

Securing occupational capacities through workplace experiences: Premises, conceptions and practices



Stephen Billett, Griffith University, Australia

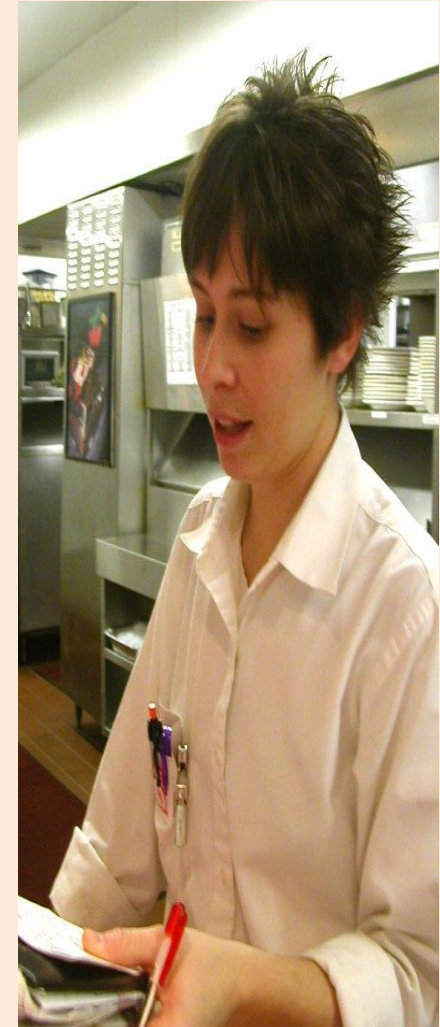
Case,

Majority of occupational capacities across human history have been secured through experiences in workplaces and being learnt.

Requires explanations based on its own conceptions, premises and practices, not those of educational institutions.

Elaborations here may inform how securing of occupational capacities can progress in contemporary times.

Considerations of curriculum, pedagogic and personal practices supporting learning through circumstances of practice are advanced.



Progression



Conceptions of learning in circumstances of practice

Explanatory premises

Curriculum, pedagogic and personal practices

Conceptions of learning in circumstances of practice

The development of occupational capacities across human history primarily a product of learning through practice, not teaching

Essential for human survival and progress of culture

Family and local workplaces common sites for that learning in Europe, India (Menon & Varma 2010), Japan (Singleton 1989) and China (Ebrey 1996)

In Europe, family-based occupational preparation displaced by industrialisation (Greinert 2002)

Vast majority of this learning appears based on participation in occupational practice – through mimesis (observation, imitation and practice).

This can be difficult to comprehend within schooled societies

Apprenticeships, for instance.....

Across history apprenticeship mainly been a mode of learning.

Only recently a model of education (2015)

Active engagement and construction (Webb 1999)

Apprenticeship – ‘apprehending knowledge’ – to seize - stealing’
(Marchand 2008)

Japanese term for apprentice is *minarai* , "literally one who learns by observation." (Singleton 1989)

... it is expected that serious learning will proceed unmediated by didactic instruction. *Minarai kyooiku* describes an education which relies on principles of learning through observation Yet, it is the apprentice who has to discover even this. (Singleton 1989: 26)

Apprentices had learn what needs to be learnt and how it has to be learnt, albeit, interdependently

Whatever the origins of the didactic mode, it has always been a minor mode of knowledge acquisition in our evolutionary history. In the West, however, the didactic mode of teaching and learning has come to prevail in our schools to such an extent that is often taken for granted as the most natural, as was the most efficacious and efficient way of going about teaching and learning. This view is held despite the many instances in our own culture of learning through observation and imitation. (Jordan 1989: 932)

Of course, there have been educational institutions before modernity, but they were for a tiny minority and teaching as we know it does not feature strongly in these provisions (i.e. yeshivas, madrassas), it seems.

Explanatory premises

No separation between participation in work and learning

.....Also, remaking of practice

Work knowledge is a product of history, culture and situation

– we need to access and engage that knowledge (i.e. inter-psychologically)

Richness of learning likely to depend upon:

- i) the kinds of interactions and activities individuals participate in and
- ii) the quality of learners' engagement:

That is a duality between:

workplace affordances and

Individuals' engagement (2001)

New experiences –
novel learning

Repeated experiences –
reinforcement, refining,
honing, linking etc –
what is already known

Is it person-dependent



Contributions to and limitations of learning through work



Learning through everyday work practice

Workplaces provide access to:

authentic activities and interactions;

direct guidance by more experienced co-workers

richly contextualised experiences (i.e. engages multi-sensory processes, provides clues, cues - indexicality etc);

purposive activities (i.e. directed to goals, engages in decision-making);

practice (i.e. engage, refine, hone);

episodic experiences (establishing causal and propositional links); and

monitoring progress and outcomes (i.e. appraising and evaluating performance).

Note: locus for many of these contributions is individuals' intentionality, agency, energy and interdependent processes – mimetic processes

Limitations of learning through everyday work activities

- learning that is inappropriate
- access to activities and guidance
- understanding the goals for workplace performance
- reluctance of experts to provide guidance
- absence of expert guidance
- developing understanding in the workplace
- reluctance of workers to participate (2001)

So, we need to optimise the contributions and redress those limitations.



Curriculum, pedagogic and personal practices

- Curriculum practices – sets and sequencing of experiences
- Pedagogic practices – activities or interactions that augment learning
- Epistemological practices – bases by which individuals engage with, construe and construct knowledge through practice



Parallel practice

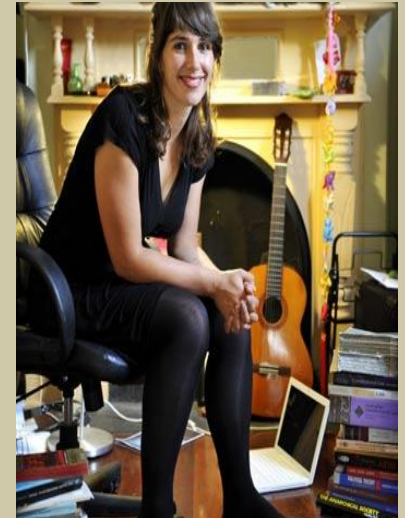
Sue's experiences – rural placement

Working alongside a GP

observations

questioning, explanations

parallel practice monitored and checked by doctor



Learning to take bloods

learner-initiated

practice based and rehearsal

Provides an example of practice curriculum, pedagogies and personal epistemologies at play

1. Practice curriculum

1. Apprenticeship as a way of life - Lived experiences within a community (Jordan, 1989, Rogoff 1990, Bunn, 1999)

2. Deliberate structuring of learning experiences (Bunn, 1999)

Ordering of experiences

Sequencing of activities - from those of low error risk to where consequences of errors are greater (Lave 1990)

Sequencing often has pedagogic qualities and intents in ways analogous to what occurs in educational settings (2006)

Tailors – Hairdressers – Production workers – Room attendants -- doctors (Sinclair 1999)

Stages of learning (pottery) premised on access to artefacts and materials (Singleton 1989)

Table 1 in handout: Models of practice curriculum

Practice	Description
Apprenticeship as a way of life	Engaging individuals in the lived experience of workplaces by participating in their everyday activities and interactions (Jordan 1989, Bunn 1999) to understand the practices and requirements for performance (Makovicky 2010, Lave 1990)
Ordering of experiences	Providing access to and ordering of experiences required to learn occupational capacities not acquired through everyday work. Might entail skill acquisition in stepwise manner, from those that are easy to learn to more difficult.
Learning curriculum	Sequencing access to work activities from those with low consequences when errors occur, to those where errors costs are high. Starts with observations to understand goal states and progresses through activities of increasing demanding work requirements (Lave 1990). In work where all component have same salience (e.g. midwifery(Jordan, 1989), junior doctors (Sinclair 1997) tasks might be linear
Learning activities as work conditions permit	Learning staged around workplace imperatives(e.g. learning pottery premised on access to potter’s wheel: i) pre-practice observation with apprentice engaged in menial work activities; ii) tentative experiments with wheel, (when not used for productive purposes; iii) assigned regular practice at wheel; iv) assigned production tasks; and v) a period of work to repay training (Singleton, 1989)
Parallel practice	Individuals engaging in an occupational practice, and being monitored and checked by a more experienced partner at key point in tasks completion (Billett & Sweet 2015). (e.g. doctors – seeing patients, taking histories and conducting examinations, often in parallel to what has been done by a registrar) (Sinclair 1997)

2. Practice pedagogies

Story telling (Jordan, 1989)

Verbalisation (Gowlland, 2010)

Pedagogically rich activities (Billett 2010)

Guided learning/proximal guidance (Rogoff 1995 Billett 2001, Gowlland, 2011)

Indirect/distal guidance (Gowlland, 2011)

Heuristics (Billett, 1997) and mnemonics (Sinclair 1997)

Partially worked example/ Notation system (Makovicky, 2010)



For example - pedagogically-rich activities

Some work activities have inherently rich pedagogic properties:

An example: nurses' handovers

- Patient
- Condition(s)
- Treatment(s)
- Responses
- Prognosis

Also, doctors' morbidity and mortality meetings



Table 2 in handout: Pedagogic practices

Pedagogies	Description
Story telling	Telling stories about work events and incidents (Jordan 1989)
Verbalisation	Talking aloud whilst performing a work task as a form of direct guidance can be linked to 'hands on' engagement (Gowlland 2012)
Pedagogically rich activities	Workplace activities that are inherently pedagogically rich e.g. handovers (2010) or mortality and morbidity meetings
Guided learning (proximal guidance)	Direct interaction between more and less experienced co-workers. Use of modelling, demonstrating, guided practise, monitoring progress and gradual withdrawal of direct guidance (2001, Collins et al 1989, Rogoff 1995), placing hands on novices' (Gowlland 2012) , guided discovery - novices in situations where they practice, hone skills, and gain experience independently, yet can have direct guidance (Ingold, 2000)
Partially worked example/direct instruction and hands on	Combination of guidance and using a worked example. (e.g. experienced lace-maker producing a small piece of simple lace, showing novice how bobbins are held, and placing hands on novice's to assist learn hand movements to use the bobbins. Also asking novice which bobbin they should use for the next stitch before novice makes movement, leading to confidence in action. Questioning gradually ceased as competence demonstrated (Makovicky 2010)
Heuristics	Tricks of the trade (i.e. procedures that will give you certainty) (Billett 1997)
Mnemonics	Developing and using mnemonics (doctors' use of 5 Fs, DANISH to remember about cerebellar lesions) and actual patients (" Mr Leeming to remember about duodenal ulcers, Freddie Mercury and missed seroconversion) (Sinclair 1997) for procedural efficiency (Rice 2008; 2010)
Artefacts	Artefact or notation system, assists by embedding the knowledge required in a localised context and assists skill and proficiency (Makovicky 2010)

3. Personal epistemological practice

Individuals' learning shaped by personal epistemologies (i.e. bases for knowing, engaging and learning)

Shaped by what individuals:

know (i.e. propositional knowledge)

can do (i.e. procedural knowledge)

value (i.e. dispositional knowledge)

Imitation (*mimesis*) (Jordan 1989, Tomasello 2004, Gardner 2004, Marchand, 2008) and mimetic development (2015)

Ontogenetic ritualisation (Tomasello 2004)

Importance of learner readiness (Bunn 1999, Singleton 1989) and assent (Mishler 2004)

Deliberate practice (K A Ericsson, 2006, Gardner 2004, Sinclair, 1997)

Table 3 in handout: Personal practice

Personal practice	Description
Mimetic learning	Ability to imitate and interest to do so at work (Billett 2014). A fundamental process of human learning (Jordan 1989), by imitating implicitly or explicitly what they do (Marchand 2008) including asking questions or listening to more knowledgeable individuals (Gardner 2004), is a higher order activity
Ontogenetic ritualisation	A system of communication and engagement between social partners negotiated through repeated social interactions (Tomasello 2004), supports close guidance and reciprocal interactions in workplaces permitting co-workers to engage learn reciprocally
Embodied knowledge	Ability to do rather than talk about it arising through practice (Jordan 1989), renders unconscious much of what is required for performance (claims over 90% rendered non-declarative) (Reber 1992, Lakoff & Johnson 1999)
Deliberate practice	Practising skills and monitoring its improvement (Gardner 2004), as the means by which agency, focussed intentionality and the act of rehearsal come together to secure effective performance (Anderson 2006)
Guided re-discover	Novices engaging in situations where they can practise, hone skills, and gain experience by themselves, yet can still access direct guidance (Makovichy 2010, Ingold 2000)
Active engagement & construction	Importance of active engagement (i.e. observation, listening and mimesis). Apprenticeship means 'apprehendere' (i.e. to seize, lay hold of, apprehend, and apprise with the mind (i.e. to inform, give form: to shape (Webb 1999)
Averting gaze	Mediating the external (i.e. immediately social) contributions – actively ignoring erroneous suggestions to secure an immediate goal to effect productive activities (Glenberg et al 1998)
Readiness	The level and qualities of what individuals' know, can do and value
Assent	Individuals' willingness to assent to effortful learning (Mishler 2004)

So what?

Need to understand, appraise and enhance learning through work on its own terms

Requires going beyond the discourse of schooling and schooled societies

Suggests a focus on learning, interdependence and experiencing, rather than teaching, independence or experiences

Curriculum, pedagogy and personal epistemology practices are central to understanding learning through practice and seeking to achieve the kinds of outcomes required for much of the learning for contemporary work

As well as accounting for particular cultural, societal and situational factors,

the actions and agency of learners are quite central.