An epistemology of practice

1. Four distinct but interconnected elements of professional practice:
   • Assessing clients and/or situations (sometimes briefly, sometimes involving a long process of investigation) and continuing to monitor their condition;
   • Deciding what, if any, action to take, both immediately and over a longer period (either on one’s own or as a leader or member of a team);
   • Pursuing an agreed course of action, modifying, consulting and reassessing as and when necessary;
   • Metacognitive monitoring of oneself, people needing attention and the general progress of the case, problem, project or situation; and sometimes also learning through reflection on the experience.

2. The contexts in which the practice takes place

3. Three modes of cognition, which depend on the speed and conditions in which the practice is conducted
# Modes of Cognition

<table>
<thead>
<tr>
<th>Type of process</th>
<th>Instant reflex</th>
<th>Rapid intuitive</th>
<th>Deliberative analytic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessment of the situation</strong></td>
<td>Pattern recognition</td>
<td>Rapid interpretation</td>
<td>Prolonged diagnosis Review, discussion and analysis</td>
</tr>
<tr>
<td><strong>Decision making</strong></td>
<td>Instant response</td>
<td>Intuitive</td>
<td>Deliberative analysis/discussion</td>
</tr>
<tr>
<td><strong>Overt actions or scripts</strong></td>
<td>Routinized action</td>
<td>Routines punctuated by rapid decisions</td>
<td>Planned actions with Periodic progress reviews</td>
</tr>
<tr>
<td><strong>Meta-cognition</strong></td>
<td>Situational awareness</td>
<td>Implicit monitoring Short reflections</td>
<td>Monitoring of thought and activity Reflective learning</td>
</tr>
</tbody>
</table>
The Scope of Tacit Knowledge

**Understanding**
- Implicit or incidental learning
- Implicit aggregation of episodes and impressions
- Hidden constructs

**Skills**
- Routinised
- Non-verbal or meta-verbal
- Intuitively monitored

**Knowledge use**
- Transforming & resituation knowledge
- Retrieving knowledge from memory
- Recognising when to use knowledge
- Sensing how to use some knowledge

**Decision-making**
- Rapid and intuitive
- Holistic assessment
- Judgement in complex uncertain situations
Research questions for ESRC projects on mid-career and early career learning at work

- What is being learned?
- How it is being learned?
- What factors affect the level and direction of learning efforts?
Research Methods

Project 1: Development of knowledge and skills at work
Two interviews (6-9 months apart) with 120 professionals, managers and technicians in the business, engineering, and healthcare sectors.

Project 2: Early Career Learning at Work
A longitudinal study of the learning of Accountants, Engineers and Nurses at the start of their careers, with four 1-2 day visits over 3 years, during which researchers:
• Observed activities and the work-place context
• Talked to mentors, preceptors, managers and trainers
• Interviewed the main participants
Status of main participants in second project

The **graduate accountants and engineers** were formally contracted trainees

- Their employers have systems of organised training support
- Engineers have related degrees, but trainee accountants do not.

The **newly qualified nurses**

- Start work with more practical experience
- May have their learning needs neglected, despite official provision of induction and mentors.
Advantages of Observation

Educating the observer/interviewer about the working context, and thus enriching subsequent data gathering

Enabling us to use workplace documents and activities as starting points for conversations about embedded knowledge and its acquisition that would otherwise have been impossible

Providing ‘clues’ to the use of knowledge that must have been previously learnt, thus making it easier to track down implicit learning

Allowing complexity to be appreciated, even if it was not fully explained to, nor fully understood by, the observer

Discouraging the painting of ‘ideal pictures’ by informants when they know reality has been observed.
<table>
<thead>
<tr>
<th></th>
<th>Newly Qualified Nurses</th>
<th>Graduate engineers</th>
<th>Trainee Accountants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial interviews</strong></td>
<td>40 (6 male)</td>
<td>36 (10 female)</td>
<td>14 (3 female)</td>
</tr>
<tr>
<td><strong>Third year interviews</strong></td>
<td>21 (4 male)</td>
<td>34 (10 female)</td>
<td>11 (3 female)</td>
</tr>
<tr>
<td><strong>Total interviews with participants</strong></td>
<td>91</td>
<td>121</td>
<td>53</td>
</tr>
<tr>
<td><strong>Interviews with managers, team leaders, mentors</strong></td>
<td>40</td>
<td>92</td>
<td>22</td>
</tr>
</tbody>
</table>
Typology of Learning Modes

Work processes with learning as a by-product

Learning processes at or near the workplace

Learning actions within either type of process
Work Processes with learning as a by-product

- Participation in group processes
- Working alongside others
- Consultation
- Tackling challenging tasks and roles
- Problem solving
- Trying things out
- Consolidating, extending and refining skills
- Working with clients
Learning Processes at or near the workplace

Being supervised
Being mentored
Visiting other sites
Conferences

Being coached
Shadowing
Independent study
Short courses

Working for a qualification
Learning actions within either type of process

- Asking questions
- Listening and Observing
- Getting information
- Learning from mistakes
- Reflecting
- Locating resource people

- Giving and receiving feedback
- Use of mediating artefacts
Settings for Feedback

**Immediate comment** on aspects of a task or role given on-the-spot or soon after the event by a co-participant or witness.

**Informal conversations away from the job** often convey indirect and/or unintended messages as well as intended advice.

**Formal roles such as mentor or supervisor** involve:
- Some responsibility for a learner’s short to medium term progress
- Obligation to provide formative feedback on a regular basis.

**Appraisal** is a process where designated appraisers are expected to:
- Give normative feedback on personal strengths and weaknesses
- Ascertain views on learning opportunities and meeting expectations.
Factors affecting learning in the workplace # 1

Confidence and commitment
Personal agency and motivation

Challenge and value of the work
Feedback and support

Learning Factors
Factors affecting learning in the workplace # 2

- Allocation and structuring of work
- Encounters and relationships with people at work
- Individual participation and expectations of their performance and progress
Attributes of a Learning Culture

Confidence and trust in managers and colleagues
Mutual learning and support
Giving and receiving feedback without blame

Learning from experiences, positive and negative, at both group and individual level
Learning from colleagues, clients and visitors
Locating and using relevant knowledge from outside sources

Attention to the emotional dimension of work

Discussing and reviewing learning opportunities, their appropriateness and their use
Reviewing work processes and opportunities for quality improvement
The Role of Managers

To demonstrate learning leadership and be trusted by their staff
To know their staff and trust them
To be aware of their concerns and communicate with them appropriately

To appraise and give feedback on both work and learning
To develop mutual support within the group for learning and a learning culture

To use their authority for and/or influence on the organisation and allocation of work to create opportunities for learning and quality improvement
To enhance and extend the understandings and capabilities of the work group as a whole and its individual members.
Conclusions and Recommendations

The same management style and capability improve learning in the workplace, retention of staff and quality improvement. Managers need training for promoting all three outcomes in an integrated manner.

Hence the organization needs to develop effective approaches to planning, conducting and evaluating such training, and ways of encouraging and supporting managers in this new role.

This approach should be an integral part of management development and appraisal in both private and public sector organisations, and incorporated into Management Qualifications.