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Tucker, Richard and Elkadi, Hisham 2011, Teaching in practice : work integrated design learning for architecture students, in *Proceedings of the 2011 International Conference of the Association of Architecture Schools of Australasia*, Deakin University, School of Architecture & Building, Geelong, Vic., pp. 341-354.

**Available from Deakin Research Online:**

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# TEACHING IN PRACTICE: WORK INTEGRATED DESIGN LEARNING AND PRACTICE READINESS FOR ARCHITECTURE STUDENTS

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## ABSTRACT

This literature review describes the theoretical basis for developing a pedagogical model of higher education/industry engagement for the built environment and related design disciplines, with a focus on architecture. In particular, attention is given to the conceptualisation informing the development of such a model as a form of work integrated learning (WIL). In the discussion, the use and development of WIL in architecture will be placed in the historical context of Cooperative Education as a whole. The objective of the paper is to present ideas about the way in which design education relocated to practice might better prepare students for professional life.

Aiming to capitalize on the work place as a location for authentic learning, the paper will propose a form of WIL that will be termed “Teaching in Practice” (TiP). A prime aim of such a model is to bridge the growing gap between academia and the profession by enabling students to learn design from practitioners within a practice environment. The paper will argue that TiP allows practitioners to have a direct influence on design education, and thus establishes connections between academia and the professions that ensure built environment education remains relevant to industry needs.

Keywords: Collaborative Learning, Cooperative Education, Teaching, Practice

### 1. Introduction:

Historically, students of the built environment disciplines have been educated in the workplace. However, over the last century academia has come to dominate professional education. This is particularly the case in Australia where academic architectural education does not generally involve an integrated period of internship. Thus, in Australia, the professions now play little part in teaching practice knowledge, and students have little exposure to professional practice. Not only do students report this as a source of frustration but this problem also has serious consequences for employers, for while many graduates are inadequately prepared for practice many practices are just as often inadequately prepared for graduates. In architectural education discourse in Australia there has been growing concern about student’s restricted exposure to professional practice knowledge. Savage suggests that learning practice knowledge “requires immersion in the authentic, complex problems

which practice presents (2005, p. 9). Similarly, Recommendation 07 (of 17) of the 2008 ALTC discipline scoping study *Understanding Architectural Education in Australasia* (Ostwald and Williams 2008, p. 38) suggests “maintaining an appropriate level of current industry knowledge in an architectural program is a particular challenge in the present climate in tertiary education,” requiring that “alternative “academic-practitioner” employment models should be investigated for the architecture discipline.” This paper will present ideas about how the growing gap between practice and academia might be bridged to better prepare students for professional life, and posits a “Teaching in Practice” (TiP) model as an alternative to the “academic-practitioner.”

The academic practitioner model commonly uses practitioners to teach in academia either in the lecture theatre, classroom or studio. Teaching in Practice may be understood as variation on the academic practitioner model in that it also utilises practitioners, rather than academics, to teach. However, TiP allows practitioners to teach not in academia but rather in the context of the practitioner’s own work-place. Thus, TiP can be understood as a form of cooperative education (also known as work-integrated Learning (WIL) or practicum) in that it relocates student learning from academia into practice. The TiP model fulfils two primary aims; the first is to provide students with practice experience before completing university, and the second is to forge stronger links between academia and professional practice by facilitating two-way knowledge transfer between the two; thus informing both pedagogy and practice. While the aims of TiP echo those of more traditional cooperative education models, the structure of the model departs from these other models. Whereas traditional cooperative learning consists of a semester long or yearlong “sandwich” placement of students in industry, which requires students to be involved in everyday “work” activities, TiP differs in that the students are merely hosted in the work-place for one day per week of one semester.

In order to illustrate how a design education relocated to practice via TiP might better prepare students for professional life, we will now locate the development of WIL in architectural education within the historical context of cooperative education as a whole.

## **2. The Development and Benefits Cooperative Learning**

Cooperative education has evolved over one hundred years to take on many forms across a wide variety of disciplines. Cates and Jones (1999) define cooperative education as a structured educational strategy that progressively integrates academic study with learning through productive work experiences in a field related to a student’s academic or career goals. Thus, it is a form of experiential learning that is not an add-on to the curriculum, but an integral part of the educational process. Cooperative education has also been described as a collaborative enterprise in which students, employers and higher-education-providers work together to produce work-ready graduates with practical skills, complementary to their theoretical academic learning, that make them of almost immediate value to employers (Groenewald 2004).

The particular name given to a system of cooperative education often reflects its physical location, its duration and when the placement takes place in relation to academic study. Thus, in the UK it is most

commonly manifested in ‘sandwich’ programs (which includes most architecture courses), and in the USA it takes the form of ‘co-op’ work placements spaced evenly throughout the degree, or capstone internships added to the end of a degree. More recently, a broader term used to describe the model is work-integrated learning (WIL) (Franks & Blomqvist, 2004), a term reflecting that a key feature of cooperative education should be that learning from each ‘site’ is integrated so that structured two-way knowledge exchange occurs between academia and industry. So, for example, as Colls and Eames have explained (Coll and Eames 2007), students studying at university take knowledge, or a different culture or way of thinking, learnt from academic studies or research and use this to inform meaningful work with an employer. And, vice-versa, a student’s academic studies are informed by new knowledge from the workplace.

The framework in cooperative education for integrated knowledge exchange between industry and academia has been said to be reducible to four core dimensions (Groenewald 2003, p. 51): “(a) the integrated curriculum, (b) learning derived from work experience, (c) cultivation of a support-base and (d) the logistical organisation and co-ordination of the learning experience.” On the second dimension – the learning outcomes that should be derived from cooperative education to ensure that graduates are ready for the workplace, Martin and Hughes (2009, p. 20) have listed the six most important non-technical competencies identified in the literature as:

1. The ability and willingness to learn;
2. The ability to prioritise tasks and organise effectively;
3. The ability to take responsibility and make decisions;
4. The ability to solve problems;
5. The ability to communicate interpersonally;
6. The ability to work as a team.

In addition, they list nine key competencies identified by students that WIL should focus on developing (Martin and Hughes 2009, p. 38):

1. Communication Skills;
2. Self Confidence;
3. Customer Relationship Management;
4. Enthusiastic Participation;
5. Industry & Business Knowledge;
6. Self Sufficiency;
7. Personal Organisation;
8. Professional Networks;
9. Professional Ethics.

To these lists, Turner and Langworthy (2002) add the following “employability skills,” personal values (e.g., loyalty, commitment, honesty), initiative and enterprise skills, self awareness, life-long learning skills, and technology adaptation skills. In addition to learning outcomes, Martin and Hughes list the following ‘opportunities’ as the benefits available to students from cooperative education (2009, p. 31):

- gain knowledge and understanding of the organisational and operational aspects of an organisation or group of individuals;
- integrate and apply knowledge, theory, and understanding from academic courses to other life experiences;
- experience contacts with professional workers on the job;
- discover strengths which may be developed and weaknesses which can be improved; develop the following skills and techniques, which are common practice within an organisation: communication skills, motivation of others, marketing skills, and related organisational skills;
- analyse the organisation or group of individuals;
- identify, plan, implement, and evaluate practices that benefit the organisation;
- formulate goals and measurable objectives to be accomplished during the work place experience;
- gain an appreciation of some of the organisations environmental factors (physical, economic, social, and technological).

As reported in Turner and Langworthy, studies have identified the benefits to employers of being involved in Cooperative Education programs as including:

1. Reduced graduate recruitment costs;
2. Opportunity to screen potential employees;
3. Low employee turnover;
4. Opportunity to use students to take over tasks that free employees to focus on more advances tasks;
5. Innovative questioning approaches that students bring to established processes;
6. Students returning to campus acting as goodwill ambassadors;
7. Cost effective access to skilled employees.

To these benefits, Christopherson and Hardwick (1996) add three impediments for small businesses to uptake of Cooperative learning:

1. Student lack of knowledge about small business;
2. Loss of staff member when placement concludes;
3. Time and supervision requirements.

Let us now consider how cooperative education has been presented in architectural education policy and discourse as offering a solution breaking down the knowledge-transfer barriers between academia and professional practice.

### **3. Current policy and recommendations in architectural education**

As Gutman has suggested (1996), in the USA the expansion in the scope of knowledge demanded of practitioners has raised the possibility that “architectural education is unsuitable to the requirements of

architectural practices,” such that aspiring architects may be “trained more appropriately if they spent fewer years enrolled in university... and instead received more of their formal education under the aegis of firms.” The tension expressed by Gutman between practitioners and the schools is reflected in the professional criticism that, as Stevens expresses it (1995, p. 120), “the schools are operating in some sort or unrealistic fantasyland, training students for a professional world that simply does not exist” (see also Buchanan on this (1989)). Anderson also recommends a rethinking of the role of practitioners in professional education (2001, p. 298), recommending that “aspects of a student’s professional development await immersion into the architectural office.”

In Australia too, the workplace has been underutilised as a learning environment for practice awareness. In 1995, Maher recommended that in Australia the training of students for practice needed be relocated to practice from academia (in (Luscombe 1995, p. 25));

*“The pressure from practitioners for greater practice awareness in graduates needs to be alleviated by a shift in responsibility back to those practitioners for this aspect of training. The academies and practitioners need to cooperate in establishing a college concept for the transition to practice.”*

However, Savage suggests that professional education should now embrace the best of both worlds – practice and academia – to offer a continuum between theory and practice, for (p. 3);

*“design students are best equipped for working life if they develop competence in knowledge development through practice during the course of their university studies... through critical work-based teaching and learning strategies.”*

Savage (2005) suggests a brief for such “best-of-both-worlds” learning that, importantly, would not oversimplify the professional environment; rather it would involve students fully participating with all that is happening in practice workplaces (rather than, as is often the case, being restricted to special tasks). Thus, students must be exposed to the workplace with (Savage 2005, p. 9) “its ‘hot’ action, its messy complexity, its instantiation of professional culture and its daily confrontation with the ethical.” As Franz has drawn attention to (2007), the problem of academic/industry engagement was acknowledged by the federal government in 2006, with the then Honorable Julie Bishop MP, Minister for Education, Science and Training asking (Bishop 2006): What is the value of providing professional degree courses which do not reflect contemporary practice? The question has resonated with various design disciplines in their educational policies and debate. At the 2006 International Federation of Interior Designers/Interior Architects Round Table Conference, for instance, it was conceded that there was misalignment between graduate outcomes and design industry expectations, such that higher education institutions, including those in Australia, needed to start producing design graduates with employable skills that allowed them to easily fit into organizations. There has been little information, other than minor references to the inclusion of professional experience, provided by the design professions on how this type of experience-based industry/practice knowledge might be learned. Franz suggests (2007, p. 2) that a solution is the design of dedicated WIL units with specified learning objectives aiming “to develop a range of discipline-specific as well as generic knowledge and skills.” Such a learning context may (Franz, p. 3);

*“provide a more cohesive, pedagogically sustainable framework in relation to authentic learning for the built environment design disciplines; improve the capacity of the work environment to provide contemporary relevant learning experiences for students along with more effective outcomes for employers and other stakeholders, and; in conjunction, improve the status and purpose of work experience in the eyes of educators, practitioners and students.”*

The idea of including dedicated WIL units in architectural degree programs bridges the practice/academia divide by immersing students into practice. However, the divide can of course also be bridged from the opposite direction i.e., by immersing practitioners into academia as what are known as ‘academic practitioners.’ This practice-to-academia direction of knowledge transfer has particular advantages for students, for as Hawkes has argued, many unique design insights that inform “the processes of interpretation and invention” and “the ability to communicate them through the medium of teaching, depend upon the direct experience of practice” (Hawkes 2000, p. 38). Yet it has become increasingly difficult for academia to retain the role of the academic practitioner; a difficulty that we shall now see has been recognised in recent architectural education policy and discourse in both Australia and in the United Kingdom.

In Australia, the ALTC funded scoping study *Understanding Architectural Education in Australasia* (Ostwald and Williams 2008) highlights that the divisions between (1) the academy and the profession, (2) practices and the profession, and (3) the academy and practices, has led to disagreement on the extent to which “universities should produce graduates who can meet the immediate needs of architectural practices and the way in which these needs are defined by the architectural profession.” A key recommendation of the study (Rec 07 – The Academic Practitioner) focuses on the educational consequences of these conflicting demands for both architecture schools and their students. Thus, as the study explains, schools require a balance of skills from their teaching staff, meaning that some staff members (often part-time) are required to possess current practice skills and others high-level academic skills. However, as the study notes, only between 42% and 52% of current academics are able to maintain engagement with practice, and those who do rate maintaining this connection as very difficult. Over the last decade, two of the strategies that schools have used to maintain the skills balance have been threatened. First, fractional “academic-practitioner” positions do not fulfil the growing research needs of universities; and, second, academic pressures now make it near impossible for full-time academics to also run practices. The solution suggested by the study is (Vol. 2, p. 33);

*“Alternative “academic-practitioner” employment models should be investigated for the architecture discipline. Such models could draw on the experiences of other professional disciplines (including law and medicine) that have developed positions that effectively balance teaching and practice.”*

Francis Duffy, ex president of the Royal Institute of British Architects, has suggested that in the UK there is an equivalent problem, arguing that “there is now no connection between what happens in architectural practice and what is taught in the schools” (Duffy 1998, p. 118). He acknowledges that the “problem is a difficult one: the widening gap between the schools and contemporary architectural practice [...] makes it seem practically impossible to prepare students adequately” (p. 119). Out in the profession, this problem has consequences for both employers and their new employees, for

Murray found that only 42% of architecture graduates felt adequately prepared for practice, while Cowdroy found that few practices were adequately prepared for graduates. Cuff suggests that the uncertainty of the step from academia to practice results in graduates becoming frustrated when first entering into professional employment. Nicol and Pilling are precise when explaining the reasons for this difficult transition, stating that the mismatch is because architecture schools cannot replicate a practice environment and practices cannot simulate an educational environment.

In the face of the recent widespread economic downturn, which exacerbated the problems of students obtaining satisfactory professional experience, the RIBA offered a solution to bridging the gap between practice and academia in the introduction of its 'Host Practices' program. This initiative offers architecture graduates desk space and work and/or research opportunities in professional offices for a fixed term post graduation. The program aimed to "develop a national template for graduates, practices, and universities to work together and provide worthwhile professionally related opportunities in times of economic recession" (R.I.B.A. 2009, p. 1). A significant inclusion in the remit of the Host Practices program is that of offering 'research' opportunities, for this aim can be seen to depart from a traditional internship, which is normally restricted to 'practice' or 'work' experience. The inclusion of research can be seen to reflect, it is worth noting, an issue that is particular to architecture. As Hawkes has explained (2000, p. 38), a "central point of controversy in the debate about the status of design practice in the academic system is whether design can be considered to be research." This consideration is an important one, for excluding design from research can be seen, as Hawkes expresses it, to exclude "practising architects from the academy, purely because they and their work do not conform to the demands of a bureaucratic process of assessment" (Hawkes 2000, p. 39). It could be suggested, therefore, that the RIBA is being inclusive of research in its Host Practices program to facilitate academia being inclusive of practitioners in its research.

While the lack of satisfactory professional experience opportunities for students is a widespread problem, the issue is of greater importance for Australian universities compared to British universities. For Australian architectural education is not founded on the traditional 'sandwich' model common to most vocational degrees in the UK, where students spend a year ('thick-sandwich') or a semester-per-year ('thin-sandwich') of their course in placement. Thus, Australian students can only obtain professional experience outside of their course structures, either between periods of study (e.g. during a gap-year), or during study (whether working in practice during part-time or full-time study). However, as *Understanding Architectural Education in Australasia* (Ostwald and Williams 2008) stresses (Vol. 2, p. 39);

*"Architecture schools are neither resourced nor expected to monitor or manage students' industrial experience... Commercial practitioners and professional bodies also have limited responsibility for the educational needs of students during their "year out" and... there is widespread confusion about the content of a typical intern program."*

Thus, a key recommendation of the study (Rec 13 – Industrial Experience) is for further research into this topic.

#### **4.0 How a TiP model might bridge the practice/academia divide in architecture**

As Nicol and Pilling note (2000, p. 13), “there is currently a perceived gulf between the learning in architecture schools and the realities of professional life.” Solutions to bridging this divide by facilitating knowledge transfer from academia to architectural practice and the wider construction industry can be categorised into seven strategies. These are;

1. The Practicing Academic - whereby academics are given opportunity to maintain professional activities or are supported to practice part-time;
2. The Academic Practitioner – whereby practitioners are hired part-time; as “sessional” teachers (employed on short-term contracts), or as “fractional” teachers (employed permanently on a fraction of full-time);
3. Sandwiching – whereby periods of placement in practice are a structured part of a degree program;
4. Site Visits – to practices, building firms, contractors, buildings, building sites etc.;
5. Guest Lectures – from practitioners or industry experts;
6. Supervision – where an external supervisor is appointed from the outset of a student design project to consult face-to-face for a short period of time (normally limited to a half hour to one hour per student per week). When an external supervisor is appointed, it is considered desirable to appoint a co-supervisor from within the university who, even if not expert in the thesis subject, will ensure that the university’s formal requirements and ethos are observed.
7. Work Integrated Learning - dedicated WIL units in architectural degree programs.

As has been already noted, the first two of these methods are under threat from the growing research pressures of academia. The third method of ‘sandwiching’ is impractical in Australia because; firstly, architectural education is committed to course structures that do not support sandwiching; and, secondly, because (unlike in the UK) structured placement has never been a role demanded of and resourced by architectural practices in Australia. Although methods 4, 5 and 6 (site visits, guest lectures and supervision) provide useful experiences for students, they are short in duration and can thus never be considered as continuous knowledge transfer. Nor can they be considered to offer a great deal of practice experience. Moreover, it should be noted that site visits are under threat by the increasingly burdensome demands of Health and Operational Safety. The seventh strategy – Work Integrated Learning units that aim to achieve practice learning outcomes by placing students in practice – are certainly a sustainable model for bridging the academia-practice divide. However, the role of the practitioner as teacher in such WIL might be said to be limited, and hence so is any inclusion of the practitioner in academia. The TiP model offers an eighth method, and one that can be seen to include the practitioner as a teacher; a teacher that supervises students’ design learning rather than practice knowledge learning.

#### **5. Categorisation of the Teaching in Practices Model**

A useful categorisation of cooperative education programs is utilised by Turner and Langworthy (2002). This is as follows:

<b>Location</b>
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<b>Workplace</b>	<ul style="list-style-type: none"> <li>• At one workplace</li> <li>• At multiple workplaces</li> <li>• At the workplace with University seminar supplementation <ul style="list-style-type: none"> <li>o Prior to the workplace experience</li> <li>o During the workplace experience</li> <li>o After the workplace experience</li> </ul> </li> </ul>
<b>University</b>	<ul style="list-style-type: none"> <li>• At the University by academics</li> <li>• At the University by industry specialists</li> <li>• At the University with workplace visits</li> <li>• Business projects on campus</li> </ul>
<b>Employer Involvement</b>	
<b>Work Undertaken</b>	<ul style="list-style-type: none"> <li>• Entirely employer driven</li> <li>• Agreed project</li> <li>• Negotiated learning contract</li> </ul>
<b>Supervision</b>	<ul style="list-style-type: none"> <li>• Employer</li> <li>• Academic</li> <li>• Student Mentor</li> <li>• Student Buddy</li> <li>• Employer and academic</li> <li>• Industry (non-employer) mentor</li> </ul>
<b>Extent of contact</b>	
<b>Intensity</b>	<ul style="list-style-type: none"> <li>• Full-time</li> <li>• Part-time <ul style="list-style-type: none"> <li>• 2 days per week</li> <li>• 4.5 days per week with 0.5 days study leave</li> </ul> </li> </ul>
<b>Duration</b>	<ul style="list-style-type: none"> <li>• 1 week – 12 months</li> <li>• In one block</li> </ul>

	<ul style="list-style-type: none"> <li>• In several blocks</li> </ul>
<b>Timing</b>	<ul style="list-style-type: none"> <li>• After 2nd year</li> <li>• As 4th year</li> <li>• Split <ul style="list-style-type: none"> <li>• 1 block in 1st year, 1 block in 3rd year</li> <li>• 1 block in 2nd year, 1 block in 3rd year</li> </ul> </li> <li>• Semester break(s)</li> <li>• Parallel to part-time study</li> </ul>
<b>Compulsory or Optional</b>	
<b>Compulsory</b>	<ul style="list-style-type: none"> <li>• For course</li> <li>• At institution</li> <li>• For major</li> </ul>
<b>Optional</b>	<ul style="list-style-type: none"> <li>• Certain academic results required <ul style="list-style-type: none"> <li>• Credit</li> <li>• Distinction</li> </ul> </li> <li>• Any student</li> <li>• If places available</li> </ul>
<b>Range of Skills</b>	
<b>Generic</b>	<ul style="list-style-type: none"> <li>• Communication skills</li> <li>• Interpersonal skills</li> <li>• Team skills</li> <li>• Ability to work independently</li> <li>• Ability to take initiative or be self-motivated</li> <li>• Time management skills</li> <li>• Problem solving skills</li> </ul>
<b>Specific Skills</b>	<ul style="list-style-type: none"> <li>• Discipline specific</li> <li>• Career specific</li> <li>• Job specific</li> </ul>

<b>Level of Skill</b>	<ul style="list-style-type: none"> <li>• Menial</li> <li>• Low</li> <li>• Medium</li> <li>• High</li> </ul>
<b>Recognition and Assessment</b>	
<b>Credit arrangements</b>	<ul style="list-style-type: none"> <li>• Credit points given towards course completion</li> <li>• Additional qualification (ie Grad Dip)</li> <li>• No credit points but noted on transcript</li> <li>• Recognition of Prior Workplace Experience</li> </ul>
<b>Assessment</b>	<ul style="list-style-type: none"> <li>• No assessment</li> <li>• Assessment to pass grade</li> <li>• Assessment by employer</li> <li>• Assessment by academics</li> <li>• Assessment by combination</li> <li>• Assessment on <ul style="list-style-type: none"> <li>• Report(s)</li> <li>• Presentation(s)</li> <li>• Reflection(s)</li> <li>• Project Outcome(s)</li> </ul> </li> </ul>
<b>Payment</b>	<ul style="list-style-type: none"> <li>• Scholarship for all students in course</li> <li>• Scholarship for students undertaking WBL</li> <li>• Payment by employer at varying levels</li> <li>• Reimbursement for expenses</li> <li>• No payment</li> </ul>

Using this categorisation we can describe a TiP model as follows:

<b>Teaching in Practice</b>
<b>Location</b>

<b>Workplace</b>	<ul style="list-style-type: none"> <li>• At multiple workplaces</li> <li>• With University seminar/tutorial supplementation <ul style="list-style-type: none"> <li>o Prior to the workplace experience, and</li> <li>o During the workplace experience, and</li> <li>o After the workplace experience</li> </ul> </li> </ul>
<b>Employer Involvement</b>	
<b>Work Undertaken</b>	<ul style="list-style-type: none"> <li>• Project assigned by university</li> </ul>
<b>Supervision</b>	<ul style="list-style-type: none"> <li>• Employer and academic</li> </ul>
<b>Extent of contact</b>	
<b>Intensity</b>	<ul style="list-style-type: none"> <li>• Part-time (1 day per week)</li> </ul>
<b>Duration</b>	<ul style="list-style-type: none"> <li>• In one block of 12 weeks</li> </ul>
<b>Timing</b>	<ul style="list-style-type: none"> <li>• 4<sup>th</sup> year or 5<sup>th</sup> year</li> </ul>
<b>Compulsory or Optional</b>	
<b>Optional</b>	<ul style="list-style-type: none"> <li>• If places available</li> </ul>
<b>Range of Skills</b>	
<b>Generic</b>	<ul style="list-style-type: none"> <li>• Communication skills</li> <li>• Interpersonal skills</li> <li>• Ability to work independently</li> <li>• Ability to take initiative or be self-motivated</li> <li>• Problem solving skills</li> </ul>
<b>Specific Skills</b>	<ul style="list-style-type: none"> <li>• Discipline specific – building design</li> </ul>
<b>Level of Skill</b>	<ul style="list-style-type: none"> <li>• Medium</li> </ul>
<b>Recognition and Assessment</b>	
<b>Credit arrangements</b>	<ul style="list-style-type: none"> <li>• Credit points given towards course completion</li> </ul>
<b>Assessment</b>	<ul style="list-style-type: none"> <li>• Assessment by academics</li> <li>• Assessment on Design Presentation(s)</li> </ul>
<b>Payment</b>	<ul style="list-style-type: none"> <li>• No payment</li> </ul>

## Conclusion

This literature review has described the theoretical basis for developing a form of work integrated learning (WIL) termed Teaching in Practice (TiP), which we have seen can be viewed as akin to an academic practitioner model. Like the academic practitioner model, TiP uses practitioners to teach and hence exposes students to practice knowledge. However, TiP has two significant advantages over the academic practitioner model of employment: first, the practitioner does not have to leave the workplace, for this can be a problem for time-strapped practices; and, second, unlike academia-based design teaching models the student is immersed in the context of practice and hence learns to design in a more authentic environment, an environment with, in the words of Savage, the ‘hot’ action, and messy complexity of “professional culture and its daily confrontation with the ethical.”

Within the context of the historical development of WIL in architectural education presented in this literature review, TiP can be seen to present an entirely innovative solution to bridging the divide between learning in architecture schools and the realities of professional life. Thus, as Farren Bradley have concluded (in (Nicol and Pilling 2000, p. 187)), through the acceptance of academics in practice and of practitioners in academia a better informed critique of architectural education is developed and the profession has “the opportunity to develop a learning culture and a recognition that practice is and must be a primary site for architectural education.”

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