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GOOD PRACTICE REPORT: Work-integrated learning

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Overview

The Australian Learning and Teaching Council (ALTC) commissioned this report to identify good practices in work-integrated learning (WIL) in Australia through a systematic review of 28 funded studies' final reports, including WIL and discipline scoping studies, fellowships and projects.

WIL is delineated in this report as the intentional integration of theory and practice knowledge, and a WIL program provides the means to enable this integration and may, or may not, include a placement in a workplace, or a community or civic arena. The review has two further delimitations. Firstly, some WIL projects funded by the ALTC are not reviewed by the author because the final reports are not due at the time the report is commissioned. Secondly, the project summaries do not necessarily include all issues and recommendations in each report. The above view of WIL and an awareness that other concurrent ALTC reviews, for example 'Assuring Graduate Outcomes', by Professor Beverly Oliver, will consider some of these same reports from a different interest base guided the analyses and reporting. The literature review fully addresses the definition of what is WIL and what constitutes a WIL program.

A review framework

The diversity of interests within the reviewed projects points to the scope of WIL as a field of practice. A matrix has been generated identifying four major WIL ***domains*** and eight ***dimensions*** to map the WIL landscape, thus contextualising the projects. It is described more fully in the literature review.

Table 1 Matrix outline

Dimensions	**Domains**			
	Leadership & management	**Education**	**Partnerships**	**Context**
Purposes				
Curriculum				
Pedagogy				
Legalities & ethics				
Infrastructure				
Quality assurance				
Student matters				
Staff matters				

The completed matrix (Table 2 and Appendix A) identifies potential WIL activities occurring where domains and dimensions intersect. Each project has been considered in terms of its focal activities to identify aspects that have been addressed and those that might need further attention. The following questions structure the report reviews:

- What was the scope of WIL practice in the study or project? (e.g. single program, discipline-wide, multi-disciplinary, sector-wide, multi-institutional)
- How are WIL and its purposes conceptualised explicitly or tacitly?
- Did the conceptualisation challenge current WIL conceptions and practices?
- What strategies for success were identified and what are the leadership, management and educational implications?
- Was there attention to issues of equity, access and risk mitigation?

Some reports give a macro perspective encompassing the higher education sector or a discipline across the sector. Others generate a detailed micro perspective of a particular WIL element, such as use of a specific technology tool to enhance the kind of learning WIL seeks to achieve, or strategies to develop specific graduate attributes, either preparatory or related to students' engagement in WIL programs.

A macro view of WIL

The WIL scoping study *(GI7-632)* makes a significant contribution to a macro, sector-wide perspective of WIL. It depicts current WIL contexts, conceptualisations and practices in universities across Australia, and generates a range of evidence based on key stakeholder opinions about what is needed to enhance and provide for the future of WIL sector-wide and within institutions. These opinions address issues of leadership, management, resourcing, curriculum approaches, engaging with industry partners, and attending to equity and access matters. The career education scoping study *(GI7-642)* provides a comprehensive macro perspective of a university service's place in delivering effective WIL programs.

Five fellowships *(Professor Stephen Billett, 2007 and 2009 ALTC National Teaching Fellow; Professor Ian Cameron, 2006 ALTC Senior Fellow; Professor Amanda Henderson and Dr Heather Alexander, 2007 ALTC Associate Fellows; and Professor Fiona Lake, 2006 ALTC Associate Fellow)* also contribute significantly to the macro perspective of WIL. Discipline-wide studies in engineering *(CG6-21)*, planning *(PP6-47)*, pharmacy *(PP8-923)*, speech pathology *(DS7-611)* and interprofessional education (*GI7-637)* add to this perspective. All demonstrate the value of adopting a sector- or discipline-wide approach to understanding and enhancing practice. They provide evidence based implications for future directions of specific disciplines and professions, and institutional infrastructure and service development.

Curriculum integration and pedagogical activities

The Billett and Cameron fellowships, discipline-specific projects in business *(PP8-928)*, speech pathology *(DS7-611)* and planning *(PP6-47),* and a multi-disciplinary project *(CG7-397)* comprehensively outline and theorise integrating theory and practice through the WIL curriculum, including strategies for, and challenges to achieving it. Tangentially, the discipline-specific architecture project *(DS6-606)* signals the significant issue of gaining acceptance of WIL's potential contribution to curriculum among disciplinary colleagues. A business project *(PP8-928)* contributes sets of principles to guide WIL practices pertaining to securing and preparing industry placements, relationships and simulations, and using case studies.

The individual micro projects within Billett's fellowships studies develop and theorise pedagogical practices to enhance WIL experiences. They provide the basis for a guide to generating conditions for effective curriculum design and development, and pedagogical practices (Appendix B). Two interprofessional education (IPE) studies (GI7-637 & Henderson and Alexander's fellowship) outline the potential for WIL to help forge change through interprofessional practice (IPP) in health care.

The emphasis on, and common conclusions in relation to, WIL curriculum integration and pedagogical activities are:

- students need to be prepared for placement through strategies such as opportunities for brief workplace observations or to test themselves undertaking complex routines and skills in controlled conditions. They need a clear expectation of what universities and employers expect of them
- students learn best when there is a strong element of challenge in their

placement, being assigned significant work related responsibilities
- reflection and debriefing on learning in practice that is well supported by the university is an essential element of effective programs
- leadership development at the micro/practice level is valuable. Health *(LE6-14)* and nursing *(LE8-809)* projects define it well and evidence its impacts.

Discipline-specific projects in teacher education *(PP7-323)*, planning *(PP6-47)*, nursing and midwifery *(CG7-511)*, speech pathology *(PP6-26 & LE6-6)* and physiotherapy *(PP6-28)* address the important issue of assessment of, and in, practice learning. They indicate students' strong beliefs that their practice learning and performance should be assessed and its overall importance reflected in the relative weightings of all assessment tasks.

Technology

Several projects explore the potential for technology to generate virtual realities (VR) for use in conjunction with, or replacing, placements. Two multiple-disciplinary projects (CG7-385 & *CG8-771*) that experimented with technologies to test their application, and identify barriers and solutions, and two discipline-specific projects in engineering *(CG6-21)* and veterinary science *(PP7-340)* demonstrate that e-Simulations can benefit multiple disciplines and all stakeholders. A music teacher education project *(CG6-31)* examined the learning implications of an online platform that exposed students to actual classroom dilemmas. Students could discuss with the teachers how they resolved the dilemmas.

Partnerships

Multiple projects address the importance of, and need for, more engaged, informed relationships between universities and placement provider organisations. These include engineering *(Professor Ian Cameron, 2006 ALTC Senior Fellow & CG6-21),* physiotherapy *(PP6-28),* speech pathology *(PP6-26, LE6-6 & DS7-611), n*ursing *(LE6-14),* education *(PP7-323)* and one multi-disciplinary *(CG8-771)*. The projects indicate key features of the required mature, mutually beneficial relationships, but there is little about how to achieve them.

Key Outcomes

Key outcomes of the reviewed studies recognise essential institutional, educational and partnership elements for successful WIL, as outlined below:

Institutional

- a clearly articulated, shared vision of WIL within the university, including a shared understanding of its purposes and expectations;
- a realistic recognition of WIL in institutional systems and infrastructure together with the provision of adequate resources;
- recognition and legitimation within disciplinary communities of the practice-generated knowledge, and the distinctive and complementary roles the university and workplace have in shaping and supporting the learning; and
- engaging and utilising existing institutionally-provided enabling services such as careers services in the WIL process.

Educational

- adequate induction and preparation of students prior to their practice-based experiences;
- providing structured, critically reflective, self and peer learning processes during and after WIL experiences;
- presence of an element of risk to contribute to profound learning for students (the corollary is the futility of unchallenging placements); and
- investing in the development, trialling and up-scaling of technology-based tools to provide alternative or supplementary WIL experiences, and their

integration in curriculum development and institutional strategic plans.

Partnerships

- ensuring supervisory staff familiarity with students' prior university learning;
- identifying and including all stakeholders in development, innovation and communication regarding WIL;
- induction/professional development for university and host-organisation supervisory staff and development of their leadership capabilities; and
- robust and mature relationships with placement providers (host organisations) underpinned by a commitment to mutual benefit.

Literature review of Australian and international scholarly research and publications

This review defines the core characteristics and contemporary challenges of WIL and WIL programs. It considers what are, or should be, emerging directions for attention in developing theory, scholarship and innovation in WIL practice. Many publications focus on WIL pedagogy, which has been reviewed extensively. Key contributors to a theoretical understanding of learning in WIL contexts include Billett, Boud, Calway, Coll, Eames, Eraut, Higgs, Yorke and Zegwaard. It is not possible to do justice to the theoretical nuances of their significant contributions within this review, but the individual ALTC project reports acknowledge them collectively. Similarly, all elements of WIL cannot be addressed due to their extensive scope. Thus, this review is structured to consider WIL as a field of practice, first defining what it is and its purposes, then noting emerging and innovative practices and issues to which the published literature has not paid sufficient attention. The bibliography focuses mainly on publications from the past six years.

Defining WIL

Work-integrated learning (WIL) is a chameleon term with a problem of definition. Different disciplines use different terms to describe a similar process, while others use the same term to describe different programs. Its most common use is to describe programs where students engage with workplaces and communities as a formal part of their studies (Smigiel & Harris, 2008). Terms such as practicum, field-work, internships, cooperative education and clinical placement describe these programs. A commonly expected outcome of these student WIL experiences is gaining new knowledge, understandings and capabilities, and mastering skills considered essential to particular workplace practices. The underlying assumption is that students cannot learn these skills and knowledge in formal classrooms.

The term work-integrated learning emerged in the late 1990s in an attempt to differentiate it from the term 'work-based learning'. This development heralded a growing body of scholarship, particularly in the United Kingdom (UK), in which employees' workplace learning was recognised and valued as a contribution towards an accredited degree (Boud, 2001; Costley, Abukari & Little, 2008; Lester & Costley, 2010 among others).

At this point, it is necessary to distinguish between WIL *per se* and WIL *programs*. In this ALTC review, WIL *per se* is recognised as the intersection and engagement of theoretical and practice learning, and the process of bringing together formal learning and productive work (Cooper, Orrell & Bowden, 2010). WIL *programs*, however, are described as 'student learning for credit designed to occur either in the workplace or within a campus setting that emulates key aspects of the workplace' (Beard & Wilson, 2006; Reeders 2000, p. 205). While these definitions are viable, some emerging university practices defined as WIL might be challenged.

Government-driven agendas to address skills shortages and provide all students with work-related experiences to increase work readiness have been a key factor behind the recent rapid expansion of WIL programs in Australia. Many reports describe this succinctly, particularly the *WIL Report* (Patrick *et al*., 2008; GI7-632), so it will not be repeated here. These government pressures mirror international trends in higher education to attribute universities with a responsibility to ensure their students graduate with the correct range of capabilities to meet current social and industrial requirements (Hutcheson, 1999; Yorke, 2006). This expectation has

been the basis of innovative *education to work* university initiatives to increase provision of cooperative education and internships to large numbers of students.

There has been a simultaneous growth in formal service learning programs to develop students' civic responsiveness (Holland, 2009; Hutcheson, 1999) and technological affordances (Alexander, 2006; Duffy & Bruns, 2006; Humes, 1999; Plotnick, 1999) such as workplace simulations and online role-plays. In attempting to make sense of this diversity, Cooper *et al*. (2010) suggest that WIL incorporates professional education, cooperative education and service learning, and that seven factors should be present for these programs to be considered as WIL: purpose; context; integration; curriculum; learning; partnerships; and student and workplace support. WIL cannot exist without endorsement by the university leadership. Professional education is likely to be highly structured and regulated (Billett, 2010). In contrast, emerging WIL programs are largely unregulated. They occur in more generalist or vocational degree programs, and often are the genesis of innovative and experimental designs (see for example Freudenberg, Brimble & Cameron, 2010; Ogilvie & Douglas, 2007; Wolf, 2010).

Attention to the definition of WIL and WIL programs in this review has a purpose. WIL was invisible in the academy for a considerable time. It was under-resourced and conducted at the cost of those who coordinated and believed in it (Cooper & Orrell, 1999). If the WIL agenda is to become the triumphant Cinderella Reeders predicted in 2000, it is essential that governments and institutional leaders have a better understanding of it. The *WIL Report* (Patrick *et al*., 2008, p. 33) recorded the challenge presented by the government's 2005 policy changes (*Higher Education Support Act 2003* 'Administration Guidelines' 05/09/2005), which:
… forced universities to focus attention on the level of oversight, direction and management of student learning provided through WIL placement programs and to restructure some programs to meet (new funding) criteria identified by Department of Education, Science and Training (DEST), (Now the Department of Education, Employment and Workplace Relations (DEEWR).

Differentiated funding in 2005 was a critical event in WIL history in Australia. It occurred because the sector as a whole, rather than those who were directly involved, failed to understand WIL's purposes and value, and what was needed to conduct quality programs. The growing body of scholarship and the grey literature regarding WIL now ensures its increasing visibility, recognition of its merit and understanding of the resource implications for providing an effective student experience.

The creativity of new WIL programs is welcomed and may be a catalyst for change, challenging established professional education programs such as social work, teaching and nursing, to name a few, to reconsider some of the taken-for-granted assumptions that underpin the status quo. However, it is this very innovation that challenges the accepted definitions of WIL and leads to the following questions: 1) Is the execution of a project undertaken on campus by a team of IT students to develop a software program for a commercial company a WIL experience? 2) Are simulation wards in nursing schools a WIL experience? 3) Is a virtual environment, such as second life, which reflects the unpredictable, high-risk, civil conflict environment designed and established by a consortium of peace studies academics for use in their teaching a WIL experience? 4) Is the use of shelf companies for business students to practice decision-making in a low risk environment a WIL experience? 5) Do on-campus health or law clinics staffed by university academics and students represent a WIL experience? 6) Is an online test in medicine where students manipulate virtual microscopes and analyse authentic patient data in order

to make a diagnosis a WIL learning experience? 7) Should the learning from students' life-wide experiences (Jackson, 2010), their paid work, their community engagement and their leisure activities be taken into account?

The projects reviewed in the later section of this report represent some of this diversity. While there was no debate about their legitimacy as WIL-related projects in conducting the review, their diversity contributes to the expansion of what is thought to constitute WIL today. However, an important constant in the conception of WIL is that it is a process that integrates and transforms formal learning and productive work or civic engagement, namely theory and practice, to make new meaning (Billett, 2002, 2008; Cooper *et al*., 2010).

Curriculum designers, professional accreditation bodies, teachers and supervisors focus on integration and transformation of knowledge in WIL programs' working, learning, teaching, supervising and assessing processes. These integrative and transformational curriculum and pedagogical processes constitute the core of a WIL program, focusing on students and their learning, and critical self and peer reflection. The critical reflection and integration processes differentiate *work-integrated learning* from *work experience* programs. The latter do not have intentional integrative components, but merely the experience of the work environment and practices (Cooper *et al*., 2010). This does not mean that reflection and meaning-making has not occurred, but it is more likely to be a tacit process, generating largely tacit and inaccessible knowledge through practice (Franz, 2008).

Graduate attributes and WIL: companion agendas

A number of the reviewed ALTC projects reported strategies to inculcate specific graduate attributes, such as cultural literacy and competency (Freeman *et al*., 2009; CG6-37), to prepare students to engage with workplace environments. Currently, the pressure on curriculum designers and leaders to reframe curricula to incorporate graduate attributes is ubiquitous. The academy frequently views this top-down institutional agenda, driven by business interests (Precision Counselling 2007), with suspicion at the level of curriculum implementation (Bennet, Dunne & Carre, 1999, Barrie, 2004). Consequently, institutional hyperbole at the top end regarding students' potential graduating abilities often does not translate to any significant action or effect in academic programs or pedagogical practice (Barrie, 2004).

University strategic agenda for curriculum alignment with graduate attributes and the subsequent and concurrent links to employment are often conflated with WIL and WIL programs. There is a logical synergy between graduate attributes and WIL as a strategy for developing and assuring them (Crebert *et al*., 2004). Indeed, the argument for integration of strategies to achieve generic graduate attributes has been a strong impetus for the growth in WIL programs. This synergy is most obvious in overly simplified conceptions of generic graduate attributes, namely developing problem solving, communication and teamwork skills, similar to WIL's work-ready agenda. Barrie (2004) and Oliver *et al*. (2007) provide a case for a far more sophisticated and acceptable conception and agenda for graduate attributes. While not elaborated here, it is noted that, similarly, a more evidenced and scholarly conception and rationale for WIL programs has also developed (Billett, 2008; Murphy & Calway, 2008; Reeders, 2000).

Purposes for WIL: learning to work and working to learn

Many purposes are ascribed to the WIL process. They are critical in underpinning decisions to develop WIL programs. Clarity of intentions and expectations of outcomes is an essential basis for curriculum design, pedagogical strategies, assessment processes and evaluating regimes. Calway (2006), and Murphy and

Calway (2008, p. 424) suggest that the purposes of WIL are to engender work readiness, dispositions to lifelong learning, promotion of human and social potential, internationalised thinking, knowledge transfer and career development. Significantly, they argue that WIL's 'conceptions and purposes must now be expanded to a philosophy that informs educational theory and pedagogy' if they are to be understood.

A universal conception of the purpose of WIL is to ensure university students will be employable as graduates possessing the range of capabilities that employers are seeking (see the *WIL Report* by Patrick *et al.*, 2008 for a detailed description of government and business sector calls for universities to ensure that graduates are 'work ready'). Similarly, WIL and employability are perceived as synonymous concerns in the UK (Yorke, 2006) and United States of America (USA) (Hutcheson, 1999). Franz (2007) argues that succumbing to the overly simplistic pressure to align WIL with the immediate needs of business, industries and communities risks compromising university educational autonomy.

This argument reinforces the need for a better understanding of a critical educational agenda for WIL, in which the work environment is a source of qualitatively different learning, namely 'Working to learn' (Cooper *et al.*, 2010). Billett (2001, 2008), Coll and Eames (2004), Higgs and Edwards (1999, 2002), Higgs and Titchen (2001), Higgs, Titchen and Neville (2001), and Johnsonn and Boud (2010) articulate the distinctiveness of knowledge gained from working to learn—the practice knowledge produced in, and from, engaging in practice. They argue that this knowledge is more than 'about practice' and ways of 'doing practice'; it has its own epistemology:
… engagement in goal-direct workplace activities and the direct and indirect forms of guidance that assist individuals resolve workplace problems, thereby developing further their work-related knowledge. These contributions collectively are referred to as the workplace learning curriculum… (Billett, 2000, p. 17).

Importantly, this and Billett's subsequent studies claim WIL's legitimate role as an integral component of a university curriculum in providing opportunities for generating practice knowledge as well as opportunities to critically reflect on it and transform it (Billett, 2010). Eraut *et al.* (2000), Eraut and Hirsh (2007) and Felstead *et al.* (2005) suggest that the most effective and valuable learning for people in work is often learning that occurs through the medium of work or prompted in response to specific workplace issues, as opposed to formal didactic instruction.

Billett (2008), and Johnsonn and Boud (2010) argue that the type of learning that occurs in workplaces is more than a mere application of theoretical or canonical knowledge to practice; it is a generation of 'new ways of knowing within and through practice'. Reflective practice is crucial and features in developing the effectiveness of WIL (Coll & Eames, 2004). Students' engagement in work-integrated learning involves complex learning while simultaneously developing technical skills and knowledge, and shaping their personal and professional identity, and subsequently their values (Campbell, Herrington & Verenikina 2009). Lester and Costley (2010) reason that the distinctiveness of WIL practice learning and knowledge generation requires unique forms of curriculum and pedagogy.

In 2000, Reeders drew from Miller, Watts and Jamison's (1991) list of goals for WIL, adding a further one from Dall'alba and Sanberg (1996). The WIL goals focused on the discipline, work, career, employment and professional elements. Disciplinary purposes were to deepen classroom conceptions and apply skills that had been learnt, and make the curriculum more meaningful to students. Work purposes were

to facilitate students' personal and social development, help students learn about the world of work, provide experience of some of the strains of work so students could better manage the transition from studies to work, and acquire skills and knowledge that students could use in the future. Career purposes were to broaden the range of occupations, specialisations and industry sectors that students are prepared to consider in their career planning, and to test vocational preferences before making further commitments. Employment purposes were to establish relationships with particular employers, which may lead to job offers (adapted from Miller, Watts & Jamison, 1991 in Reeders 2000, p. 212). The additional goal was Dall'Alba and Sandberg's notion of 'professionalising', namely understanding what it means to be a competent professional (1996, in Readers, 2000, p. 212).

Campbell and Zegwaard (2011, p. 3) add the important dimension of ethics, arguing that students need workplace experience during their studies to understand and learn to navigate the increasingly important ethical aspects of being a professional. They posit that the authenticity of student exposure to workplace dilemmas enables them to begin the path to being a professional, moving beyond mere compliance to reach the level of critical engagement with ethical reasoning:
…the professional is challenged in how they respond to ethical issues in the workplace. A student on placement is no different and needs to be equipped with the capacity to navigate and negotiate the ethical complexities of the workplace.

The inclusion of WIL in the curriculum provides opportunities for engaging with, and further developing, student frames of reference regarding themselves, work, their professional identity and conceptions of their careers. Career education or career learning experiences supported by university careers services (Daniel, 2010; Smith, *et al.*, 2009 [*PP6-26*]; Thomson 2010) frequently function as extra-curricular programs. They support students' transitions from study to paid employment. Members of the National Association of Graduate Career Advisory Services (NAGCAS) argue for the inclusion of careers learning in the curriculum and integration into WIL programs to assist students generate a career plan that gives personal purpose and meaning to their WIL experience. This complex agenda of purposes is about much more than employability.

Assessing WIL
Assessment is one of the biggest challenges in designing WIL programs. Universities are reluctant to move beyond commonly accepted notions of objectivity and reliability that govern on-campus assessments. Projects that have taken up the challenge include use of e-portfolios (An & Wilder, 2010) and blogs (Ogilvie & Douglas, 2007) as assessment strategies. A USA study of employers' views about the evidence they required when recruiting graduates indicated that 69 per cent had the 'most confidence in assessments that demonstrate graduates' ability to apply their college learning to complex, real-world challenges, as well as projects or tests that integrate problem-solving, writing, and analytical reasoning skills'. Furthermore, over 80 per cent believed that 'completion of a supervised and evaluated internship or community-based project would be very or fairly effective in ensuring that recent college graduates possess the skills and knowledge needed for success at their company' (Hart, 2009, p. 4).

Stenström, Laine and Kurvonen (2006) outline assessment of WIL as a major field of enquiry in itself — enquiry that is core to assurance of the quality of learning outcomes. Similarly, André (1999) underscores the importance of assessment in clinical nursing with her finding that the focus of assessment defines the nature of the work and the profession. The issues in assessment are greater than knowing how to assess. They include knowing what to assess, and how to guide and report

the interpretation of students' performances (Cooper *et al.*, 2010).

Models of WIL programs

Considerable inventiveness seems to be core to most WIL programs, even when they have adapted successful models from other sources. Despite this, much of the literature focuses on models that adhere to a singleton model, adopting a Fordist approach to placing large numbers of students from a single discipline into one-on-one placements. Many of these small-scale single-programs/single-discipline studies report on inventive strategies to: 1) prepare the student, the learning environment and supervisors for placements; 2) establish support systems for students and mentors while they are on placement; and 3) establish effective reflection and review processes to assist students integrate their practice learning with their canonical classroom learning. This complies with commonly accepted good practice and includes small-scale evaluations as to the strategies' effectiveness.

The projects reviewed in the later section of this report outline cogent theoretical rationales and justifications grounded in the canonical knowledge of education that will be reported in a forthcoming book. Billett and Henderson's (2011) edited volume of ALTC-funded projects is titled *Developing learning professionals: integrating experiences in university and practice settings.* It includes Newton, Billett, Jolly and Ockerby, 'Preparing nurses and engaging preceptors'; Molloy and Keating, 'Targeted preparation for clinical practice'; and Carmel, 'A considered curriculum for preparing human services practitioners: structured circles of learning and change'. These projects outline the importance of careful preparation prior to placement, support and good supervision during placement, and use of reflective processes to review and transform the practice learning. The largely endorsed singleton approach has inherent strengths in its one-to-one attention and coaching, to which students have access, and its possibilities for students to establish networks and links in the field. These arrangements are remarkably similar to mentoring and apprenticeship models, and provide similar benefits. Singleton models, however, limit students' exposure to the range of conceptions of what is possible in workforce engagement. They can discourage reflective critique of accepted routine practices, which may be perceived as risky and uninvited. The addition of reflective learning circles can help to alleviate this problem.

Billett (2010) differentiates the complementary roles of universities and workplaces in the execution of an effective WIL program. He posits that it is the workplaces' role to provide students with richly authentic real world experiences in which knowledge is generated through, and in, practice. The university's role is to provide structured programs that assist students to reflect critically on practice knowledge in light of what he terms the canonical knowledge of the discipline. The provision of authentic experiences, and self- and peer-reflection are two discrete, distinctive and complementary roles played out within WIL programs. Boud (2001) argues strongly that universities need to be clear about their particular responsibilities, purposes and place in the WIL arena, because without this clarity, university education is at risk of being undervalued. As participation in WIL increases, however, consideration beyond singleton models of WIL is important, as there are limitations in the numbers of places available. It is appropriate, therefore, to discuss strategies/WIL models that address this issue.

Dedicated Education Units (DEU)

Nursing education has generated a range of models to contend with securing enough placements for their large cohorts with proficient supervision, the impact on academic careers of the university staff involved in supervision, and maintenance of

their clinical acumen and currency. Dedicated education units (DEUs) were developed as a solution to these issues (Edgecombe, 2005; Edgecombe & Bowden, 2009; Edgecombe, Wotton, Gonda & Mason, 1999; Gonda, Wotton, Edgecombe & Mason, 1999). This WIL model involves wards agreeing to become dedicated sites for nursing education. Working on these wards means dedication and a commitment to educating cohorts of nursing students — the next generation of professional nurses. Ward staff receive continuing professional development in clinical learning and an academic from the university is assigned as a liaison between the hospital and university. Students are inducted as members of the ward and, in groups, work in shifts. Evaluations of this model have identified numerous secondary benefits. Although considerable extra costs are associated with the first generation of establishing DEUs, subsequent DEUs are found to be more cost-effective in the longer term. An unintended and unexpected positive outcome is that professional nurses on the wards are more likely to return to higher degree study. This model is now established in other Australian universities (Ranse & Grealish, 2007), in New Zealand (Jamieson *et al.*, 2008) and in the USA (Moscato *et al.*, 2006). The principles that underpin this model have the potential for translation to other professional and occupational fields.

Interprofessional education and learning

People in the same professional field rarely populate practice arenas. Nowhere is this more obvious than in the field of health care. Many of the problems of poor health care practice result from poor communication between the different professional fields of practice. Thus, the introduction of interprofessional education (IPE), interprofessional learning (IPL) and interprofessional practice (IPP) has been another significant innovative move in the health professional field. It moves beyond the focus on education of a single field of practice to developing communication between different professional fields of practice. Following some innovative development in the UK, a number of initiatives in Australia are trialling ways of engaging in interprofessional education (Henderson & Alexander, 2010; Thistlethwaite, 2007). Interprofessional graduate capabilities have been established and promulgated for comment, critique and uptake. The long-term goal is to enhance interprofessional practice and ultimately the quality of patient care and patient health outcomes (Barr, 2005; D'Eon, 2005). Interprofessional education is in a nascent stage of development and, while positive results are reported in terms of students' engagement and learning, systematic random control studies have found that, at this point, there is no evidence to suggest positive results for patient care that are central to its intention (Reeves *et al.*, 2008). Despite these results, this approach has considerable potential for other disciplines and fields of practice such as business and the built environment.

New WIL for Business

Freudenberg, Brimble and Cameron (2010) have created a highly successful model of WIL in which first year business students sign up for an additional professional development program that focuses on developing specific generic skills and career awareness within the field of business. Industry partners are engaged as instructors and mentors in delivering the on-campus introductory program, which is designed to help students make a transition to an internship in the second and third years, at which point students reduce their on-campus study commitment to part-time while undertaking their internship. In contradiction to the definition of WIL, this program occurs outside the formal program. However, it is highly successful and relies on the good will and commitment of academics and industry alike. It is a model that could be integrated into the formal curriculum to good effect. Papadopoulos *et al.'s* (2011) ALTC report (PP8-928) provides an excellent basis for business schools to establish WIL programs.

Technology-enhanced placements
Technological development provides new possibilities and challenges to the traditional conception of a WIL program. An and Wilder (2010), Ogilvie and Douglas (2007), McNamara and Brown (2009), and Wolf (2010) among others raise the possibilities of using emergent social networking and communication technologies for enhancing WIL learning and management. Using blogs and other technologically enhanced means of communication, students can maintain contact with university support systems, even in remote placements, to support reflection and peer learning while in placements. Other technological tools include, e-Portfolios, which enable students to focus on what is important in their placements and to gather, organise and store validated evidence of their emerging capabilities for use in assessment and seeking employment (An & Wilder, 2010), and e-Simulations and role-plays. The latter two provide the chance for students to experience previously inaccessible conditions to practice difficult skills without the attendant risks (Ogilvie & Douglas, 2007). These developers call for opportunities to adopt a whole of sector collaboration for the development of sustainable tools (Hands, 2009; CG7-385).

Meeting the needs of special groups
The needs and potential contribution of marginalised students received little attention in projects other than the *WIL Report* (Patrick *et al*. 2008). Few papers attended to international students, and those that did failed to promote the potential benefit these students might bring in terms of their additional cross cultural knowledge (Lilley, Nulty & Stewart, 2008). A search of the grey literature uncovered only one paper that reported some case studies in a national program that successfully supported students with disabilities in law, banking, IT and business, accounting and human resources placements (Lazaroo, 2008). Whilst the grey literature is replete with university and government mission statements regarding Indigenous participation in education and work, no scholarly papers or projects relating to WIL were found to report on in this review. This is a significant omission.

International placements
Internationalisation and globalisation agendas for WIL have both economic and educational implications. The *WIL Report* (Patrick *et al*., 2008), and Gamble, Patrick and Peach (2010) outline the interrelatedness of critical issues. Multinationals located in Asia are experiencing a skills shortage. Despite the large number of universities and graduates in their countries, they prefer to recruit graduates who have studied in foreign universities because they are more likely to have developed critical capabilities such as communication skills, leadership and teamwork. Australia and its higher education institutions have come to depend on large enrolments of international students from Asia. Gamble *et al*. (2010, p. 535) argue that 'Australia needs to consider the role they play in supporting graduate skill levels in international students' to continue to capture this market. These authors point to the success of WIL programs such as the industry affiliates program (IAP) in making constructive contributions which enhanced both Australian and international students' generic skills attainment and employability.

The challenge, however, is in finding placements. Employers are often hesitant to take on international students because they lack essential cultural knowledge and understanding of the Australian work context, and some experience English language difficulties. Furthermore, employers use internships and other WIL initiatives as an effective recruiting device, and international student visa conditions place limitations on opportunities for long-term employment and even short-term internships. Creativity is needed to overcome these and other barriers to international student engagement in WIL.

Partnerships

WIL's visibility as a concept has increased significantly in university grey literature such as strategic plans, annual reports, WIL-focused policies, and systems and infrastructure. Cameron *et al.*'s (2009) ALTC project (CG6-21), which developed a virtual refinery, is an outstanding example not only of the use of e-Simulations but also of the benefits of engaged stakeholder partnerships. The simulation produced is an effective tool in quite different engineering programs and disciplines. It has been incorporated not only into curricula in multiple universities, but also into the industry itself for the induction of new staff and ongoing in-house training. The way in which stakeholders worked together to develop the tool for mutual benefit and continue to benefit from its use demonstrates the power of a community of practice (Wenger 1998).

Increased WIL scholarship has precipitated a deeper, more detailed understanding of stakeholders, their needs and issues, and of how industry perspectives, motives and understandings differ. Smith, McKay *et al*. (2008), for example, systematically researched and tested academics' assumptions about cooperative education compared with those of the supervising mentors in their industry partnerships, while Breen (2001) provides grounded insights into the important factors that constitute robust mature partnerships between universities and industry partners. Her PhD study underscores the importance of having sufficient academic time to build these relationships before placing students, and validates the argument that trust is a critical element that grows commensurately with reciprocity. Calls for mutual benefit in WIL partnerships following on from Moody (1997) and Harvey (1997) are ubiquitous, but largely lack operational detail. Breen's study makes a significant contribution to that detail**.**

Leading with WIL

The executive forum for higher education and business leaders: Partners in integrating learning and work for the 21st century graduates explored the integration of learning and work in post secondary curricula and agreed on this integration's importance for the education of a globally productive citizenry (Hutcheson, 1999). The leaders called for: 1) building a lifelong system of integrating learning and work; 2) gathering and disseminating outcomes data and models of best practice to convince key partners of the need for this change; 3) enhanced student learning through approved work experiences; 4) institutionalising integration of learning and work through system change; and 5) building strong local partnerships. Leaders called for professional education and recognition and reward systems to gain faculty support for this new direction. This impressive documentation focuses on big picture changes while paying careful attention to micro details to ensure its ambitious agenda is achievable.

In the last decade, a number of Australian universities have acted on the forum outcomes, and determined that WIL is an aspect of their branding and business (McLennan, 2008). Griffith University has determined that 70 per cent of its students will have a WIL experience. Victoria University has determined that 25 per cent of assessment in every course will focus on learning in the workplace and the community (Kay, Russell & Standfield, 2010; McLennan, 2008). Queensland University of Technology has adopted providing real world education as their brand (Franz, 2007). Swinburne University has led with WIL in its curriculum reform, and in 2008, Professor Ian Goulter launched Charles Sturt University's Research Institute for Professional Practice, Learning and Education (RIPPLE). These are not small ambitions and have significant consequences for governance, partnerships, and course and assessment design throughout the institutions.

Conclusions

There is now a rich body of literature on pedagogy and design to validate the increasing investment in WIL practice, innovation and scholarship (Costley *et al.*, 2008; Heerde & Murphy, 2009). The university sector has been engaged in its own *work-integrated learning process* in relation to WIL as a philosophy and the design of WIL programs. Much has been experienced and learnt through practice. The emergence of the national Australian Collaborative Education Network (ACEN), its state branches and biannual conferences have made enormous contributions toward the growth of shared knowledge and theory building in relation to WIL in terms of leadership, pedagogy, partnerships with industry and differentiating contexts. The institutional, disciplinary, state and national communities of practice that have grown up through ACEN's stewardship have enabled sector-wide critical and scholarly reflection on this practice learning to generate theories about, and models of, WIL practice. The ALTC Fellows have added immeasurably to the scholarship in the field and to the advancement of disciplinary activity in WIL. But, what have we learnt? Has change occurred with the current high level of university leadership participation in governing WIL? This is difficult to answer without some systematic sector-wide evaluation studies. Smith (in press) has generated a cogent argument and a model for a new WIL agenda, namely the matter of programmatic and institutional evaluation of WIL that is systematic, scholarly and valid in its construction.

Trends in the research and scholarship literature alert us to some imbalances and issues that need further attention. The focus of the scholarship to date has been weighted towards the fields of health, social welfare and engineering, and student-learning focused education practices. There has been particular emphasis on pedagogical practices to facilitate self and peer critical reflection on knowledge created in, and through, practice experiences in the workplace, learning in communities of practice, professional identity and assessment of practice-based learning. The preceding project reports and their extensive reviews pertain largely to curriculum, graduate skills development and pedagogical practices to support reflection. They also allude to critical factors to ensure good practice. These usually refer to institutional leadership support and effective management, and sound partnerships. However, these are rarely the focus of developmental projects.

In an attempt to delineate the scope of WIL practices, the diverse WIL activities have been identified and categorised to generate the framework for this review. *Four primary domains* were identified: ***Governance*** — responsibilities of leadership and management; ***Education*** — designing, delivering and maintaining WIL programs; ***Partnerships*** — engagement with external organisations; and ***Context*** — the defining ***conditions*** of the WIL experience. *Seven focal dimensions* that require distinctive attention within each of the domains were also identified: Purposes; Curriculum and pedagogy; Legal and ethical matters; Infrastructure provision; Quality assurance; Student matters; and Staff Matters. A matrix illustrating the intersections of these domains and dimensions emphasises the considerably complex agenda involved in WIL practice (Matrix attached as Appendix A).

A new epistemology is emerging as WIL becomes better understood through research and academic analysis of its learning process. Until recently, work experience was understood as a one-way process in which the knowledge gained at university was applied to the workplace and deeper knowledge gained. Later, it was recognised that a comparable body of knowledge was present and learned in the workplace. Now, the process is understood to be more complex, involving an integration of learning and knowledge derived from academic sources, workplace

experience and reflection.

WIL's new practices require a move from an expert or delivery model of higher education to one of enabling partnership (Harvey, 2007). Making the transition to support these new practices currently challenges university culture, systems and expectations. University leadership and management have major responsibilities to ensure that university governance accounts for resources, policies and infrastructure to support students, staff, industry partners and the diverse WIL contexts of social justice, cultural diversity, technological advancement and uptake, internationalisation and professional accreditation commitments. These should not confound WIL's institutional intentions and purposes, but should begin with a WIL educational philosophy.

Technological development, internationalisation, business and industry's changing needs, changing requirements of accrediting bodies and government agendas, and changing student profiles ensure WIL is enacted in a context in flux. The projects and literature reviewed here illustrate that WIL will have to change to expand its value for universities, students, employers and the community in general. Thus WIL's chameleon status will remain.

It is important to state that this literature review crosses the ALTC WIL Report's findings and issues raised in the other ALTC projects reviewed quite considerably. This is unintentional. It became apparent while undertaking the review that the WIL Report's thoroughness, the fruits of ALTC funding for WIL projects and ACEN's considerable work have served to identify and incorporate a significant amount of published knowledge about WIL. Nevertheless, some issues identified three years ago as significantly lacking in WIL planning and processes still require attention, particularly those related to access, equity and social justice. The review points to the need for multi-institution, multi-disciplinary, multi-partnered research as the way forward to ensure WIL continues to adapt and change as needed, beginning with sector-wide projects addressing the currently identified gaps.

Recommendations

The recommendations offered here emanate from conclusions drawn from evidence presented in the projects and the literature. They outline a view to the future success of WIL endeavours by enhancing and sustaining the good practices generated by the funded projects in the four domains of the review framework: governance (leadership and management); education; partnerships; and context.

A vital part of the review process involved identifying gaps and silences in the project profiles:

- the WIL needs of students with particular backgrounds, including students who are indigenous, students with disabilities, students from low SES backgrounds, international students and students who are the first in their family to attend university. While a few reports mentioned this issue in passing, it was not given strategic consideration; it was absent from projects or plans designed to make changes, although the *WIL report (GI7-632)* raised the need for this;
- the perspectives of professional accrediting organisations who frequently regulate the amount of WIL included in curricula;
- group placements (multi-disciplinary and otherwise);
- implementing mutual benefit systems and ways to integrate the diverse needs and interests of host organisations in WIL program designs; and
- high-level, institutional governance issues to support and manage large-scale WIL implementation plans.

The recommendations encompass these issues. Perhaps not surprisingly, there is a high degree of consistency with the *WIL report* in the following recommendations to the ALTC regarding future funding for development of WIL in Australian universities.

Governance (leadership and management)
The review has identified that, increasingly, universities are establishing institutional agendas and targets regarding integrating WIL experiences into the formal curriculum. Thus, it is important to provide a detailed understanding of the range of issues and their interrelatedness for institutional governance (leadership and management). These details need to be more than promotional information. They require an independent, scholarly recording of institutional narratives. While the funded projects raised issues of leadership and management, their focus was largely on leadership at the level of practice. Therefore, there is a need for scholarship on leadership and management at the higher institutional levels.

> *Recommendation 1: Implications for university governance*
> Call for the conduct of a comprehensive study incorporating the following range of issues that university leadership and management should consider to establish and maintain institution-wide WIL agendas and their inter-relatedness:
>
> - the scope of a WIL policy;
> - risk analysis and mitigation, and duty of care;
> - equity and access for all students quality assurance systems;
> - staff support, recognition and reward systems; and
> - resourcing and sustainability.
>
> *Recommendation 2: Equity and access*
> Call for the conduct of targeted studies that engage the full range of stakeholders, including the related university enabling services and other social and government instrumentalities with an investment in access and equity issues to address the following questions:

- What impact do WIL experiences have on the long-term employment opportunities for indigenous students, students with disabilities, international students, low SES students and students who are first in their family to attend university?
- What opportunities are there and what are the constraints for programs designed to ensure WIL opportunities for indigenous and international students, and students with disabilities?

Education

Recommendation 3: Targeted impact studies

Call for the conduct of targeted impact studies that account for the articulated purposes of WIL programs and established standards, focusing on:

- ways in which technology and simulations can be used to supplement and prepare students for high-risk activities, particularly in professional and vocational education;
- the values, ideals and rationales that regulatory accreditation organisations hold regarding practice education;
- the relative merits of online and simulated learning in comparison with learning that occurs in actual placements;
- the impact of service learning on student learning and engagement generally in their studies compared with students who do not engage in service learning programs; and
- the distinctive learning outcomes for students who undertake rural and/or international placements in comparison to students who undertake local, city and urban placements.

Recommendation 4: Interprofessional education up-scaling

Call for the conduct of a study to examine how learning from the IPE/IPL/IPP project in health might be up-scaled and developed in other occupational fields such as business and the built environment.

Partnerships

An impressive number of organisations in Australia have made a significant investment in placing students in their organisations. Recognition of the need for mutual benefit for all stakeholders (Moody 1997; Harvey Moon and Geall 1997) is ubiquitous. However, what constitutes mutual benefit, especially for host organisations, is relatively unexamined.

Recommendation 5: Impact studies on host organisations

Call for the conduct of studies to examine the impact on small, medium and large organisations that have invested in WIL by offering internships, or cooperative education, professional education and service learning placements.

Context

Many of the reviewed projects were conducted largely on a single program of study, addressing locally-identified needs. As a result, the conditions for good practice in the popular forms of WIL, which are largely single students in single places, have been well evidenced. While localised projects have had an important formative influence, it is evident that large scale studies that adopt a sector wide disciplinary or multi-institutional, multi-disciplinary approach are best placed to deliver well grounded conceptions and practices that can be up-scaled to other contexts.

Recommendation 6: Focus of future funding on sector- and discipline-wide studies

Funding for future WIL development should direct particular attention to new and innovative conceptions of WIL such as group placements and Interprofessional practice, as well as the development and uptake of enabling

technologies. These studies should engage multi-institutional and sector- or discipline-wide interest.

Conclusion

The challenge of WIL

This review of 28 completed ALTC-funded fellowships and projects and the recently published literature illustrates many facets of WIL and what constitutes good practice. Above all, it illustrates the growth of robust scholarship and educational development in this field of practice in Australia over the past fifteen years; growth that raises questions about the role of universities and their relationships with business, industries, professions and communities, and the value and place of theoretical knowledge in relation to practice knowledge. These questions are exciting to many engaged in WIL, and challenging and troublesome to many in the university. The conversations and debates have had the unintended benefit of precipitating a reconsideration of many taken-for-granted assumptions about what constitutes legitimate knowledge and knowledge production, the role and purpose of university studies, and what society might expect of a graduate. This significant growth has also challenged the concept of what should count as academic work, what is counted in staff workload calculations, and in promotion, recognition and reward systems. Debate continues about these contentious matters, many of which have scarcely been resolved in most institutions despite their constant identification.

Equity, access and social justice

In general, the funded projects and fellowships paid insufficient attention to matters of equity and access to WIL, despite it being lauded as important. It has been difficult to identify projects that attempted to find ways to ensure satisfactory participation in WIL by those who are often at the margins, namely students who are first in their families to come to university, who often come from low socio-economic backgrounds, or from Indigenous and migrant communities, or may be living with limiting disabilities. In a just society, it is important for such students to have every opportunity to find satisfactory employment upon completing their studies. Moreover, WIL might be a means to assist industries, businesses and community organisations to realise the potential in employing graduates from diverse backgrounds.

Enterprise approach to WIL

A major challenge for WIL programs is to find sufficient placements for their students. This is especially so when professional accreditation for registration regulates programs' WIL component, and for programs with large student cohorts. Thus, finding placements becomes a major preoccupation for WIL program leaders. In some sense, an important step is missing if a mutually beneficial stakeholder ethos (Moody, 1997) is to be developed. There is a need for sufficient time and resources for academics who are responsible for WIL programs to develop mature and authentic relationships with industries and professional organisations. When universities and partner organisations negotiate WIL conditions properly, each can better understand the other's needs and expectations. This understanding can become the basis for more robust, authentic student engagement and learning. Such partnerships can also become the basis for collaborative research. Respecting and understanding the host organisation's needs should be an initial priority. The student placement negotiations should follow (Orrell, 2011, National WIL Summit, Bathurst). Importantly, universities need to recognise and value the work of generating such relationships in its recognition and reward systems. They also need to recognise the value of sustained relationships with partner organisations and the costs of establishing them.

Principles of good practice

There has been a call for high order guiding principles for universities' consideration when developing institution-wide endeavours to implement WIL programs. The reports contained many sets of principles for good practice. Billett, for example, has published a well-grounded set of principles for curriculum and pedagogy from his funded projects reviewed in this report *(Professor Stephen Billett, 2007 and 2009 ALTC National Teaching Fellow*). Papadopoulos *(PP8-928)* has produced principles related to working with industry and business. The following draft list of principles is intended to form the basis for a sector-wide discussion and possible development into a more detailed statement such as those of AUQA's *Good Practice Principles for English Language Proficiency for International Students in Australian Universities* (DEEWR, March 2009). Use of this AUQA resource as a model is recommended so that an explanation and some examples of good practice accompanies each principle, once agreed on.

Good practice principles for implementing WIL programs

When implementing WIL programs, universities are responsible for ensuring that:

1. Students are sufficiently prepared and fit for the workplace demands.
2. Sufficient resources and infrastructure are available to ensure duty of care to student safety and effective learning experiences that add to students' education.
3. All students have equal access to full participation in a WIL experience where a degree program offers such experiences.
4. Indigenous students receive appropriate support in their WIL placements.
5. Students with disabilities have access to WIL programs in their course of study and receive appropriate support in their placement.
6. International students receive support to understand and adapt to Australian socio-cultural workplace environments, and their personal cultural background and prior knowledge are recognised as valued attributes.
7. WIL programs meet the requirements of professional registration and accreditation organisations.
8. WIL programs are designed to be mutually beneficial to all stakeholders.
9. WIL programs are integrated into the curriculum so that they have clear educational expectations, and are a vehicle for integrating theory and practice learning.
10. Evidence from a variety of sources is used to monitor, evaluate and improve the effectiveness of diverse WIL program arrangements.

It is acknowledged that these principles of good practice provide a benchmark for all involved in WIL to work towards. Discussion and debate about these principles will hopefully refine and expand them to enhance the future of WIL for all stakeholders. Awareness of barriers to working from these principles is essential to developing new strategies to overcome them, and thus refine the current principles and develop new ones.

Table 2 – Summaries of completed ALTC projects and fellowships

Report title, project no. project Leader	Discipline(s) Involved	Scope/Participating Universities	Focus	Technology Tool
Building academic staff capacity for using e-Simulations in professional education for experience transfer Cybulski (CG8-771)	Non-disciplinary	Multi-institutional (3) Deakin University RMIT University Charles Sturt University	Aimed to transfer knowledge and build organisational capacity to develop, deliver and evaluate digital simulations (e-Simulations) to enhance professional learning Key element/s: Pedagogy; ICT	e-Simulations
Career Development Learning: maximising the contribution of work-integrated learning to the student experience Smith (GI7-642)	Non-disciplinary Multi-stakeholder	National Scoping/NAGCAS Multi-institutional (5) University of Wollongong; RMIT University University of Southern Queensland Flinders University Monash University	Understanding key stakeholders' interpretations of career development learning and WIL, and the extent to which each can contribute to the other in terms of student-centred learning experiences Key element/s: Career Development Learning	
Curriculum and pedagogic bases for effectively integrating practice-based experiences Billett (2009 ALTC National Teaching Fellow)	Non-disciplinary	Multi-institutional (6) Griffith University Flinders University La Trobe University James Cook University Murdoch University The University of Newcastle	To identify and appraise curriculum and pedagogic principles and practices for integrated learning experiences in practice and university settings - included aligning those bases to particular kinds of learning e.g. Conceptual, procedural and/or dispositional outcomes Key element/s: Pedagogy; Students/Learning	
The WIL Report Patrick (GI7-632)	Non-disciplinary Multi-stakeholder	National Scoping/ACEN Multi-institutional (3) Griffith University; Queensland University of Technology Swinburne University of Technology	Current state of knowledge, understanding and practice in relation to WIL cross the Australian higher education sector with a view to improving the student WIL learning experience and developing a best practice framework for the future Key element/s: Comprehensive	

Report title, project no. project Leader	Discipline(s) Involved	Scope/Participating Universities	Focus	Technology Tool
Engaging with learning: understanding the impacts of practice-based learning exchange Barraket (CG7-397)	Multi-disciplinary	Multi-institutional (3) University of Melbourne University of Queensland University of Newcastle	Evaluation of outcomes of practice-based learning exchanges (PBLE) between students, no -academic university partners and universities Key element/s: Pedagogy; partnerships	
The PHENC Project Hands (CG7-385)	Multi-disciplinary	Single institution The University of Notre Dame	To evaluate the usefulness of a video analysis software teaching and/or assessment tool for practical and professional skills in five undergraduate programs Key element/s: ICT, Assessment, Pedagogy	
Identification of teaching and instructional issues & opportunities for the architecture and associated disciplines Ostwald Vol 1 and 2 (DS6-606)	Architecture and building	Sector wide/Multi-institutional (3) The University of Newcastle RMIT University; University of Tasmania Professional Association members/Oceania	To identify and investigate teaching and learning challenges and opportunities to provide a foundation for future research into architectural education Key element/s: Curriculum	
Generating academic standards in Planning practice education Jones (PP6-47)	Architecture and building	Multi-institutional (3) Griffith University; RMIT University; Latrobe University	Academic standards, assessment practices and student outcomes in planning practice education in the context of accreditation, and on investigating the most appropriate ways to incorporate planning practice into planning education within the contested relationship between the two Key element/s: Assessment	
Bridging gaps in music teacher education: developing exemplary practice models using peer collaboration Ballantyne (CG6-31)	Creative Arts	Sector wide/Multi-institutional (4) Griffith University University of Tasmania University of Southern Queensland Charles Sturt University	Academic and school–university collaboration to contextualise and integrate music teacher education courses to improve pre-service teachers' transition between universities and schools Key element/s: Learning; Peer collaboration	Website

Report title, project no. project Leader	Discipline(s) Involved	Scope/Participating Universities	Focus	Technology Tool
Practicum partnerships: exploring models of practicum organisation in teacher education for a standards-based profession Ure (PP7-323)	Education	State-wide Victoria study Dual institution University of Melbourne; RMIT University	The professional learning experiences provided by the practicum component of graduate secondary teacher education programs in Victoria to illustrate Teacher Education practicum partnerships in a standards-based profession Key element/s: Assessment/Professional standards	
Engineering science and practice: alignment and synergies in curriculum innovation Cameron (2006 ALTC Senior Fellow)	Engineering and Technology	Single institution University of Queensland	The theory-practice landscape; identifying and mapping the wide variety of spaces and places where student engineers encounter theory and contemporary engineering practice Developing alignment strategies for curriculum renewal and innovation Key element/s: Curriculum design	
Development, deployment and educational assessment of an advanced immersive learning environment for process engineering design and operations Cameron (CG6-21)	Engineering and Technology	Multi-institutional (5) University of Queensland University of Sydney University of Melbourne Monash University Curtin University of Technology	To find a way of bringing the workplace to the student; and create a strategy to enhance student insight and understanding by providing real engineering contexts for key process related concepts to enhance student learning Key element/s: Pedagogy; VR; Learning effectiveness/evaluation; Professional learning; Career education; Partnerships	Virtual Reality (VR) Program
Application of a clinical staff on the development model (Teaching on the Run) to allied health and multi-professional audiences and to rural and remote settings Lake (2006 ALTC Associate Fellow)	Health	Multi-institutional (4) University of Western Australia Curtin University of Technology University of Queensland Murdoch University Partnership with WA & QLD health departments	Adaptation and expansion of Teaching on the Run to other disciplines and multi- and inter-professional groups Key element/s: Pedagogy	

Report title, project no. project Leader	Discipline(s) Involved	Scope/Participating Universities	Focus	Technology Tool
Benchmarking clinical learning in speech pathology to support assessment, discipline standards, teaching innovation and student learning Lincoln (PP6-26)	Health	Sector wide/Multi-institutional (3) Multi-national University of Newcastle; University of Sydney; Charles Sturt University	To build speech pathology university academics' capacity to monitor and improve the quality of their teaching, assessment and work-integrated learning programs, and graduates Key element/s: Assessment	
COMPASS™ directions: leading the integration of a competency based assessment tool in speech pathology learning and teaching Ferguson (LE6-6)	Health	Sector wide/Multi-institutional (3) Community partnership The University of Sydney The University of Newcastle Macquarie University	Building academic and clinical education leaders' capacity to integrate COMPASS™, a competency–based assessment tool, into their learning, teaching and assessment practices across the Speech Pathology curriculum Key element/s: Assessment/standards; leadership	
Curriculum development and assessment of methods to enhance communication and life skills in veterinary students Mills (PP7-340)	Health	Sector wide/Multi-institutional (3) Murdoch University The University of Queensland The University of Sydney	Enhancing the development of communication and interpersonal skills among veterinary students using e-Portfolios to develop ability to engage in clinical consultations etc Key element/s: Curriculum development; assessment; ICT	Simulated Training Programs and e-Portfolio
Developing agentic professionals through practice-based pedagogies Billett (2007 ALTC Senior Fellow)	Health	Multi-institutional (3) Griffith University; Flinders University; Monash University	Maximising students' learning experiences by developing and appraising pedagogies for practice-based learning to develop students as agentic professionals (independent practitioners and intentional learners) Key element/s: Pedagogy; Students/Learning	
Developing a model for interprofessional education during clinical placements for medical and nursing undergraduate students Henderson & Alexander (2007 ALTC Associate Fellows)	Health	Single university Griffith University in partnership with two hospitals	To develop students' knowledge about other health professionals using IPE structure in their clinical education component Key element/s: IPP, IPL, IPE	

Report title, project no. project Leader	Discipline(s) Involved	Scope/Participating Universities	Focus	Technology Tool
Development of a computer-generated digital patient for teaching and assessment in pharmacy Newby (CG7-431)*	Health	Multi-institutional (3) The University of Newcastle Charles Sturt University Monash University	To identify strategies to create a framework for embedding the development of intercultural competence (IC) in business studies in Australia Key element/s: Pedagogy; curriculum	Simulated training tool
Development of the APP (Assessment of Physiotherapy Practice) instrument Dalton (PP6-28)	Health Multi-stakeholder	Sector wide/Multi-institutional (3) Griffith University; Monash University La Trobe University	To develop, test and refine the APP, a standardised instrument to assess physiotherapy students' clinical performance Key element/s: Assessment	
Enhancing student learning in the workplace through developing the leadership capabilities of clinical supervisors in the nursing discipline Nash (LE8-809)	Health	Single institution Queensland University of Technology Partnership between institution and 3 health care organisations	Clinicians' leadership roles and their critical contribution to student success in the clinical placement. Key element/s: Leadership	
Experiential placements in Pharmacy. 'Quality indicators for best practice approaches to experiential placements in pharmacy programs' Stupans (PP8-923)	Health	Sector wide/Multi-institutional (3) University of South Australia University of Sydney Monash University	To map experiential placements including learning objectives, teaching and learning activities and assessment processes across pharmacy schools in Australia, to highlight successful practices and to identify areas for improvement and quality indicators for 'best practice' Key element/s: Pedagogy	
Facilitating the integration of evidence based practice into speech pathology curricula: a scoping study to examine the congruence between academic curricula and work based needs Togher (DS7-611)	Health	Sector wide/Multi-institutional (3) University of Newcastle University of Sydney Charles Sturt University	The current state of evidence based practice (EBP) teaching and learning in Australian Speech Pathology programs in academic and clinical contexts Key element/s: Curriculum alignment/partnerships	

Report title, project no. project Leader	Discipline(s) Involved	Scope/Participating Universities	Focus	Technology Tool
Learning and teaching for interprofessional practice, Australia (L-TIPP, Aus) Bell/Lee (GI7-637)	Health	Joint project - University of Technology, Sydney The University of Sydney	Increase the capacity of Australian higher education sector to graduate health professionals with interprofessional learning and practice capabilities Key element/s: IPL, IPP, IPE	
Leading for effective partnering in clinical contexts (2006) Creedy (LE6-14)	Health Multi-stakeholder	Single institution Griffith University	A systematic approach to communication across leadership levels to develop an effective partnering model between universities and clinical settings to improve clinical education Key element/s: Leadership	
The development of an under-graduate nursing competencies assessment tool, for use across Australian universities Crookes (CG7-523)	Health	Multi-institutional (5) University of Wollongong; University of Technology Sydney; Curtin University; Queensland University of Technology and University of South Australia	Identification and rationalisation of specific skills for assessment of undergraduate nursing students' clinical competence: performance indicators to enhance clinical learning and teaching to graduate competent RNs Key element/s: Assessment, professional education	
Engaging industry: embedding professional learning in the business curriculum Papadopoulos (PP8-928)	Management and commerce Multi-stakeholder	Multi-institutional (4) Victoria University RMIT University University of Technology Sydney University of Wollongong	To take stock of the business curriculum in universities and ascertain means to improve graduate employability Key element/s: Professional learning; curriculum	
Embedding development of inter-cultural competence in business education Freeman (CG6-37)	Management and commerce	Multi-institutional (4) University of Sydney University of NSW Queensland University of Technology; University of South Australia	To identify strategies to create a framework for embedding the development of intercultural competence (IC) in business studies in Australia Key element/s: Pedagogy; curriculum	

Report title, project no. project Leader	Discipline(s) Involved	Scope/Participating Universities	Focus	Technology Tool
Professionalization of peace education through wiki networking and innovative teaching methods Ware (DS7-613)	Society and culture	Sector wide/Multi-institutional (4) University of New England; University of Sydney Australian National University University of Otago - New Zealand	Development of an online network of peace studies stakeholders to provide a common hub and virtual sector meeting place for the discipline to discuss and evolve Key element/s: Pedagogy; Professional learning; Virtual technology	Focal IT Hub
Online student supervision training – accessible and cooperative learning in social work Bowles (CG7-491)*	Society and culture	Multi-institutional (7) Australian Association of Social Workers NSW Department of Community Services The University of Sydney University of Western Sydney Australian Catholic University University of Newcastle Victoria University	To identify strategies to create a framework for embedding the development of intercultural competence (IC) in business studies in Australia Key element/s: Pedagogy; curriculum	

ALTC projects and fellowships completed: non-disciplinary

(The year at the end of each title is the year in which the project or fellowship is funded. Project/fellowship titles are live links to the resources.)

Building academic staff capacity for using eSimulations in professional education for experience transfer. A guide to designing, developing, using and evaluating eSimulations for professional learning in Australian higher education (CG8-771) (2008)

Discipline: General **Element/s**: Pedagogy/ICT

This project, undertaken in a *multi-institutional, multi-disciplinary* context, aimed to transfer knowledge and build organisational capacity to develop, deliver and evaluate digital simulations (e-Simulations) to enhance professional learning in the Australian higher education sector.

Action research cycle activities included team conferences at the beginning, midway and near the end of project. Learning design review, development and production review, IT infrastructure review, student experience review, research and evaluation review, and organisational capacity building review informed ongoing evaluation. A student e-Simulation evaluation survey instrument was used to collect students' opinions and experiences of using e-Simulations immediately after using them in relevant modules at the three partner universities. The survey aimed to measure students' perception of teaching and learning effectiveness in a blended learning environment, facilitated by e-Simulations. Online and paper-based data collection methods were used at the different sites.

Key findings from students' responses included: e-Simulation's ability to bring life to abstract topics that could easily be related to the professional practice to be learnt; some of the concepts and skills would be difficult to learn in a real workplace without assistance from simulation and blended learning; the safe, unpunished trial and error e-Simulation environment helped develop confidence in students' capabilities; the interactivity, engagement and gaminess of the professional role projects sustained students' interest; their motivation to succeed in assessment tasks increased their level of engagement; e-Simulations afforded flexibility in learning methods; tools and environment were accessible; authenticity of experience; and all learning gained in the process would be useful later in an actual workplace.

The time taken to develop, trial and evaluate e-Simulations and learning did not fit well with workload pressures or action learning methods and the evaluation process.

A key outcome from this project has been *A guide to designing, developing, using and evaluating e-Simulations for professional learning in Australian higher education* (see the project website: http://www.deakin.edu.au/itl/insims/altc-project/index.php). This resource presents the key findings and advice on organisational capacity building (conceiving and enabling knowledge transfer), how to teach with e-Simulations, development and production of e-Simulations, setting up the technical infrastructure and evaluating e-Simulations. Importantly, the project demonstrates that e-Simulations can contribute to university-wide teaching and learning commitments and directions, and associated measurements of WIL performance. It makes recommendations that pertain to university management and leadership in technology development, as well as integration of technologies into programs of study. The recommendations call for attention to e-Simulations in strategic development plans and systems development, and ALTC support for development of ongoing networking arrangements for those engaged in innovation in simulated learning environments, as well as further opportunities for research. The project explicitly revealed both the potential and limits of knowledge transfer to build organisational capacity in partner institutions.

Career development learning: maximising the contribution of work-integrated learning to the student experience (GI7-642) (2007)

Discipline: General **Element/s**: Career development learning

This study's *primary focus* was on understanding key stakeholders' interpretations of career development learning and WIL, and the extent to which each can contribute to the other in terms of student-centred learning experiences. It was undertaken as a National Association of Graduate Career Advisory Services (NAGCAS) initiative in the *context* of national and international *multi-disciplinary, multi-institution, multi-stakeholder* research. Assumptions about the *purposes of WIL* included WIL as part of career development learning/lifelong learning to prepare the future workforce; giving employers a view of prospective employees; and enabling students to understand work but not necessarily preparing them for a career in a specific profession.

Action research *methods* generated knowledge and solutions by, and for, key stakeholders. University staff who provided career development services and/or work-integrated learning (career development practitioners, placement coordinators, lecturers), organisations providing paid or unpaid work-integrated learning opportunities (supervisors, employers, mentors), professional associations influencing degree program requirements regarding industry experience, and university students participated. Activities included a literature review; a project website; two group-based studies with universities' career development practitioners; targeted follow-up interviews; case study development; a national action research symposium; students/employers forum; dissemination of findings to stakeholders and steering committee for feedback; and project team participation in WIL events.

This study identifies that career development learning, which is student-centred, contributes to a student's engagement with higher education; therefore, there is a clear nexus of learning potential between career development learning and WIL. Issues considered in relation to career development learning and WIL included the value of diverse learning contexts, institution support and funding, student finances and employment, diversity and equity, international students, staff training and development and cross-sector linkages. It suggests that institution-specific policies and procedures can be extended to cover the delivery of career development learning and WIL. It identifies the need to develop a quality system for the delivery of career development learning and WIL, common terminologies, and incorporation of cross-disciplinary approaches within, and external to, the formal curriculum. Accordingly, the provision of flexible models, processes and programs will ensure that career development learning and work-integrated learning can occur in a broad range of contexts, and educational institutions, industries and stakeholders can adapt it for their needs.

This project's significant contribution is the development of a model to explain to other professionals how career education and career development is an integral aspect of university education ('graphical model', p. 30). It also produced a web-based resource manual to support student learning and teaching activities (readings, templates for learning agreements, assessment, case studies, accessed at <www.nagcas.org.au>), a set of practice principles (p. 13) and recommendations that support the recommendations made in the *WIL Report*. There was collaboration between these two scoping studies. The recommendations pertain to university leadership and management as well as curriculum engagement with career education. Some of the underlying premises need further consultation with academic curriculum designers.

Curriculum and pedagogic bases for effectively integrating practice-based experiences, Professor Stephen Billett (2009 ALTC Senior Fellow) (2009)

Discipline: General **Element/s**: Pedagogy, students/learning

The *focus* of this fellowship was to identify and appraise curriculum and pedagogic principles and practices for integrating learning experiences in practice and university settings in a *multi-disciplinary, multi-institution* context. *Assumptions about the purposes of WIL* included preparing students for professional practice through integration of practice-based and academic learning experiences. It sought to answer three key questions:

- *What combination of curriculum and pedagogic practices will secure rich integration of learning experiences in academic and practice settings?*
- *How are these best enacted before, during and after practice-based experience to secure the most effective outcomes?*
- *What particular curriculum and pedagogic practices are aligned to secure instances of hard-to-learn conceptual, procedural and dispositional knowledge required for effective occupational practice?*

Methods included engaging with practical and focused teaching programs in six universities (James Cook, Newcastle, La Trobe, Flinders, Murdoch and Griffith). Phase 1 comprised a literature review to identify the kinds of curriculum and pedagogic practices used to organise and integrate experiences across educational institutions and practice settings. In Phase 2, the literature was appraised through prompting, sponsoring and engaging with 20 projects across the six universities – each nominated three or four projects for this purpose. The third (final) phase comprised appraising the worth of all projects' findings to other areas of teaching.

The *key findings and contributions* to WIL knowledge include the need for program developers to be aware that merely providing practice-based experiences for students is insufficient. Experiences must be enriched through preparation, engagement, and opportunities to share and reconcile what the experiences contribute. Engaging, preparing and extending students as active and agentic learners is central to effectively integrating experiences across practice and higher education settings, and developing students' ability to engage in professional practice and become effective critical, reflexive practitioners.

Implications for curriculum conception and enactment include:

- Being clear about what needs to be learnt (intended learning outcomes) so experiences can be aligned to secure that learning;
- Organise a gradual, staged engagement with practice-based experiences;
- Align the experiences' duration with their educational purpose (e.g. orientation versus skill development);
- Acknowledge practice settings as providing experiences to understand practice requirements, not merely as places to practice; and
- Intentionally sequence preparatory experiences and opportunities to consolidate and reconcile learning after practice experiences.

This fellowship makes a major contribution to the WIL education domain by providing an illustrative curriculum framework in the final report for linking purpose with processes, choices and pedagogical practices prior to, during and after placement (see Appendix B).

The WIL Report: Work-integrated learning (WIL): a national scoping study (GI7-632) (2007)

Discipline: General **Element/s**: Comprehensive – refer to the review framework and matrix outlined in the overview

This report's *major focus* was the current state of knowledge, understanding and practice in relation to WIL across the Australian higher education sector, with a view to improving the student WIL learning experience and developing a best practice framework for the future. The *method* of using interviews, focus groups, large forums and surveys with approximately 600 stakeholders and 35 universities ensured a broad and diverse cross-section of WIL programs, practices, terminologies and stakeholder reflections.

Purposes of WIL related primarily to benefits for students, employers and universities. WIL gave: s*tudents* the opportunity to develop graduate attributes, professional awareness, professional identity, workplace literacy, career development and practice knowledge by applying theory to novel real work contexts; e*mployers* the opportunity to use WIL as a recruitment device in a context of skills shortages; and u*niversities* the opportunity to develop stronger, more mature relationships with industry and community partners.

The report identified and clarified *terminology*, *approaches to WIL*, *stakeholders and their perceptions of WIL*, *features of good practice*, *challenges*, *curriculum issues* and *strategies for success*. Patrick et al. avoided a restrictive definition of WIL, describing it as 'an umbrella term used for a range of approaches and strategies that integrate theory with the practice of work within a purposefully designed curriculum'. *Key features of good practice* included preparation of stakeholders; student orientation programs; organisation systems; systematic documentation; appropriate supervision and mentoring arrangements; adequate resourcing; and ensuring host organisations' and their supervisory staff's awareness of students' current workplace knowledge. *Key curriculum issues* included integrating WIL intentions, strategies and processes into the curriculum; conducting and being responsible for assessment that maintains standards, is relevant for students, and incorporates processes to support student achievement and manage expectations; and incorporating evaluation and quality assurance processes. *Key strategies for success* included leadership engagement; adequate resources; common understandings, negotiated expectations, and clear and commonly recognised roles and responsibilities; mature partnerships working towards mutual benefit and a stakeholder approach; and effective national institutional communication processes and networks. More importantly, *key challenges* identified in equity and access in relation to international students, low SES students, students with families and limited access to child care, students with disabilities, Indigenous students, students in rural and remote areas, and students with work commitments highlight a need for more research and resultant action to ensure WIL's accessibility to all students – action needs to match rhetoric.

The report's scoping of the national issues and framework for best practice are its *most significant contribution* to teaching and learning, and makes a major contribution to the model of good practice generated by this review. Its acknowledgement of access and equity is particularly relevant because this issue receives scant attention in the other reports reviewed or in the literature.

ALTC projects and fellowships completed: multi-disciplinary

(The year at the end of each title is the year in which the project or fellowship is funded. Project/fellowship titles are live links to the resources.)

Engaging with learning: understanding the impacts of practice-based learning exchange (CG7-397) (2007)

Discipline: Multi-disciplinary **Element/s**: Pedagogy, partnerships.

This *multi-level, multi-disciplinary, multi-institutional* project *focused* primarily on challenges to, and strategies for, embedding good practice-based learning exchange (PBLE) in university curricula and its impact on students, non-academic university partners and universities. Assumptions about the *purposes of WIL* were to facilitate skills, knowledge, dispositions (including civic dispositions) and networks through learning in industry and community-based placements, exchange programs, internships, and leadership and community engagement activities supplementary to the formal curriculum.

Research *methods* included an initial review of pedagogical literature on developing graduate attributes in a global world; educational research on the role of universities in stimulating civic engagement; and literature informed by education and organisational studies. In-depth, semi-structured interviews and surveys (online and paper-based) to explore the outcomes of PBLE activities for university students, university alumni, host organisations and university staff were implemented in seven different degree programs at the Universities of Melbourne, Queensland and Newcastle. Curriculum mapping identified the role of PBLE in classroom and non-classroom-based learning activities. Thematic and statistical analysis indicated that PBLE are the most highly valued and powerful self-reported learning experiences.

Key findings were that PBLE benefit students in terms of higher order generic skills development; greater engagement with, and understanding of, discipline specific knowledge; nurturing professional relationships; and enhanced graduate employability. Benefits to universities and host organisations include encouraging reflective learning and knowledge exchange between students and participating organisation staff members; contributing to community and disciplinary knowledge; facilitating reciprocal relationships between host organisations and universities/university staff beyond PBLE to other forms of knowledge building and action; helping universities realise their potential for effective community engagement; and providing opportunities for consultation with host organisations about curriculum design, assessment and research partnerships.

Despite these benefits, and the stakeholders' expressed high value of PBLE, the report *recommends* universities need to pay close attention to three key areas to effectively support and value the programs, staff and students involved in them: 1) PBLE design; 2) institutional support; and 3) relationships with host organisations.

This fellowship's *contribution* lies in reinforcing the importance of the need to design and manage PBLE to the advantage of all stakeholders. Poor practice can lead to tensions between universities and host organisations, which ultimately undermine the students' learning. Key issues requiring action are: 1) universities need to improve the way in which they build partnerships with host organisations to ensure benefits flow in all directions. This can be addressed through action from universities' high level leadership (e.g. the Vice Chancellor's Committee) advocating government support from organisations that host students, and local level action, with universities increasing host organisations' involvement in discussions about curriculum design and following up opportunities for building research partnerships; and 2) some degree of information sharing within, and potentially between, universities is needed to ensure that particular host organisations are not overwhelmed with requests to host students.

The PHENC project. Interactive video analysis to develop learning and assessment of university students' practical and communication skills (CG7-385) (2007)

Discipline: Multi-disciplinary **Element/s**: ICT, assessment, pedagogy

The purpose of this project was to evaluate the usefulness of a video analysis software program as a teaching and/or assessment tool for practical and professional skills in five different undergraduate programs at one Australian university. There were no apparent assumptions about the purposes of WIL.

The evaluation was based on two key assumptions: 1) when the practice activities are directly linked with expected skill outcomes learning is meaningful and reflective practitioners are developed; and 2) most Generation Y students better engage in teaching and learning strategies that include recent information and communication technologies. Participants in this project included academics (n = 6) and students (n = 306) enrolled in first semester units requiring the learning and assessment of practical skills from physiotherapy, health and physical education, education, nursing and counselling degrees (hence PHENC). Methods included lecturers for each unit implementing the video analysis software in a way best suited to their needs. In most cases, experimental and control groups were formed, based on unit tutorial groups. The experimental group had the opportunity to use the software to support their learning of a practical skill of interest. This first evaluation was conducted as a pilot. Modifications were made and the program was implemented in three units of study in a subsequent semester.

Lecturers and students affirmed the value of video analysis in critically evaluating performance. The software proved to be an assessment tool as well as supporting students' self-reflection. Thus, the findings indicate the video analysis strategy has potential as both a teaching and formative and summative assessment tool in the learning and enhancement of practice skills.

Key outputs took the form of recommendations for lecturers regarding introducing video analysis in learning and assessment:

- implement staged introduction to minimise student anxiety and maximise learning, for example requiring students to use the process to analyse a small component of skill in their first year of the degree building to a more complex analysis as they approach completion;
- ensure video analysis is a required component of an assessment task so that all students will engage with the process;
- develop simple tagging templates to suit the skill focus in the first instance, becoming more detailed with increased student competence and familiarity with the process; and
- work closely with the IT department to ensure a manageable process for software access and video management has been identified.

This project provides *a working example* of the need to develop staged processes when introducing and integrating new technologies. It also points to the need to consider academic and student readiness and willingness to engage with unproven technological processes despite their promise to enhance learning. While the actual assessment and focus was only tangentially involved with WIL, the project reminds WIL practitioners that there are technological opportunities yet to be fully explored, trialled and exploited in developing and mastering specific capabilities prior to students' entry into learning in actual workplace environments. Some of the recommendations are transferable to any attempts to integrate various forms of technology into practice learning.

ALTC projects and fellowships completed: specific disciplines

(The year at the end of each title is the year in which the project or fellowship is funded. Project/fellowship titles are live links to the resources.)

Architecture and building

Identification of teaching and instructional issues and opportunities for the architecture and associated disciplines (DS6-606) (2006)

Discipline: Architecture **Element/s**: Curriculum

This discipline scoping study's main *focus* was to identify and investigate teaching and learning challenges and opportunities to provide a foundation for future research into architectural education in the *context* of collaboration among members of the Association of Architecture Schools of Australasia (AASA) in Australia, New Zealand and Papua New Guinea. WIL is not mentioned in the report, but academics express their frustrations with the architecture curriculum being a slave to professional accreditation standards, while rating professional practice and industrial experience as only 'somewhat important'. They assumed that students would learn workplace skills by default through working on projects as part of 'studio design'.

Methods included a literature review of the history of Architecture schools in Oceania, site visits, and surveys, interviews and focus groups with leaders, academics and students from the 16 Australian AASA members over a 20-year period (1987–2007), and the two New Zealand and two Papua New Guinea members from 1991–2007, and statistical analysis.

Key findings were that differences of opinion regarding graduate skills underpinned divisions between 1) the academy and the profession; 2) practices and the profession; and 3) the academy and practices. Academics and students perceived the design studio as the most important aspect of architecture education. However, they disagreed on assessment methods for group design projects. Academics' rating of virtual studios and associated systems as not important was unusual given that universities are doing away with design studios and virtual design studios/e-Simulations could be a solution. Academics identified the 'crit' as a major teaching and learning strategy for students to discuss design with tutors.

Recommendations included rationalising competency documentation; focusing on core and discipline-specific skills; maintaining appropriate levels of current industry knowledge among teachers; researching industrial experience; developing shared online resources; developing and aligning outcomes of recent Carrick/ALTC projects on the design studio with architecture discipline-specific needs; and developing resources to assist academics assess design (see report v.2, pp. 27–43).

This study's illustrative evidence of the conflicting perspectives of academics, practitioners and the profession regarding the place of education for practice in contrast to education about the discipline makes a *contribution* to good practice. It has demonstrated that each has different ways of engaging with architectural knowledge – academics are interested in developing, testing and propagating knowledge (an approach that involves research and scholarship), while practitioners are concerned with short-term or rapid responses to situations while working on conventional projects. It was argued that practitioners are unlikely to develop a substantial new knowledge base or share this knowledge freely because it is practice-based and often tacit. This project also recognised the community as a stakeholder group, and students as members of this group, not separate.

The study outcomes underscore the design studio's importance and role in built environment and creative arts education, yet this element of higher education received very little focused attention in the scholarship of teaching and learning (SOTL). Despite its highly authentic nature, design studio has become a contentious aspect of design-based disciplines, well illustrated in this project, and needs investigation within a pre-placement pedagogy framework.

Generating academic standards in Planning practice education (PP6-47) (2006)

Discipline: Planning **Element/s**: Assessment

This *multi-institutional collaborative* project investigated understandings of academic standards within the discipline of urban and regional planning (hereafter known as planning). It *focused* on academic standards, assessment practices and student outcomes in planning practice education in the context of accreditation, and on investigating the most appropriate ways to incorporate planning practice into planning education within the contested relationship between the two. A main *assumption of the purposes of WIL* is a sense of shared purpose between the university and planning industry in developing student practice capability.

The participative and collaborative project approach engaged key stakeholders of planning practice education, including their respective understandings and perspectives. Project design involved a national scoping and review of planning practice education, and an empirical inquiry into the views and experiences of planning educators, planning practitioners and planning students. A survey was designed for use with the planning industry to collate data on what they want in a planning graduate; effectiveness of planning education in developing and assessing required capabilities; what work placement achieves; what academic standards and assessment practices apply to work placement; and who should be involved in defining and implementing them. Semi-structured interviews were used with planning academics and practitioners, as well as focus groups with students. The design included development and dissemination of models and materials to enhance assessment practices and academic standards, and strategies for achieving change. The focus on undergraduate programs was a limitation because a high proportion of these programs are postgraduate level.

The project demonstrated how practice is a legitimate part of academic endeavour. Some of the value and benefits identified included opportunities for students to experience the realities of planning practice, become aware of workplace culture, expectations and ethical practice, put theory into practice and gain a greater understanding of employers' expectations. Self-assessing and identifying skills that need further development and clarifying career options were also identified.

The project produced a set of guiding principles for enhancing assessment practices and academic standards for structured work placement (p. 109). Key contextual factors identified as influencing an approach's viability and sustainability included quality of communication between the university and planning industry; coherence for practice education within the overall planning program; assessment literacy within planning education; and organisational recognition of distinctive features of practice education. The ways in which students' planning programs bridge the worlds of work and academia significantly affect the quality of their practice learning experience. Achieving practice capability is seen to encompass complex learning outcomes of thinking, doing and being that are fostered in learning situated in real world tasks. The professional accrediting body is seen to have a role in generating a sense of shared purpose between the university and planning industry in the development of student practice capability.

This project's significant contributions are its comprehensive review of the extant literature on practice education and its application in planning education and assessment, engagement of a diverse range of stakeholders and the knowledge base it has generated for future long term education development in this field, which can be up-scaled to programs other than those immediately involved. It has also produced a set of principles to guide assessment development that are transferable to other disciplines involved in built environment education and beyond.

Creative arts

Bridging gaps in music teacher education: developing exemplary practice models using peer collaboration (CG6-31) (2007)

Discipline: Music teacher education **Element/s:** Learning/peer collaboration

This *project focused* primarily on academic and school-university collaboration to contextualise and integrate music teacher education courses to improve pre-service teachers' transition between universities and schools. In response to earlier research recommendations and a national review of school music education, it was implemented in the *context* of a *special focus within a single discipline, multi-institution, multi-stakeholder* collaboration. Its methods and processes demonstrate *assumptions about the purpose of WIL* – involvement of multiple stakeholders working together to develop and deliver context relevant resources and experiences to best prepare students for real-world work situations.

The project centred around collaborative development of the Music Teachers Oz (MTO) website, with input from the project team and an international reference group (education academics, implementing academics at participating universities, qualified teachers and pre-service education students). Through the MTO project, qualified teachers were filmed in the context of their music teaching environment, outlining current real-world problems and answering a set of questions. The project team piloted the use of the website at one of the collaborating institutions and made changes in line with student feedback. All participating institutions then implemented the website. Evaluation tools included questionnaires and focus groups with students, interviews with participating academics, project team members and the reference group, and online feedback from other website users (public). Students responded to the case-studies as part of curriculum for university units in music and general teaching throughout the project.

Major resources developed as part of the overall website development and implementation included the online case studies, online discussion forums, online news and current music education issues, and an online research space for collaboration of the project team, reference group and implementing academics.

Major outcomes were successful integration and contextualisation of learning opportunities; building an online international network of professionals, pre-service teachers, academics, teachers, students and general public members; an innovative learning and teaching tool to engender open conversations between students and experts; and recognition of the online environment's value in preparing music education students for the world ahead as music teachers.

This is a sustainable project that uses the online environment to supplement and enhance practicum in practice education. It is thorough in its systematic development, implementation and evaluation of an innovation in the preparation of pre-service teachers for practice, and continuing professional development of music teachers and academic music teacher educators simultaneously. It *contributes to good practice* by demonstrating development of a stakeholder approach to practice learning. Using multimedia and the online environment to record and present authentic everyday problems music teacher practitioners encounter provides a tool for exposing pre-service teachers to, and engaging them with a diversity of contexts and problems, and interaction with models for teaching music and solving problems. Students could interact with the teachers who had recorded the problems, thus the problems had greater face validity – students' saw them as authentic. The project demonstrated the a highly effective use of pilots to improve the full-scale project, and broke down barriers between all stakeholders.

Teacher education

Practicum partnerships: exploring models of practicum organisation in teacher education for a standards-based profession (PP7-323) (2007)

Discipline: Education **Element/s**: Assessment, professional standards

Undertaken in the *context* of a one-state partnership between the Victorian Council of Deans of Education, Victorian Institute of Teaching, The University of Melbourne and RMIT University, and ten graduate secondary teacher education programs, the project *focused* on the professional learning experiences provided by the practicum component of graduate secondary teacher education programs in Victoria. It aimed to illustrate teacher education practicum partnerships in a standards-based profession. Assumptions about the *purposes of WIL* include quality professional learning, and congruence between placement learning objectives, experiences and assessment practices, and professional standards for teaching.

Four guiding questions related to the quality of professional learning that school placements provide for pre-service teachers; how placement learning objectives, experiences and assessment practices relate to the professional standards of teaching; areas of professional learning pre-service teachers find difficult and what helps them address these areas; and resource implications of different organisational placement models for schools and higher education providers.

Methods used to address these issues included: 1) a literature review; 2) information from higher education providers about the design of graduate secondary teacher education programs; 3) group interviews with pre-service teachers after placements; 4) group interviews with supervising teachers after placements; and 5) information related to resources for support of pre-service teacher placements (included an electronic survey by secondary school principals about the financial and human resources provided by schools for support of practicum placements).

The findings show that the supervising teachers' views influence pre-service teachers more strongly than providers' goals or VIT standards. This needs to be understood in light of further findings that supervising teachers do not always address the placement program goals, and that both students and teachers are not particularly familiar with, nor use, VIT standards in their reflections on students teaching practice behaviour or assessment teaching capability. The project team also found that higher education providers need to evaluate more closely the extent to which supervising teachers address their programs' goals. There was a need for more knowledge about how the standards might inform teacher preparation.

The findings pose a highly considered set of recommendations (see Ure pp. 6–7) that add to the investigation of the current conditions in pre-service teacher education practice which could *guide reform*. The findings have national significance, given the introduction of national standards for pre-service registration. The literature review of teacher education provides a sound base for future planning. The project promotes standards-guided professional learning for pre-service teachers and advocates for pre-established high quality relationships between teacher education providers and schools, and new strategic ways to deploy human and financial resources. Good practice requires universities to have a clearly articulated set of learning expectations regarding the placement, guided by research-based evidence of the development of pre-service teachers for practice. The report also advocates a statement of responsibilities for supervision, together with induction of, and professional development for supervisors to the role of workplace supervisor to ensure familiarity with, and use of, the public statement of standards for pre-service teachers. It would be advantageous to up-scale this project to a national level, focusing on the new national standards for teacher registration.

Engineering and related technologies

Engineering science and practice: alignment and synergies in curriculum innovation, Professor Ian Cameron (2006 ALTC Senior Fellow) (2006)

Discipline: Engineering **Element/s**: Curriculum design

The fellowship program, undertaken by one researcher in a single institution *context*, specifically *focused on* the theory-practice landscape, namely the wide variety of spaces and places where student engineers encounter theory and practice. Its assumptions about the *purposes of WIL* clearly focus on curriculum design as a vehicle for theory/practice learning.

Cameron adopted three main *methods* to generate the intended outputs. First, he conducted an historical review of the relationship between theory and practice in engineering education. Second, the development of a framework captured where engineering theory and practice take place, leading to a concise representation of spaces and places that are influential in generating important engineering graduate capabilities. Third, Cameron used national seminars at major universities (Go8, ATN and non-aligned institutions) and the Engineering Education Futures Forum in 2008 to raise debate about the interface between engineering theory and practice for consideration of engineering and education into 2015–2020.

Key outputs include a three dimensional learning spaces landscape that takes into account time, space, engagement, affordances and cost, which can be used in three ways. It can map current course and curricula to show immediately the space/places the curriculum design crosses. It can assess the character of existing curricula, and explore the possibilities of curricular change and value adding to existing curricular design methodologies. When designing courses and program curricula, engineering educators can use it as an awareness tool for disseminating the character of learning spaces through a cohesive framework presented in graphic form that is readily recognisable by engineers. A framework for mapping the multiple and dualistic dimensions of engineering practice was also developed, as well as a framework of the key aspects that drive alignment and synergies within curriculum development that need to be considered in further development of the engineering curriculum. These aspects are the place of whole-of-curriculum design philosophies, WIL practices and their deployment, Industry engagement strategies for students, complementing WIL, engineering projects in community service (EPICS) to broaden the understanding of socio-technical aspects of engineering, and curriculum design models that help enthuse, engage and inform students.

A *significant contribution* of this fellowship is the conceptualisation and illustration of the diverse learning spaces in which engineering theory and practice can take place (pp. 8–10). The visual map has the potential to encourage curriculum designers to think beyond common and traditional practices in their planning to consider the full range of learning space options available and; therefore, the type and nature of learning that might occur. The model is transferable beyond engineering to other disciplines. It provokes a more considered approach to what must be learned, what might be learned, and the relationship between canonical and practice learning. A second contribution is the explication of the diverse and dualistic dimensions of engineering practice (p. 11). This, too, is a useful model other disciplines can adapt to provoke a more holistic conceptualisation of the diversity and dualism inherent in their particular practice arena, and to consider the place of theory in relation to it. All too often, tradition and commonly accepted practices guide development of curricula and the selection of spaces to operationalise them. This fellowship challenges tradition by offering a valid and comprehensive alternative that is translatable to many disciplines beyond engineering. The fellowship strategically posits WIL within the curriculum arena so that it can be considered beyond being a good thing to being considered a vehicle for specific theory/practice learning.

Development, deployment and educational assessment of an advanced immersive learning environment for process engineering design and operations (CG6-21) (2007)

Discipline: Engineering **Element/s**: Pedagogy, virtual realities (VR), learning effectiveness (evaluation), professional learning, career education, partnerships

Driven by a *context* of insufficient process engineering WIL placements and the *purpose of WIL* being a strategy for students to develop the professional skills and knowledge to equip them for a career in engineering, the project had *two primary foci*: 1) to find a way of bringing the workplace to the student; and 2) to create a strategy to enhance student insight and understanding by providing real engineering contexts for key process related concepts. The team developed activities and information relevant to the level of understanding within engineering programs; and provided an exploratory platform for students to discover and investigate at their own pace.

Comprehensive methods were used to successfully develop and sustain the immersive VR system (a high fidelity digital imaging of a full 3D walk-through environment within part of the BP Refinery, Bulwer Island, Brisbane and Coogee Energy's methanol synthesis plant in Melbourne), including collaboration amongst engineering academics, industry partners, multimedia and instructional design personnel; basing the system's conceptual design on a systems structure that provided different learning depths and the ability to expand into new areas of learning; and using research outcomes in the area of visualisation, cognitive processing and human-machine interaction to guide considerations in the system design, which utilised and extended existing VR knowledge to enhance learning outcomes. The team considered educational theory and concepts, including constructive or generative learning, cognitive load theory, dual load theory (visual and verbal) and multiple representation principles. Consideration was given to the diversity of end-user characteristics, teaching and learning needs, and engagement with the VR interface, resulting in a game and problem-based virtual environment where successful task completion was rewarded with knowledge acquisition, and users confronted typical plant operation issues and deposited concepts tools into a knowledge bank linked to a user-generated concept map. Regular usability testing and ongoing evaluation of initial data from students on learning outcomes ensured the system's *sustainability*.

Outcomes for industry partners include the added value of showcasing their operations to engage the general public; a basis for site inductions for new staff and operators; training in specific aspects of the process plant and process equipment; and an extensible environment for related engineering disciplines. *Outcomes for universities* include a deeper understanding and targeted development of the most appropriate forms of visualisation to generate improved student insight into industrial process systems' design, scale, complexity and behaviour; qualitative and quantitative assessment of usability, understanding and insight; closer collaboration across participating chemical/process engineering departments in Australia; possible extension to other departments; and stronger links with major industrial companies likely to support further development of immersive VR systems and development of new relationships with companies who see the systems in action.

This project's *key contributions to resources for WIL* are self-evident in the VR immersion system. *Key factors* in the project's success, include industry engagement/authentic partnerships; team engagement, support and project management; multi-media and instructional design expertise; multi-level evaluation strategies; long-term value; uptake in multiple universities and industry; and transferability to other engineering disciplines and to other virtual environments.

Health

Application of a clinical staff development model (Teaching on the Run) to allied health and multi-professional audiences and to rural and remote settings, Professor Fiona Lake (2006 ALTC Associate Fellow) (2006)

Discipline: Allied health **Element/s**: Pedagogy

Based on the premise that the way health professionals teach and supervise students has substantial similarities and challenges, this fellowship *focused* on expanding 'Teaching on the Run' to disciplines other than medicine, including nursing, physiotherapy, veterinary science, multi-professional groups and interprofessional groups. The *multi-institution, multi-disciplinary* but *local-leader* led collaborative research *context* enabled a focus on specific priority areas for each discipline, resulting in different foci across disciplines and institutions. Although not specifically stated in the report, it appears *assumptions about the purposes of WIL* relate to preparation of teachers and workplace supervisors to ensure students receive quality WIL learning and teaching.

Steps in the *research process* included identifying local leaders who confirmed the need for staff development programs, and provided advice and contacts; a literature and web review to identify currently available programs and resources in nursing, physiotherapy, veterinary science, multi-professional groups and interprofessional groups; workplace observation and talking to those teaching and assessing in that context; leader reviews of existing profession-specific material; interactive local workshops for each discipline; adapting resources to the various settings, taking into account discipline-specific priority areas, challenges, the learning context and the educational environment; and evaluating the outcomes.

Key outcomes were discipline-specific staff development modules for key priority areas discussed in workshops. Priority areas included working in multicultural settings and working with various levels of nurses (nurses); consent from patients and students providing physical care (physiotherapists); working in the emergency setting and teaching alongside veterinarian nurses (veterinarians); developing generic scenarios that engaged all professional groups in a meaningful way, focusing on professional behaviour or communication (multi-professional and interprofessional groups); and getting teachers who had little or no experience in interprofessional learning (IPL) to consider the relevance for themselves and explore how they would do it (interprofessional groups).

Participant evaluation of the workshops indicated high levels of satisfaction (98 per cent excellent or good), and there was evidence of a shift in self-assessed ability after undertaking the workshops. Concerns raised in workshops included staff shortages, young staff, and use of a new Australia-wide assessment form (physiotherapy); high pressure of work, curriculum review, need to improve integration across years so teachers understand and build on prior learning, and the risk of involving students in high stakes care (veterinarians); varied work environment with one-on-one to group learning experiences (multi-professional groups); and little understanding of other professionals' knowledge or skills (interprofessional groups).

This report was limited by its lack of further in-depth evaluation. It appears the research process became fragmented due to personnel changes and pressures of other work. However, its emphasis that it was essential to have a keen disciplinary head who identified a real need and demonstrated a desire to collaborate reinforces findings from other reports, and thus *contributes to good practice*, as does its identification of concerns raised about the learning environment, which require further research.

Benchmarking clinical learning in speech pathology to support assessment, discipline standards, teaching innovation and student learning (PP6-26) (2006)

Discipline: Speech pathology **Element/s**: Assessment

The primary focus of this *multi-site, multi-institution, multi-national* project was to build speech pathology university academics' capacity to monitor and improve the quality of their teaching, assessment and work-integrated learning programs, and graduates. *Assumptions about the purposes of WIL* appear to be the embedding of standardised assessment tools within curricula, aligned with professional competency standards, and a focus on assessment as a quality learning and teaching tool in preparing students as competent professional practitioners.

The project capitalised on the introduction of the newly developed competency-based assessment tool COMPASS™. It aimed to ensure integration and use of COMPASS™ within all speech pathology programs in Australia and New Zealand to generate valid data to enable programs to evaluate and monitor quality over time through benchmarking data within and across topics and programs in relation to teaching, assessments, clinical experiences, and ultimately the resulting graduates. It also aimed to facilitate participating academics' and programs' ability to use the COMPASS™ measurement functionality to engage in collaborative research on learning and teaching issues.

All speech pathology programs in Australia and New Zealand participated. As part of the *COMPASS™ Project*, it used the same methodology as the tandem project LE6-6 *COMPASS™ Directions* – a nested set of consultative groups and a layered cross level implementation process. This *method* reflected a multi-level model of leadership, distributed as a collaborative tool across and within higher education institutions and the professional speech pathologists' community. Site visits, summit meetings, a website, and telephone and computer conferencing facilitated speech pathology educators' familiarisation with the COMPASS™ measurement capabilities. The project team supported academics to apply this understanding to developing and evaluating standards for student performances within topics to improve learning and teaching practices. Project participants collaborated to develop an ethical model for cross-institutional benchmarking of COMPASS™ student assessment data, which was trialled in three universities.

Key outcomes included: 1) a model containing resources for how to engage ethically in electronic and paper-based cross-institutional benchmarking of student data (see report Appendix 7:10); and 2) a model for cross institutional collaboration on learning and teaching issues within a discipline (APEC SLP), which provides a starting point for other disciplines (see report section 3.1.3).

This project makes a *significant contribution* to good practice in that its benchmarking of student performance within and across professional education programs as a strategy to examine learning and teaching practices is an entirely new endeavour within the higher education sector. Previous benchmarking has consisted of comparing inputs, such as content and processes, and measuring success by the degree of adherence to pre-determined standards rather than by measuring outputs in terms of student learning/performance. This project provides a model for research/implementation of strategies that promotes student learning in the workplace. Three factors critical to the project's success were: a receptive context; the project team's collaborative approach; and the practical achievement of efficiencies.

COMPASS™ directions: leading the integration of a competency based assessment tool in speech pathology learning and teaching (LE6-6) (2006)

Discipline: Speech pathology **Element/s**: Assessment/standards, leadership

This project's *primary focus* was building academic and clinical education leaders' capacity to integrate COMPASS™, a competency-based assessment tool, into their learning, teaching and assessment practices across the speech pathology curriculum. Building academic and clinical speech pathology educators' leadership capacity to develop the research base for future enhancement of learning and teaching was part of this focus. The project took place in *the context* of a single discipline, collaborative *multi-institution and community partnership*, in which the *purpose of WIL* relates primarily to enhancing learning and teaching to develop clinical competence for assessment against professional speech pathology registration standards.

Strategic consultation involved the development and use of a nested set of consultative groups and a layered cross level implementation process. This research *method* reflected a multi-level model of leadership, distributed both across and within higher education institutions and the professional community of speech pathologists as a collaborative tool.

Key findings were that there was evidence at all levels of leadership (professional, academic, clinical, and student) that the project had effectively integrated the newly developed tool, COMPASS™, within learning, teaching and assessment practices. The professional association, Speech Pathology Australia, continued its support for the tool, providing funding for an online version, while some programs had begun cross-mapping the tool's generic and occupational competencies against university graduate attributes/outcomes more generally across their curricula. Importantly, speech pathologists and students readily acquired and understood the tool's main concepts after being introduced to it.

Support is planned for university clinical education coordinators in their use of the tool for benchmarking and research purposes, while further support is recommended for both clinical educators and students to develop their skills in using the new assessment tool. A further recommendation is for research to investigate the longer-term impact of the new assessment approach on teaching and learning processes, and outcomes.

This project's main contribution is that it provides an exemplar of how a distributed model of leadership can facilitate rapid change within a shared learning and teaching community. The outcomes have practical significance in guiding the further embedding of this new assessment process in the community of practice. They also have theoretical significance in enhancing understandings of the relationship between assessment, teaching and learning in speech pathology.

Curriculum development and assessment of methods to enhance communication and life skills in veterinary students (PP7-340) (2006)

Discipline: Veterinary science **Element/s**: Curriculum development, assessment of life skills and communication

This project's *primary focus* was on enhancing the development of communication and interpersonal skills among veterinary students in the *context* of this single discipline across three collaborating Australian universities. The *purpose of WIL* appears to be to equip students with the graduate attributes, in particular consultation communication skills, needed for work in veterinary contexts.

Methods and strategies included: consultation with veterinary practitioners to construct real case-based scenarios; development of training programs for simulated clients, actors and facilitators; questionnaires on animal welfare and human-animal bond for use in ethics discussions and consultation processes; collaboration with technical services to develop an e-portfolio; utilisation of Calgary-Cambridge guides (modified) and Global Ratings scale to assist competency training in consultation skills; development and application of strategies to assess human-animal bond in clinical contexts; development of a tutorial module to enhance reflective skills, and outcomes dissemination at conferences.

Key findings included recognition that a focus on the human-animal bond is essential to veterinary consultations' successful outcomes. Students can be helped to learn to recognise, acknowledge and support the bond. Client simulations can significantly increase students' consultation confidence levels. Females were less confident that clients would have confidence in their professional abilities. Males were significantly less confident in expressing empathy as a professional skill. Exposing students to grading rubrics for essential communication skills, and appropriate training programs for facilitators and simulated clients can effectively support client simulations. A brief description of personality styles and specific questions based on students' defined learning tasks enhances client scenarios.

Key resources included: a web-based module on the human-animal bond for veterinarians, veterinary nurses, and veterinary students; and simulation case scenarios of veterinarian-client interactions accompanied by teaching resources for students to gain formative assessment. Assessment rubrics for enhancing veterinary consultation skills based on the Calgary-Cambridge guides, instructional material (notes, images, videos, lesson plans and focused tasks) to develop specified life skills, and a model of an e-portfolio to record and report student skills, progress and reflections were created. Other resources included reliable and validated survey tools to monitor client and veterinarian satisfaction, a prototype module to integrate self-awareness, self-management, social awareness and relational competency attributes in the veterinary curriculum, and a prototype small group learning tutorial module to aid critical reflective skills and better integrate communication theory with clinical experience, supervisor feedback and self-assessment.

This project makes a *significant contribution* to locating and translating graduate attributes, specifically communication and empathy, within disciplinary and practice contexts. It provides a transferable model of considering curriculum implications when including communication development into a practice education program, and strategies for translating this into pedagogical practice using simulations as pre-placement education. It provides an evidenced rationale for including this graduate capability in practice-based programs. Further work is needed to take capacity development beyond the classroom into practice learning. Gender issues (need and engagement) need more investigation and development on the facilitation, learning and assessment of communicative capacity in practice education programs.

Developing agentic professionals through practice-based pedagogies, Professor Stephen Billett (2007 ALTC Senior Fellow) (2007)

Discipline: Health **Element/s**: Pedagogy, students/learning

The project *focused* on maximising students' learning experiences by developing and appraising pedagogies for practice-based learning to develop students as agentic professionals (independent practitioners and intentional learners). It was grounded in the *assumptions* that: 1) there is a need to augment canonical professional concepts, procedures and dispositions learnt in university settings by understandings, procedures and sentiments learnt through practice-based experiences; and 2) students need to develop effective personal epistemologies to support the initial and ongoing learning required for their professional practice because practitioners need to be self-directed, agentic or lifelong learners (LLL).

The research method was engagement with, and guidance of teams of academic staff in five projects in four disciplines (physiotherapy, midwifery, nursing, human services) in three universities (Griffith, Monash and Flinders). A significant consideration was how to generate student agency to support the integration of experiences in both university and practice-based settings to: 1) enhance students' learning of their professional practice, including making efficacious the transition to competent practice; 2) improve teaching and learning practices through using practice-based experiences; and 3) develop and sustain the use of those practices through changes to their institutions' commitments, curriculum and pedagogy.

Key activities comprised: integrating practice-based experiences in response to discipline specific teaching and learning issues, including developing students' capacities as agentic learners; enacting and appraising selected approaches to teaching and learning to develop learner agency; evaluating the outcomes of these interventions and their applicability to other disciplines in each university; and developing the capacity to enact these approaches within these universities so they are replicable across the Australian higher education sector.

Key recommendations included the need for universities to identify and acknowledge practice experiences' pedagogic potential as legitimate and unique learning in contrast to canonical disciplinary learning. The role of the placement learning environment is to provide authentic, complex learning environments in which students can develop personal practice epistemologies. In contrast universities have an unique, important role in providing curriculum-embedded opportunities for students to critically reflect on their learning that has occurred from, and within, practice settings, and to review how it can be integrated with, and critiqued by, canonical discipline learning.

This project has recognised that *good practice* is designed to acknowledge the educational value of the high risk placement learning. Students need to know the boundaries of their capabilities and boundaries within which to exercise their agency within this environment. It highlighted workplace supervisors' need for greater knowledge about students' prior learning and knowledge which they bring to the placement and that preparation has a confidence-building as well as an informational role. It also identified that student value the opportunity to observe and test their basic skills before engagement in placement; and post placement's opportunities for students to make links between their practice learning and theoretical concepts. It stresses the importance of self-evaluation in developing agentic or LLL graduates, and identifies learning circles, reflective logs, group discussion and reflection contribute to quality learning outcomes from placement.

Developing a model for interprofessional education during clinical placements for medical and nursing undergraduate students, Professor Amanda Henderson and Dr Heather Alexander (2007 ALTC Associate Fellows) (2007)

Discipline: Health (Medicine, Nursing) **Element/s**: Interprofessional education (IPE), Interprofessional Learning (IPL), Interprofessional Practice (IPP)

The *focus* of this project was to develop a model to help students understand the respective roles of other health professionals by providing a structure incorporating IPE into their clinical education component. It aimed to facilitate students learning and working together in the clinical environment, with emphasis on enhancing communication, collaboration and teamwork to improve patient outcomes. The project *context was one of partnership between two hospitals and two disciplines from one higher education institution* (Griffith University). It involved medical and nursing students, IPE facilitators, clinical coordinators, and hospital executive and ward staff. *Assumptions about the purpose of WIL*, in this case IPL, teaching and practice, were to help students develop particular sets of knowledge, skills and attitudes to prepare them to work with others from the same and different professions, and also to develop facilitators' skills in guiding students' learning.

The project method consisted of a literature review to identify barriers to incorporating IPE, development of two 'Interprofessional Learning Workbooks' (IPLW) to provide direction for students and facilitators, and three phases of testing the workbooks' use. A pilot study trialled and revised IPLWs in an emergency department. Trial 1 tested the IPLWs in an acute care inpatient setting. In phase 3, the modified IPLWs were implemented in an inpatient ward environment with an enhanced role for the facilitator. Published quantitative surveys were used pre- and post-intervention to investigate attitudes to IPE.

Key findings and recommendations highlighted the importance of the IPE facilitator taking a proactive role in overcoming the identified barriers of attitude, diverse objectives for clinical placements and logistical difficulties such as timetabling. Other essential elements identified for successfully implementing IPE activities in the clinical setting, which can be used as a guide, were:

- engagement of the leadership from both the university and health service, and of the local clinicians;
- identification of logistical and practical barriers to implementing IPE and developing a plan to overcome them;
- flexible IPE activities that can be completed in short time periods;
- acknowledgement that students' may have preconceptions about other health professions that are not congruent with collaborative practice requirements;
- when planning an IPE activity, consider the different learning, teaching and supervision models used by the various health professions; and
- development of appropriate data analysis methods to determine the activity's effectiveness in changing student attitudes. Results from IPE activities will vary between individuals.

Everything in this highly commendable systematic study contributes to WIL's future directions. It has developed a much needed innovation in WIL, taking the concept of WIL to a new level by systematically piloting and trialling a new model. The investigation and evaluation methods substantiate the thoughtful, balanced claims and recommendations. While the project focused on nursing and medical students, its methods can be transferred to other health disciplines. In addition, other fields of work practice such as the built environment or business could consider the concept. This project is another very good example of choosing to work in collaboration with other relevant ALTC-funded projects (in this case Learning and teaching for interprofessional practice) for greater mutual benefit.

Development of a computer-generated digital patient for teaching and assessment in pharmacy (CG7-431) (2007)*

Multi-disciplinary: Health, natural and physical sciences
Project priority area: **Innovation in Learning and Teaching**

Final report: Development of a computer-generated digital patient for teaching and assessment in pharmacy (David Newby, Jesse Jin, Peter Summons, Rukshan Athauda, Mira Park, Jennifer Schneider, Sheree Kable, Jennifer Marriott, Gregory Duncan, Maree Simpson, Richard Xu) (The University of Newcastle, Charles Sturt University, Monash University) (2011)

Good communication skills are vital for pharmacists as they are often reliant on obtaining a good oral history to manage minor illnesses. While there is a significant amount of time devoted to teaching communication skills, students often have limited opportunities to practise these skills and to obtain feedback. The project sought to develop and test a computer-generated virtual patient for pharmacy students to practice and improve their communication, diagnostic and management skills. The tool will be used to teach communication skills in university pharmacy programs.

OUTCOMES AND TOOLS:
The project developed **a computer-generated virtual patient** with the following attributes:

- simulates a real patient using a three-dimensional model to which various human characteristics may be added, such as skin rashes, body manoeuvres, eye contact and vocal responses;
- captures both the questions asked by students, and answers given to the questions by the patient, in sequence;
- provides feedback to students on whether they failed to ask certain questions;
- provides feedback to students on whether they used appropriate questioning, e.g. open-ended versus closed questions;
- analyses whether students asked irrelevant questions;
- uses the questions asked by the student to prompt emotional responses in the virtual patient;
- records the diagnosis and the chosen management for the patient; and
- presents the correct diagnosis and the current evidence-based recommendations for treatment.

Some features were not fully implemented, owing to unexpected difficulties in creating the computer-generated 3D patient. For example, although the software has a range of emotional responses, only a limited number were used in the final version.

The broad applicability of this project with its focus on communication skill development has evoked interest in its application in other pharmacy education settings, as well as an inter-professional learning (IPL) context. The development was extended so that the software could support assessment in multi-disciplinary fields, i.e. the program is expandable beyond the pharmacy teaching setting.

The software is available to download at:
http://resweb.newcastle.edu.au/VirtualPatient/private/uploads/. (Please email: david.newby@newcastle.edu.au for a user name and password.)

Development of the APP (Assessment of Physiotherapy Practice) instrument. A standardised and valid approach to assessment of clinical competence in physiotherapy (PP6-28) (2006)

Discipline: Physiotherapy **Element/s**: Assessment

In response to the need for an assessment instrument to meet student and educator requirements, and provide valid and reliable measurements of physiotherapy students' clinical competence in the workplace, the *project focused primarily* on developing a standardised instrument to assess physiotherapy students' clinical performance. It was undertaken in a *single discipline, multi-institution and multi-stakeholder context* in which collaboration and partnerships across institutions were essential to its success. Assumptions about the *purpose of WIL* centred around students gaining professional practice experience, and institutions and professional accreditation bodies working together to ensure competency assessment meets the needs of the profession, teachers, institutions and students.

The test development process reflected the integration of an action research approach and implementation of strategies for effective dissemination, adoption and adaptation of education innovations. Key stakeholders from the collaborating and partner institutions helped design the instrument, which was piloted at one university (295 students). Focus groups and face-to-face discussions provided feedback. Two field tests were carried out in nine universities (the first with 747 students, the second with 695 students). Relevant stakeholders (all institutions with entry-level physiotherapy programs) provided feedback, which was used to modify the instrument. Inter-rater reliability testing was conducted with five universities, 30 students and 30 pairs of educators. Instrument validation included a combination of Rasch analysis, factor analysis, and positive student and educator feedback. Qualitative analysis underpinned the instrument refinement. Training/learning guides were distributed to facilitate effective adoption, implementation and ongoing instrument evaluation.

The project achieved *its key outcome* of developing an instrument to assess physiotherapy students' practice competencies (APP). The number and variety of participants in the pilot and the field testing process authenticates the APP. At the time of the report, eight universities had adopted it as their sole physiotherapy practice assessment method, and a further three were planning to adopt it within 12 months. Attachments to current assessment forms in some universities have been identified as an impediment to Australia-wide adoption of the APP.

Further research is *recommended* to advance support material, develop an online APP and investigate the long term impact of assessment standardisation

The project's *contribution to good practice* is its demonstration of the value of multi-institution collaboration in producing a single instrument with known validity and reliability (APP) to replace the 25 distinct assessment forms used formerly. The APP also provides unprecedented opportunity for national discussion regarding measurable standards of practice, as it highlights the perceived benefits of a national standardised clinical assessment tool for physiotherapy students.

Enhancing student learning in the workplace through developing the leadership capabilities of clinical supervisors in the nursing discipline (LE8-809) (2008)

Discipline: Nursing **Element/s**: Leadership

This project *focused primarily* on clinicians' leadership roles and their critical contribution to student success in the clinical placement. It aimed to improve the quality of student learning in the clinical setting through strengthening the clinical leadership capacity of staff involved in clinical facilitation and supervision of undergraduate nursing students. The project was carried out in the *context of a clinical education partnership* between Queensland University of Technology and three large metropolitan health service organisations. In this context, *WIL* was seen as a tool for developing strong leadership and partnership to enhance supervisor and buddy job satisfaction, and students' clinical learning outcomes and clinical experiences, as well as to improve nursing staff attitudes to student mentoring.

An action research approach underpinned the three-phase research methodology: Phase 1 – an integrative literature review, developing a prototype leadership model of clinical facilitation and capacity building framework (LaCE), and key stakeholder focus group discussions for feedback on the framework. Phase 2 – piloting the model (and supporting resources, including an online toolkit), and a cyclical process of reflection and model revision followed by implementing the revised model in all partner organisations, and recommendations for future action and planning for final evaluation, dissemination and reporting. Phase 3 – national forum for the project advisory group and national stakeholder committee; generalisable guidelines, strategies and recommendations for model development and implementation; independent evaluation of its effect on students, supervisors, and registered nurse buddies supported by clinical supervisors; and dissemination.

Key resources developed include the LaCE online toolkit to assist clinical supervisors to advance their knowledge and skills through incorporating leadership perspectives within their role. Theoretical perspectives related to leadership, teaching and learning in the clinical setting underpin the web-based resources, which are organised according to dimensions of practice from the LaCE framework: envisioning direction, enhancing sustained commitment, executing the role and enacting self-development.

Despite *early limitations*, such as technological incompatibilities and getting enough participants to attend workshops due to rostering difficulties, *key outcomes* included: change by involving students and buddy nurses more in the feedback process; formalising supervisory processes; looking at supervision more as a leadership role; and demonstrating the importance of creating a positive learning environment with a focus on staff as well as students.

This project's *significant contribution* is its demonstration that clinicians can exercise their own agency to produce practical, context relevant resources to deal with immediate, context relevant learning barriers if their leadership is respected, acknowledged and supported. The report provides a very useful, user-friendly model of effective leadership in the clinical context on page 21, which is transferable to other disciplinary and professional clinical contexts. The project's leadership development activities with clinical educators resulted in their transformation as leaders. Some valuable clinical teaching resources were developed in the process. This approach to transactional and transformational leadership in clinical contexts is transferable to, and replicable for other health professions. A major question is sustainability of the resource and approach. Has it become embedded? Will the commitment be maintained?

Experiential placements in Pharmacy. Quality indicators for best practice approaches to experiential placements in pharmacy programs (PP8-923) (2008)

Discipline: Pharmacy **Element/s**: Pedagogy

The *primary focus* of this research was to map experiential placements, including learning objectives, teaching and learning activities, and assessment processes across pharmacy schools in Australia to highlight successful practices and identify areas for improvement and quality indicators for best practice placements. The *purposes of WIL* related to developing professionalism and transitioning from student to career professional, as well as reinvigoration of the whole profession and continuous updating of knowledge.

Preliminary forums, a literature review, analysis of experiential placement handbooks, and contact with other professions as well as university pharmacy schools preceded focus groups with professional/registration organisations, preceptors and students in each state and territory of Australia, and interviews with national groups. Almost 250 participants from metropolitan and rural locations including hospital and community-based pharmacists, aged care and profession situations participated in consultation sessions.

A key finding was agreement among all stakeholders that whilst competencies per se are not assessed until internship year, university programs have a significant role in providing an opportunity for students to develop essential knowledge, skills and attitudes in preparation for registration and that internship year. Experiential placements in many professions support students in developing entry level competencies, with assessment occurring prior to graduation or within a pre-registration/internship year. Level of support, time to complete tasks, focus on client or self, ability to link practice to theory and interpretation of rules in individual situations are the basis for detailed assessment descriptors.

Key recommendations included: establishing a national repository of experiential placement learning and assessment tasks based on collaborative action research work; using an educational template and planning model incorporating learning outcomes, criteria for assessment and evaluation processes; collaborative stakeholder work in developing standardised developmental descriptors related to competencies as applicable to university students at the novice and advanced beginner levels; and undertaking further collaborative work with professional bodies and other stakeholders to further identify quality experiential placement success indicators in relation to preceptors, students, university, site and overall environment including pre-placement, during placement and post-placement aspects to support improvements in pharmacy experiential placements.

This report *contributes* to WIL pedagogy through its explicit and extensive evaluation of experiential learning. It raises the issue of short-term placements leading to a focus on completing specific learning tasks rather than building relationships and taking initiatives to seek broader learning experiences. The report's contribution to curriculum is evidenced by its identification of the need for universities to include professional practice competencies explicitly rather than implicitly, and ensure students undertake some learning tasks within the complexities of the workplace context as a way to move them beyond knowledge aspects. It clearly outlines a set of quality indicators for experiential placements (Figure 9, p. 83) in Australia, focusing on the qualities and characteristics of the pharmacy site, the preceptor, the university, the students and the overall environment, which can be adapted as a guide for quality evaluation in other disciplines.

Facilitating the integration of evidence based practice into speech pathology curricula: a scoping study to examine the congruence between academic curricula and work based needs (DS7-611) (2007)

Discipline: Speech pathology **Element/s**: Curriculum alignment/partnerships

The current state of evidence-based practice (EBP) teaching and learning in Australian speech pathology programs in both *academic and clinical contexts* was this *multi-institution* scoping study's *primary focus*.

Specific target areas included: establishing a process of evaluating how speech pathology programs teach EBP principles nationally; understanding current, available EBP resources that can be incorporated into curriculum development; developing core EBP teaching and learning outcomes for incorporation into speech pathology curricula nationally; and identifying clear directions for future research projects investigating approaches to teaching and learning in promoting EBP principles during clinical practice. The *purposes of WIL* implied in this study include greater integration of university curricula and work-based needs to facilitate improved clinical teaching and learning, and resource development in speech pathology nationally.

An action research methodology enabled critical self-evaluation throughout the project. One online survey asked academic staff, program coordinators, and on- and off-campus clinical educators to self-evaluate their practices in relation to EBP and their speech pathology programs (nationally). It also sought data of academic staff and clinical educators' access to, and use of, EBP resources. A second online survey used case studies and clinical questions to investigate clinical educators' application of the EBP process to clinical decision making. However, gaining representative data from across participating universities via the online survey had limiting time and information technology infrastructure issues. Other data collection methods included sourcing existing national and international EBP resources. The project team workshopped the data gathered to develop recommendations for Australian speech pathology EBP academic and clinical curricula. Site visits, teleconferencing, phone calls, web conferencing and email facilitated project team communication. Critical to the project's success were active participation by universities, their affiliates and key stakeholders, project team engagement and participation, a clear understanding of the project's scope, and utilising existing resources.

K*ey outcomes* included: proposed amendments to the competency based occupational standards for speech pathology (CBOS) document; a national plan of action for EBP curricula and resources; and a knowledge transfer strategy for organisational and individual change. *Key resources* produced included a summary of worldwide EBP resources, and a report related to current national teaching practices in speech pathology and the strengths, gaps and challenges of incorporating EBP into academic and clinical curricula.

The *major strength* of this scoping project is that it engaged speech pathology programs across the sector and became *an instrument of curricula reform*. The limited number of programs made this more possible than in disciplines with larger numbers of programs. Its strength also lies in the fact that it was grounded in some newly developed scholarly work on standards in speech pathology education. It has taken a scholarly piece of work and carefully explored it with a *diverse group of stakeholders* to *translate the intentions into a practice-appropriate and accessible language for practitioners and students*. This is a tension in educational development. It needs to balance being scholarly and evidence-based with utilising practice-based language and imperatives. The chances of uptake and up-scaling are limited without this balance.

Learning and teaching for interprofessional practice, Australia (L-TIPP, Aus). Developing interprofessional learning and practice capabilities within the Australian health workforce – a proposal for building capacity within the higher education sector (GI7-637) (2007)

Discipline: Health **Element/s**: Interprofessional education (IPE), Interprofessional Learning (IPL), Interprofessional Practice (IPP)

The project, undertaken in an *international, multi-health discipline context,* driven by a team from two Australian institutions with an international reference group, *focussed* on the long-term outcome of significantly increasing the Australian higher education sector's capacity to graduate health professionals who had acquired well developed IPL and IPP capabilities. *Assumptions about WIL* were the development of collaborative, knowledge-sharing networks across all stakeholders involved in health education and service delivery to facilitate students' development of IPL and IPP capabilities.

The project team implemented a capacity-building model as a method to work interactively and collaboratively with the field to identify the current state of play in IPE, practice and learning within the academy and the health system. This enabled achievement of all project goals, which were to:

- establish an Australian development and research agenda for IPE and IPL
- develop a national approach to further develop the IPE curriculum for health professional students within the higher education sector
- describe what's happening in terms of health professional IPE across the Australian sector
- contribute to the further development of a community or network of academics, health practitioners, health service managers and policy analysts
- develop a web-based information exchange and communication clearing house for those interested in developing IPE, learning and practice within the Australian and New Zealand contexts. (While the project was funded to focus primarily on the Australian context, the team have engaged with the Australasian Interprofessional Practice and Education Network [AIPPEN] who are interested in developing an Australian/New Zealand perspective).

The project informed and inspired national reform in health education curricular by identifying relevant ALTC-funded health education projects, and enabling a forum so they could understand the projects and points of intersection. The team established collaboration with the ALTC-funded graduate attributes projects with a view to developing a set of IPL graduate attributes, ongoing web-based infrastructures, and their own agenda on the ALTC Exchange to maintain national and international information and collaboration links between health bodies and universities.

The major outcome is a robust national and international network of consultation, information sharing and collaborative action to develop the conceptualisation of IPE/IPL/IPP and promote its uptake into health professions curricular nationwide. A set of key values literature and developed resources related to IPE/IPL/IPP underpin the promotion <www.aippen.net>. This project has taken an innovation and established a new direction on a large scale in both education and practice. It has supported projects that can trial its implementation, and produced infrastructure and resources to sustain what it has developed and develop it further. The project makes a twofold major contribution: 1) it has developed a strong conceptual basis for reform in health practice education; and 2) the strategies adopted are a good model for systematic engagement and collaboration with all stakeholders, and for sustaining and developing the project's achievements on a wide scale.

Leading for effective partnering in clinical contexts (LE6-14) (2006)

Discipline: Nursing **Element/s**: Leadership

This project's *primary focus* was on a systematic approach to communication across leadership levels to develop an effective partnering model between universities and clinical settings in the *single discipline context of multi-stakeholders* seeking to improve nursing undergraduate students' clinical education. The project's focus and context indicated that the *primary purposes of WIL* are to create collaborative, communicative leaderships and partnerships at individual, organisational and institutional levels, and to deliver high quality clinical learning experiences.

Based on an agency-partnering process developed in Griffith's School of Human Services and a literature review to identify key areas in which leadership could make a difference to students' clinical learning outcomes, the project team conducted a series of learning circles. This *method* generated *explicit communication* among four levels of leaders: the coal-face (clinical facilitators, ward staff, undergraduate nursing students); the gate-keepers (course convenors, nurse unit managers, clinical coordinators); strategic group (nursing directors, university-based deputy heads of school, program convenors); and an advisory group (representatives from Queensland Health, Queensland Nursing Council and university deans). The final learning circles challenged group members to explore local innovations to address barriers to learning on their ward/units as identified from previous discussions. Evaluation included staff and student pre- and post-learning circle surveys, learning circle discussion records, a modified communication audit tool for feedback from learning circle participants, Queensland Health student placement capacity data, and an independent evaluation involving interviews with advisory group members, learning circle participants, students, and clinical and university staff.

Key outcomes included: development of tips for students prior to their clinical experience; a short preparatory clinicians' workshop prior to students entering the clinical area; an accessible prompt card for clinical facilitators to help them access the diversity of strategies identified as useful for encouraging student learning; and alternate models for placing students and their supervisor in the clinical practice area. Increased numbers of students were placed in the clinical setting and registered nursing staff reported an improved clinical learning organisational environment. However, this was at odds with student feedback. While key leadership teams demonstrated good cooperation and participation, focus groups generated shared understandings and a consistent project officer enhanced the quality and continuity of communication across the project team, there were *challenges*. These included time constraints; participation limited to those already interested and motivated; and inconvenience and confusion due to learning circle venue changes. An open dissemination strategy via a website to give participants and the general population easy access to information about the project is planned, but will require efficient management to meet its objective of maintaining and expanding dialogue between stakeholders from different groups, agencies and institutions.

The *key outcomes* of this project reinforce the concept of adopting a stakeholder approach to professions-oriented practicum. This project has emphasised the element of communication and partnership between university teachers and workplace supervisors, recognising clinical supervisors' distinctive leadership roles and responsibilities, and their potential to impact on the quality of students' learning. This project's *contribution* is its illustration of the need for investment in establishing collegial partnerships between university academics and workplace supervisors, and that failure to do so risks compromising the quality of the student learning environment.

The development of an undergraduate nursing competencies assessment tool, for use across Australian universities (CG7-523) (2007)

Discipline: Nursing **Element**: Assessment, professional education

This project's *primary focus* was identification and rationalisation of specific skills for assessment of undergraduate nursing students' clinical competence. It was undertaken in the *context* of single discipline, multi-institution and organisation participation, with a focus on *WIL as a strategy to develop professional competence*. It aimed to develop a clinical assessment tool (CAT) and create a set of clinical skills for use by all Australian universities delivering Bachelor of Nursing degree programs, leading to national registration. As such, it focused on performance indicators to enhance clinical learning and teaching.

A four-phase data collection, analysis, tool development and testing strategy began with a literature review and analysis of curriculum documents using 2 rounds of modified Delphi surveys with clinicians and educators to develop a set of employer competencies (technical skills) as expected of a newly registered nurse (Phase 1a). A relevant literature review and audit of clinical assessment tools followed to provide accurate, reliable and valid information facilitating articulation of Australian Nursing and Midwifery Council (ANMC) competencies as the basis for more consistent assessment in clinical areas (Phase 1b). A CAT was developed, based on findings from the first phase (Phase 2) and disseminated to partner universities (Phase 3). The third phase considered implementation strategies and impact on the curriculum, assessment practices and skill delivery while providing the project team with a way to identify and outline strategies to assist other institutions. Phase 4, which involved piloting the tool at partnering institutions, did not happen; thus preventing any benchmarking to validate the CAT.

Key outcomes include a standardised tool (CAT) for Australian universities delivering Bachelor of Nursing degrees leading to national registration and a list of skills as a means by which to prepare pre-registration nursing students for employment. As with other projects in this review, key stakeholders' input was essential for this research.

A *key limitation is the lack of the pilot phase* at the time of the project report's submission. The report recognises this in its *key recommendation* that preparation of the final tools and supporting resource materials, their dissemination to other institutions and evaluation of the outcomes are vital.

This project's *main contribution to good practice* is by omission. The lack of benchmarking the CAT emphasises the importance of benchmarking as an element of good practice. Once properly tested, the skills list and CAT may be used to shape future curriculum design and pedagogy. The skills list also has the potential to contribute to preparation for graduate employability and as a means to measure achievement of graduate attributes. There is an opportunity for leadership because the tool facilitates the ability to build a professional and institution-wide e-Portfolio system.

Management and commerce

Engaging industry: embedding professional learning in the business curriculum (PP8-928) (2008)

Discipline: Business **Element/s**: Professional learning, curriculum

This project *focused* initially on taking stock of the business curriculum in universities and ascertaining means to improve graduate employability, which included exploring and documenting approaches to professional learning in the Australian higher education business curriculum to build professional learning through industry engagement in business courses in Australian universities. It was undertaken in the *context* of a *discipline-specific, multi-institution, multi-stakeholder* collaboration involving business academics who had developed and delivered professional learning curriculum; industry and professional associations; university business students; Associate Deans Teaching and Learning (Business); and the Australian Business Deans Council. Assumptions about the *purposes of WIL* related to integrative curriculum development and professional learning.

The project used a three-phase research method:
1) Scoping current practice. Activities included using a literature review, documented analysis and review of institutional and business faculty mission statements, a survey of business academics, and focus groups and workshops with business academics involved in professional learning.
2) Developing and embedding resources and case studies. Activities included developing professional learning case studies using the inventory of practice collected in phase 1; developing resources to guide practice-based on the typology and god practice case studies; workshops with business academics to review emerging typology, good practice principles, industry engagement approaches and perceived enablers and impediments to professional learning; industry advisory group review; and ongoing review and evaluation.
3) Disseminating case studies and findings. Activities included dissemination via a website, presentations and workshops, and in the compilation of a final report.

Key outcomes included a typology of professional learning and the associated resource manual, which present an approach to conceptualising and actualising professional learning for business disciplines in higher education. Eight main types of professional learning were identified: case study; simulations; practitioner delivery; mentoring; study tour; placement; competition; and project.

This project thoroughly addresses the challenge of designing curricula that will prepare students for their transition to employment, and informs the development, delivery and evaluation of what Australian business schools commonly call professional learning. It integrates graduate attributes with teaching modes (pp. 21–26), guided by principles of good practice. It has developed effective resources that integrate conceptual learning, workplace learning and teaching frameworks to guide academics' decision-making in designing curricula and selecting pedagogical approaches that fit their purpose. Of particular interest is the attention given to providing resources to assist those working at the interface between universities and industry. The project's *major contribution* lies in its practical resources (Chapter 4 & Appendix IV) and its illustration of how a discipline, with the support and engagement of the senior leadership (Council of Deans & ADEs) sector wide, can function productively, using the ALTC funding programs to best effect. It also illustrates how a discipline can engage productively with their related industry to advance the needs of the university, the discipline, the industry and the students. It has made good use of prior ALTC studies and work pertaining to WIL and graduate attributes, applying and further developing them. It is replicable in other disciplines, and the outputs are transferable and translatable to other disciplines. A highly commendable project.

Embedding development of intercultural competence in business education (CG6-37) (2007)

Discipline: Business **Element/s**: Pedagogy, curriculum

The *primary focus* of this collaborative, multi-*institution, single-discipline* ALTC-funded project was to identify strategies to create a framework for embedding the development of intercultural competence (IC) in business studies in Australia. The main assumption about the *purposes of WIL* seemed to be preparing students so they have the graduate attributes business employers desire.

The project team used action research methods across the four participating sites. Each site did an initial stocktake to identify the potential for change in their unique setting. The embedding framework was refined after the first year to inform the final two iterations. Teleconferences and face-to-face meetings ensured ongoing communication among collaborators. Establishing local reference groups and a national reference group ensured collaborators took ownership of the project at their site. The project manager disseminated information to stakeholders. Varied stakeholders' ongoing formative feedback was used to evaluate the project's progress. Evaluation data gathering was embedded in all project activities and collected from key stakeholders, including the reference group. Two key stakeholder engagements in 2009 provided summative feedback: the national meeting of Business Associate Deans Learning and Teaching in Tasmania, and six national working seminars around Australian capital cities. Dissemination strategies included the seminars, a website and various publications.

The *key resource* from the project is *The Embedding the Development of Intercultural Competence Evaluation Framework* (Revised December 15 2008, p. 37). This is the project's *contribution* to good practice in the context of graduate attributes that employers request as a component of WIL. However, it is not WIL-specific. Similar to several other projects reviewed here, it demonstrates the value of collaboration. It has established and sustained a sector-wide dialogue about intercultural competence and its place in the Business curriculum. It highlights the need for ongoing funding to maintain the focus on embedding strategies for cultural competence learning in three domains: leadership and communities of practice; curriculum policies and procedures; and resources.

Society and culture

Professionalization of peace education through wiki networking and innovative teaching methods (DS7-613) (2007)

Discipline: Peace studies **Element/s**: Pedagogy, professional learning, virtual technology

This project was a scoping study for an emerging discipline. The *primary focus* was development of an online network of peace studies stakeholders to provide a common hub and virtual sector meeting place for the discipline to discuss and evolve. One of the concerns addressed was providing students with authentic complex learning environments, a WIL teaching and learning context that challenged them in complex decision making and did not involve sending them to real world conflict zones. It was undertaken in a *multi-institutional and stakeholder context* in which students, such as members of the Australian Defence Force, often had considerably more practice knowledge than their teachers. The discipline scoping exercise found no common vision or range of required competencies. Some academic and professional groups viewed peace studies as an emerging discipline that was not worthy of professionalisation. The *primary purpose of WIL* appeared to be educating students to understand and experience theory in practice, and peace and conflict work as a field of practice.

Issues of concern, needs and priorities for delivering WIL in peace studies drove the *project method* – three discussion meetings over two years at three of the four collaborating universities with stakeholder representatives from 16 universities, an non government organisation, the government, and academics and postgraduate students from the collaborating institutions, with follow-up electronic networking.

Whilst other WIL reports and literature identify seeking input from stakeholders as a good practice strategy, this project *identified challenges* to its effectiveness. A *key finding* was that a professional group without a professional association or an annual conference faces special problems in maintaining a common spirit. However, while stakeholders agreed there was a need for a peace studies association, they could not agree on its objectives, raising *issues of access to, and equity in* membership.

Findings from student input suggested different teaching methods for undergraduate and postgraduate students, and provided insight into a path for virtual delivery of professional education through simulation technologies such as second life, which addressed the major *risk management issue* of students engaging in learning for professional practice without placement in overly dangerous situations. This was not without question from other students, particularly those who worked, who stated they were time poor and virtual reality simulations were time consuming. Academics also identified *time poverty* as a challenge to development and expansion of WIL in peace studies. Other student suggestions included creating closer linkages between theory, research and practice by linking with, and being willing to offer support for, communities, individuals and groups struggling with conflict.

The Peacewiki was the *key outcome* related to the primary focus on networking. However, key findings included: recognition that networking 'only covers some of the people some of the time'; information technology proficiency varies; and core conflict between the tendency to collaborate and inter- and intra-university competition for students and funds is worsening. The report's *challenge to the conceptions of the purpose and place of WIL within a curriculum* is its *most significant contribution to good practice*, illustrating an emerging discipline's challenges in establishing an approach to WIL. It is also important to recognise the need for ongoing and greater networking, role-play and simulations for students to experience theory in practice through VR such as second life, and students already working in related fields having more practice experience than their teachers.

Online student supervision training – accessible and cooperative learning in social work (CG7-491) (2007)*

Lead Institution
Charles Sturt University

Partner Institutions
Australian Association of Social Workers, NSW Department of Community Services, The University of Sydney, The University of Western Sydney, Australian Catholic University, The University of Newcastle, Victoria University

Team Leader
Dr Wendy Bowles

Final report: Online student supervision training – accessible and cooperative learning in social work (Wendy Bowles, Mike Collingridge, Jennifer McKinnon, Kylie Agllias, Al Dawood, Jude Irwin, Sue Maywald, Carolyn Noble, Justine O'Sullivan, Joanna Zubrzycki) (Charles Sturt University (Lead), Australian Association of Social Workers, Australian Catholic University, NSW Department of Community Services, The University of Newcastle, The University of Sydney, University of Western Sydney, Victoria University) (2011)

There is an ongoing shortage of qualified health and welfare professionals in regional and rural Australia. This problem is exacerbated by a range of postgraduate supervision training courses, subjects and workshops which are provided mainly in metropolitan universities and accessible only to those practitioners who can attend classes at these locations. This project aimed to establish a national, accessible online program to prepare field educators (experienced social work and human service practitioners) to supervise social work and human services students during their practicum (field education) subjects. Another long-term aim was to increase the pool of trained field educators, particularly in rural and remote areas where face-to-face professional development opportunities are rare and there is a shortage of health and welfare practitioners.

OUTCOMES AND TOOLS:

Project outcomes include:

- a website which hosts the resources created;
- masters level and free self-paced online subjects in student supervision;
- a printed Guide to Supervision in Social Work Field Education; and
- two new national groups established within the peak professional (the AASW and AASWWE – Australian Association for Social Work and Welfare Education) and higher education bodies to develop standards and update the resources created by the project.

Dissemination:
Most social work programs offered nationally have provided links to their program on the project's website. Links to other key stakeholders, employers and the peak bodies are being organised. Copies of *A guide to supervision in social work field education Revised edition* are being sent to every university offering social work education and will be distributed to field educators supervising social work students. The *Guide* is also available for download from the website.
Project website: http://www.socialworksupervision.csu.edu.au

ALTC projects and fellowships in progress: non-disciplinary

(The year at the end of each title is the year in which the project or fellowship is funded. Project/fellowship titles are live links to the resources.)

Bringing the learning home: programs to enhance study abroad outcomes in Australian universities (CG10-1549) (2010)*

Lead institution
Murdoch University

Partner institutions
Macquarie University, University of Wollongong

Project leader
Dr Jan Gothard

Project abstract
Bringing the learning home: re-entry programs to enhance study abroad outcomes in Australian universities' seeks both to enhance Australian students' international exchange and study abroad experience and better integrate student educational experience into the home campus. The project team proposes to develop and pilot a module of teaching resources, based on a structured program of experience-based learning and targeted specifically at the distinctive types of study exchange programs typically undertaken by Australian students. The resultant flexible learning and teaching module, designed to develop global and intercultural competence and trialled at three partner institutions, will comprise teaching and learning strategies, reflective online exercises, assessment suggestions, readings, workshop materials and videos. While focussing on all three phases of study abroad (pre-departure, the period abroad and return), the resultant teaching module will particularly capitalize on the re-entry phase as an under-utilised opportunity both to reinforce cross cultural skills and to embed educational experiences into home curricula, enhancing the benefits to both students and universities.

Program Priority
Research and development

Key words
Student exchange, mobility, re-entry, study abroad, global competence, campus internationalisation, graduate attributes, experiential learning

Scheduled completion
March 2012

Building leadership capacity for work-integrated learning: developing fieldwork coordinators as academic leaders (LE9-1234) (2009)*

Lead Institution
Curtin University of Technology

Partner Institution
Charles Sturt University

Project Leader
Ms Sue Jones

Project Abstract
Fieldwork, a form of work-integrated learning, is an integral component of many courses. It provides students with an opportunity to build their graduate employability and consolidate their professional skills and confidence, as well as helping them develop positive, professional attitudes and qualities. The aim of this project is to design and implement an academic leadership development program for fieldwork coordinators from a wide variety of disciplines to enhance their leadership capabilities, enabling them to provide high quality fieldwork learning experiences through appropriate pedagogy and management. An expected outcome of the project is to strengthen peer and industry relationships, reduce risks for all parties and ultimately improve the quality of student learning, as well as preparation and support mechanisms for supervisory staff.

Program Priority
Disciplinary and cross-disciplinary leadership

Key Words
Fieldwork, work-integrated learning, leadership, management

Scheduled Completion Date
December 2011

Facilitating flexible, enquiry-based experiential learning through an accessible, three-dimensional virtual learning environment (3DVLE) (CG8-738) (2008)*

Lead Institution
University of South Australia

Partner Institution/s
Monash University, RMIT University, Edith Cowan University, Flinders University, The University of Sydney, University of Sheffield (UK)

Project Leader
Dr Denise Wood

Project Abstract
This project will demonstrate the pedagogical benefits of the application of three-dimensional virtual world experiences in the undergraduate and graduate curriculum and result in the design and development of an accessible, open source 3D virtual learning environment. The team will consult with institutions and networks to ensure stakeholders are involved in the evolution of the 3D virtual learning environment. The development of open source 3D virtual learning environment will guided by pedagogy, accessibility, legal, ethical and intellectual property responsibilities. The project outcomes will be disseminated via project website, peer-reviewed journals, conferences, seminars, workshops and public events hosted in 3D virtual spaces.

Key words
3D virtual learning environments, simulations, accessibility, inclusivity, intellectual property, ethical and legal issues, experiential learning, student engagement, flexible learning

Project Completion Date: June 2011

Building leadership capacity in undergraduate students Associate Professor Lynne Cohen (2010 ALTC Teaching Fellow) (2010)*

Lead Institution: Edith Cowan University

Fellowship Abstract

This fellowship addresses the significant issue of leadership. Its primary focus is developing leadership skills in undergraduate students. This is an area that has been under-researched and -debated in recent work about graduate attributes, generic skills, and work-integrated learning. The fellowship will research, refine and trial an innovative approach that promotes leadership knowledge, leadership skills and leadership in action. The student program will be delivered through retreat workshops and work-based student projects directly related to their academic studies. The program aims to equip students with skills and insights that will help them to lead, inspire and positively influence their professions and workplaces. It will adopt a model of distributed leadership to conduct trials across diverse disciplines and professions in four Australian universities. This approach has the great advantage of also enhancing the leadership capacity of students and university teachers by engaging them in critical debate, reflection and feedback around the application of the leadership model in their own context.

Resources

http://www.altc-leadership.ecu.edu.au
Undergraduate leadership development – programs and models
Undergraduate leadership development – leadership literature review notes

Fellowship due for completion: Late 2011

ALTC projects and fellowships in progress: specific disciplines

(The year at the end of each title is the year in which the project or fellowship is funded. Project/fellowship titles are live links to the resources.)

Architecture and building and Health

Facilitating WIL through skills-enabled e-portfolios in the disciplines of construction and nursing (PP9-1283) (2009)*

Lead Institution
The University of Newcastle

Partner Institutions
University of Western Sydney, RMIT University, Avondale College (NSW)

Project Leader
Associate Professor Anthony Williams

Project Abstract
The professional institutions accrediting the construction management and nursing professions have developed well defined competency requirements. These disciplines are therefore in a similar and unique position to provide students with opportunities to relate these competencies to the skills they develop during their time at university, (including their work-integrated learning (WIL) and other life experiences) through e-portfolios. This study will develop a design brief and specifications for a resource that will be readily transferable to other disciplines.

Program Priority
Curriculum renewal

Key Words
E-portfolios, work-integrated learning (WIL), skills development, curriculum alignment, curriculum renewal, engineering, nursing

Scheduled Completion Date
June 2011

Engineering and related technologies

Design-based curriculum reform within engineering education (PP8-919) (2008)*

Lead Institution
The University of New South Wales

Partner Institution/s
Queensland University of Technology, The University of Melbourne, The University of Sydney

Project Leader
Dr Carl Reidsema

Project Abstract
The project team will work closely with the Australian Council of Engineering Deans, Engineers Australia, the Australasian Association for Engineering Education and selected ALTC Fellows and project leaders to form a community of practice. The community of practice will provide the strategic and political support necessary to develop and sustain the critical mass required in advancing much-needed curriculum reform. Regional forums will be conducted to establish the community of practice through stakeholder validation, using the design process as a basis for designing potential curriculum models which address the integration of in-depth technical and professional competencies through project-based learning in context, and as a means of disseminating the project outcomes and addressing identified staff development issues.

Key Words
Engineering education, project-based learning, community of practice, engineering design pedagogy, curriculum frameworks, CDIO

Project Completion Date: January 2011

Enriching student learning experience through international collaboration in remote laboratories (CG8-697) (2008)*

Lead Institution

University of South Australia

Partner Institution/s

Blekinge Institute of Technology (Sweden), University of Porto (FEUP, Portugal), University of Technology, Sydney

Project Leader

Professor Andrew Nafalski

Project Outcome

The project aims to develop, implement and evaluate a framework that will enhance international and intercultural perspective of engineering students through their collaborative work with students from other countries remotely via the internet, using remote laboratories as a platform for this collaboration. The project will deliver a toolkit for university educators to support student collaborative activities in remote laboratories. Information from a literature review of current best practice in online collaborative learning in the context of students' collaborative work in an engineering laboratory will guide focal points for developing a framework for teaching students online collaboration skills in international environment. The project will investigate and recommend the most suitable communication system(s), to be used in remote laboratories including both hardware and software and taking into account issues like technical and economical diversity in various countries/regions. The final stage of the project will implement and evaluate the framework and a toolkit for lecturers to provide effective learning environment where students will be gaining international collaborative skills while performing engineering experiments in remote laboratories.

Key words

International collaboration, intercultural communication, laboratory experiments, remote laboratories, engineering education, communities of practice

Project Completion Date: March 2011

Health

An integrated system for online clinical assessment of practical skills (eCAPS) for web-based courses (PP8-893) (2008)*

Lead Institution
The University of Queensland

Partner Institution/s
The University of British Columbia (Canada), The University of Melbourne

Project Leader
Professor Doune Macdonald

Project Abstract
Given the increasing presence of e-learning environments within health education, initiatives such as the online clinical assessment of practical skills project (eCAPS) are needed to evaluate and demonstrate the effectiveness of web-based courses within the higher education sector. The project will develop, implement and evaluate online clinical assessment of practical skills (eCAPS). eCAPS is focussed on learner-oriented and authentic assessment of practical competencies for health professionals within web-based courses. eCAPS will utilise a system of integrated online technologies (e.g. virtual patients, web-based video interactions) to enable genuine reciprocity of information and materials between learners and instructors.

Key words
Authentic assessment for learning, online postgraduate coursework, practical competencies in diverse practice settings

Project Completion Date: November 2010

Establishing infrastructure and collaborative processes for cross-institutional benchmarking of student clinical performance in speech pathology (PP8-955) (2008)*

Lead Institution
The University of Sydney

Partner Institution/s
The University of Queensland, La Trobe University, The University of Newcastle, James Cook University

Project Leader
Dr Sue McAllister

Project Abstract
The project will establish an ethical, efficient and sustainable cross-institutional strategy to use COMPASS ™ data to benchmark assessment of speech pathology student workplace performance in Australia, New Zealand and Singapore; and facilitate ongoing engagement with and effective use of benchmarked data to inform curriculum and research on preparing students for practice. An online database will be developed to support confidential and efficient cross-institutional benchmarking of practice assessment data. The database will articulate with Speech Pathology Association of Australia's COMPASS™ Online used by speech pathology programs to lodge student assessments and collate assessment data electronically. Programs will be facilitated over two cycles to collaboratively examine their benchmarked data to identify and act upon areas for curriculum reform or research to support practice based learning. A variety of community building strategies including teleconferencing, online communities, and two face-to-face study or *learning sessions* will support these activities.

Key words
Benchmarking, speech pathology, COMPASS™

Project Completion Date: April 2011

Examining the impact of simulated patients and information communication technology on nursing students' clinical reasoning (CG8-679) (2008)*

Lead Institution
The University of Newcastle

Partner Institution/s
University of Western Sydney

Project Leader
Dr Tracy Levett-Jones

Project Abstract
This project will examine how nursing students' clinical reasoning skills and knowledge application can be enhanced by the effective use of human patient simulation (HPS) manikins and information and communication technologies (ICT) such as personal digital assistants (PDAs) and computerised decision support frameworks. The project will produce: evidence to support the effective use of HPS manikins and ICT as strategies to enhance nursing students' clinical reasoning and knowledge application; and quality indicators and teaching resources that will optimise the use of HPS and ICT in clinical nursing laboratories throughout Australia.

Key words
Human patient simulation, personal digital assistants, clinical reasoning, nursing, healthcare, quality indicators, knowledge application, information and communication technology

Project Completion Date: February 2011

Promoting resilience and effective workplace functioning in international students enrolled in health courses (CG9-1065) (2009)*

Lead Institution
Queensland University of Technology

Partner Institutions
University of South Australia, Princess Alexandra Hospital, Ramsay Health Care, Royal Brisbane & Women's Hospital

Project Leader
Associate Professor Robyn Nash

Project Abstract
This project addresses the increasing cultural and linguistic diversity of the student body aiming to develop and build supportive strategies for international students in the nursing, nutrition and dietetics, and public health disciplines.
The project will develop, implement and systematically embed a supportive model for promoting resilience and effective workplace functioning for international students. In addition to the provision of direct student support, this model will involve enhancing the mechanisms by which international students are mentored and supervised when on practicum placement in clinical settings. The model and accompanying resources developed through the educational partnership will be informed by critical iterative feedback from a network of tertiary health education experts, specialists in the area of language and learning support, and other key stakeholders to ensure that project outcomes have the potential for mainstream adoption across both the education and health service sectors.

Program Priority
Strategic approaches to learning and teaching that address the increasing diversity of the student body

Key Words
International students, student resilience, workplace functioning, work-readiness, supportive model, clinical support, health education, diversity, supportive strategies

Scheduled Completion Date
July 2011

Using Team Management Systems to identify and build leadership for quality learning in clinical health care teams (LE7-356) (2007)*

Lead Institution
The University of Adelaide

Partner Institutions
University of South Australia, Flinders University

Team Leader
Associate Professor Maree O'Keefe

Project Abstract
This project involved a pilot investigation of the utility of team management systems (TMS) to identify and build leadership capacity within health service clinical teams. Participating clinical team members completed a team management profile. This initial profiling of individual team member management preferences provided an understanding of the range of existing work preferences within the team around student learning, and facilitated clinical team quality improvement planning. Six months later the clinical team completed a linking leader profile. This second profiling activity guided teams in the assessment of improvements that have been made, the identification of additional changes to team functioning that are required, and strategies that may be effective in achieving these goals. Each profile activity included individual questionnaires, feedback and a facilitated workshop. The development, implementation and impact of quality improvement plans were evaluated at several points in time by questionnaire, interview and observation.

Key words
Experiential learning, workplace learning, health disciplines, clinical learning, interprofessional learning

Project Completion Date: January 2011

Natural and physical sciences

Advancing science by enhancing learning in the laboratory (ASELL) (CG9-1049) (2009)*

Lead Institution
The University of Sydney

Partner Institutions
Curtin University of Technology, Deakin University, Flinders University, The University of Adelaide

Project Leader
Professor Scott Kable

Project Abstract
ASELL has four objectives:
• to build a database of scientifically sound and educationally-tested experiments to share;
• to provide professional development for science academics in the area of laboratory education;
• to build a community of practice amongst science educators; and
• to research how students learn in the laboratory.

The objectives will be realised by holding a series of experiential workshops across the three main discipline areas of physics, chemistry and biology where science educators will test their preferred experiments and participate in the educational evaluation of other experiments.
Teams of educators will then evaluate experiments in their home institution leading to broad programs of laboratory evaluation, recognition of strengths and weaknesses, and measurable improvements in the student laboratory learning experience. The Australian Council of Deans of Science is a partner in this project, which will lead to ASELL activities being recognised as valued academic activities, and support participation in ASELL activities in the future.

Program Priority
Research and development focussing on issues of emerging and continuing importance

Key Words
Laboratory education, professional development, strategic change, enhancement of learning and teaching, dissemination of good practice in learning and teaching

Scheduled Completion Date
March 2011

Teacher education

Pre-service teacher education partnerships: creating an effective practicum model for rural and regional pre-service teachers (PP9-1285) (2009)*

Lead Institution
Australian Catholic University

Partner Institution
La Trobe University

Project Leader
Dr Josephine Ryan

Project Abstract
The project will develop and implement inter-university strategies designed to reshape curriculum in the practicum aspect of rural and regional teacher education programs. This collaboration between ACU National and La Trobe University addresses the challenges of establishing effective teaching approaches in the school practicum, in particular that of providing supervision for pre-service teachers who are placed across a wide geographical area. The project will develop a secure ICT platform shared between ACU and La Trobe which supports rural and regional pre-service teachers' learning during their practicum; create processes and protocols which will allow universities to share supervision of pre-service teachers in these areas and develop new strategies for universities to create positive partnerships with rural and regional teacher supervisors. The partnership model developed, together with documentation of lessons learned, will be designed to meet the varying needs of other universities with similar challenges.

Program Priority
Curriculum renewal

Key Words
Teacher education, teaching practicum, information communication technology and education, teacher education supervision, rural and regional teacher education

Scheduled Completion Date
January 2012

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Appendix A: WIL review scoping matrix

DIMENSIONS	DOMAINS			
	Leadership & management	**Education**	**Partnerships**	**Context**
Purposes	Institutional vision Inspiring motivation staff engagement Resource and budget	Educational objectives Graduate attributes Professional registration Career learning	Enterprise needs & potential benefits Mutual benefits Vision integration	Scope Innovation Geographical location Socio-political-industrial
Curriculum & pedagogy	Approval Resourcing	Alignment Integration Pedagogy Reflection	Engagement Integration	Singletons/group Virtual/real Professional Service learning
Legal & ethical Matters	Risk analysis & management WIL policy provision	Accreditation compliance Access & equity	MOU Intellectual property Confidentiality	Accreditation High/low risk
Infrastructure provision	Systems Services Sustainability	Career development Student support services	Recognition University systems & services access	Supervision ICT platforms Specialist advisory
Quality assurance	Evaluation Audit Benchmarking	Assessment Standards Access and equity	Mutual benefit Duty of care	Evidence based Research informed
Student matters	Duty of care Communication	Preparation Career learning Coaching	Authenticity Networking Employability	Element of risk Student numbers Diversity
Staff matters	Communication Recognition & reward Promotion profiles Workload calculations	Induction, Professional development	Host organisation induction & support Communication	Staff numbers Expertise

Appendix B: Table 3: Matrix of purposes and processes

(Source: Stephen Billett, *Curriculum and pedagogic bases for effectively integrating practice-based experiences* report, p. 18)

Educational purpose	Curriculum					Pedagogy		
	Timing and sequencing	Duration	Organisation	Engagement	Kinds of experiences	Before	During	After
Learning about the occupation	Early in the university program	Short, long enough to observe	Access to variations of practice	Observation and participation in peripheral tasks	Observation and opportunity to experience the occupation	Understanding requirements for appropriate engagement and occupational norms & practices	Guidance by experts, opportunity to ask questions & understand further	Opportunity to reflect upon the occupation and how it meets expectations & preferences
Learning about variations of that occupation	After some initial experience of the occupation	Short, long enough to observe and listen	Access to variations of practice	Opportunities to engage across workplaces and also with other workers	Access to a range of work settings	Basing experience on what individuals know and seek to know through these visits	Guidance by expert partners to delineate differences and distinctions in occupational practices	Opportunity to reflect upon variations in occupational practice and be advised about particular requirements
Extending the knowledge learnt in university settings	During or after this knowledge has been imparted	Possibly short, but well focused engagements	Pathways of experience used to make explicit the applicability of knowledge learnt	Effortful engagement to assist the application of knowledge to novel circumstances	Engagement in authentic workplace activities of different kinds	Consideration of the applicability of the occupational knowledge to the settings	Guidance by more expert partner who will press students to make links to what was learnt in the academy	Focus group activities for students to share and compare experiences and their applicability to the occupation
Orientations to the settings where the occupation is practiced	Early in the university program	Long enough to observe a range of work settings	Rotation through a range of workplaces to understand how practice is enacted	Engaging student in their developing understandings about these activities	Rotation through a range of workplaces to understand how the occupation is practiced	Setting out the opportunity and support for understanding work practice, ahead of real experiencing	Actively seeking to compare and contrast across occupational settings	Organising process of comparing and contrasting students' experiences
Building the occupational capacities required to be an effective practitioner	Building upon some initial experience	Longer periods of engaging in range of workplace activities	Progressively longer periods of practice and more demanding tasks during those periods	Engaging in a range of authentic activities, initially guided by more expert partner	Provision of access to authentic work practices and engagement in appropriate level tasks.	Advising and guiding students to understand the kinds of knowledge to be learnt	Opportunities to practice, engage with kinds of knowledge required for effective practice.	Opportunities to reflect and share with others about their experiences and making these generative of robust occupational knowledge

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