Learning in circumstances of practice and its integration within medical education

As long recognised, experiences in healthcare settings make distinct contributions to medical education.

Yet, to understand maximise and integrate these contributions requires drawing on accounts of learning informed, but not constrained, by educational science.

Likely has dimensions of curriculum, pedagogy and personal epistemologies.

Draws upon three bodies of inquiry:

i) workplace learning,
ii) learning through practice and
iii) integration of workplace experiences.
Progression

Some premises

Learning through practice

Strengths and limitations of learning through practice

Limits of the educational discourse

Learning for the professions: lessons from historical and anthropological accounts

Curriculum, pedagogic and epistemological practices

Integrating practice experiences into medical education curriculum, pedagogic and students’ epistemological considerations

So what? .........
Some premises ....

No separation between participation in practice and learning

... Also, remaking of cultural practice (e.g. medical practice)

Occupational (e.g. medical) knowledge: a product of history, culture and situation

– this knowledge needs to be accessed and engaged (i.e. inter-psychologically)

Rich learning of medical knowledge likely dependent upon the:

i) kinds of interactions and activities available to students/junior medical staff (i.e. affordances) and

ii) quality of their engagement with them (engagement).

Educational provisions and practice-based experiences are nothing more or less than an invitation to change

How that invitation is taken up by those who are learning is most salient
Learning through practice

The most common and sustained mode of learning occupations across human history – it has been essential for human kind

Little written about it in pre-modern societies: “not of interest to those who wrote”

Seems to have arisen through observation, imitation (i.e. mimesis), practice and occasional direct guidance – not teaching

Before the ‘era of schooling’, institutionalised provisions for few occupations (e.g. medicine, law, military, philosophy), even then, practice still central

Hellenic Greece - anatomy classes and textbooks introduced to compensate for lack of authentic practice in medical education (Clarke 1971)

So, what is known about learning through practice...its strengths and limitations?
Learning through everyday practice

Contributions to learning through everyday occupational practice include:

i) engagement in work tasks (“just doing it”) – legacies of goal-directed activities (cognitive and socio-cultural constructivist accounts);

ii) indirect guidance provided by the setting (“just being there”) – observation and imitation (cognitive and neuro-science);

iii) practice within that setting – practise, rehearse, refine and associate (cognitive accounts of procedural and conceptual development); and

iv) close guidance (proximal) by other practitioners and experts – assisting develop knowledge that cannot be learnt through discovery (Billett 2001).

Note worthy:

• most of that learning based on individuals’ intentionality, agency, energy and interdependent processes
• contributions are made collaboratively
• particular utility and impacts at different points in learners’ trajectories
Limitations of learning through everyday work activities

- learning that is inappropriate (i.e. bad, unhelpful, wrong)
- lack of access to activities and guidance
- not understanding the goals for performing tasks
- reluctance of experienced others to provide guidance
- absence of expert guidance
- limits in developing understanding in the workplace
- reluctance of workers to participate (Billett 2001)

So, we need to find ways of drawing on the contributions and minimising or ameliorating these limitations —

i.e. enhancing the educational worth of these experiences

Yet, the discourse of ‘schools’ and ‘schooled societies’ not always helpful
Not captured, articulated or privileged in this discourse:

Many procedural capacities (i.e. strategic and specific) needed for work

Embodied learning (i.e. knowing through the sensory system)

Haptic qualities (i.e. feel, tactile competence)

Dispositions (i.e. values, interest, intentionality – ethical conduct, for instance)

Yet, these capacities are central to much of occupational performance

Educational discourse also emphasises declarative forms of knowledge, didactic teaching and de-emphasises learning

This critique is not anti-education: it repositions practice experiences within and beyond educational science discourse
From literature into learning through practice, the following elements emerge to informs an account based on its discourse

• Curriculum practices – sets of experiences

• Pedagogic practices – activities or interactions that augment learning

• Epistemological practices – how individuals construe and construct knowledge – existing knowledge and knowing, subjectivity, gaze, agency and intentionality, not to mention introspection
Practice curriculum


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)

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

Stages of learning (pottery) premised on access to artefact materials (Singleton 1989)
Deliberate structuring of experiences

Sequencing and purpose of learners’ experiences

e.g. midwifery students’ follow throughs and clinical practice

How might these experiences be ordered?

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Clinical placements
Practice pedagogics

Story telling (Jordan, 1989)

Verbalisation (Gowlland, 2010)

Pedagogically rich activities (Billett 2010)


Direct instruction and ‘hands on’ (Makovicky, 2010)

Indirect/distal guidance (Gowlland, 2011)

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

Partially worked examples/ Notation system (Makovicky, 2010)
For example - pedagogically rich activities

Some work activities have inherently rich pedagogic properties:

For example: handovers

• Patient
• Condition(s)
• Treatment(s)
• Responses
• Prognosis
Pedagogies for practice

Procedural development
Modelling
Coaching
Scaffolding

Conceptual development
Questioning
Diagrams
Explanations

Also
Group discussion
Extending knowledge through questioning

Billett 2001
Personal epistemological practices


Ontogenetic ritualisation (Tomasello 2004)

Active engagement with and construction knowledge:
- apprehending -to seize (Webb 1999),
- to steal, (Marchand 2008),
- Japanese word for apprentice is *minarai*: one who learns by observation;
- unobtrusive process of observation: *minarai kyooiku* (Singleton 1989)

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

Promoting, aligning and integrating practice-based experiences with intentional education experiences

Considerations of how these experiences can be:

i) made more effective for medical students
ii) aligned with the intended outcomes of medical education
iii) integrated with other elements of the medical education experience

Some lessons might be drawn from a recent study

Australian Learning and Teaching Council Fellowship on utilising integration practice-based experiences. Comprised 20 projects across a range of disciplines, each addressing specific issues

A consideration of:

- Curriculum practices
- Pedagogic practices
Conceptions of integration

**Personal process** – meaning making – phenomenology, premised on individuals’ experiences

‘Transfer’ process – each physical and social setting makes particular contributions (e.g. theory-practice) – need to reconcile and transfer them from one setting to another (situated learning)

**Relational process** – construal and reconciliation of the personal as shaped by the suggestions of the physical and social settings (socio-personal)

Need to consider the kinds of experiences that are provided and how learners will come to make sense of and reconcile these contributions
Curriculum practices: three conceptions

**Intended curriculum** - what is intended to occur and be learnt (i.e. educational outcomes)

- promoted by sponsors or developers who are often remote

**Enacted curriculum** - what is implemented

- shaped by available resources, ‘teachers’ experiences and expertise, interpretations of what was intended, values and situational factors

**Experienced curriculum** - what students experience and learn

- personal processes of construal and construction of what is enacted
Intended curriculum - key considerations include:

• being clear about what is to be learnt through practice-based experiences (educational outcomes)
• aligning experiences provided for students with intended educational outcomes (e.g. orientation vs skill development)
• aligning the duration of experiences with educational purpose
• intentionally sequencing experiences and opportunities to secure, consolidate and reconcile learning from practice experiences

... the early introduction of ward time in second year, that was quite good. So from second year onwards we were doing history-taking and examinations. We had clinical skills from an early stage. I think doing lectures up until the end of third year was just right. ... if we had done lectures into fourth year that would’ve been probably just a bit too much because you need to put it into practice on the wards. ... fourth year, having the orientations around all the wards and the departments was quite good, you ... got you a flavour for it. In fifth year being able to do time away from (regional city), so I did two blocks in Inverness and it was good to get out from (regional city), for a bit and just see what happens in (small town) as well. So it was good that, I guess, the remote and rural aspect was quite good because you get to get a flavour for medicine outside (regional city). (JB#1)
Enacted curriculum - key considerations include:

• augmenting or maximising available opportunities (e.g. in regional settings)

• considering range of options, not just supervised placements to secure experiences

• accounting for students’ readiness (e.g. interest, capacities, confidence) when enacting experiences

• additional or specific experiences may be needed for particular student cohorts (e.g. overseas students)

Maybe more ... supervised clinical things rather than just being on a ward and kind of left to your own devices, and having teaching being with... because it varied because we had five week blocks of things, and some supervisors were really involved, and will meet up with you, you know, every week, find out how you were doing, do assessments with you... like a consultant with you seeing a patient, doing everything. Whereas other consultants you weren’t as supervised, so I think being more supervised and having structured things. And also doing more like group... not like group work but presenting things to your peers and discussing stuff with your peers, I think would have been better. (GC#1)
Experienced curriculum - key considerations include:

• students' capacities, interest and readiness central to their engagement and learning in practice settings, and reconciling it with their coursework

• immediate concerns (e.g. performing in practicum) focus of students' interest

• early and staged engagement in practice settings may boost students' confidence to learn effectively

• challenges to personal confidence and competence can be redressed by effective group processes, including sharing of experiences.

... well people learn in different ways. ...whenever you’ve got multiple things going on at any one time, in work or out with work, sometimes your priorities change for a short period of time. So if you’re distracted from other things, that affects your focus. ... as long as you find a point for what you’re leaning or if you think to yourself “what’s the reason for this?” If you can relate it to something that you’ve seen done practically or you’ve seen in the hospital, that’s a reason to read up or learn more about what you’ve seen or done. I think I quite like to be able see something and then relate to it and then think about why I’m doing this and then explore a bit more.(JB#1)
Pedagogic practices

Before practice experiences,

During practice experiences

After practice experiences
Before practice experiences – likely to be helpful

- orient students to requirements for effectively engaging in work practices
- clarify expectations about purposes of, support by and responsibilities of parties in practice settings
- prepare students to engage as agentic learners (e.g. importance of observations, engagement, interactions)
- develop procedural capacities required for tasks in practice settings
- prepare for contestations that might arise

... were very well prepared. We'd had a lot of clinical exposure throughout medical school and certainly in the last year there was a big emphasis on just learning how to do the job, how to be a doctor. Obviously there’s a big adjustment and, you know, the amount of time you’re working, the amount of responsibility you have is always going to be tough for any new graduate doctor. But we were certainly very well prepared from the clinical side of things. There wasn’t any issues with having to learn how to do procedures and we’d had some very practical stuff on, you know, how to write letters and do referrals and some things like that. ... we had the professional practice weeks which were sort of helpful but in real terms they were actually largely like what we were doing on a day to basis anyway, going in, helping with the ward work, trying to take on a bit of responsibility for some jobs or maybe a select group of patients or something like that. So, yeah pretty well prepared I’d say. (GK#1)
During practice experiences

- direct guidance by more experienced practitioners (i.e. proximal guidance)
- active engagement in pedagogically rich work activities or interactions (e.g. handovers, grand rounds)
- effective peer interactions (i.e. students’ collaborative learning)
- active and purposeful engagement by the students as learners in workplace settings.

... I guess people learn how to be a doctor from example or just on your own intuition. ... seeing good practice helps you develop your own practice. ...in my last job there were lots of people who I saw that were quite inspiring in the way they worked and you learn from that. And when you see people who maybe aren’t as, um, good at what you think they should be doing...because you’ll always be able to recognise bad practice as well. So it’s good to be able get a feel for what you think is good practice and what is bad and then I guess you reflect on it. ... you just change what you do because of that. (JB#1)
After practice experiences

- facilitate the sharing and drawing on students’ experiences
- make explicit links to and reconcile what is taught (learnt) in the academy and is experienced and learnt in practice settings
- emphasize the active and selective qualities of students’ learning through practice
- generate students’ critical perspectives on work and learning processes – ongoing learning.

Medical students engaging with others to provide support and study assistance

Places where they live often provide a supportive learning space
So what?
Experiences in practice settings go beyond just exercising, practicing and ‘contextualising’ what is learnt in medical programs.

Both educational and practice settings make particular contributions, we need to utilise and augment them effectively through their integration.

Emphases how: i) practice curriculum and ii) pedagogies, and iii) personal epistemologies can assist effectively utilise practice experiences.

Joint considerations of intended, enacted and experienced curriculum.

Considerations how students might be prepared for and engaged experiences before, during and after practicum experiences.

This might include intentionally promoting their personal epistemologies.