Table 21 Codes for subsets of learning trajectories, student narratives 2008

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

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

The subsets for each have been coded to enable us to distinguish between elements of each trajectory e.g. 1.1 indicates seeing a task through from start to finish, 1.2 represents challenge, 5.1 means responsibility/trust, etc.

If we now consider the six narratives at this level of detail, we can see clearly how different each person's learning experience actually was. Table 22, below, shows that no two narratives followed identical learning paths.

Table 22 Student narratives 2008 by subsets of learning trajectories

	Narrative 3	Narrative 4	Narrative 17	Narrative 20	Narrative 22	Narrative 28
1.1		X	X		X	
1.2		X	X	X	X	
1.3						
1.4	X		X			X
1.5	X	X	X	X	X	
1.6	X	X		X	X	X
1.7				X	X	X
2.1		X	X	X	X	X
2.2		X	X		X	
2.3	X	X				
2.4	X	X	X	X	X	X
2.5	X	X	X	X	X	
2.6	X		X	X	X	X
2.7	X	X	X	X	X	X
2.8	X	X	X			
2.9			X	X		X
2.10						
3.1		X	X		X	
3.2	X		X	X	X	
3.3						
3.4		X				
3.5	X	X			X	
3.6		X	X		X	X
3.7	X	X	X	X	X	X
3.8	X		X	X	X	X
3.9	X	X	X	X	X	
3.10	X					
4.1		X				
4.2		X	X		X	
4.3	X	X	X		X	
4.4	X			X		X
4.5	X		X		X	X
4.6	X	X	X			
4.7	X		X		X	X
4.8	X			X	X	X
4.9	X		X		X	X
4.10			X			

	Narrative 3	Narrative 4	Narrative 17	Narrative 20	Narrative 22	Narrative 28
5.1	X	X	X	X		X
5.2	X	X		X	X	
5.3		X	X		X	
5.4	X					X
5.5	X		X	X		
5.6	X		X	X	X	
6.1	X	X	X		X	X
6.2		X	X		X	
6.3	X			X		
6.4		X	X	X		X
6.5	X	X	X	X	X	X
6.6	X	X	X		X	
6.7	X		X	X	X	X
7.1		X	X		X	
7.2	X	X				X
7.3		X	X		X	X
7.4						
7.5	X		X	X	X	X
7.6		X	X	X		X
8.1		X	X		X	
8.2	X	X				
8.3	X					
8.4	X		X	X	X	X
8.5	X	X	X	X		
8.6			X	X		X
8.7			X	X		X

A new model of professional development

What is beginning to emerge is the notion of a rope for professional development. Each subset of the learning trajectory represents a potential cord within the rope. Figure 4 shows the bundles of each trajectory, which will combine in unique ways, producing a rope of the professional development of each individual at a given point in their career

progression. The rope will be formed differently as situations and tasks vary both between individuals and within the individual's career.
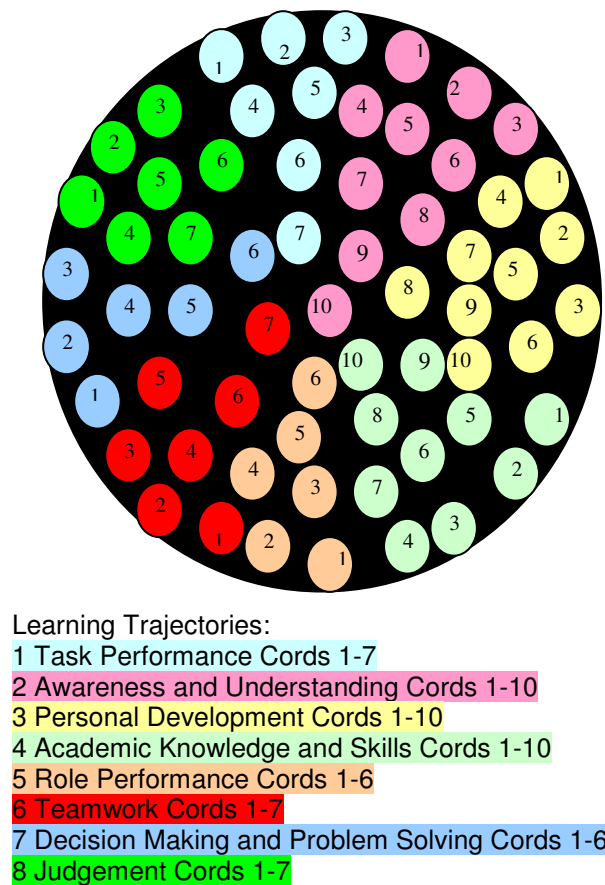

Learning Trajectories:
1 Task Performance Cords 1-7
2 Awareness and Understanding Cords 1-10
3 Personal Development Cords 1-10
4 Academic Knowledge and Skills Cords 1-10
5 Role Performance Cords 1-6
6 Teamwork Cords 1-7
7 Decision Making and Problem Solving Cords 1-6
8 Judgement Cords 1-7

Figure 4 The Rope of Professional Development

So, if we envisage each of these six narratives as a slice across the rope of their individual professional development, we obtain six unique intertwinings of the cords. Figure 5 shows just two of them.

Narrative 3

Narrative 4
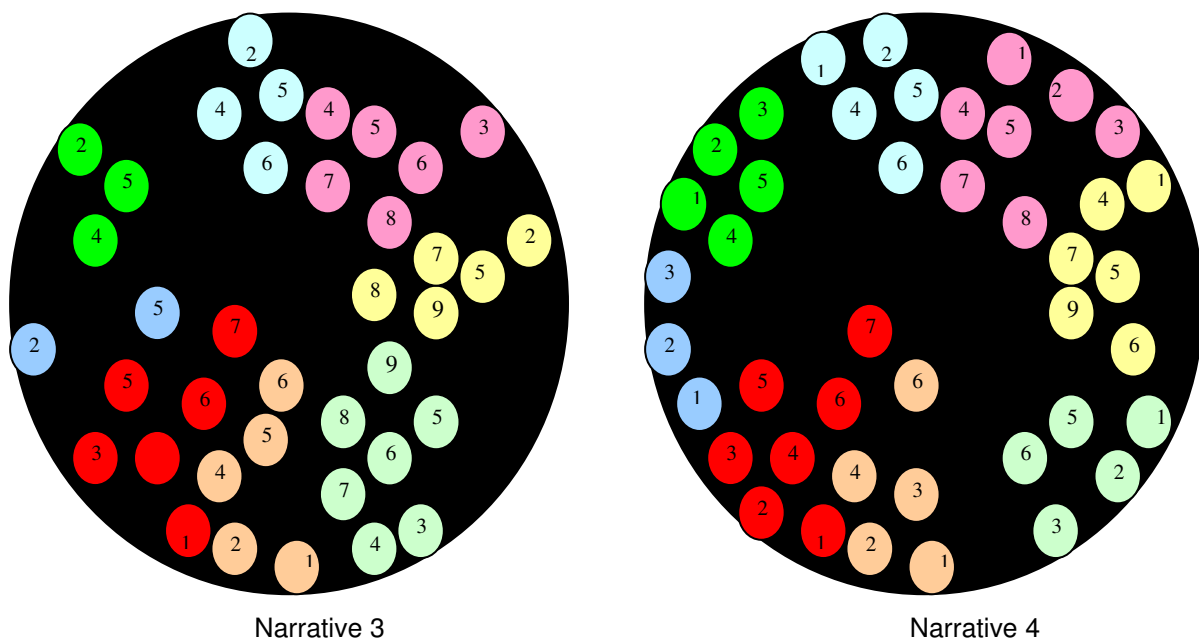
Figure 5 Examples of cross-sections of professional development

Figure 5 provides an immediate image of the cords which were intertwined to bring about the professional development narrated in stories 3 and 4. Those elements which were not found to have been involved in their PT experience have been removed.

But what of the remaining narrative, story 15, which revealed only four of the learning trajectories? What transpired during that placement and how does its rope of professional development compare with the other experiences?

(15) Ming Chung, student of Chemistry

Ming describes herself as "an immature, hideaway but hardworking girl" who had attended presentations by level 3 students at Industry Day, where they had talked about their placements. When she left that meeting, she says

> "I remember feeling excited about the prospect of taking a placement year and then coming
> back equipped with various skills and a new found confidence."

She had not been enjoying practical laboratory work, so she set herself the challenge of improving this by working in a laboratory setting:

> "This was my underlying motivation to specifically choose a placement with plenty of lab
> work involved to improve my poor lab skills and knowledge."

From the outset, then, her placement expectations were different from those of the other narrators. She had fixed specifically on something which related directly to her programme of study and in which she felt she was deficient. She succeeded in obtaining a placement in a fuel company in Cambridgeshire.

She quickly learnt how to conduct experiments, some theory related to them, and data analysis processes but, she continues,

> "Of course, these were all important skills to learn, but I also learnt something which is of equal
> value if not more, that is, the importance of taking responsibility for getting to work on time (…)
> and learning to interact and socialise with my colleagues."

In other words, even at the start of her placement, she recognised that her professional development was about more than application of theory: she was already experiencing the process of *becoming* a different person.

She realised that the highs of learning to socialise with others were counterbalanced with lows. For her, the worst experience related to "the ugly nature of company politics." Without going into detail, she indicates that she was caught up in a conflict between personal loyalty to an individual and loyalty to the company, concluding

> "I learnt a really important lesson there, that is, in every workplace there will always be politics
> at the heart of it and to be very careful with company politics (it is wise not to mix and stir it up)."

The theme of confidence echoes throughout Ming's account. She was petrified of giving presentations in particular, something she had to do for each of her tutor's visits:

> "I was so nervous, my voice was faltering and my hands were slightly shaking. However,
> by my tutor's third visit, I felt that I had gained the confidence required to carry out a
> presentation and was no longer shaking."

Ming's focus on work led her to feel that she has been wasting her leisure time, watching television and shopping. She therefore set about learning to drive, then enrolled in pottery and knitting classes. The following term she joined a class in creative writing. In addition, she took a four-day first aid course, accredited by the Red Cross.

It is only towards the end of her narrative that Ming tells us any more about what she did in the placement itself. When a colleague left for maternity leave, she volunteered to take over her responsibilities for stock ordering and delivery. She observes:

> "I really enjoy learning and taking responsibility for something else."

In her summary, she explains:

> "For me, learning to be professional through the work placement means learning to interact and build a good working relationship with my colleagues, learning a variety of things both in XX and outside of work, experiencing the working life and what it has to offer, gaining the lab skills which I so desperately wanted, increasing in self-confidence, and maturing as a person."

Whilst she acknowledges her personal development, she reveals her preoccupation with 'doing' and 'knowing' in her final comment:

> "Undertaking a placement year has had a positive impact in terms of my final year project (I am better able to carry out independent lab work), my CV, hopefully my degree and it is the best start to the working life."

It seems that she is so task-oriented that she undervalues the development she has achieved in terms of 'being'. Is this borne out by her profile in Table 18? If we add her narrative to Table 22's analysis, we can see how she differs from the other narrators.

Table 23 shows not only the narrow range of developmental points indicated, but also that those cited relate to trajectory 1 (task performance), 4 (academic knowledge and skills), and 6 (team work). Her account has been predominantly concerned with her development as an employee and active member of the community, seemingly dismissing the importance of her value as an individual person. This different focus may derive from her cultural background: if so, it suggests an interesting area of further research.

Table 23 Student narratives 2008 including story 15

	Narrative 3	Narrative 4	Narrative 17	Narrative 20	Narrative 22	Narrative 28	Narrative 15
1.1		■	■		■		
1.2		■	■		■		
1.3							
1.4	■	■				■	
1.5	■	■	■	■	■	■	
1.6	■	■		■	■	■	■
1.7				■	■	■	■
2.1	■		■	■	■	■	
2.2	■		■	■	■		
2.3	■	■					
2.4	■	■	■	■	■	■	
2.5	■	■	■	■	■		
2.6	■		■	■	■	■	
2.7	■	■	■	■	■	■	
2.8	■	■	■				
2.9			■	■		■	
2.10							
3.1		■	■		■		
3.2	■		■	■	■		
3.3							
3.4		■					
3.5	■	■				■	
3.6		■		■		■	
3.7	■	■	■	■	■	■	
3.8	■		■	■	■	■	
3.9	■	■	■	■	■		
3.10							
4.1		■					
4.2		■	■		■		
4.3	■	■	■		■		
4.4	■			■	■		
4.5	■	■	■		■	■	■
4.6	■	■	■				
4.7	■		■			■	
4.8	■			■	■	■	
4.9	■		■		■	■	
4.10			■				

	Narrative 3	Narrative 4	Narrative 17	Narrative 20	Narrative 22	Narrative 28	Narrative 15
5.1	■	■	■	■	■	■	
5.2	■	■	■		■	■	
5.3		■	■		■		
5.4	■	■				■	
5.5	■		■	■	■		
5.6	■	■	■	■			
6.1	■	■	■		■	■	
6.2	■		■	■	■		
6.3	■	■		■			■
6.4	■		■	■		■	
6.5	■	■	■	■	■	■	
6.6	■	■	■	■	■		
6.7	■	■	■	■	■	■	■
7.1		■	■		■		
7.2	■	■				■	
7.3		■			■	■	
7.4	■						
7.5	■		■	■	■	■	
7.6			■	■	■	■	
8.1		■	■		■		
8.2	■	■					
8.3		■					
8.4	■	■	■	■	■	■	
8.5	■		■		■		
8.6			■	■		■	
8.7			■	■		■	

If we were to take a cross-section of Ming's professional development, as indicated from her narrative, it would have a stark contrast with those viewed above. Figure 6 shows the result.
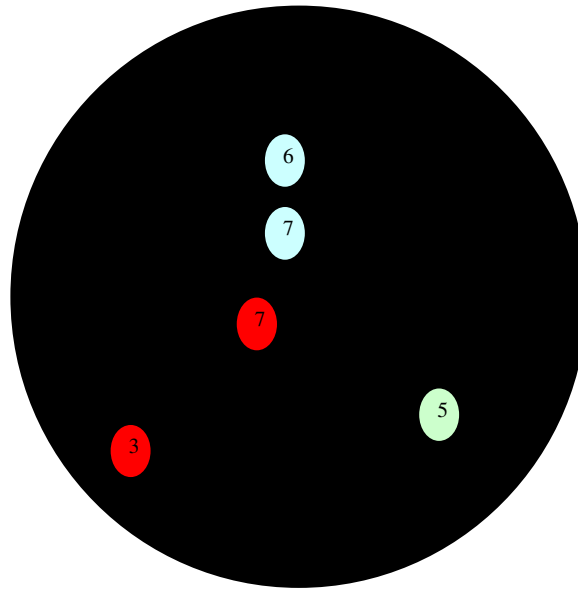
Figure 6 Cross-section of the professional development rope for narrative 15

The contrast between this and the other profiles reminds us once again of the individuality of experience, expectations and perceptions. This rope of development may look meagre in comparison with the other six, but in terms of Ming's personal development it is considerable. She achieved the academic goals she set herself and exceeded them in that she developed her self-confidence along the way.

Figure 6 also reminds us that perceptions vary: we might be more generous than Ming is to herself and feel that there is evidence in her story of more areas of development than she gives herself credit for.

Summary of student narrative discussion

This discussion of the student narratives has identified a range of 32 emergent themes (learning outcomes), from knowledge and understanding to personal qualities, generic and subject-specific skills, derived from the placement experience. These were either explicit or implicit in the stories.

These emergent themes were mapped across all 28 narratives, producing an overview of perceived learning outcomes which enabled selection of seven stories for closer examination.

The themes were found to be consistent with Eraut's learning trajectories, against which they were mapped.

When mapped by learning trajectory, the narratives showed that only three individuals did not identify elements of each trajectory. Viewing narratives in terms of trajectory failed to give sufficient detail for the overviews to be meaningful, so reference was required to the 32 learning outcomes.

The stories selected for examination confirmed the complexity of the professional learning experience, and the uniqueness of each. Outcomes were relative to the individual's stage of development. At their richest, they demonstrated Barnett's conceptualisation of professional development as using *knowledge* for *action*, thereby *becoming* different.

In order to visualise the diversity and individuality of experiences, a model was proposed wherein each outcome within a learning trajectory was seen as a cord that could be drawn in to the rope formation at any point in an individual's professional development. The combination of cords would vary both between individuals and for the individual at every point of their development.

Slices of the development for a sample of students illustrate the model.

As the narratives were discussed, it was asked whether the experiences offered in each placement could be replicated in the university. Whilst some were amenable to inclusion e.g. opportunities to utilise software or to work in groups on joint projects, it was clear that a sense of reality and of being engaged in real-life tasks was a vital element of the perceived value of the PT experience. This cannot be reproduced in the normal curriculum.

*

Finally, let us return to the three questions posed at the outset of this research and consider some responses in the light of this analysis and the ideas arising from the two interviews conducted early in my fellowship. These were with Mrs Pauline Johnson, Senior Tutor for Music and Dr Peter Alcott, Senior Tutor for Management, to both of whom I am indebted for their engagement with this research.