serve in the short term to pass a test, but has little longevity or practicability. The relationship between learner and learned is distant and impersonal.

The distinctions Lynch (1999) makes amongst know that, know how, and know why, drawing on Adler, are informative and relevant to the discussion here. "Knowing that" is the most basic form of knowing – having the information and facts. "Knowing how" is next up the ladder of sophistication, and concerns skills. The most important and hardest to teach is "knowing why" – deep understanding or having the wherewithal to ask questions and challenge the way things are. Knowing why:

> can not be accomplished directly through didactic lecturing or through coaching. An understanding of 'why' only comes through debate and investigation, through discussion and discovery. To actuate this questioning-based process the student must be allowed to discuss ideas and values; the student must experience the feeling of discovering fundamental first principles and cause and effect relationships. (Lynch, 1999, p. 127)

Discovery is key for Lynch (1999), the pathway to practical wisdom. Concluding that the habits and supporting skills of discovery are crucial for professionals of the twenty-first century, he claims that "a different path to discovery than most business schools have furnished" (p. 128) is needed. It may be that our endeavour to get as much material across to students as quickly and painlessly as possible may have unintended consequences, subverting inquiry, discovery and deeper learning. While not a pervasive theme in the literature reviewed, discovery did figure importantly in a few treatments on teaching and learning (Borthick & Jones, 2000; Kumar, 2006; Mezirow, 1997; in addition to Lynch, 1999).

Finally, in her insightful work on critical reflection in the workplace, van Woerkom (2004) articulates the importance of "why?" questions. "Why?" questions, she asserts, transcend the limits of "how to" questions that tend to reinforce and reproduce current practices – "how to" thinking may be productive and efficient, but probably does not lead to discovery and development. Innovative learning is a strategic imperative in a world that is unknown, unpredictable, and continually changing (Hays, 2015a). It would appear that the task for educators is to create conditions for learning that stimulate creativity, autonomy and critical thought (Hays & Reinders, under review; Marsick, 1998); that is, teaching for the unknowable (Barnett, 2012).

Deep Learning

Many strategies have been developed to overcome or compensate for shortcomings in university teaching and learning, the more relevant of which to Applied Practice will be discussed further on. One important concept, deep learning (Grauerholz, 2001; Havard et al., 2005; Kirby et al., 2003), bears mention, here, as the contrast to surface learning. In deep learning, the learner develops a breadth and depth of understanding regarding a theory, concept or principle. The learner is able to discuss its relationship and relevance to other theories, concepts or principles, and how, when, where and why it applies in practice. Such knowledge has life and purpose beyond the passing of an examination. Having learned something deeply, a learner should be able to apply it in diverse or unfamiliar situations (Havard et al., 2005; Marsick, 1998). The relationship between learner and learned is intimate and personal.

Experiential Learning

Another concept needing introduction before proceeding is experiential learning (Boud, 1993; Dewey, 1938; Kolb, 1984; Mead; 1934). Consideration of experiential learning is important at this juncture for at least two reasons. The first is that experiential learning activities are often employed in university classrooms to enrich and deepen learning. They achieve this, as suggested by the term, by giving learners an "experience" of the target knowledge or skill. Basically, learners can try things out – they engage with the material to be learned with more than just their heads. Possible experiential strategies are almost limitless, but include fishbowl exercises, simulation, role-play, and many group activities and team projects.

Such experiential activities enrich learning by exercising and appealing to multiple modalities, physical and affective, in addition to cognitive (Grauerholz, 2001; Yorks & Kasl, 2002). There is little doubt that such activities can enhance learning, and they are generally more enlivening than a lecture. Nevertheless, they generally happen within the classroom or in controlled conditions such as labs and workshops – which brings us to the second important reason for raising the topic at this point.

In Applied Practice, learners are actively engaged with real people, problems and organisations outside the university classroom. This is crucial. Problems, people and situations outside the classroom are competing, unpredictable, and can easily spin out of control (Hays, 2013b). They are dynamic, complex and diverse; and under the right conditions could produce the most relevant and useful learning (Paauwe & Williams, 2001; Ross, 1998). No matter how rich the classroom experience, it remains insular, somewhat contrived, and under the careful supervision of the instructor or facilitator. In fact, we suspect that some teachers work quite hard to keep control and provide structure, believing that is their responsibility and/or pushed to do so by students or administrators (see Hays, 2013b). While understandable, this practice narrows possibilities for emergent and divergent learning.

Programs such as Cooperative Education, Industry-Based Learning and Work-Integrated Learning endeavour to minimise the theory–practice divide (Lee et al., 2020), essentially working to make academic learning relevant to, and prepare graduates for, the real world. There is ample evidence that they do so (Carson & Fisher, 2006; D'Abate et al., 2009; Haddara & Skanes, 2007; Lee et al., 2010; Madsen & Turnbull, 2006). There is, however, less certainty about what and how students learn, and very little data that discriminate across programs – which work best and why. And, while there is an overwhelming adherence to the principles and practice of "learning from experience" in the literature on program delivery (practice), there is disproportionately less theoretical grounding for the practice and how it produces learning. The assumption that students learn from experience, and that experience alone as a complement to formal study is sufficient, appears rife. Learning is under-researched and under-theorised in the domain of work experience for learning (Hays & Clements, 2011; Hickey, 2013; Smith-Tolken & Williams, 2011).

Context and Transfer

As alluded to above, Applied Practice and associated programs are designed to bridge the theory–practice gap, a disconnect between what a student learns through academic studies and what he or she is expected or needs to know in the workaday world. It is not that the theory or abstract concepts and principles that students learn are irrelevant in the real world, but that they may have difficulty applying them to real-world problems (Murphy & Calway, 2008). If students have acquired knowledge and skill *acontextually* – that is, in the insular classroom or lab – they may not recognise problems that should be familiar, because the circumstances (or *contexts*) are so different (Lynch et al., 2006; Kirby et al., 2003). They may fail to see the connection or relevance of what they've learned to the job at hand. They may not have the flexibility and adaptability to apply what they've learned to unfamiliar problems in foreign circumstances, as they have acquired them in the abstract. They have learned the theory, but not how, why or when to apply it.

"Knowing what to do is simply not enough," maintain Meldrum and Atkinson (1998; p. 564). You have to know how, when and why. These authors identify "meta-abilities" as personal attributes that underpin and determine how and when knowledge and skills gained over time can and will be used most effectively. Meta-abilities may derive from experience, but only if sufficient feedback is provided and learners closely examine why they do what they do – for example, how they approach problems, deal with others, entertain new ideas and learn new things. The need to transcend "knowing that" and "knowing how" to a fuller understanding and appreciation of context are key themes in the professional practice literature (see Dall'Alba, 2004; Kinsella, 2009; or Yielder, 2004, as good source examples). Yielder (2004) explains:

> For practitioners to reach [a high] level of expertise . . . they require more than narrow technical specialization. This kind of educational approach does not allow practitioners to be able to effectively respond to change. That is, their knowledge base rapidly becomes outdated with technological advances, and they may not have the skills necessary to acquire, process and effectively use new information themselves. (p. 70)

Unless students are particularly insightful, inventive and courageous, they may lack both the understanding and confidence to adapt what they have learned through academic studies. Thus, for formal learning to be useful in the real world, it must transfer from one context to another. Noting that training often does not transfer, Lynch et al. (2006) stress context and the ability to contextualise learning as key features of workplace learning. Citing Crebert, Kirby et al. (2003) argue that:

> emphasis should be placed on assisting employees in developing multiple skills which would enable them to transfer knowledge from specific situations to broader contexts. Such learners would be able to integrate new information with previous knowledge, synthesise new material and make connections to form a wider perspective. Each of these characteristics is involved in the deep approach to learning. (p. 34)

Deep Learning and Transfer

Havard et al. (2005) also link deep learning to transfer. They explain that surface approaches to learning foster adoption of material and replication of behaviour, while deep learning fosters adaptation, which is creative and innovative. In deep learning, they note: "New learning is combined with existing knowledge for problem solving in unfamiliar contexts" (Havard et al., 2005, p. 125). In making her case for field-based learning, Lekoko (2005) argues that classroom learning is generally devoid of the context in which students would apply their learning and can only approximate authentic work environments and situations. Inferring from her thesis, field work and formal study should form a companion strategy to foster learning and better prepare graduates for the challenges ahead. She also highlights the value of two-way learning (transfer) possible when students take what they are learning in the classroom into the community or work context and bring back what they are learning and experiencing at work to the classroom. This is the essence of Applied Practice.

Transfer and Transformational Learning

Harris et al. (2008) make a direct link between transfer and transformational learning: not only does transfer enable application of knowledge and skill to other contexts, but under the right conditions a fundamental shift in the learner's view of self or the world allows him or her to operate differently and more efficaciously. Drawing on Baumgartner, they suggest a needed evolution in teaching and learning is occurring. The focus has shifted from learning for information (what we know) to learning for transformation (how we know). This would be evidenced in helping students come to understand themselves and how they interact with the world better; achieved, Harris et al. (2008) maintain, through reflective practice, continual examination of assumptions and beliefs, and deliberate attempts to explicate the relationships between theory and practice.

Both transfer and context are key factors in Applied Practice. And, because problems in the real world can be new, complex and diverse, the learner's approach to problem-solving and effectiveness in learning will probably be more important than his or her current knowledge and skill (Hays, 2013b; Murphy & Calway, 2008; Nixon & Murr, 2006). This presents a paradox. Many students have been trained to produce the right answer using specific techniques in prescribed settings (Paauwe & Williams, 2001; Sice & French, 2006).

At time of writing, one of the authors is teaching a postgraduate course in a program accepting only the top five percent of students in measures of undergraduate performance. Even (perhaps especially?) these students struggle when not instructed specifically and directly what is expected. It appears they do not know how to make the most of ambiguity and latitude. The kind of problems and approaches in which they have been trained are very different to what learners will experience in the real world, where qualities such as intuition, creativity, and the ability to redefine the problem and invent new pathways to solving it will be called upon.

Learning Through Participation

Winchester-Seeto et al. (2010) aggregate programs such as Professional Practice and service learning as "learning through participation," or LTP, which appears at face to be a useful categorisation. However, caution is advised. Learning through participation could easily be interpreted as group learning or any learning occurring in and through interaction with others, including class-based experiential activities and projects. These are not really Applied Practice, though they may serve as preparatory activities and supplement it.

Strong undercurrents in the [adult] teaching and learning literature suggest that people learn best and deepest in participatory processes – in interaction, collaboration and dialogue with others. Sice and French (2006) observe, "our knowledge, or more precisely our reality, is born in our interactions with the world" (p. 854). In their thoughtful article on whole-person learning, Yorks and Kasl (2002) develop the concept of *learning-within-relationship* to emphasise the important contributions of diversity, and even division, amongst individuals to learning and change.

Learning-within-relationship is essentially about shared experience and deep engagement, invoking the whole of one's being and accepting the totality of others. Of the many themes identified in the review of the literature and the selection of sources to be included as references for this treatise, learning through participation and interaction was the most pervasive, save reflection and reflective practice. And, to Yorks and Kasl's (2002) article as an example, a second common theme in the literature is the whole learner/holistic learning. The more modalities or senses that can be engaged in a learning activity, the greater and more durable the learning is likely to be.

Context and Authentic Engagement

A further reasonable qualification has been proposed in the literature: the authenticity of the work or engagement (Herrington & Oliver, 2000; see, also, Billett, 1994; Harkavy & Benson, 1998, or Lekoko, 2005). This is what is meant, here, by real. Quoted in Madsen and Turnbull (2006, p. 725), Bush-Bacelis observes:

> [T]he best advantage for students is that . . . they are able to connect the readings, class discussions, and other assignments with the real world, full of real people, with real problems that students try to help solve.

In her paper on work-based, academic learning, Ross (1998) linked authentic work and situated learning. Citing other sources (Winn; Choi & Hannafin), she notes:

> Situated learning occurs when a student works on an authentic task in a real setting instead of working with abstract, decontextualized knowledge and skills. Authentic tasks also have important potential for motivation. Context helps guide the activity. It organizes learning and points learners to resources in the situation. (p. 68)

Newmann and Wehlage's (1993) work on authentic learning provides a helpful framework. They noted two "persistent maladies" making conventional education inauthentic:

1. Often the work students do does not allow them to use their minds well.
2. The work has no intrinsic meaning or value to students beyond achieving success in school. (p. 8)

To combat these maladies, Newmann and Wehlage (1993) generated five scales to assess the degree to which an instructional activity "engages students in using their minds well" (p. 8). These are: higher-order thinking; depth of knowledge; connectedness to the world beyond the classroom; substantive conversation; and social support for student achievement. While elaborating on these dimensions is beyond the scope of this exposition, suffice it to say that to score well, learning activities must be meaningful, relevant, challenging, complex and interactive – that is, match the realities of life *outside the classroom.* As Newmann and Wehlage (1993) point out, authentic engagement demands of students that they use disciplined inquiry to construct meaning and produce knowledge of use beyond formal study. It follows, then, that class-based exercises would generally be excluded from classification as Applied Practice.

In their article on practice learning, Nixon and Murr (2006) explore problems between, and solutions for, academic and practice-based learning. One educational exemplar problem, they note, referring to both Margetson and Cunliffe, with relevant consequences for higher education teaching and learning is identified as the "application metaphor". Somewhat ironically, the application metaphor focuses on teaching students to *apply* theory to problems. This encourages learners to rely on templates and prescriptive methods, that is, repeat what they have been told or mimic their instructors rather than think for themselves. Learners are basically trained "to look for solutions (or at least for a predetermined approach) to problems" (Sice & French, 2006, p. 858).

The application metaphor disregards the messy problems of the real world and suggests every problem can be solved using simple procedures (Hays, 2010; Schön, 1987). The dynamic of the application metaphor appears to reproduce an unfortunate theory *or* practice division. Applied Practice addresses this application metaphor by teaching a more organic and holistic strategy for problem-solving inductively (Nixon & Murr, 2006). Through the application of appropriate pedagogy, design and delivery of an Applied Practice Program will ensure the greatest possible integration of theory and practice, no longer requiring students to apply theory to set problems, but meaningfully engaging them in real problems and working alongside professionals when solving them.

The Counterintuitive Nature of Learning from Experience

It is the promise and potential of learning outside the classroom that appeal to proponents of Applied Practice and other forms of Work-Integrated Learning. However, it should be stressed that experience does not necessarily or directly convert to learning (Percy, 2005; van Woerkom, 2004). In making her case that reflective practice is crucial to learning from internships, and citing Van Gyn, Doel (2009) concludes:

> Students do not necessarily learn from experience, particularly if they do not think about it or do not take responsibility for it. If a[n Applied Practice] placement is only a way to gain experience of industry, and a method of linking technical knowledge with real life application, then it is not being fully recognized. (p. 172)

Elsewhere she adds:

> For a placement to be more than just an experience, a chance to learn or enhance technical skills, students must be able to take something more away with them, *something that cannot be developed at university*. (Doel, 2009; p. 170. Emphasis added)

Implications

While the four-pillars model has not been empirically validated, it is solidly rooted in learning and teaching theory and practice. It provides reasoned legitimacy to today's best strategies in Applied Practice, and suggests how Applied Practice programs can be improved to enhance student learning. Additional strengths

of this account are the Applied Practice Principles and Guidelines and articulation of how the four theoretical streams can be incorporated into practice. This is covered in "Applying the Applied Practice Model" and Table 4.

The most significant negative consequence of previous approaches to Applied Practice and Work-Integrated Learning has been the privileging of practical experience over learning from the experience. Major operative assumptions being that (a) work and other forms of practical experience are tantamount to learning, (b) placements meeting certain criteria will be sufficient supplements to students' formal studies, and (c) the greater the immersion the more beneficial the experience. These assumptions have grave implications for the design and delivery of Applied Practice, not least of which are frequent disconnects between the student while on placement and the academic institution and rifts between what the student experiences and what he or she studies. Experience does not necessarily or automatically convert to desired learning (Percy, 2005; van Woerkom, 2004). And, unfortunately, some of what is learned may be counter-productive (Hays, 2015a).

Applied Practice holds tremendous promise for developing the leaders and other professionals of tomorrow. This potential is not fully realised, however, when more attention is paid to experience than the learning from it. Many educators and professional development practitioners have incorporated reflective exercises into academic and training courses and informal workplace learning. There is little doubt that critical reflection contributes to deep learning, and it has been linked to both personal transformation and organisational change (Hays, 2013a). This notwithstanding, Applied Practice should provide more than just experience or even reflecting upon it. It can accomplish this through creating meaningful experiences for students instead of merely trying to help them make meaning from those experiences. Applied Practice can continually strive to enhance theory–practice integration and make the most of both theory *and* practice.

Experiential learning theory and the practice of reflection can only take us so far. To realise its fullest potential, Applied Practice and Work-Integrated Learning need more robust theoretical foundations. These foundations exist already within the field and across the teaching and learning literature, as evidenced in the many useful sources included as references in this exposition. Though within grasp, much important research remains underutilised. Reasons for this are unclear. It may be that the field is by nature more practical than scholarly. It may be believed that everything is known and the best already put into practice. It may be that Applied Practice is dismissed as a legitimate field of study. Any one or all of these possibilities might be true; but in no case is Applied Practice well served. For many of us, it's business as usual.

Applied Practice programs are fraught with challenges. Finding and keeping suitable placements; striking the balance between student needs and expectations and those of host organisations; assuring quality supervision; gaining faculty support and involvement; having to do more with less; assessment; conferring credit; attempting to meet multiple and sometimes competing demands; and continually fighting the same old battle to prove legitimacy and earn credibility are all problems the authors have experienced. Readers may be familiar with these or face other difficulties. These problems are complex and interrelated, and will not easily be solved. But one step we can take toward ameliorating the contestable nature and uncertain future of Applied Practice is to ground it firmly and defensibly in established theory and best practice.

Practice in Search of Theory

Sharing common principles and objectives, one would expect Work-Integrated Learning and the variety of learning through participation programs to have a unifying theory or set of theories of learning. An extensive review of the literature, however, refutes this assumption. Not only do these programs have no unifying theory, their independent theoretical bases are often implicit or inconsistent. By far, the most widely applied

theoretical base is experiential learning theory, drawing on and extending Dewey (1938) and Mead (1934), and popularised by Kolb and his associates (Kolb, 1984; Kolb et al., 2011; Kolb & Kolb, 2012). Despite the reasonable and widely accepted application of experiential learning theory to learning through participation programs, it does not sufficiently address what and how students learn. And, if one is not careful, experiential learning theory and practice may reinforce the assumption that experience alone produces desired learning.

The theoretical bases of learning through experience programs are tenuous at best, and further research and theorising are warranted. In a search of all *Journal of Cooperative Education and Internships* articles using the search term "theory," only 21 articles appeared spanning 1973 to 2010. There were three in the 2000s and ten in the 1990s, with the remaining studies further back. Theory-based studies appear to be increasing since 2010 (see, as examples, Raelin et al., 2011, and Hodges et al., 2014). This increase may be the result of articles such as Coll and Kalnins (2009) and Zegwaard and Coll (2011) highlighting the dearth and criticism of cooperative education research. The *Asia-Pacific Journal of Cooperative Education* was also searched, with a fairly low showing of theory-based research or articles advancing theory in its ten-year history. Recent notable exceptions include Eames and Coll (2010), Groenewald (2007), and Stupans and Owen (2009). Of course, these are not the only sources of theory-based research on work experience for learning programs (see McNamara, 2013, as an example; and Coll and Zegwaard's 2011 text should also be mentioned).

As late as 2010, the auspicious journal, *Higher Education Research & Development,* published a special issue on Work-Integrated Learning. Even here, there seemed to be a preference for practical and programmatic papers selected for publication over those with strong theoretical bases. Despite this general observation, Lee, McGuiggan and Holland (2010) strongly position their article on work-based learning in the literature on management learning. More than many scholars in the field, they bring together a range of learning principles and strategies of relevance to learning through participation programs, including active learning, community-based or service learning, Problem-Based Learning (PBL), deep learning, scholarly engagement and workplace learning. Importantly, they identify transfer and context as key objectives and outcomes of learning through participation programs. And, if not foregrounded, underpinning Lee, McGuiggan and Holland's (2010) conception of learning through work is active engagement.
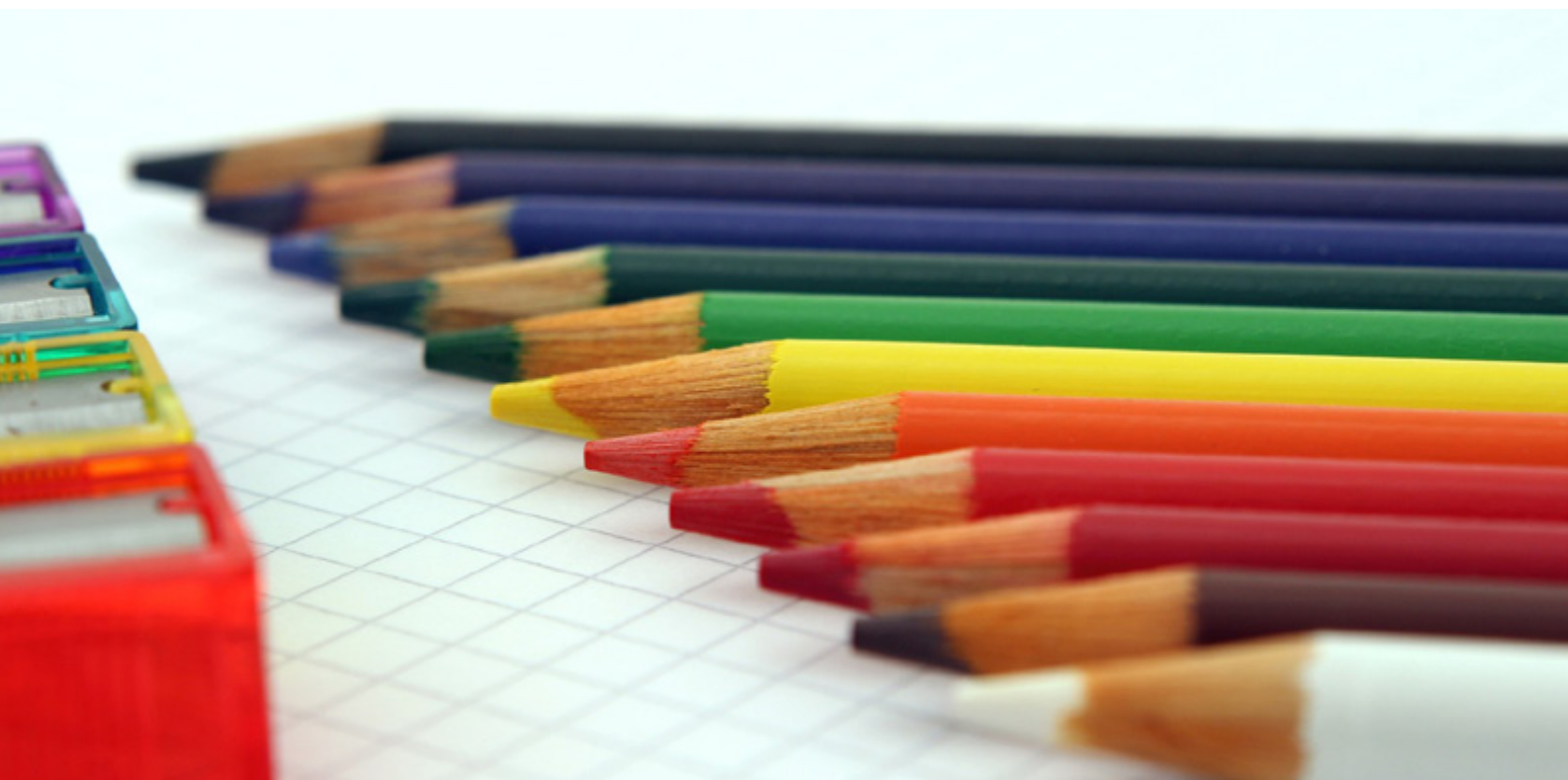
As a new field, Applied Practice does not yet have its own established theory. There does not appear to be a journal of applied practice for the generic field. By default, Applied Practice has absorbed the theory bases from its constituents, Cooperative Education, Work Integrated Learning, professional practice and others. While there is general agreement that experiential learning underpins pedagogies and programs such as Industry-Based Learning and Professional Practice, their theoretical and conceptual foundations lack depth and breadth. If work experience for learning programs are to remain viable, they must root themselves more firmly in established teaching and learning theory, and principles of best practice. They must also demonstrate their effectiveness in promoting student learning and professional development, a challenge legitimated and simplified by having strong theoretical foundations. The call to prove efficacy and value-for-money is relentless in today's climate of cost-cutting, efficiency-seeking, and performance-measuring (see Porter & Vidovich, 2000, and Welch, 2005).

While numbers of students placed, and satisfaction, will continue to be relevant measures, what should matter most to those who run and fund academic institutions and their key stakeholders is that the next generation of graduates will be equipped and have the desire to make meaningful contributions to society. This aspiration requires more than graduates having basic skills and getting a job. It means they have a broad set of knowledge and skills that they can bring to bear on new problems in an uncertain world, the sense of moral and civic responsibility to do so, and an informed set of values and ethics to guide their way (Hays, 2014; 2015a). If this is at least partially true, then we must exhaust every opportunity to build the capabilities of the next generation and do it in the best ways possible. One reasonable means of doing so is to design and deliver Applied Practice in accordance with the best that is known with respect to teaching and learning. And much is known, though it may not have been systematically brought together to ground and guide practice. The model put forward, here, attempts to do so.

Applying the Four Pillars Model of Applied Practice

The four pillars model provides a strong and much-needed theory base for Applied Practice and related work experience for learning programs. For some practitioners, a good theory is all they need, and they can design, deliver and evaluate Applied Practice accordingly. Others may appreciate a set of guidelines for practice that are grounded in theory. Such grounding provides legitimacy and credibility for learning objectives, strategies and assessment. To this end, the authors have developed and share here a set of broad guidelines for Applied Practice programs. The general principles in Table 4 (see next page) are indicative only, and in no way exhaustive. So, while program designers and evaluators might rely on these guidelines, they should not be limited by them. The intent here is to draw on the range of possibilities inherent across the four learning theory streams. There is greater potential to promote meaningful and productive learning through the interaction, synergy and leverage of all four pillars.

There is some overlap across the items, but this may work to advantage as the guidelines and principles are linked to produce effective and integrated learning objectives, strategies and assessment. Again, these are not prescriptions, but options. The savvy practitioner will pick and choose in accordance with program needs, stakeholder expectations, and his or her own preferences and inclinations. The presence and enactment of these guidelines and principles would indicate the general health, breadth and depth of an Applied Practice program; but they are, in the final analysis, principles for practice, not evaluation criteria. They are also not particularly operationalised or stipulative, allowing for considerable interpretation in application. Finally, a given program does not necessarily have to incorporate each of the items to qualify as Applied Practice or to attest to its learning value or other benefits generated.

Applied Practice Principles and Guidelines

Learning first. Focus of Applied Practice programs must be on learning first. Placement numbers and administrative concerns are all secondary. At all times remember that it is not the experience that matters, but what participants in that experience learn from it.

Student at the centre. The student is at the centre of his or her own learning – involved in setting learning objectives, strategies and assessment.

Learn how to learn. Preparatory and ongoing dialogue and instruction help the student understand how he or she learns, the implications of this, and how learning might be improved.

Focus on lifelong learning. Dialogue with supervisors, including performance feedback sessions, focuses on the relationship between learning and development, performance and career aspirations.

Build on discoveries. Students on placement are frequently asked or stimulated to think and talk about discoveries, insights, and observations about themselves, others, organisations and work-life. Help students see how they and their discoveries fit into the bigger picture.

Close the theory–practice divide. Deliberate and continual attempts are made to foster the student's connection-making between theory and practice – how is what you are experiencing related to what you are studying, and vice versa?

Develop reflective habits and skills. Students receive instruction and ongoing coaching in reflection and reflective practice. Formal and informal strategies are used to foster ongoing reflection.

Have students create their own meaning. Students are prompted to name and explain their learning and its significance, to actively construct meaning out of experience. What does this mean? Why is it important? What are its implications?

Make learning active. Important theory and concepts are translated into active projects and tasks, best negotiated with the student, that can be done on the job or in the community. The learning comes through the doing, produces meaningful and authentic services or products, is evaluated in terms of relevance to the customer, and consolidated through critique and reflection.

Foster agency and self-efficacy. Projects, tasks and assignments are negotiated, and tailored to the student's ability and learning and developmental needs. Feedback and coaching are provided on an ongoing basis through collaborative process. Increasing responsibility and challenge are agreed and supported.

Build citizenship. The topic of what it means to be a good citizen at work or in the community is entertained and remains a continuous thread running through conversations, training and assessments. Students are prompted to explore how what they do depends and impacts on other people and projects. May comprise separate activities dealing with ethics, values and professionalism. An assignment or discussion may centre on how democracy plays out in the workplace, or how power relationships are perpetuated or moderated.

Spice it up. Projects, tasks, assignments and assessments are diverse, and exercise and honour a range of learning modalities (thinking, feeling, doing). Try to get the whole student fully engaged. Don't limit experience or its assessment to the conventional or the easy.

Go for depth. Correct answers and appropriate responses are only the beginning. Students are encouraged to explore why they do what they do in particular circumstances, what the consequences and implications might be, how they might approach it differently, what other people might do in the situation, and so on.

Understand context. Dialogue and assessments focus on understanding a particular context and how they may be alike or different from other contexts. A simple contrast is provided by school and work. What makes the student's work site different, special or problematic? Is this the kind of environment the student wants to be part of? Why or why not? How does this context relate to what the student studies?

Learn collaboratively. To the fullest extent possible, tasks, projects, assignments, exercises and activities are done in groups, taking advantage of the fact that people can learn effectively in groups and that much real work requires collaboration and teamwork. Action Learning models are examples, as are shared reflection and after-action debriefings. Remember it is not teamwork, per se, that is important, but what team members learn from it.

> *Encourage active engagement.* Learning is least effective when passive. For lifelong learning and career success, students need to take responsibility for their own learning, and for seeking out challenge and opportunity and staying with it. People get more out of experience when they engage with it fully; they are more efficacious, and contribute more to others and their learning when wholeheartedly engaged.
>
> *Make learning matter.* Ultimately, students will learn most when what they learn matters. Every effort should be made to help students see how what they are learning is relevant to them, their studies and profession, and the world.

Table 4. Guidelines and principles for Applied Practice as grounded in the Four Pillars Model.

Synthesis: Theory into Practice

Applied Practice is a contemporary model of education that intentionally and directly links the academic curriculum with a practical, or applied, one. Ideally, theory and practice are seamlessly linked – the one informing the other in a mutually beneficial way. Like most work experience for learning programs, including many forms of Work-Integrated Learning, its intent is to provide and stimulate learning for students that is transferrable, that is to say, applicable outside the relatively predictable confines of the classroom. Applied Practice is meant to narrow the theory–practice divide and equip graduates with the capabilities demanded of the professional workforce.

Applied Practice is about much more than employability, however. It also seeks to develop skills and dispositions needed of an active and productive citizenry in our global, increasingly democratised world, where autonomy, initiative, self-governance, ethical responsibility, innovation, and collaboration across diverse cultures and disciplines are essential in effectively dealing with today's vexing problems and the complex and unanticipated challenges that will inevitably arise in the coming decades. Finally, and perhaps we have not emphasised this enough, Applied Practice must instil graduates with resilience, the acuity to recognise needed change, and the courage, wisdom and skill to transform themselves, their organisations and their communities.

In many respects, Applied Practice is not a new concept. Forms of Applied Practice have been around as long as practices have. The number of practices has increased with the burgeoning of specialisations. There has been an "applied" side as long as there has been a theoretical one. However, we use the term generically to encompass an emerging philosophy and pedagogy of education that applies to many disciplines and individual practices. As such, it introduces a new science of practice, or professional practice, attempting to foster innovation of teaching and learning approaches, tools and principles that enrich and extend academic learning, and make it more versatile and applicable. This is an ambitious objective, and we have far to go.

Unfortunately, the distance is deceiving, as it is all too easy to assume that a robust simulation or practical experience outside the classroom is sufficient. Deep, transferrable learning is not purchased so easily. To approach predictable and productive achievement of transferrable and transformational learning, we need far more research to better understand the dynamics of Applied Practice learning; and we need considerably more grounding in learning and teaching theory. Some grounding may be drawn from proven theory; this is what the present authors have tried to do in this monograph. We assembled theoretical and pedagogical foundations from an extensive review of relevant literatures, portraying the foundations as the four pillars model. The model is defensible and, hopefully, interesting and useful. But it is not definitive or exhaustive. It is presented as a means to stimulate critique, dialogue and further research. More theory building with respect to Applied Practice is warranted. What kinds of practical experiences, for example, are most productive? How can practical experiences best be scaffolded and linked academically?

Applied Practice, Work-Integrated Learning, and the other various forms of work experience for learning programs are contemporary models of education – or practice – in search of theory. Used widely in developed countries around the world, it is somewhat surprising that more has not been done to ground work experience for learning programs in established learning and teaching theory. Evidence of the benefits of cooperative education, service learning and other forms of professional practice and work-related learning, empirical and anecdotal, has been amassing for decades and is, on the whole, convincing. This notwithstanding, our work in the field and ongoing research reveal that many placement programs like co-op and WIL have been predominantly practice-based, rather than firmly rooted in established learning and teaching theory.

The preponderance of scholarly articles on related programs looks to experiential learning theory, which is natural, logical and creditable. Most researchers in the area, it appears, would believe this sufficient. And, in truth, reliance on experiential learning theory and practice have stood the predecessors of Applied Practice in good stead to date, with many programs having decades of success. We do not criticise ELT, but note only that Applied Practice may benefit more by extending and strengthening its theory base. To this end, we introduced the four pillars model, which is the centrepiece of this monograph.

The model comprises four established theory streams, represented as pillars, of great relevance to Applied Practice and related work experience for learning programs: adult, experiential, transformational and workplace. We do not privilege one stream over any other, assuming that each is equally important. Each stream contributes uniquely to the overall model of professional practice learning, and each plays an important part in leading to theory–practice integration; that is, closing the perceived gap between what students learn in formal studies and what they need to know to perform well at work and in their communities.

Applied Practice and the associated four pillars model are not merely vocational or study-to-work transitional processes, though they incorporate and complement such programs. The fact that Applied Practice aspires to more than just preparation for work and promoting "employability skills" is embodied in the transformational learning pillar. Applied Practice is premised on the belief that students can, and perhaps should, transform as a part of the process – *becoming* greater than they are in the beginning, or *transcending* their current limitations, (for example) by:

- developing as professional practitioners;

- becoming more efficacious human beings;

- taking responsibility for making the world a better place and feeling capable of doing so

- becoming better workplace and community citizens;

- developing a conscious set of principles, values and ethics;

- developing a mature and balanced self-awareness and appreciation for their own and others' strengths and weaknesses; assuming at least partial responsibility for learning and development.

The notions of becoming and transcending are in accord with much of the literature on Work-Integrated Learning and professional practice (see, as examples, Dall'Alba, 2009 and Trede, 2012), and are certainly at the heart of transformational learning theory (McGonigal, 2005; Taylor, 2007 and 2008), and Service Learning and citizenship education (Harkavy & Benson, 1998; Hays, 2015b; Hays & Clements, 2012; Pless et al., 2011).

Some readers will reject the stance that educators should be in the business of changing people, citing both ethical and practical issues. This is a matter of personal and professional choice. However, learning always

implies change; behavioural, affective or cognitive. It is the degree and nature of that change and what educators should or should not do to promote it that are points of contention. To our thesis and its theoretical and practical implications, we believe that the whole learner can and should be brought into the process of Applied Practice and that more significant learning will occur as a result. This can be transformational, identity-forming, even life-changing. Grauerholz (2001), Hays (2008), Kempster (2006), Meuser and Lapp (2004), Plack (2006) and van Woerkom (2006), all cited elsewhere in this essay, have documented learning at this fundamental level.

Having a strong theory base can serve Applied Practice in important ways, guiding research and practice. Our search for theory has accomplished at least one thing locally: it has highlighted the importance of placing students' learning first and shown that this is both desirable and possible. Reviewing the relevant teaching and learning literature fairly extensively allowed us to develop and begin to validate the principles and guidelines listed in Table 4. We can assert these principles and guidelines now with the assurance that they are grounded in theory and documented best practice. This, in turn, should promote examination of co-op, WIL, internship, practicum and other professional practice programs more critically, with reference to the principles and guidelines as a benchmark.

The literature is replete with excellent examples of established teaching and learning theory and best practice (see, for example, Wangsa & Uden, 2007). There is great collaborative effort amongst academic and workplace supervisors, course convenors and students to integrate theory and practice and to support students to get the most from their learning experiences. On the downside, there are indications that some aspects of our programs are mechanistic and administrative – more of a placement activity than an integrated learning strategy. In integrated learning strategy, an example would include student placement experiences which are embraced in the classroom, while in the placement activity little is done in or out of the classroom to make the most of student experiences or link them to instruction in any way. Where the programs are working well, faculty and staff see work experience for learning as an integral part of the curriculum. Where they are working less well, these experiences are viewed as detached, considered adjunct to formal studies, and continually under threat.

It may be difficult to exceed our own expectations in all areas, but we can expect to see a turnaround in performance as faculty, staff, host organisation personnel, community groups and students come to appreciate this new emphasis on student learning and the theory that supports it. The four pillars model is expected to keep student learning front and centre of attention. The graphic nature of the model should remind us at all times that the theory–practice divide can and should be narrowed, and that we have four solid theory bases and associated practices to support our effort.

In a Nutshell

Institutions can and should do more to produce graduates prepared to make meaningful contributions to society (Hays, 2015a). The minimal requirement is that graduates are employable – they have baseline skills and knowledge to get and keep jobs. But we do them a disservice and society an injustice if we graduate them only so endowed. Our standard has to be much higher. It is crucial that our graduates are equipped to challenge the status quo, to find new and better ways of doing things, and to continue to learn and develop, reinventing themselves, their places of work, and their communities. The real world demands of the next generation of leaders that they will effectively work with and through others; that they will learn together to solve the hardest problems facing organisations and societies today (Matus & Talburt, 2015; Sankraran & Brown, 2012).

To this end, Applied Practice must champion learning that surpasses minimum requirements, employing strategies that transcend 'business as usual'. The kind of learning that is possible in and through practice, when carefully structured and linked to theory, will enable our graduates to confidently take on the problems of today and tomorrow. We can educate in ways that promote deep learning; actively engage students and help them learn from the process; foster insight, enquiry and creativity, and make the most of these discoveries; and tap into their hearts and souls, as well as their minds, allowing them to explore their vast potential and find greater meaning in their studies and work. We can help them become more willing and able contributors to bettering the organisations and communities in which they work and live. If this sounds all too idealistic or even presumptuous, we might need to take a refresher course in Applied Practice ourselves.

Directions for Further Research

Emerging delivery forms of Applied Practice and the four pillars on which it could reasonably be founded are instructive, defensible and appealing. However, there remains much to learn and empirical evidence will only substantiate and inform what seems to make a lot of sense. Some directions for further research are discussed below.

(1) As a new model, and one that integrates four major theory streams, empirical research is needed that can demonstrate (or refute) the efficacy and synergy of the four foundations and approaches to learning. It is recognised that, as a complex model, it may be difficult to pinpoint precisely which aspects of Applied Practice have the greatest effect. Are learning gains the result of the aggregate or some independent factor?

(2) Research into assessment of deeper learning is warranted. The quality and depth of learning suggested possible through the four-pillars model far exceeds simple measures of satisfaction and crude self- or supervisor ratings of learning and other achievement. If colleges and universities are going to invest time and money into reshaping their programs to more fully utilise Applied Practice approaches and the four theory streams, harder evidence of their efficacy is required.

(3) As it is suggested that teaching and supervision may need to take a more facilitative direction, research into the most productive kinds of facilitating teaching and supervisory behaviours, knowledge and skills, and the best way to cultivate them, are necessary.

(4) Realising the full potential of Applied Practice relies in no small measure on its embrace by students, course convenors, academic and workplace supervisors, community groups and administrative staff. It would be helpful to determine their level of readiness and how to best equip them. Research that explicates these issues would be fascinating as well as beneficial.

(5) With respect to the four pillars of Applied Practice, there is a multitude of particulars worthy of further research. Can active learning strategies be qualified? Can discoveries be promoted? Can individual and collaborative learning approaches be contrasted in terms of effects? At what point does duration of placement matter? What are the best ways to prepare students for placement, support them while on placement, and follow up with them to optimise learning; and what are the essential attributes of the fully integrated curriculum?

(6) Since learning from work experience appears to hinge on reflection, it would be worthwhile to evaluate and critique the relative impact of reflective assessments and practices employed and the efficacy of instruction regarding development of reflective skills and dispositions. Despite almost ubiquitous coverage of reflection in the work experience for learning literature, anecdotal evidence from observation and dialogue suggests wide inconsistency in understanding and use of reflection and in provision of education *for* reflection. What precisely makes a palpable difference? What might the qualitative differences be between students having a substantial reflection component and those who do not?

(7) Finally, what does a curriculum for Applied Practice look like? What makes it unique and more powerful than traditional curricula? What are the challenges involved in designing, delivering and continually evolving such a curriculum? If practical experience is seen as the perfect complement to academic-theoretical education, why does the theory–practice divide persist?

Research projects focusing on the topics and questions listed above will help Applied Practice to demonstrate its credibility and legitimate place in the curriculum. To deservedly earn such status, Applied Practice should be at the forefront of research into teaching and learning, rather than lagging behind as has often been the case. Applied Practice has much to offer students, the community and industry. Renewed research focus will ensure that Applied Practice continually improves, retaining its prestige and influence, and adapting to meet the evolving needs and expectations of its stakeholders.

Conclusion

This treatise should be of great interest to researchers and practitioners alike. It adds significantly to a nascent theory and pedagogy of Applied Practice, validating current best practice, legitimating program enhancements, challenging some approaches to delivery and pointing to areas for lucrative research. The piece provides both breadth and depth, complementing extant literature and contributing new insights. While its thesis and arguments are reasoned and well supported, some areas of this monograph may be provocative, others controversial. This is intended and desired. Though Applied Practice is an emerging field, the many programs and pedagogies it subsumes have been around for some years. Hopefully, some readers will agree that it is time to reaffirm, re-establish or reinvent our practice. We should proceed not by restating the obvious, but by finding and demonstrating new and better ways of complementing formal studies and integrating theory and practice. The strong theory base advanced in this essay will enable us to move forward confidently.

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