# CONCEPTUALISING PROFESSIONAL CAPABILITY


## Abstract

This paper reports on the findings of research into the intended and actual (as perceived by students) outcomes of professional placement (WIL). At the University of Surrey, undergraduate students in all subjects have the opportunity to undertake a 1-year period of paid professional placement, usually between the second and final year of a degree programme. As a result of this experience, the University leads the field in graduate employment. The research sought to identify how professional capability is developed, in order to enhance the curriculum for all students.

A map of the learning objectives, and of the nature and weighting of assessment applied during this placement year was produced for all Faculties. Qualitative data from 455 student questionnaires and 28 extended student narratives were then compared with the intended learning objectives so as to identify how professional capability is actually developed through an extended period of work experience integrated in degree programmes. Emergent themes were found to correspond with Eraut's (2005) notion of learning trajectories and Barnett's (2003) model of higher education for a supercomplex world. A conceptualisation of the elements which combine variously to represent what we mean by professional capability was derived from the data. Using colour coded strands which plait together into an ever-changing rope, we are able to see a snapshot of an individual's professional development at any stage of learning or practice. This enables learners and teachers to visualise what has been learnt and to identify where further opportunities for development are needed. A tool has been developed and is being trialled, which supports learners in reflecting critically upon their experiences in the workplace. This paper will offer the tool to the wider community.



**Key words:** assessment; learning outcomes; professional development/WIL/COOP; critical reflection


## Introduction

This paper reports on qualitative research, undertaken as part of a Fellowship in the University of Surrey's Centre for Excellence in Teaching and Learning, during the academic year 2008/09. It traces the evolution of a conceptualisation of professional capability that may be used by individuals to monitor their own development, and by curriculum planners to examine perceived learning outcomes at any given point in a programme.

## Background

The University of Surrey established its reputation as a leader in the development of highly employable graduates over a century ago. Today, it continues to head graduate employment league tables and its webpages abound in references to its excellence in the field of professional training (WIL/COOP). Typically, it promises

> The experience, maturity and confidence our students gain whilst out on placement either in the UK or abroad sets them a cut above the rest when they graduate, which shows in our consistently low unemployment rate after graduation, another reason to choose Professional Training at the University

of Surrey. http://www2.surrey.ac.uk/professionaltraining/

One of the unusual features of the University of Surrey is that WIL is available in every discipline, from the arts, sciences and technologies through to vocational subjects such as nursing and tourism management. Students undertake a period of professional placement during the third of a four-year degree programme. Placements are usually paid and are integrated with the programme of study. Students are set defined learning objectives and are assessed on their performance by visiting academic tutors and their workplace supervisors. Critical reflection is developed though formative and summative reports, discussion and presentations. 120 P (professional) credits are awarded for the placement year, and assessment may contribute to the degree awarded or else be recognised by a separate, vocational certificate[1]. Table 1 summarises the assessment framework for the period of WIL, which aims to balance academic rigor with flexibility for different disciplines.

**Table 1 Framework for WIL Assessment**

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

**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 |

Students are fulsome in their praise of their WIL: year after year, in the questionnaire they complete on returning to the University for their final year of study, they extol the professional changes they have undergone. A random sample of views across the range of Faculties gives a flavour of their sense of achievement (from Willis 2009):

I feel a lot more confident in my skills and able to achieve anything I set my mind on. I now have a goal

[1] At the time writing this paper (October 2009), the Associate of the University of Surrey has been discontinued and is being replaced by an award which recognises a broader range of student experience

> to work towards which will motivate me to do my best in my final year. I have matured a lot over the last year and become a lot more responsible, I appreciate the meaning of hard work and the rewards it brings. *(Level 3 Economics Student, 2008/09)*
>
> I am more focused on my work for my final year, I am more confident about my own skills and knowledge and feel I have matured. *(Level 3 Nutrition Student, 2008/09)*
>
> [I have gained] Confidence, understanding of cultural differences, better IT skills, improved language skills. I have more confidence, am more dedicated to my degree programme, more organised and more altruistic. *(Level 3 Student of Spanish, 2008/09)*
>
> My placement has helped me determine my career path. I thoroughly enjoyed my placement and gained social skills and self-confidence (…) I feel grown up and I have made choices about my career path. I have improved my interpersonal skills. *(Level 3 Retail Management Student 2008/09)*
>
> [I have developed] Time management, self- motivation to get things done. My attitude to work and when to start projects has improved. I also have more confidence in my own skills. *(Level 3 Student of Computer Science & Engineering, 2008/09)*
>
> The experience itself was good as I learnt how to act professionally in a business environment, what to expect within the office environment in the future. Also I know more about the medical research industry and what our clients do – could possible be a career option in the future. I think I have become more confident when talking to people at varying levels. *(Level 3 Sociology Student, 2008/09)*

Having analysed such student feedback over five consecutive years, I had found it consistent with Knight and Yorke's (2003) model where development is categorised within four domains: Understanding, Skills, Efficacy Beliefs and Metacognition (USEM). But now I sought to identify what actually happens to realise this sense of greater professional capability. What was the nature of students' workplace experiences, and was there anything more that could be built into the curriculum for the benefit of those who do not undertake WIL?

As the above quotations indicate, professional development belongs to the world of supercomplexity described by Barnett (2003), where 'knowing' and 'doing' lead to 'becoming' and 'being.' How to make sense of this highly subjective and elusive experience, what Knight (2005, 2007) terms 'wicked competences'?

## Methodology

The research was designed to drill down from (1) an overview of the assessment criteria applied in each subject area of the undergraduate curriculum, to (2) an examination of their intended learning outcomes and finally (3) the perceived learning outcomes, as revealed in student feedback. The respective data sources were (1) departmental handbooks, (2) interview with programme directors then (3) qualitative analysis of the student questionnaire returns for 2008/09 and a set of student narratives 2008/09 (extended reflective accounts of their WIL, submitted in a competition organised annually for encouraging metacognition.)

## Findings

### *(1) Departmental WIL assessment criteria*

Table 1 has already indicated the inbuilt flexibility for disciplinary assessment schemes. Table 2 illustrates the diversity of weighting accorded to each assessment mode, by subject area and Faculty. Striking findings include the discrepancy between assessment by the workplace supervisor and by the Visiting Tutor in Mathematics and Electronic Engineering, and the award of P-credits for attendance and participation in briefing/debriefing sessions.

**Table 2 Subject Area Assessment Schemes**[2]

| ASSESSMENT AND P CREDITS | | | ASSESSMENT MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Faculty | Programme | | By workplace | Student report | Presentation | By visiting tutor | Attendance of briefing/ debriefing | Additional academic work | TOTAL P CREDITS |
| FAHS | Music | | 40 | 10 + 30 | 10 | 20 | 10 | | 120 |
| | Music & sound Recording | | 40 | 20 + 30 | 10 | 20 | | | 120 |
| | Dance & Culture | | * | | | * = 70 | 10 | 40 Reflection | 120 |
| | Economics L100 | | 60 | 35 | 10 | 15 | | | 120 |
| | Psychology | | 45 | 40 | 10 | 25 | | | 120 |
| | Sociology | | 45 | 40 | 10 | 25 | | | 120 |
| | Applied Psychology and Sociology | | 45 | 40 | 10 | 25 | | | 120 |
| | Politics | | 50 | | | 20 | 5 + 5 | 40 Essay | 120 |
| | Foreign language | | 30 | 10*** + 60 | With *** | 20 | | | 120 |
| | Foreign language | | 15 | 10 + 25 | | 10 | | | 60 (20 weeks) |
| FHMS | Biosciences (1 placement) | | 40 | 10 + 50 | | 20 | | | 120 |
| | Biosciences (2 placements) | | 30 | 30 + 30 | | 30 | | | 120 |
| | Chemistry BSc | | 3 x 5 + 25 | 15 + 40 | 10 | 3 x 5 | | | 120 |
| | Chemistry MChem | | 2 x 2.5 | | 15 + ** IndustD | 2.5 + 7.5 | | ** Poster | 30 P credits |
| | Nutrition/Nutrition Food Science | | 40 | 10 + 50 | | 20 | | | 120 |
| | Dietetics | | | | | | | | |
| | Nursing Studies | | | | | | | | |
| FEPS | Computing | | ** | 40 | | ** 30 + 35 | | 15 log | 120 |
| | Mathematics | | | 40 | | 30 + 35 | | 15 log | 120 |
| | Electronic Engineering | | 65 | 15 + 25 | | | | 15 log + paperw | 120 |
| | Physics | | 30 | 45 | 5 | 20 | | | % of 120 |
| | MMAE / ETITB | | 45 | 25 + 25 | 5 | 20 | | | =10% 0f degree |
| | Civil Engineering | | 45 | 25 + 25 | 5 | 20 | | | =10% 0f degree |
| FML | Management | | 20 | 60 | | 10 | 20 46 weeks | 10 PTO module | 120 |
| | Law (per placement) | | 30 | 10 | | 10 | 10 | | 60 |

[2] Faculties: FAHS, Arts and Human Sciences; FHMS, Health and Medical Studies' FEPS, Engineering and Physical Sciences; FML, Management and Law

**(2) Intended Learning Outcomes**

The next level of scrutiny was to identify the learning outcomes required for each element assessed, and to verify the analysis through interview and correspondence with programme directors. Learning objectives confirmed the USEM categories, focusing on application and enhancement of subject knowledge, generic skills, and critical reflection, all also commensurate with Barnett's dynamic world of supercomplexity and change. Subject-specific additional objectives included more 'wicked competences', amongst them punctuality, personal appearance, initiative, leadership and communication.

Eraut (2003, 2004, 2005, 2007) proposes an alternative model of professional development, one where learning occurs along 8 different pathways/trajectories, viz. task performance, awareness and understanding, personal development, academic knowledge and skills, role performance, team work, decision-making and problem solving, and judgement. There is clear resonance between these and the University's WIL learning objectives, but I put aside any known models in order to analyse the emergent learning outcomes as objectively as I could. So I turned to the perceived learning outcomes revealed in the student feedback and narratives.

**(3) Perceived Learning Outcomes**

This was the richest and most difficult data area, comprising 455 sets of qualitative feedback and 28 student narratives. The methodology was trialled first with the questionnaires, to test its viability, before it was applied to the narratives, producing the model discussed below.

***A. Questionnaire Returns***

My preliminary reading of the qualitative data identified a vast range of perceived outcomes, which fell naturally into four generic areas: personal qualities, acquisition of generic skills, acquisition of subject-specific skills, and acquisition of subject-specific knowledge. Each of the outcomes was mapped across all four Faculties. Table 3 illustrates the themes relating to one category, personal qualities.

**Table 3 Personal Qualities emergent from Qualitative Data**

| PERSONAL QUALITIES Acquired/developed | FAHS | FEPS | FHMS | FML |
|---|---|---|---|---|
| Confidence | ■ | ■ | ■ | ■ |
| Incentive/motivation for study, degree level, future | ■ | ■ | | ■ |
| Self-awareness/ strengths and weaknesses | ■ | | | ■ |
| Maturity | ■ | ■ | ■ | ■ |
| Responsibility | ■ | | | ■ |
| How to handle new situations/challenges | ■ | | | |
| More focused / disciplined | ■ | ■ | | |
| Taking the initiative / proactive | ■ | ■ | ■ | |
| More altruistic | ■ | | | |
| Stand up for rights / assertive | ■ | | | ■ |
| Become a better person | ■ | | | ■ |
| More thorough | ■ | | | |
| Better able to concentrate | ■ | | | |
| More willing to learn | ■ | | | |
| Confidentiality | ■ | | | |
| More patient | ■ | ■ | | |
| More common sense | ■ | | | |
| Reliability | ■ | | | |
| How to balance work/personal life | ■ | | | |
| Better work ethic | | ■ | ■ | ■ |
| Coping with pressure | | ■ | | |
| More open minded / flexible | | ■ | ■ | ■ |
| More productive | | ■ | | |
| Independence | | ■ | ■ | |
| Stronger person | | ■ | | |
| More realistic view of work | | | | ■ |
| Handle emotion | | | | ■ |
| Tenacity | | | | ■ |

A similar analysis was produced for each of the four categories, finding 28 sub-themes for personal qualities, 35 for generic skills, 45 for subject-specific skills and 45 for subject knowledge. Table 4 shows the distribution of these emergent themes, by Faculty. It offers an insight into student perceptions of their learning outcomes, providing a guide for future curriculum planners.

**Table 4 Summary of Perceived Learning Outcomes, Qualitative Feedback**

| Faculty | Personal Qualities | Generic Skills | Subject Skills | Subject Knowledge |
|---|---|---|---|---|
| **Arts & Human Sciences** | 19 | 20 | 18 | 17 |
| **Engineering and Physical Sciences** | 12 | 26 | 14 | 19 |
| **Health and Medical Studies** | 6 | 18 | 12 | 16 |
| **Management and Law** | 12 | 20 | 10 | 7 |
| **TOTALS** | 28 | 35 | 45 | 45 |

The themes appeared to correspond with Eraut's 8 learning trajectories. Using colour-coding, I re-analysed the four categories within his framework. Table 5 demonstrates the outcome for one area, generic skills. The colour coding highlights which activities potentially support the greatest professional development: significantly, project management is the only one that may enable development along each trajectory.

**Table 5 Comparison between Emergent Themes and Learning Trajectories**

| **GENERIC SKILLS Acquired/practised** | **TRAJECTORIES** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Team work | | | | | | | | |
| Working independently | | | | | | | | |
| Inter-personal skills | | | | | | | | |
| Communication (oral, written, etc) | | | | | | | | |
| Time management, planning | | | | | | | | |
| Organisation | | | | | | | | |
| Networking | | | | | | | | |
| How to behave in the workplace | | | | | | | | |
| Coping with pressure/ stress | | | | | | | | |
| Leadership | | | | | | | | |
| Punctuality | | | | | | | | |
| Project management | | | | | | | | |
| Report writing | | | | | | | | |
| Making presentations | | | | | | | | |
| IT skills | | | | | | | | |
| Adaptability | | | | | | | | |
| Problem-solving | | | | | | | | |
| Active listening | | | | | | | | |
| Working 9-5 | | | | | | | | |
| Multi-tasking | | | | | | | | |
| Coping with/behaving in meetings | | | | | | | | |
| Interviewing skills | | | | | | | | |
| Research | | | | | | | | |
| International travel | | | | | | | | |
| Decision-making | | | | | | | | |
| Negotiation | | | | | | | | |
| Helping/supporting others | | | | | | | | |
| Conducting literature review | | | | | | | | |
| PDP e.g. CV writing | | | | | | | | |
| Assessing self and others | | | | | | | | |
| Analytical skills | | | | | | | | |
| Assessing cost effectiveness | | | | | | | | |
| Money management | | | | | | | | |
| Minute taking | | | | | | | | |
| Observation skills | | | | | | | | |

**Learning Trajectories Key**

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

### *B. Student Narratives*

Having tested this methodology, I turned to the student narratives. With the smaller quantity, yet greater depth, of this data source, there was no need to analyse emergent themes within the four

categories used for the questionnaires. Instead, themes were roughly grouped by topic. 32 themes were identified, and these were tracked across the 28 narratives. Table 6 demonstrates the principle for six narratives.

**Table 6 Emergent Themes, Student Narratives**

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Responsibility/trust | | | | | | |
| Delegation to/training others | | | | | | |
| Budget management | | | | | | |
| Feeling valued | | | | | | |
| Seeing through start to end | | | | | | |
| Unpredictability, ad hoc tasks | | | | | | |
| Variety | | | | | | |
| Apply coursework/vice versa | | | | | | |
| New skills/knowledge | | | | | | |
| Challenge | | | | | | |
| Demotivation through lack of | | | | | | |
| Inspiring/enthusiastic staff | | | | | | |
| Role models in workplace | | | | | | |
| Networking | | | | | | |
| Hospitality/socialising events | | | | | | |
| Communication different levels | | | | | | |
| Workplace behaviour | | | | | | |
| Being part of team | | | | | | |
| Independence | | | | | | |
| Time management, prioritising | | | | | | |
| Organisation | | | | | | |
| Punctuality | | | | | | |
| Attention to detail | | | | | | |
| Job application processes | | | | | | |
| Benefits of work experience | | | | | | |
| Report writing | | | | | | |
| Written skills | | | | | | |
| Presentation giving | | | | | | |
| Cultural awareness | | | | | | |
| Volunteering additional tasks | | | | | | |
| Additional qualifications | | | | | | |

Following the established procedure, I next mapped the emergent themes against Eraut's learning trajectories, using the same colour coding as before. Table 7 shows the results. Once more, the colour coding provides an immediate image of students' perceptions of how their professional capability is developed. Importantly, the opportunity to see through a task from start to end draws potentially on each trajectory, mirroring the finding shown in Table 5, the value of projects. The column labelled N gives the number of narratives where the theme is cited. This confirms that teamwork and feeling trusted are highly significant factors for students.

**Table 7 Student Narrative Themes and Learning Trajectories**

| EMERGENT THEMES | LEARNING TRAJECTORIES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | N |
| 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 |

**Learning Trajectories Key**

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

The narratives were examined in depth to identify actual learning experiences, with a view to enhancing the curriculum. This paper's focus on conceptualising professional capability does not permit discussion of this aspect of the research, which is addressed elsewhere (e.g. Willis 2009).

**Towards a model of professional capability**

My next step was to codify each of the 32 themes illustrated in Table 7. For instance, theme 1, Task Performance, comprised cords 1.1, Seeing though from start to end; 1.2, Challenge; 1.3, Demotivation, and so on, across all eight trajectories. Once the themes were coded, they could be envisaged as cords which plait together to give an image of the professional development experienced at any given point in time. If all 32 strands were present, a cross section image would look like that reproduced in Figure 1.

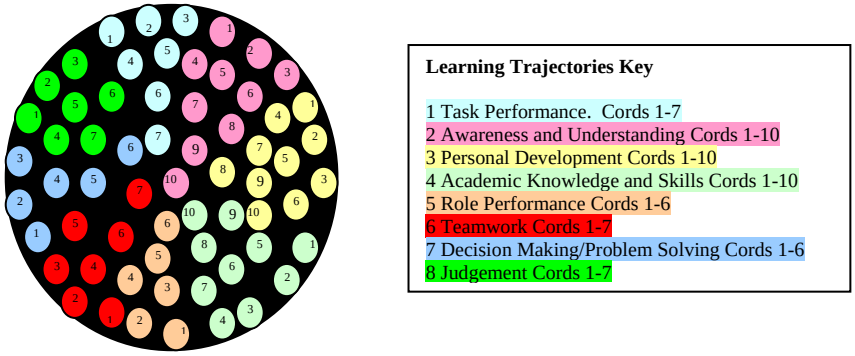


**Figure 1, Rope of Professional Capability**

By applying this model to each of the 28 narratives, a visualisation of students' perceived professional capability on completion of their WIL was possible. Figure 2 illustrates a selection of these.

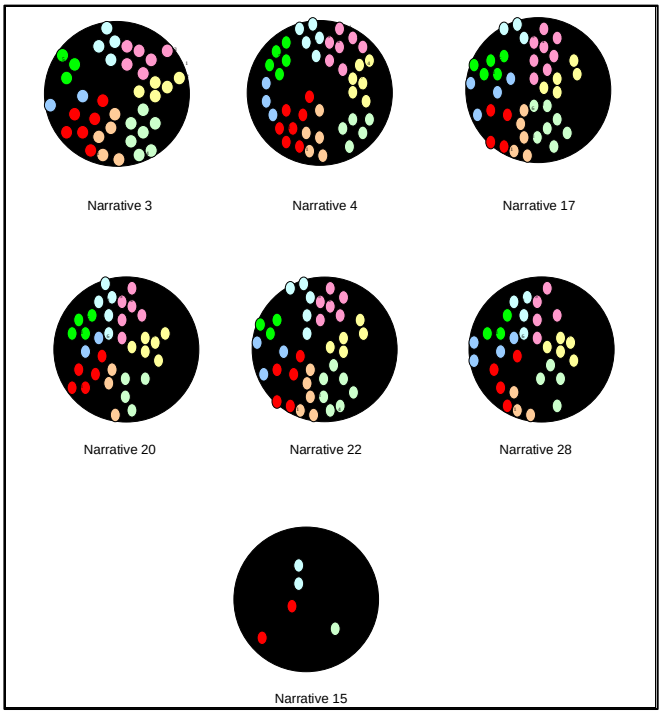


**Figure 2. Students' Perceived Professional Development**

This conceptualisation supports longitudinal comparisons, for students to monitor their own development and/or curriculum planners to ensure that an appropriate balance of opportunities for developing professional capability is included in their programmes of study. As the examples reveal, development is highly individual: although narrator 15 identified only 5 strands of development, for her, they were deep learning experiences. The model at present does not include evaluation of the quality of professional development, but could be enhanced to do so.

Since completion of the research, the model has been adapted for use with an on-line tool designed to support students' metacognition in the workplace (SCEPTrE 2009). This relates to students who are working to pay their way through university, hence the nature of their employment is variable and not necessarily related to their degree. At the time of writing, the methodology has been tested and is being adapted for further trials.

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