Education for Professionals through Work-Integrated Learning

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Abstract: Training practices that separate work and learning inhibit learning transfer. Professionals deal with complex and ill-structured problems which demand that they draw on real world situations to develop the appropriate contextual and conceptual knowledge. Entry into a profession is dependent on an individual having acquired a level of competency sufficient to practice. Professionals ideally should be able to apply to their role the knowledge and skills gained through an education system which currently disconnects theory from practice ‘real world’. Much of the current emphasis for professional development is on development of competencies.

This paper argues that to enhance their careers, professionals need to either acquire a specialist discipline or to develop their skills beyond a competence/sufficiency level and that learning for this requires learning at a greater depth of understanding than mere competency. The paper explores how Work-Integrated Learning (WIL) is an appropriate education philosophy to enhance the careers of professionals. WIL recombines learning with the real world in a single education paradigm. It incorporates hands-on work experience and instructional learning in a real-world setting that assumes a level of explicit knowledge/skill on the part of the learner and the exchange of tacit knowledge/skill from the real-world to the learner.

Keywords: Work-Integrated Learning, professional development, competency/sufficiency, learning transfer, risk minimisation, risk aversion, risk mitigation
**Education Systems and Professionals**

This paper is concerned with investigating the needs of professionals for on-going Professional Development and the potential of Work-Integrated Learning (WIL) to improve the instructional educational systems enabling improved outcomes for the individuals concerned. The paper looks at current education philosophies and directions in Australia through a review of relevant literature and questions the impact of a perception that professional development is driven by an emphasis on competency and asks:

- Does an emphasis on measuring competency to ensure sufficiency knowledge lead to an improvement in the level of practice by professionals?
- Is the professional development available for professionals designed to assist professionals in dealing with problems which professionals typically face and need to solve i.e. problems which are non-repetitive and unstructured?

It is the theme of this paper that there is a level of education which is largely ignored but which does have an impact on organisations and society. Too many professional development programs are competency based training programs which largely use multiple choice definitional styled questions. They are designed to enforce the concept of standard solutions to all problems.

Explicit knowledge is not sufficient for a professional practitioner. “Very little of real working life is run on agreed common definitions” (Lambe, 2002). The work of professionals involves approximations and most of practice is “highly interpreted, time and place contingent, and constantly shifting” (Lambe, 2002). Knowledge is not made up only of discrete pre-formed units. Education systems have been designed mainly involving assessment of discrete pre-formed units of manageable problems which lend themselves to pre-specified solutions – a competency or sufficiency approach.

This paper argues that there is a need not only for professional development which recognises learning and acts as consumer protection but also there is a need for professional development at an advanced level in the areas of specialisation and integration.

**The Drivers of Professional Development**

There are three factors which cause individuals to undertake professional development:

1. Minimise the risk to, and enhance the security of, the public as harm may be caused to:
   - individuals well being, wealth and social standing;
   - organisations – employers, professional, trade, suppliers and customers; and
   - society – government and the economy in general.

Most professional societies have ethical codes (above all do no harm) and codes of conduct (advocate only practices which are seen as being effective). Professional
societies need to ensure that members are aware of these requirements and are equipped to follow them through effective professional development.

2. Provide a means for the objective recognition of qualifications where individuals seek to obtain recognition of knowledge and/or skills through professional societies who set admission standards for entry into a profession. The societies have a responsibility to ensure that the sufficiency level of knowledge of members is updated and maintained. Professions Australia, the peak body for professional societies in Australia, states that professional societies are responsible for control of the profession through policies relating to admission to the profession, regulation of professional practice and consumer protection (Professions Australia, 2006a). Professional societies should also oversight the development of knowledge of their members beyond a sufficiency level and provide appropriate recognition (Argy, 2006b; Australian Physiotherapy Association, 2005; Phelan, 2002).

Within a Work-Integrated Learning philosophy, professional societies can provide learning frameworks covering specification of learning objectives, content development, content delivery, mentoring, peer support, assessment and recognition. Work-Integrated Learning provides a context for learning.

3. Provide self determined personal development as individual professionals choose to undertake professional development to improve their knowledge and skills either for:

   • Continual Competency -

   Most professional societies prescribe a minimum compliance level in order to maintain membership at a professional level. In many cases this will involve attendance at seminars, workshops, short courses and more recently online learning activities. The choice of process and topics is generally left to the individual. The level of learning obtained is debateable and will be demonstrated by the ability of the learner to use the material taught; or

   • Self Actualisation professional development -

   This relates to professionals who wish to develop their careers beyond the sufficiency level and to take responsibility for their career development in order to become either a specialist or to be able to use their domain knowledge in combination with other domains.

Competency

The Australian Pocket Oxford Dictionary defines competent as “adequate; sufficient; properly or legally qualified; capable” (Johnston, 1983), while the Australian Integrated Compact Dictionary & Thesaurus defines competent as “the ability to do a particular
thing” and the alternative words suggested in the thesaurus are “able, adept, capable, effective, efficient, handy, practical, proficient, qualified, skilful, skilled, trained” (Knight, 2005). The concept of competency is complex and may be defined differently by various stakeholders. (Smith, 1996, 2000) argues that in much current usage the notion of competence has been whittled down to the ability to undertake specific tasks; it has been largely stripped of its social, moral and intellectual qualities.

It is possible to mount a case that in general terms, competency signifies an assessed minimum compliance level and this is driven by a need to minimise risk. The assessed compliance level does not necessarily guarantee that particular tasks can be performed. Some professional societies suggest that that competence implies a broader focus e.g.:

- Competence goes beyond formal qualification to the sufficiency of the professional's knowledge (theory and process) and skill capability and to effectively represent the interests of the client and institution. The professional should not undertake a program without honestly feeling either competent to handle it, or able to become competent without delay, risk or expense to the client and institution (ACCED-I, 1994).

This definition (from USA) is consistent with professionals operating within an ethical framework. A code of ethics is a requirement for any professional society wishing to become a member of Professions Australia (Professions Australia, 2006a). The level of knowledge suggested by the definition is really a minimal compliance level.

- Competence: The broad range of knowledge, skill, attitudes and observable behaviour that together account for the ability to deliver a specified professional service. Competence also involves adoption of a professional role that values accountability to the public and leadership in public practice, industry, government and education (CICA, 2005).

This definition (from Canada) suggests a higher level of knowledge and performance. If this level is to be combined with some form of professional registration, it is questionable as to how competence at this higher level can be measured and assessed. The Pharmaceutical Society of Australia distinguishes between competency standards (knowledge based) and professional standards (practice conformity and uniformity):

- Competency can be described as skills, attitudes and other attributes (including values and beliefs) attained by an individual based on knowledge (gained through study at bachelor’s degree level at least at university) and experience (gained through subsequent practice) which together are considered sufficient to enable the individual to practice as a pharmacist.
On the other hand, professional standards relate to the systems, procedures and information used by individuals to achieve a level of conformity and uniformity for a given practice. The attainment of a professional qualification versus the practice of pharmacy to a set of professional standards highlights the distinction between the two types of standards. The adoption of professional standards ensures that the knowledge and skills acquired are executed to a level of consistency identified as essential for the delivery of a quality professional service.

There is an inherent assumption that pharmacists using the professional standards are also competent as pharmacists. The delivery of professional services requires personal competence as well as quality procedures if the service is to be delivered to a standard that is acceptable to both consumers and professional peers, has credibility in a professional sense and meets all regulatory requirements (Pharmaceutical Society of Australia, 2003).

The practice of pharmacy involves potentially high risk to the public. The requirements specified by the society consequently are high in relation to meeting regulatory requirements. Both the competency standards and the professional standards specify a sufficiency level of knowledge and performance. They do not specifically address issues of credentialing higher level specialist services.

The professional who gains entry into a professional association is acknowledged to have acquired a body of knowledge, a skill, or ability at the sufficiency level defined by the professional body (a minimal level of knowledge sufficient to practice within a particular profession). This is generally recognised by professions and the public that the professional is competent. The Committee for Economic Development Australia’s study on lifelong learning found that “the skills needed for work throughout a lifetime are diversifying. Jobs which once changed little in the course of a worker’s career are now changing every few years. Qualifications achieved at age 20 are more and more likely to be out of date by the time you turn 50” (Dimopoulos & Walker, 2005).

Simply maintaining the sufficiency level of knowledge held at entry into the profession is inadequate. Practice alone is generally insufficient to ensure knowledge is effective and up to date. New knowledge required to continue to practice within a profession evolves over time as a consequence of legal changes, technological advances or conceptual development. Professionals, therefore, have a requirement for professional development to obtain knowledge which reflects current practice within the profession. Much professional development activity focuses on the development and assessment of competencies (Painter, 2006; Professions Australia, 2006a).
Entry to a Professional Society (Professional Society Requirements)

Professions Australia defined continuing professional development as “the career long acquisition and development of knowledge, skills and attitudes, enabling a practitioner to continually enhance their professional performance for the benefit of the community” (Professions Australia, 2006a). However, their paper Blueprint for National Registration of the Professions concentrates on the need to protect consumers through professional development.

Professions Australia (2006b) declares that:

A profession is a disciplined group of individuals who adhere to ethical standards and who hold themselves out as, and are accepted by the public as possessing special knowledge and skills in a widely recognised body of learning derived from research, education and training at a high level, and who are prepared to apply this knowledge and exercise these skills in the interest of others.

It is inherent in the definition of a profession that a code of ethics governs the activities of each profession. Such codes require behaviour and practice beyond the personal moral obligations of an individual.

They define and demand high standards of behaviour in respect to the services provided to the public and in dealing with professional colleagues. Further, these codes are enforced by the profession and are acknowledged and accepted by the community.

This definition acknowledges that a professional’s recognised body of learning is derived from research, education and training at a high level. In most circumstances this body of learning has been obtained through undergraduate studies and depending on the policies of individual societies may or may not contain a requirement for practical experience which may or may not integrate work and learning. The definition does not refer to experience or the ability to apply the special knowledge specified in combination with that experience. Professions Australia (2006a) does support minimising risk to consumers through maintaining competence by specifying that practitioners have a requirement for professional development. This is a prerequisite for professional associations wishing for membership of Professions Australia - not all Australian professional associations are affiliated with Professions Australia.

Individual Professional Associations such as Australian Computer Society, CPA Australia, Institute of Chartered Accountants etc. specify a minimum compliance level of professional development activity to maintain membership and/or professional registration. This is a compliance strategy designed to achieve a Sufficiency approach to professional practice. Sufficiency is defined as “Accomplishing defined or required
objectives, according to the required or defined conditions, conforming with the right time, place, quantity, quality and costs” (Maswady, 2002).

Sufficiency may not be consistent with long term career and personal development goals of individual professionals and with the expectations that organisations and society have for professionals. Kolb’s theory of growth and development explains that people progress through three stages of development – acquisition of knowledge, specialisation and integration (in Coffield et al., 2005). We can acknowledge that most professionals have reached the acquisition of knowledge level of development and that this has been assessed by a relevant professional body using a competency assessment.

**Learning and Professional Practice**

The widespread compliance strategies developed to certify competencies has generated a need for professional development within various professions. However, compliance is generally measured by either assessment of tightly specified skills or on meeting compulsory time requirements. Depth of learning is too often ignored as professionals are not required to progress beyond an entry level knowledge. Senge (1990:4), who takes a strategic view of organisations, maintains that “in situations of rapid change only those [organisations] that are flexible, adaptive and productive will excel. For this to happen, he argues that organisations need to ‘discover how to tap people’s commitment and capacity to learn at all levels’”. The current emphasis on skills training does not encourage professional development for professionals who are required to be flexible, adaptive and productive.

Entry level education courses are not designed for students to master complex ill-structured problems. Students in these courses are not expected to independently transfer knowledge to new situations. On the other hand learners at an advanced level should be required to not only master the complexity of the domain knowledge but to be able to transfer their newly acquired knowledge to fresh situations as they arise. Problems faced by professionals continually change and evolve. The professional needs the capability to respond to new challenges through the transfer of knowledge derived from learning and experience. Professional development programs designed for professionals should take into account this fundamental requirement.

Brown and Duguid (1991) claim that the learning theories associated with most training courses, “tends to endorse the valuation of abstract knowledge over actual practice and, as a result, to separate learning from working and, more significantly, learners from workers”. Concepts of Transfer of Learning are not considered as the emphasis is on the transmission of explicit abstract knowledge which ignores the need for education systems to address solving problems which are complex and ill-structured. Brown and Duguid agree with, and extend, the work of Lave and Wenger (1990), which indicates that the separation of knowledge and practice is unsound and argue that the composite concept of "learning-in-working" best represents the fluid evolution of learning through practice (Brown & Duguid, 1991).
Learning does not occur independently of communities. There are many and diverse examples of communities including geographic, social, religious, artistic, special interest, organisational and professional. Communities provide the experience and the context necessary for professional learning (Brown & Duguid, 1994). Professional organisations can provide a community environment to promote the career and development of their members by making explicit, relevant tacit knowledge or by developing strategies for learners to use authentic work based activities in their studies. Peers as well as teachers can support learners' attempts to extend their knowledge and skills and to empower independent learning (Brown et al., 1989). Learners (in this context, developing professionals) can be guided through a form of apprenticeship (cognitive apprenticeship see Brown et al., (1989)). The activity in which knowledge is developed and deployed is an integral part of what is learned and is implicit in the development of the professional.

The president of the Australian Computer Society argues for a higher level of professionalism in calling for a commitment to a code of ethics and a code of professional conduct and practice, continuing knowledge and skills development as the ideal form of risk mitigation. A key competitive advantage can be obtained both on a global and an organisational level through true professionalism which demands a level of excellence, rigour, integrity and honesty (Argy, 2006a). It is significant that he uses the term risk mitigation rather than risk minimisation. The emphasis that is placed on risk minimisation in competency literature could more accurately be described as a process of risk aversion. Risk aversion works to eliminate undesired results, but may lead to lack of action or in the case of learning a lack of depth it is overly cautious and inhibits development. Informed knowledge held by professionals can be used to mitigate (or moderate) potential risk to organisations and society through the application of both implicit and explicit knowledge derived from a deeper understanding of the profession’s body of learning.

Professional societies are responsible for setting standards within a profession. They are able to provide communities of practice to support learners. These communities have an important role in the growth of knowledge and expertise within a profession.

Professionals and Problem Solving

The professional is required to solve real world problems and to take account of the peculiarities of each situation or case. Individual problems are often conceptually complex and require more than the ability to retrieve from memory intact pre-existing knowledge. Conceptual knowledge needs to be able to be applied to novel situations using reasoning and inference through an ability to flexibly reassemble pre-existing knowledge to adaptively fit the needs of each new situation (Spiro et al., 1996). Problems which are complex and ill-structured require the professional to draw on a knowledge base, derived from both prior studies and prior experiences, to solve each new situation. Often cases will vary from previous cases with individual solutions being non-repeatable.

The ill-structured nature of the knowledge domain of a professional is characterised by multiple, wide-application, conceptual structures (multiple schemas, perspectives,
organizational principles, and so on), for which the applicability of concepts and solutions are inconsistent from case to case (Spiro et al., 1996). The professional has to construct meaning in each situation. Constructivist theory (Bruner, 1996; Spiro et al., 1996) views learning as the establishment of knowledge rather than committing information to mind. It involves going beyond information presented in a course to encourage comprehension or an understanding of the issues involved. In a learning situation mere knowledge of the text is insufficient; it must be combined with knowledge built through experience. The schemas held in the heads of a professional can be changed, enlarged and made more sophisticated through the assimilation and accommodation of new concepts to enable the construction of knowledge which is relevant for a variety of situations (Clark, 1999b).

**Suitability of Work-Integrated Learning (for Knowledge Development of Professionals)**

There is a growing need for people who are deeply knowledgeable about their domain areas and who have well developed generic skills. Commonly recognised generic skills identified in studies of experiential education include the ability to be flexible, adaptable, creative, think critically and problem-solve. Important additions to these generic skills identified were the ability to have the skills required for learning, and to transfer learning to new and different contexts (Doyle, 2002; Murphy et al., 1997; Shaw, 1992). These studies demonstrated that WIL programs are effective in developing these skills.

The findings are consistent with Young’s (1997) international study of Cooperative Education which examined employers’ attitudes to coop students. The study identified attributes of Cooperative Education students within three categories, cognitive, psycho-motor or behavioural. Of the top six responses from employers which identified where Cooperative Education students held superior skills over other graduates, all were either cognitive or behavioural; viz: teamwork, capacity to learn, initiative, communication skills oral, adaptability and interpersonal skills. These cognitive and behavioural skills are important foundations for advanced level learning which the various studies identified WIL students were above normal students. The development of psycho-motor skills is more likely to be found in competency programs.

**Little evidence of Integration**

Many professional societies specify an experience requirement for admission to membership. The integration of that experience with learning is seldom or fleetingly addressed. On-going integration of work with learning is unlikely to be considered in the design of professional development programs which have compliance as the main driving force. Evidence shows that educational systems which integrates work with learning provide a more meaningful context not only at a skills level where relevance adds to the motivation and understanding of learners, but also at the conceptual level which is the depth necessary for professional development for professionals.
As the keeper of standards for a profession, professional societies have role to play to ensure that:

- The professional development requirements they specify are relevant for the profession.
- The educational systems are designed so that depth of learning is encouraged.

Learning needs to take place in context. Work placed problems are readily available to the professional to enhance learning. The current emphasis of professional development is on risk minimisation; the specifying of skill requirements; and the assessing of the specified competency. Professional societies have breadth and depth insight and awareness of their professions which can enable them to provide both the practical understanding of the required domain knowledge and to develop a contextual framework to ensure a deeper level of knowledge within their professions. The environment in which professionals operate is conducive to the integration of work and learning and we recommend that professional societies act as a conduit to enable this to happen. They have a responsibility of care to ensure the development of their profession.

**Levels of Knowledge**

Within an organisation, it can be argued that at most levels, compliance or sufficiency or conformance represents a minimum obligation regarding performance; re-thinking, re-learning, and re-examining are more significant concerns for organisations and individuals who need to progress beyond the status quo and to achieve excellence. In order to progress, organisations need to promote the development and application of relevant knowledge. Davenport and Prusak, (1998) emphasise the significance of the development of knowledge which originates and is applied in the minds of the knower through a mix of experiences for evaluating and incorporating new understanding and information.

Knowledge is derived from many sources. Significantly it represents more than can be obtained from conventional competency focussed training programs. As discussed, much of what is delivered in these competency focussed training programs is concerned with the transfer of explicit, abstract knowledge, that specifically exclude both complexities of practice and the communities of practitioners (Brown & Duguid, 1991). If we expect professionals to cope with complexities of practice we should look at ways professionals may obtain relevant professional development. Practitioners need to make a commitment to learning which extends beyond the memorisation of facts. The experiences of communities of practitioners can be drawn on to encourage and enable professionals to integrate new ideas with what they already know if they are going to keep - and use – new knowledge (Boadle, 2004). C words such as: “comparison, consequences, connections and conversation” are the keys to transforming information into a thorough informed and reliable understanding of the subject material (knowledge) (Davenport & Prusak, 1998).

One area where development of understanding is required is in the area of integration of domain knowledge with other domains. Development of integration knowledge is often
achieved through generic programs such as MBA programs which focus on broadening the professional beyond a technical domain area. It is interesting to note the growth of domain specific MBA type programs e.g. Technology Management, Frontline Management, Sport Business etc. These programs enable students to study within their domain area and use concepts and problems which are specific to that area while they are challenged to apply their new knowledge to practical domain relevant situations. These domain specific programs generally require that students have experience in the field prior to commencing studies.

The IT (sometimes referred to as ICT) profession in particular has recognised the need for integrative knowledge for its professionals. Bodies such as the CIO Executive Council, Initiatives – Australia, Higher Education and Mentoring Standing Committee have stated that the traditional focus within the IT industry on technical competency has not developed IT leaders. The concentration on technical training has contributed to a consistent distinction between “business” and IT. They argue for higher level training so that IT can be integrated within the business (CIO-Executive-Council, 2006).

In a similar vein IBM, specifies that business transformation and process redesign is determined not only by the skills of employees, but also by the employees’ capacity for leadership and change. Businesses need to be more agile, flexible and adaptive. The characteristics required by practitioners were identified by IBM as responsiveness, variability, resiliency and focus. Significantly IBM claims that businesses are recognizing that they can only adapt as quickly as their people can (IBM, 2004). From this, we argue that sufficiency training (particularly training which is specifically technical) does not adequately meet the needs of industry for the professional development of IT practitioners. IT is often seen as a profession which is multi-disciplinary and it is possible that IT requires a higher need for integrative knowledge than other professions. This will be examined in an on-going study.

First-world economies no longer have a monopoly in performing knowledge work, and authorities such as Peter Drucker have proclaimed on many occasions that the productivity of knowledge workers is the key to economic strength (Davenport, 2004). The strength of an organisation is often determined by the capability of its workforce led by its professionals.

The term Discipline is often used synonymously with Profession. It may also refer to a subset of a profession used to signify a specialisation within the profession e.g. within the medical profession – surgery specialisations; within the accounting profession – auditing specialisation; within the nursing profession - midwifery. Specialisation requires the acquisition of new knowledge which usually builds on the sufficiency knowledge obtained for entry into a profession (Phelan, 2002). There is recognition that the specialist has undertaken further study and obtained certification beyond the entry level into the profession. This right to use a specialist designation is earned through some form of structured professional development which is either provided or overseen by the relevant professional association or discipline specialisation authority. The professional associations are seen as the keeper of standards (Professions Australia, 2006a).
Transfer of Learning

Effective Transfer of Learning is the key to ensuring that education has a positive impact. Educators assume that transfer of learning always occurs as a result of education and training. They expect that whatever is learned will be retained or remembered over time and used in appropriate situations (Doyle, 2002). Unfortunately conventional educational practices often fail to stimulate students by either using conditions similar to those in the learning context including using well-practiced routines or to search for connections using deliberate abstraction (Perkins & Salomon, 1992).

“Transfer of learning occurs when learning in one context enhances (positive transfer) or undermines (negative transfer) a related performance in another context. Transfer includes near transfer (to closely related contexts and performances) and far transfer (to rather different contexts and performances). Transfer is crucial to education, which generally aspires to impact on contexts quite different from the context of learning” (Perkins & Salomon, 1992:1). For professional development at a professional level we need to look for positive transfer and far transfer.

Learning in its broadest sense takes place when a learner can demonstrate or display that learning later. Passing an exam can demonstrate that ordinary learning has occurred – transfer learning is always at least implicitly contrastive: it assumes learning within a certain context and asks about the impact beyond that context. Human Resources and Skilled Development Canada (HRSDC) refers to the "so what" or "now what" phase of the learning process. However HRSDC states that “abundant evidence shows that the very ‘often hoped for’ transfer from learning experiences does not occur.” HRSDC defines transfer of learning in the context of the workplace as “the effective application by trainees to their jobs of the knowledge and skills gained as a result of attending an educational program.” Transfer of Learning is positive when learning in one context impacts on performance in another context (HRSDC, 2005:1). HRSDC (2005:2) cites Baldwin and Ford’s (1988) claim that not more than ten percent of expenditures on training and development in North America actually result in transfer to the job. There is no evidence regarding the Australian position, but it is reasonable to assume that Australia is likely to be similar to north America. It is conceivable that with the emphasis on assessment of competency the potential impact of positive and far transfer of learning has been ignored.

Doyle (2002) “highlighted the value of linking learning to real workplace problems and situations”. In her study, students were able to apply theory to real life situations with the result that they were engaged in deep learning as they grew in confidence and were able not only to obtain clarity about the actual learning topics were, but they were able to identify the future applications of that learning. HRSDC (2005:2) supports this view when referring to Mosel (1957) who identified three conditions for transfer: content must be applicable to the job, the trainee must learn the content and the trainee must be motivated to change job behaviour by applying what was learned.
Career Development, Experiential Education and Deep Learning

Career development beyond an entry level for professionals will require Professional Development which either aims at:

- Acquiring a new Specialist disciplines or
- Developing professionals beyond a competence/sufficiency level and/or integrating knowledge across knowledge domains.

The learning required for either of these levels has been referred to as:

- **deep learning** which occurs when experiences are integrated into the learner’s body of knowledge and understanding and connections are made to previous lessons. In contrast, the memorization of facts and the acquisition of unrelated pieces of information characterize surface learning (Ramsden, 1992 in {Weisz & Smith, 2005}) or;

- **double loop learning** which results in the detection and correction of errors in ways involving modifying an organization’s underlying norms, policies and objectives. This learning may result in a change in the way problems and opportunities are perceived which may affect the way in which strategies and consequences are framed. Double loop learning involves questioning the role of the framing and learning systems which underlie actual goals and strategies ((Argyris and Schön 1978: 2) in {Smith, 2001,2005}).

‘Learning is the process whereby knowledge is created through the transformation of experience. Significantly an experiential component gives students the opportunity to recognise the learning that lies hidden in earlier workplace experiences - the ‘Aha!’ factor - ‘Aha! That’s why that happened’ (Kolb 1984, 36 in (Smith, 2001)). Students in work related learning situations appear not only to organize and store current learning for future retrieval, but also re-organize and restore inert knowledge all of which become accessible for future learning. The evidence suggests that the opportunities to reflect on and apply learning at work may nurture dispositions and habits which are conducive to transfer (Doyle, 2002). Professionals have access to real world problems. It is reasonable to suggest that professional development programs for practitioners can be developed using a WIL base which will draw on real world problems and enable the development of deep learning.

An Education System for Professionals

There is currently a philosophical split between education designed for Knowledge (traditionally university based) and education designed for Practice (or Praxis). Praxis is more than application of applying knowledge to given situations. It involves interpretation, understanding and application in a single process involving a continual interplay between end and means rather than following a predetermined process (Smith, 1996,1999). This section will look at learning theories in general terms and at the suitability of Work-Integrated Learning for professional development.
There are many labels and theories related to learning all of which emphasise particular elements of the education process. These include the generically used term pedagogy, and others more usually directed at aspects of adult learning such as andragogy, experiential learning, lifelong learning, self-directed learning, informal education, critical pedagogy. Many writers have difficulty in using the term pedagogy in relation to adult learning. The word pedagogy has a Greek derivation meaning to teach children while andragogy, which means to teach adults, has come into usage to distinguish essential differences. Pedagogy is concerned with transmitting content; andragogy concentrates on specific issues related to adult education and it is concerned with facilitating the acquisition of the content (Clark, 1999a). Professional development programs need to be designed incorporating learning theories and methodologies which are appropriate for adult learning and for the needs of the participants. This paper recognises that the term pedagogy is used in a generic sense in many educational papers but we would like to draw attention to the need for professional development programs to developed using appropriate adult learning frameworks.

In this paper we propose that any understanding of a Work-Integrated Learning (WIL) incorporates a learner environment for individual action learning and institutional active learning as an initiative that addresses six educational imperatives: workforce readiness; a professional development culture (both individual and workforce related); international relevance; life-long learning; knowledge transference; human and social potential. These imperatives we derived from published mission statements, public policies and institutional governance expressions e.g. Australian Government policies (1975 – 2005), OECD reports (2002, 2003) and the International symposia on career development and public policy held in Australia (2006) (Calway & Murphy, 2006b).

WIL is a philosophy of learning (not a learning theory) which is appropriate for the professional development of professionals. Work-Integrated Learning is also referred to as Workplace Learning, Work Based Learning or Industry Based Learning. The six education imperatives for WIL can and should inform both pedagogy and methods for individual action learning; and the course development for tertiary degrees using active learning concepts. Of the six education imperatives the concept of workforce readiness is relevant for entry level (sufficiency knowledge) for professionals. The remaining five imperatives are relevant both at the entry level and for practicing professionals.

Cooperative education (Sandwich programs, internships etc. in some countries) represents one educational form of WIL, which has broad recognition worldwide among employers, students and tertiary institutions, and forms a significant part of the literature reporting on WIL. It incorporates hands-on work experience in a real-world setting that assumes a level of explicit knowledge/skill on the part of the student and the exchange of tacit knowledge/skill from employment to the student (Calway & Murphy, 2006a).

WIL can be experienced through a number of learning theories based on any interpretation of the literature analysed. Much of the literature focuses on real-world experiences of WIL implementations and through a diversity of learning theories including; active, experiential, services, vocational, situated, constructive, cognitive,
deliberate practice etc. WIL does not seek to promote any single theory or model. Rather, it can and does make use of and explain a number of the theories.

WIL programs should be intentional, organised, real-world and accredited, having an educational structure that accounts for the nature of the student; the roles of the teacher/supervisor; the curricula emphasis; teaching methodologies; and social function of education and institutions (Calway & Murphy, 2006a). WIL programs in non-business disciplines are more likely to adopt an apprenticeship model, with students working on a one-to-one basis with a supervisor in largely research-based programs. In business disciplines students work in an organisation using knowledge obtained from their prior studies. They are expected to extend that knowledge and obtain new knowledge within the constraints of the available opportunities and expertise of the host organisation (Shaw, 1992; Young, 1997). Most Cooperative Education programs are at an undergraduate level. Rowe (2005) considers that postgraduate Cooperative Education programs are not appropriate for programs in scientific disciplines as students often complete only the Master’s degree and rarely have careers in research.

Dewey who was the inspiration for much research on experiential learning, argued that that ‘all genuine education comes through experience’ (Dewey, 1938). He argued that learning from experience should not happen in isolation but that the learner should be encouraged to connect their learning with past and current experiences and to see possible future implications of their new knowledge. According to Kolb (1984, 41 in (Smith, 2001)): ‘learning is the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping experience and transforming it’. He proposed that experiential learning has six characteristic features:

- Learning is best conceived as a process, not in terms of outcomes (i.e. a direction, a way of life – not a destination);
- Learning is a continuous process grounded in experience;
- Learning requires the resolution of conflicts between dialectically opposed modes of adaptation to the world (and world events);
- Learning is a holistic process of adaptation to the world;
- Learning involves transactions between the person and the environment; and
- Learning is the process of creating knowledge: ‘[which] is the result of the transaction between social knowledge and personal knowledge’ (Kolb 1984, 36 in (Smith, 2001)) (italics are our comments/emphasis)

This is in contrast to a competency/sufficiency approach to education which is:

- Outcome focussed;
- Does not particularly draw on practical and complex real world examples;
- Supports standard solutions to problems; and
- Does not seek to extend knowledge

Kolb’s view of experiential education is consistent with the six educational imperatives derived for WIL. The connection of structured learning with a past and current experiences will enable students to achieve a transfer of their learning.

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Conclusion

The philosophy of Work-Integrated Learning includes the imperatives of workforce readiness; a professional development culture (both individual and workforce related); international relevance; life-long learning; knowledge transference; human and social potential. This philosophy is consistent with the objectives relating to advanced level professional development for professionals. WIL can be used to provide a focus for the development of relevant professional knowledge which will provide society with greater expertise. An emphasis on WIL in the pedagogy will create a richer learning environment enhancing the professional’s performance and career. It is both feasible and desirable to design professional development programs which incorporate WIL.

Work-Integrated Learning (WIL) in its broadest sense is often described as an attempt by educators to provide a ‘schooling-to-work’ pathway to support the employability of graduates and have existed at undergraduate level for the best part of the last century. WIL is a construction by educational practitioners and associating employers. The cooperative arrangements between these groups can be developed for programs of study provided under the auspices of professional societies and bring together tertiary education institutions and employers.

Importantly given the diversity of professions, WIL is not a prescriptive form of education – it supports various models of operation and it can exist within different learning theories. Much of the literature is focused through real-world experiences of learning implementations and through a diversity of learning theories including; active, experiential, services, vocational, situated, etc. Rather than being specific WIL can and does make use of and explain a number of the theories.

Given our arguments what would an ensuing WIL philosophy state in terms of ‘purpose’ and ‘praxis’ for a holistic professional development environment?

We assert that WIL should be intentional, organised and real-world, having an active educational structure that accounts for:

- The nature of the student;
- Roles of the teacher/supervisor;
- Curricula emphasis;
- Teaching methodologies; and
- Social function of education and institutions.

Most current implementations of WIL are at undergraduate level and are accredited. Many professionals do not need professional development offerings which lead to a full academic award. Whether studying for an accredited postgraduate level program or not WIL can provide professionals with a deeper level of learning. Knowledge transfer is more likely to occur when learning content is delivered in context and professionals are able to apply their learning. Professional development programs should be designed to
incorporate the six educational imperatives of WIL and engages active and/or action learning methodologies, and focuses upon a broader holistic approach to individual and corporate professional development.

References


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