

Assessing Performance and Capability in Work Placements: A collaborative study involving Queensland University of Technology Australia and the University of Surrey England *Jenny Willis, Tony Sahama & Megan Hargreaves*

Authors



Dr Jenny Willis is an independent educational consultant, currently working with SCEPTRe on a number of research projects. She has contributed other chapters to this e-book, and her biography can be found in chapter A3. All three authors 'meet' monthly through an AGN video-conference to develop their respective research on professional capability and assessment.

Dr Tony Sahama – is a Senior Lecturer in the Computer Science Discipline, Faculty of Science and Technology (FaST) at Queensland University of Technology (QUT) Brisbane, Australia and he holds PhD in Computer Simulation and Modelling. Tony was awarded a QUT teaching fellowship during 2006 and published several articles in the Teaching and Learning space. Tony completed three small to medium in scope Teaching and Learning projects during the past 4 four years as a contribution to the academic community. These include a method of providing instant feedback to computer programming students when completing final examinations. This addressed assessing students in a group and electronic examination environment including question paper distribution electronically. Presently, Tony is a SCEPTRe Fellow, and engaged in a Work Integrated Learning (WIL) project at university level. He is actively engaged in a “Real World” learning paradigm. In addition, Tony’s research area is Medical Informatics with 4 ~6 PhD projects are near completion.



Associate Professor Megan Hargreaves is a Scientist with 30 years experience in teaching in Higher Education, and a PhD in Education (higher ed). Her research in teaching has focussed on assessment, particularly authentic assessment strategies for real-world purposes. Megan has facilitated the “Role of Assessment in Learning” special interest group at QUT, and editor of an in-house publication in that field. This research underpins a strong interest in WIL (Work Integrated Learning) and particularly in authentic assessment of that experience. With many universities now turning to WIL experiences, the knotty question of appropriate assessment is becoming more and more of an issue. Megan is now focussing her assessment expertise on this question, across other disciplines as well as Science and Technology.

Abstract

As universities worldwide begin to appreciate the value of authentic learning experiences, so they struggle with methods of assessing the outcomes from such experiences. This chapter describes the application of an assessment matrix developed by Queensland University of Technology (QUT) in Australia, to the assessment requirements and practices relating to work integrated learning at the University of Surrey in the UK. Despite the very different institutional contexts and independent way in which the assessment regimes have developed, it was found that the values and outcomes being assessed and the methods used to assess them were similar. The most important feature of assessing work integrated learning experiences is fitness for purpose, hence the learning objectives and assessment of outcomes for a WIL experience must be explicitly aligned to this objective.

Key words: assessment; collaborative learning; professional competence; work experience, Work Integrated Learning

Editors Note: origins of this collaboration

A succession of events, beginning with the interaction of colleagues from QUT and Surrey in a mail list, followed by participation in conferences and a regular video conference exchange, led to the award of a SCEPTRe Fellowship to three academics at QUT. One of these Fellows (TS) participated in SCEPTRe's conference on the theme of Enabling a More Complete Education in April 2010 and conversations with JW eventually led to the collaboration that resulted in this paper. This is as solid a case as you can get for the value of networking and relationship building based on mutual interests and respect.

Introduction

Both the University of Surrey and Queensland University of Technology have an educational mission that is underpinned by a commitment to authentic real world learning. The University of Surrey was a pioneer of professional training (known elsewhere as e.g. Work-Integrated Learning or Cooperative Learning, and referred to henceforward in this chapter as WIL), in which all undergraduate programmes are required to offer students opportunities for year long work placements, or in the case of health-related programmes, integrated theory-practice experiences (Willis 2010). Queensland University of Technology has an explicit mission formed around real world education and has adopted a curriculum model that embraces Work Integrated Learning (Peach in prep).

Both universities therefore have a common interest in concepts of 'graduateness' that involve the development of capability for being an effective professional alongside more traditional academic capability, and of understanding how to assess evidence of the complex mixture of skills, knowledge, dispositions and qualities that are developed and applied in authentic real world situations. This paper brings together research independently conducted in both institutions, in the UK (Willis 2009b, Willis 2009c) and Australia (Sahama et al. 2010), in an attempt to establish synergies, transfer ideas and test whether a framework developed for assessing the workplace performance of engineering, information technology and science students in Queensland was applicable to assessing such performance in other disciplines at the University of Surrey. The study demonstrates how individual researchers working in different locations but drawing from a common inspiration, (students' development in authentic real world learning situations), can share simple tools and in the process of applying such tools, develop new understandings of professional capability which are greater than the sum of their original parts.

We begin with an outline of the work each researcher has been engaged in, before introducing the analytical framework developed at QUT. The tool is then used to map the University of Surrey's Faculty of Arts and Human Science programmes and its wider applicability is evaluated. The paper concludes with a discussion of collaborative partnerships.

Assessing Performance and Capability in the Workplace, Queensland University of Technology

The QUT research discussed here is set against a background in which the Australian Learning and Teaching Council (ALTC) is currently developing discipline standards as part of a new regulatory environment in higher education and the introduction of a Tertiary Education Quality Standards (ATEQS) framework. This is reminiscent of England's HE subject benchmarking statements (<http://www.qaa.ac.uk/academicinfrastructure/benchmark/default.asp>).

QUT team's work is founded on constructivist theory and belief that students must be offered a range of appropriate learning opportunities in order to guide their decision-making (Billett 2009) and that tomorrow's workers are best developed through a learner-centred, collaborative, alliance between academia and industry. A meta-analysis of studies relating to undergraduates in science, mathematics, engineering and allied health technology subjects showed that greater achievement resulted from group learning (Springer, Stanne, & Donovan, 1999).

Springer and co-workers (1999) developed a model that recognises the idea that learners undergo several iterations of exposure and development, namely their intention (*voice of intent*), understanding the work place ethos and the learning environment (*voice of design*) and goals and expected outcomes of the parties involved (*voice of experiences*). These ‘voices’ are formed into a matrix (Table 1) containing the professional capabilities and competences generally identified as essential (e.g. Johnson, Johnson, and Smith, 1991; Cohen, 1994; Johnson, Johnson and Stanne, 2000)).

Table 1 Correlation between learning expectations in a learning-centred design (source: Sahama et al. 2009)

	Voice of Intent	Voice of Design	Voice of Experience	Shared responsibility	Outcome/Deliverables
Team/Individual/Organisation	✓	✓	✓	✓	✓✓
Workplace Culture	✓	✓	✓		✓✓
Mandatory/Optional		✓	✓	✓	✓✓
Shared responsibility			✓		✓✓
Time Management	✓	✓	✓	✓	✓✓
Critical Thinking		✓	✓	✓	✓✓
Communication	✓	✓	✓	✓	✓✓
Presentation	✓	✓	✓	✓	✓✓
Critical Reflection		✓	✓	✓	✓✓
Reporting		✓	✓	✓	✓✓
Supervision			✓	✓	✓✓
Mentoring		✓	✓	✓	✓✓
Accreditation			✓	✓	✓✓
Employability	✓	✓	✓	✓	✓✓

The QUT team tested this model using data gathered over a 10-year period, from 800 participants in industries based in South-East Queensland and in higher education institutions involved in a workplace programme, Co-operative Education for Enterprise Development (CEED), managed by the private company Corporation Technologies Pty Ltd (see www.corptech.com.au).

In order to achieve these goals of work place learning, constructive alignment is necessary between, teaching style, learning and assessment. The problems of assessing ‘fuzzy’ competences are notorious (Knight 2003) but matrices were developed based on the learning pathway through induction/preparation, assessment and feedback.

Table 2 shows 7 categories of learning (e.g. whether the learning is essential to the degree) and includes the weighted importance of an outcome (more +s and ✓s indicate higher quality). The categories refer to various requirements of the placement, the outcome of the placement, and the assessment type and purpose (Sahama et al, 2010). Further development since the initial publication has resulted in the following set of categories. This information will assist in selection of the most appropriate assessment types, as well as the most suitable preparation and post-placement strategies.

After developing and testing this model with science, technology and engineering students, the team concluded:

The matrix produced was a conceptual development of the last decade’s feedback from both industries and students hence an enhanced practical experiment on a selected discipline would be useful. (Sahama et al. 2010:7)

The SCEPTRe Fellowship scheme provided the opportunity to conduct just such an experiment, when it brought together the authors of this paper.

Table 2 Categories of work placements (WIL) based on the purpose for participation, the type of activity in which the student is engaged, and the expected outcomes (source: Sahama et al. 2009)

Category	Mandatory/Elective	Purpose	Student Activity	Student Outcomes
Cat-1	M	Accreditation with a Professional body	Observation and experience of workplace culture	Experience, language of profession, approach to discipline, ethics
Cat-2	M	Accreditation with a Professional body	Individual or Group project	Project report or portfolio, experience, language of profession
Cat-3	M	Graduate attributes (oral and written communication etc)	Observation and experience of workplace culture	Experience, language of profession, time management, problem solving skills
Cat-4	M	Graduate attributes (oral, and written communication etc)	Individual or Group project	Presentation skills (project report), time management, critical thinking skills, other
Cat-5	E	Interest/Employability	Observation and experience of workplace culture	"work experience", reflection on discipline culture
Cat-6	E	Interest/Employability	Individual or Group project	"work experience", project report or portfolio
Cat-7	E/M	Widening World View	Observation and experience OR project	Appreciation of other views; i.e. socioeconomic, racial, ethical, and other aspects

Table 3 brings together the categories and stages of the assessment process in the form of a matrix. This provides the model against which the Surrey programmes are tested.

Table 3 Proposed assessment matrix for learning-centred work-placements (source: Sahama et al. 2009)

	Cat-1	Cat-2	Cat-3	Cat-4	Cat-5	Cat-6	Cat-7
Induction & Preparatory							
Group tutorials	+	++	+	+	++	+	+
Individual counselling	+	++					
Interview with workplace supervisor	+			++		++	
Material embedded in curriculum	+	+	+	+	+	++	++
Assessment methods							
Attendance	✓	✓	✓	✓	✓	✓	✓
Reflective journal		✓		✓		✓	✓
Criterion list supplied by university		✓		✓		✓	
Project marked by university	✓		✓		✓		
Project marked by workplace	✓		✓		✓		
Oral seminar	✓		✓	✓	✓		
Portfolio of original work (partial or complete)	✓	✓	✓	✓	✓	✓	✓
Feedback methods (mechanisms)							
Survey of students	✓	✓	✓	✓	✓	✓	✓
Debrief – individual, group, class	✓	✓	✓	✓	✓	✓	✓
Interactive bulletin board		✓		✓		✓	✓
Response to journal entries		✓		✓		✓	✓
Inclusion of workplace issues in		✓		✓		✓	✓
Formative feedback & critical evaluation	✓	✓✓	✓✓	✓✓	✓	✓✓	✓

University of Surrey framework for Professional Training (WIL) and its assessment

The structure within which the University of Surrey WIL is framed aligns with national Quality Assurance Agency guidelines (QAA 2007), and can be found in the Programme and Assessment Regulations contained

in the University Calendar. It is designed to allow for flexibility according to the nature of a subject, whilst maintaining robust standards. The Surrey experience is therefore at a different stage from that of the QUT, having been established many years prior to the QAA framework.

The period of professional placement, known as Level P, takes place in the 3rd year of a 4-year degree, between HE Levels 2 and 3. The minimum length of placement is 46 weeks for paid, and 30 weeks for unpaid,¹ placements. Many students work continuously through vacations on both sides of the placement year, hence their placement may last for as much as 15 months.

The model is also underpinned by an alliance between student, the university and industry, with each placement being constructed around the individual student's learning needs. During the placement, he/she will be supported by a Visiting Tutor from their Department, and by a workplace supervisor. The Visiting Tutor normally makes 3 visits during the period of placement. On workplace visits, the Visiting Tutor will make assessments and give formative feedback to the student, in tandem with the workplace supervisor. The student will keep a reflective record of his/her experiences and produce a summative report. In some subjects, they may also make a presentation as part of their final assessment for Level P.

The WIL period is normally recognised by an award separate from the degree. Until recently, this was the Associateship of the University of Surrey (AUS) award. At the time of writing (May 2010) discussion is under way to reintroduce this award. The award carries 120 P (professional) credits and levels of award are based on the following minimum scores:

Award	40%
Award with Merit	60%
Award with Distinction	70%

In some programmes (e.g. Engineering), the Professional Body also accredits the WIL experience, in which case accreditation is made within the degree itself rather than by a separate award. The University regulations for WIL delivery and assessment are shown in Table 4.

Table 4 University of Surrey Assessment Framework for Professional Training (source: Willis 2009a)

<p>Level P descriptor: Develop and/or apply theory and develop skills independently in external educational settings or in practical and operational contexts; Develop knowledge and skills which can contribute to subsequent project work and study; Develop transferable skills and improvement in presentation, communication, team-working and interpersonal skills in a professional context.</p>

Assessment must comprise:

[Areas below may be combined]	% of 120 P credits
Student performance in workplace assessed by employer	30-50
Student report(s)	30-50
Oral presentation by student	up to 10
Report by visiting tutor	5-20
Student participation in briefing and debriefing	up to 20
Additional academic work during placement	up to 30

¹ The term 'unpaid' is used for any placement where there is no salary or the salary is below the threshold for taxation. It is usually the Performing Arts that have such placements.

Although not expressed in the same terms as the QUT, this framework addresses the same notions of intent, design and experience incorporated in that model.

Against this background, much research into professional capability has been conducted at Surrey. This paper cannot do justice to the immense range produced within SCEPTRe since its inception. Readers are encouraged to consult the website (<http://www.surrey.ac.uk/sceptre/>) and browse through the extensive archive of material. We focus here on an emergent model of what professional capability comprises and how it can be assessed.

The longitudinal work of Michael Eraut (2000, 2004, 2007, 2009) in the field of work-based learning has had a major influence on SCEPTRe's evolving research, as has that of Ron Barnett (2005, 2009) into the complexity of the modern world. SCEPTRe has been fortunate to engage both of these internationally renowned academics in its conferences and research on workplace and life-wide learning. Their practical and ontological foci have been crucial to the authors' own research. Key areas of interest shared with QUT are the collaborative context of learning, and assessment of professionalism.

Willis (2009b:59) found that the flexibility built in to the university (Surrey) assessment framework shown in Table 4 translated into a diverse set of assessment criteria ranging from mere attendance at a briefing, through demonstration of critical and analytical skills to development of less easily measured competences such as leadership and initiative, and dispositions where motivation is paramount. These were consistent with Eraut's eight learning trajectories (task performance; awareness and understanding; personal development; academic knowledge and skills; role performance; team work; decision making and problem solving; judgement) and confirmed Barnett's interplay between knowing, doing and being/becoming. Willis (2009b) developed a model which enables students to track their own professional development, and curriculum designers to include opportunities for acquisition and development along each trajectory. A full copy of the report and related presentations can be found on the SCEPTRe website, by following links to Fellowship. We shall return to this model later in the discussion.

Testing the QUT framework

The objectives for the collaborative QUT-Surrey Fellowships project were:

- To test the validity of the QUT framework *per se*
- To test the applicability of the QUT framework to non-Science/Technology-based WIL placements

It was agreed that the focus would be on the QUT Cat-1 courses only, that is, those programmes at the University of Surrey where WIL is professionally accredited through an award separate from the degree.

So as to provide a contrast with the Australian science and technology programmes around which the framework was developed, it was further agreed that this project would map the programmes offered in Surrey's Faculty of Arts and Human Sciences (FAHS). These are: Dance and Culture; Economics; English Literature; Music; Music and Sound Recording; Politics; Psychology; Sociology.

As has been seen, the QUT framework examines three issues: 1. introductory and preparatory processes, 2. assessment methods and 3. feedback mechanisms. The Surrey response to each of these is outlined next.

Objective 1: the validity of the QUT framework *per se*

Framework Section 1: Induction and Preparatory Processes (Intent)

The framework proposes 4 potential processes at this stage of the WIL experience (Table 5):

Table 5 QUT Framework Section 1

Induction & Preparatory Processes
1 Group tutorials
2 Individual counselling
3 Interview with workplace supervisor
4 Material embedded in curriculum

We concluded that:

Process 1: These are generally applicable to the Surrey model, where students have group tutorials at Level 2, to introduce them to the aims, organisation and assessment of the WIL experience.

Process 2: Individual counselling at Surrey is likely to relate to contact either with the Personal Tutor, or with a Student Service such as Careers

Processes 3 and 4: The Surrey system normally requires students to apply for a post/posts, followed by interview. This means that they are introduced to CV writing and on-line application processes. This could be subsumed within 4. Material embedded in curriculum, but it would be preferable if this were made explicit in the matrix.

Framework Section 2: Assessment Methods (Design)

Seven assessment methods are included in the QUT framework (Table 6):

Table 6 QUT Framework Section 2

Assessment methods
1 Attendance
2 Reflective journal
3 Criterion list supplied by university
4 Project marked by university
5 Project marked by workplace
6 Oral seminar
7 Portfolio of original work (partial or complete)

These are broadly consistent with the Surrey model, but some amendments are necessary for the framework to work comprehensively. It was concluded that:

Method 1: Attendance. We discovered that this term had different means for each system: at Surrey, it relates to attendance of pre-placement briefing, whereas for QUT it indicates signing in and out of the workplace.

Method 2: Students keep a reflective journal and notes which contribute to their formative and summative submissions and the reflective process, but the journal itself is confidential to the student and is not assessed.

Method 3: Students have an on-line and/or hard copy handbook for the WIL year. This includes full details of assessment criteria and processes.

Methods 4 and 5: Whilst Surrey students produce a summative project/ dissertation; it is not assessed by the workplace supervisor. However, he/she and the visiting tutor (as well as the student themselves), complete

interim, formative, evaluations as part of the tutor visits. This could either be added as a separate criterion, or the existing criterion 5 could be amended to read *Project or other assessment by workplace*.

Method 6: Students may be assessed through a presentation, which is delivered as a seminar. Slight amendment of wording would clarify this.

Method 7: Portfolio of original work (partial or complete)

Framework Section 3: Feedback methods (mechanisms)(Experience) Table 7

Six feedback methods are included in the QUT framework. These, too, are consistent with the Surrey model, subject to some minor clarifications.

Table 7 QUT Framework Section 3

Feedback methods (mechanisms)
1 Survey of students
2 Debrief – individual, group, class
3 Interactive bulletin board
4 Response to journal entries
5 Inclusion of workplace issues in following/other units
6 Formative feedback and critical evaluation

Mechanism 1: Surrey has a centrally conducted post-placement survey, required originally for purposes of quality assurance, but increasingly oriented towards critical reflection.

Mechanism 2: Debriefing allows inquisitive enquiry/deep reflection into the work experience – often things arise that students did not notice at the time. When done in a group context, other students may raise an issue, which alerts their fellows to the fact that they had similar experiences. This technique also allows discussion of conflict resolution, or other coping mechanisms that could have been employed by the student to overcome the situation, or to take advantage of it. Surrey ‘return days’ mid-way through the placement, and post-placement presentations offer such reflective opportunities.

Mechanism 3: Again, is the Interactive bulletin board intended as a means of information and/or advice? Surrey Departments may have electronic boards providing information about vacancies, but interactive electronic boards aimed at providing support networks are generally confined to the resources developed for those on placements in Europe under the EU Erasmus scheme (see <http://www2.surrey.ac.uk/professionaltraining/abroad/erasmus/>).

Mechanism 4: It has already been noted that Surrey students’ journal entries are not assessed. Students are encouraged to utilise PebblePad technology, which provides guidance on personal development planning, and offers a confidential site for individuals to store their PDP material (see http://www.surrey.ac.uk/Skills/splash/pebble_pad.htm).

Mechanism 5: The main way in which workplace experience is integrated in future units is through the dissertation produced at Level 3. Many students choose to base this on some aspect of the WIL year, and begin collecting material etc during the placement.

Mechanism 6: Formative feedback and critical reflection occur through discussion of the employer, visiting tutor and student forms completed for each visit.

Summary, Objective 1, Validity of the QUT framework

In light of this discussion, it was concluded that the QUT framework could offer a useful tool for summarising the complete process of WIL from preparation, through assessment, to feedback. It might, however, be

necessary to make small amendments in order to align with institutional arrangements. Table 87 shows the revisions required for it to be applied optimally at the University of Surrey

Table 8 QUT Framework: Proposed Revisions to Preparation, Assessment and Feedback Criteria

Induction & Preparatory Processes
Group tutorials
Individual counselling (Personal Tutor or Careers Service)
Interview with workplace supervisor
Material embedded in curriculum (preceding units)
Assessment methods
Attendance (briefing)
Reflective journal
Criterion list supplied by university
Project marked by university
Project marked by workplace
Other formative evaluation by workplace
Oral seminar
Portfolio (written, recorded, illustrative, other)
Feedback methods (mechanisms)
Survey of students (centrally conducted)
Debrief – individual, group, class
Interactive bulletin board (on-line for Erasmus)
Response to journal entries (PebblePad)
Inclusion of workplace issues in following/other
Formative feedback and critical evaluation

As it stands, section 2 of the framework, assessment methods, was felt to be most valuable; however the QUT authors believe that Induction and Feedback are important processes for successful WIL, and that they should be given more attention by academic institutions, if they are serious about making the most of work placements.

Two other points were raised in this exercise: for Surrey, there is significant overlap between the assessment and feedback methods. This is because the university has comprehensive assessment and feedback policies and a quality assurance process that ensures a programme is compliant with these before it is approved. This leads to the question: what is the intended purpose of the framework? If it is as a succinct overview which would enable easy comparison between programmes, then it is suitable for any context. If, though, it is intended to provide a framework for curriculum and assessment development, its value will be relative to the stage of development of a given institution or programme.

The second of these issues relates to the final point raised in this exercise: the matrix assumes that there will have been prior discussion of fundamental issues such as the perceived value of a period of WIL. For those who are working within the boundaries of institutional policies, much of this discussion may already have taken place. For others, though, the underpinning values are essential starting points and the framework will need to be accompanied by some statement of these.

Objective 2: Mapping non-science/technology subjects against the framework

Having confirmed the validity of the QUT framework, the next stage was to map the Faculty of Arts and Human Sciences programmes against it. This was done by applying subject groups, not individual programmes within a subject. One exception was made: Surrey offers a specialist programme in Music and Sound Recording (Tonmeister) which is substantially different from the standard Music programmes, so both have been included. The revised criteria, as shown in Table 8, were used for this stage of the exercise.

Table 9, overleaf, summarises the results. The ticks represent the optimal experience, but it must be recalled that individual students will opt out of some of the processes e.g. may not attend a non-assessed

briefing, or may not need to go through a process, according to the size of their departmental cohorts e.g. Dance or Music students may be directed towards specific placements by the Senior Tutor for WIL, rather than seek their own placement.

The tabulation shows that the matrix produces a succinct overview of the WIL process for a group of subjects, enabling a ready comparison between them.

However, because of the University's regulations for assessment and feedback, the first and third sections of the matrix were less useful for this institution. The same pattern is reported for each subject. This does not mean that every student will have the same experience – as noted, the table gives only the putative processes, which will vary according to departmental and individual student circumstances. For these sections to be meaningful, an additional layer of analysis is required: what are the details of these processes?

For Surrey, the assessment section is the most useful, but it is an exercise that the author had already carried out across the whole university (Willis 2009b). That is not to say that it would not be a valuable exercise for other institutions. Experience suggests, though, that finer granulation is necessary in order to examine the actual forms of knowledge, skills, competences and dispositions represented by the figures in section 2. So, for instance, when these are probed, the BA Music Hons programmes aim to develop:

- A comprehensive and up-to-date knowledge base
- Intellectual and practical skills
- Technical, artistic and scholarly curiosity
- Motivation and self-directed learning skills
- Professional skills and training
- Communication and presentation skills
- Self-confidence
- Critical thinking

(University of Surrey Student Handbook for Music 2009)

whilst the BSc Economics Hons programmes help you to master the full range of skills practised by the professional economist. These include analytical problem-solving skills, quantitative and data analysis skills, computing skills and written and oral presentation skills. The emphasis is on being able to use these skills, and ultimately on specialising in areas that interest you.

(University of Surrey Music Prospectus 2009)

In response to the second question for this exercise, we conclude that the QUT framework is suitable for use with the broad range of disciplines found in HE, whether Arts, Sciences or Technology.

We return to the theme of collaborative development and the model offered by this exercise.

A model of capability to be an effective professional developed through collaborative processes

The thrust of the paper has been towards assessment practices and protocols with particular emphasis on WIL-based university subjects. In particular, the use of appropriate assessment strategies, that focus attention on the key outcomes of WIL placements, has been discussed.

Eraut (2009) presented the learning and gaining knowledge are social activities can be examined by learner's performances. A workplace learning model is a practical space to observe and measure such performance in a short spell. Exploring individuals' learning trajectory can provide the means to evaluate what and how people learn and the differences in how they interpret what they learn (Eraut, 2009, p1). In the work place learning environment, such activities are happening simultaneously. Information Technology (e.g., Computers) has been used for years to facilitate learning at different levels and multiple spaces.

Table 9 Practices relating to the management and assessment of student work placements in University of Surrey, Faculty of Arts and Human Sciences subjects mapped against QUT Framework

Surrey Faculty of Arts Subjects mapped against QUT framework	Number of P (Professional) credits per element, totalling 120 P credits per programme							
	Dan	Eco	Engl	Musi	MSR	Polit	Psyc	Soci
Induction & Preparatory Processes								
Group tutorials	✓	✓	✓	✓	✓	✓	✓	✓
Individual counselling (Personal Tutor or Careers)	✓	✓	✓	✓	✓	✓	✓	✓
Interview with workplace supervisor	✓	✓	✓	✓	✓	✓	✓	✓
Material embedded in curriculum (preceding units e.g.	✓	✓	✓	✓	✓	✓	✓	✓
Assessment methods								
Attendance briefing	10		0	10		5		
Reflective journal	40			10 +	20 +	40	40	40
Criterion list supplied by university	in student handbooks							
Project marked by university	70	35	60					
Project marked by workplace								
Other formative evaluation by university		15	20	40	40	20	25	25
Other formative evaluation by workplace		60	20	20	20	50	45	45
Oral seminar/presentation		10	0 +	10	10	5	10	10
Portfolio of original work								
Feedback methods (mechanisms)								
Survey of students (centrally conducted)	✓	✓	✓	✓	✓	✓	✓	✓
Debrief – individual, group, class	✓	✓	✓	✓	✓	✓	✓	✓
Interactive bulletin board (on-line for Erasmus)								
Response to journal entries (PebblePad)								
Inclusion of workplace issues in following/other	✓	✓	✓	✓	✓	✓	✓	✓
Formative feedback and critical evaluation	✓	✓	✓	✓	✓	✓	✓	✓

Recently, computer-assisted face-to-face collaboration has become an important part of the work place, under the rubric of computer supported collaborative work. A new study on Collaborative Face-to-Face Educational Environment (CoFFEE, LEAD 2010), open source software tool that helps learners analyse a problem more carefully, includes private notes, one-to-one chat, file-sharing, shared writing tool to help compose a joint report or a dialogue and most importantly not just about sharing the content of the problem but about the problem-solving process itself. Similar, facilities are also available from tools like Skype, MS-messenger, Instant Podcasts, and *Elluminate Live* a communication protocols in the QUT Blackboard site. Furthermore, ubiquitous learning environment is a merging teaching system using ubiquitous technology that facilitates immersing the learner into learning process to capture the adaptive learning.

The use of such technologies and facilitative pedagogies is consistent with the multidimensional nature of learning and behaviour in the work place and with Eraut's (2000) eight learning trajectories (task performance; awareness and understanding; personal development; academic knowledge and skills; role performance; team work; decision making and problem solving; judgement). They are also consistent with Barnett's (2009) conception of the interplay between knowing, doing and being/becoming which characterise all experience-rich learning and developmental situations.

The authors' thinking has been influenced by Eraut and his proposed 8 learning trajectories, through which the development of capability to perform effectively in the professional work environment occurs. Drawing from large-scale quantitative data, and consistent with these trajectories, the QUT team identified 14 anticipated benefits of a WIL experience (Table 1, above). They comprised a mixture of competences such as judgement and decision-making, dispositions, knowledge/understanding and skills.

Working from a qualitative perspective, Willis (2009b) studied 29 extended student narratives and found 32 perceived outcomes of a period of work experience. She mapped these against Eraut's learning trajectories, as illustrated in Table 10, and also found consistency.

Reminiscent of the QUT outcomes, the 11 outcomes most common cited by Surrey students were as follows (brackets indicate the number of narratives where an outcome emerges):

- Being given responsibility/trusted (24)
- Feeling valued (18)
- Having a variety of work (20)
- Applying coursework/being able to apply workplace learning to their programme of study (20)
- Acquiring new skills or knowledge (23)
- Having challenging work (23)
- Learning to communicate with different levels/types of people (19)
- Being part of a team (26)
- Independent working/self-direction (19)
- Time management (19)
- Organisation (19)

In addition to these, the Surrey feedback corresponds with others, and the framework for Surrey placements makes the remainder of QUT objectives integral components. Table 10 demonstrates this compatibility, showing in brackets the number of narratives which allude to the outcome.

Table 10 Consistency of intended and perceived WIL outcomes

QUT desired outcomes	University of Surrey perceived outcomes
Team/Individual/Organisation	Being part of a team (26) Independent working/self-direction (19)
Workplace Culture	Inspiring/enthusiastic staff (12)
Mandatory/Optional	Optional but all students have to be provided with the opportunity
Shared responsibility	Being given responsibility/trusted (24)
Time Management	Time management (19)
Critical Thinking	Implicit, demonstrated through outcomes relating to applying theory to practice
Communication	Learning to communicate with different levels/types of people (19)
Presentation	Presentation giving (7)
Critical Reflection	Demonstrated through reflective diaries and reports
Reporting	Report writing (7) Written skills (10)
Supervision	<i>(yes, integral to University structure)</i>
Mentoring	<i>(yes, integral to University structure)</i>
Accreditation	<i>(yes, integral to University structure)</i>
Employability	Benefits of work experience (10) Enabling career decision (17)

The challenge raised by recognition of the perceived outcomes is that many of them fall into the category of “fuzzy” objectives or “generic attributes”, which are difficult, if not impossible, to assess effectively. Assessment of discipline knowledge is relatively straightforward compared to that of attributes such as “feeling valued”. Such an outcome depends on so many subjective judgements that meaningful assessment becomes almost impossible. This question remains as a challenge for the authors to address in future collaborations.

So, two totally different lines of research, one quantitative, the other qualitative, and conducted in different hemispheres of the globe, found evidence to substantiate the validity of Eraut’s learning trajectories in students’ work placement learning experiences. Through this collaboration we have been able to bring together our independent models and further advance our understanding of the nature and assessment of WIL.

What began as an exercise to test the viability of a new assessment framework has demonstrated the inestimable value of collaborative research, in this case, greatly facilitated by the technology that enables communication between continents.

Table 11 Emergent learning outcomes from year long placement experiences, based on Surrey students' narratives (source: Willis 2009b and c)

EMERGENT THEMES	LEARNING TRAJECTORIES								N
	1	2	3	4	5	6	7	8	
Responsibility/trust									24
Delegation to/training others									9
Budget management									3
Feeling valued									18
Seeing through start to end									9
Unpredictability, ad hoc tasks									10
Variety									20
Apply coursework/vice versa									20
New skills/knowledge									23
Challenge									23
Demotivation through lack of									1
Enabling career decision									17
Inspiring/enthusiastic staff									12
Role models in workplace									4
Networking									11
Hospitality/socialising events									12
Communication different levels									19
Workplace behaviour									16
Being part of team									26
Independence									19
Time management, prioritising									19
Organisation									19
Punctuality									6
Attention to detail									10
Job application processes									10
Benefits of work experience									10
Report writing									7
Written skills									10
Presentation giving									7
Cultural awareness									6
Volunteering additional tasks									9
Additional qualifications									3

Key to Learning Trajectories:

- 1 Task Performance
- 2 Awareness and Understanding
- 3 Personal Development
- 4 Academic Knowledge and Skills
- 5 Role Performance
- 6 Teamwork
- 7 Decision Making and Problem Solving
- 8 Judgement

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