

Holistic Competence: Putting Judgements First

David Beckett

The University of Melbourne
Australia

Professional practice can be conceptualised holistically, and in fact during the 1990s the 'Australian model' of integrated or holistic competence emerged empirically. This piece outlines that story, and then develops a more rigorous conceptual analysis of what it is to make competent practical judgements, through inferences, in context-specific and accountable ways (such as to one's peer group of professionals, or to the public). Current research interest in the Schonian swamp-like messiness of judgements (e.g. in clinical medicine) is drawn upon to advance a new epistemology of practice, which takes seriously the 'know how' of real work situations, as the basis for a revival of Aristotelian *phronesis*.

Key words: holism, judgements, skills, phronesis, context, workplace

It's a question of experience. You remember that the past figures were very different. So it raises doubts in your mind. I remember once I was working on a project and there was something I didn't know about it - had something funny about it. At 3 o'clock in the morning I woke and said, 'That's what's wrong with it.' I found it at 3 o'clock in the morning in my subconscious. The decision wasn't a conscious decision. It was working in the back of my mind.

Introduction

Accountancy is a profession traditionally shaped by competence which is readily reckoned: you count, you calculate, you assess and so on. Yet in the little anecdote

David Beckett, Faculty of Education, the University of Melbourne, Australia.

Part 2 of this paper is based on Beckett (2004). Quotations are data from a UTS project on professionals' workplace learning, directed by Paul Hager and David Beckett (2000-1).

Correspondence concerning this article should be addressed to David Beckett, Faculty of Education, the University of Melbourne, Australia. e-mail: d.beckett@unimelb.edu.au

above, our sleepless accountant is stirred by something else. His technical competence is not in doubt, but his reliance on hitherto strange psychological experiences, is indeed curious. What is he drawing upon to make a professional decision, or judgement? Further, notice the experience is both vivid *and* elusive! He awoke, and something decisive resulted, yet he was not aware of how this worked for him.

This paper investigates a new approach to professional competence: one that takes such strange experiences seriously, and which tries to build upon recent research initiatives in Australia and elsewhere, to show how workplace expertise, or work performed to standards, is best conceptualised.

First, the traditional behaviourist approach to competency is briefly described, then the 'Australian model' of integrated, or holistic, competencies, is set out.

Secondly, the conceptual underpinnings of this holistic approach are made plain (in three sub-sections), and an example given of such an approach.

Thirdly, some current aspects of the new attention to these strange experiences – which I address as *phronesis* - such as those our accountant reports, are discussed. Low-status knowledge, typically called 'intuition' or 'common-

sense', or 'know how', is receiving long-overdue critical attention. One vivid summary of this epistemological problem is given by Kathryn Montgomery (2006), as part of her detailed account of the clinical judgement of medical doctors:

Along with "wisdom", "intuition" and "talent", Donald Schon (1987, p. 13) lists "artistry" as one of the terms typically used as a "junk category" to describe what cannot be "assimilate[d] to the dominant model of professional knowledge" (p. 30).

As educators shift their attention to the world of adults' lifelong learning, especially as shown in workplace experiences, it is little wonder that daily life – a 'junk category' of knowledge for the past 2000 years of Western civilisation - is found to provide exceptionally rich opportunities for truly educative experiences. Holistic competencies are one way to harness these.

Traditional Behaviourist Competencies and Moving Beyond Them

When education and training policy-makers push on with competency structures, as they have been doing in many nations since the early 1990s, they typically have in mind an over-riding concern with *outcomes*. Therefore, their national vocational structures could be described as *technicist*: how to arrive at pre-specified levels of occupational competence is rightly an important policy problem, but its solution has been shaped by demonstrating, through assembling evidence of performance, as to how an outcome has been reached. Thus, for example, a crane-driver can reach 'competence' if, through an assembling of the technicalities of crane driving ('can start the engine', 'can attach the hooks', 'can avoid accidents'), a shipping container is moved across the railyard.

Educators have typically regarded policy-makers' efforts in setting up competency structures with dismay. Reductive, behaviourist and therefore, banal: these are terms that perhaps sum up the criticisms many educators have levelled at competency structures, at least in Western democracies over the past decade or so – and in my view these criticisms are by and large accurate, since such structures reduce the work of, say, crane-driving, to technical 'atoms' of behaviour. Opportunities for educative

experiences, under such a policy regime, are slim and often mind-numbing.

By contrast, there are non-reductive, humanistic structures where rich opportunities for workplace learning present themselves, perhaps most notably in what Hyland (1997) calls the 'Australian model' of integrated or holistic competence (based upon Hager and Beckett 1995). This has gained prominence through the empirical and conceptual work of several staff at the University of Technology Sydney across the 1990s (mainly arising in their research for the National Office for Overseas Skills Recognition e.g. Gonczi, Hager and Oliver 1990), which serves as a point of entry to current debates.

In essence, integrated or holistic competence advocates a selective (not exhaustive) assembly of evidence of performative skills and attitudes in a worker from which competence is *inferred*. Central to this inference is a sensitivity to the particularities of the immediate workplace context in the worker, and also to that worker's agency in making judgements about how to proceed in the conduct of the work. So *judgments-in-contexts* are at the heart of this inferentialist account of competence, and are directly linkable to what has become known as the 'practitioner' literature: what is it about the intelligent doing of work which enables performance of it to standards?

Competencies notwithstanding, sensitivity to judgements-in-context is now taken to be the hallmark of the successful manager, the nurse, the teacher, the sales consultant, the crane-driver and the waiter (for medical doctors, see Groopman (2007) – a best-seller). By this I mean that in these postmodern times, those who can 'read the moment' (or the situation in general) for its particularities and opportunities, are probably those most likely to identify a niche, a hybridity, or an innovation which serves and may even extend prevailing circumstances, thereby reaching new understandings of workplace practices. What is it about the working life of an accountant, one may ask, which generates the 3 a.m. decisional moment? His 'judgement-in-context' brought together extensive technical learning in accountancy, a sensitivity (an *unease*, even) with a particular case, and a relaxed state of mind. And there was an outcome, but it is unlike the usual behavioural competency, which typically looks for an outcome in the form of a specified task or role with a pre-calibrated set of evidence ('performance indicators').

There is much that is helpful in specified tasks or roles, but such statements of outcome are radically under-determined by experience, or, plainly, what people, such as professionals, actually *do*. Here I take my cue from Mulcahy (2000), where she concludes:

...competence is a complex outcome, or, better perhaps, event. Competence development in its 'richest' sense involves a number of processes – discursive and material – which are only partially assimilable. Rather than regarding competence as something individuals or organisations have, it might be better to regard it as something that they do (p. 521).

Work is literally embodied in workers, and I want to show how what I call 'inferential understanding' emerges from judgements-in-context. Mulcahy mentions discursive and material processes, and in what follows I want to show the ontological significance of what is 'done' (materially) as a basis for language usage – what is 'done' (discursively).

Conceptual Underpinnings of Holistic Competence

Therefore, what do individuals at work actually *do*? I argue they mainly come to understandings of how to go on, and that they construct these in the 'hot action' of their daily work. In my chapter in Tara Fenwick's book on workplace learning (Beckett, 2001), attention is drawn to

...a reflexivity between, on the one hand, a worker "knowing how" to do something... that is, what they are drawing upon at work..., and, on the other hand, the "knowing why" they find themselves drawn to act. Both the "know how" and the "know why" are up for constant renegotiation as, anticipatively, actions unfold - amidst "hot action" in the workplace (p. 83).

In linking 'knowing how' and 'knowing why' I am exploring *what it is to come to understand something*, at a fundamental level: at coming to understand the achievement of 'understanding' itself, through work experiences for adults. Essentially, *coming to understand something* at and through one's work is very context-specific. Problems, issues, challenges and all manner of 'hot actions' arise in daily work life, and Paul Hager and I have consistently claimed this as the basis for a new epistemology of practice (Beckett & Hager, 2002).

This is the place in the analysis to broaden it beyond statements of outcomes (competence), because since the 1990s, much policy attention in Western economies is being given to statements of expectations. What can we expect graduates, for example, to be able to do, in virtue of being graduates of tertiary education as such. How 'employable' are they in this generic sense? These expectations, when listed, look like holistic competencies, since they integrate intelligent action in socio-culturally significant ways, and, by definition, they are *contrasted* with the specific skills required in and by the nature of working in particular contexts. One authoritative definition of generic skills (Hager, Holland, & Beckett, 2002), in connecting these to graduates' employability, states:

The term 'generic skills' is widely used to refer to a range of qualities and capacities that are increasingly viewed as important in higher education. These include thinking skills such as logical and analytical reasoning, problem solving and, intellectual curiosity; effective communication skills, teamwork skills, and capacities to identify, access and manage knowledge and information; personal attributes such as imagination, creativity and intellectual rigour; and values such as ethical practice, persistence, integrity and tolerance. This diverse collection of qualities and capacities is distinguished from the discipline-specific knowledge and associated technical skills that traditionally are associated with higher education (p. 3).

Various forms of testing to do with generic skills now exist in the school and higher education sectors. National testing instruments identify student achievement in the basic or foundation generic skills, 'literacy' and 'numeracy' in the early years of schooling. In Australia, the ACER *Graduate Skills Assessment Tests* have been developed for the higher education sector. The business world is keen to see these skills as markers of 'employability'.

In Hager, Holland and Beckett (2002) we claim that the value of such tests in either sector to necessarily capture the holistic nature of the learning involved in acquiring and enhancing generic skills is very much open to question. This is particularly the case in, for example, the use of multiple-choice test formats to test generic skills such as the capacity for teamwork. The assumption is that testing understanding of propositions about teamwork will indicate capacity to perform in a team. The assumed model here is that

understandings and skills are discrete, both conceptually and practically. However such dualistic models are highly contested by a more holistic notion of understanding. Therefore, my aim in this piece is to argue that, 'inferential understanding', grounded in embodied practice, can provide a strong basis for articulating both statements of outcome (competence), and statements of expectation (generic skills). We get from the materiality of workplace learning, to its discursive nature, not the other way around.

To achieve the construction of the concept of 'inferential understanding', as the basis for renewed attention in adults' workplaces in melding 'knowing how' and 'knowing why', first, inferentialism is laid out, introduced by a case of inference arising in the practice of an organisational psychologist.

Next, judgment as an 'emergent property' of workplace learning is argued, growing out of inferentialism. Finally, the entire argument is summarised and applied to the theorisation of competence and generic skills.

Inferring

The case of the corporate executive who couldn't stop talking. An organisational psychologist provides this example of how he melded 'knowing how' and 'knowing why' in making judgements-in-context, involving a stressed client:

The executive had been made redundant and could not stop talking, so I listened! The main thrust of the story was that this person felt angry – he had given 16-17 hours per day to the job and then had been made redundant. It was important that he had a job as he was the sole bread-winner with family responsibilities.

My first judgement was in relation to when to interrupt and offer a different way of thinking – 'When can I make the decision to interrupt?' – 'this person has a need to 'dump'. From observation of this process I made a judgement that 'this person is not ready for the workforce!' I judged [inferred] that the candidate was emotionally burned out; exhausted; on anti-depressants, and possibly in the throes of a life out of control.

Listening was important but I judged that there was a need to intervene at some point.

I made the intervention by asking 'Could you take a break?' in terms of "How would you feel about taking a month's break to allow yourself to recover?". My judgement was to manoeuvre the candidate's focus from the 'urgency' of the situation to 'getting back to good health so as to maximise opportunities.'

'Inferential understanding', as displayed in the above case, by the organisational psychologist, is the intertwining of knowing how and knowing why, in specific workplaces (and in 'hot action' at work). The client needed a time of healing, in which new energies, and hopefully a new way forward, could emerge. By 'inferring' from a variety of experiential evidence, the psychologist was able to create such a space, not just in the discourse underway that day (a moment to break in to the conversation), but also to make a material (embodied) difference to the executive's life. The psychologist makes several explicit 'judgements-in-context' to bring these two inferential moments about.

I believe this 'inferential understanding' offers a way to explore how holistic competencies can emerge in specific workplace experiences.

What such inferences require for their emergence as holistic competencies is simply their public justification. No-one expects the psychologist in this case to remain inarticulate over, nor unaccountable for, his professional practice. On the contrary, he should be able (= capable, competent) in stating how and why his 'judgements-in-context' are thus-and-so.

To underpin this emergence of new professional competencies, amidst 'public justifications', I draw upon the epistemologist Brandom (2000). He locates what he calls the 'genus of conceptual activity' in the pragmatic *expression* of knowledge claims, not in their *representation*. This distinction is crucial so it is worth drawing it out a little.

Instead of grounding knowledge in the representation and refinement of a state of the mind (which fits with Cartesian origins of knowledge), inferentialists like Brandom (and myself) argue for 'a form of linguistic pragmatism that might take as its slogan...that grasping a concept is mastering the use of a word' (Brandom, 2000, p. 6; he acknowledges a Deweyian, Jamesian and Wittgensteinian heritage). Brandom's expressivism – this 'usage' - sees the mind not as a mirror (representing what is inner and is outer), but, similar to a lamp,

...making explicit what is implicit. This can be understood in a pragmatist sense of turning something we can initially only do into something we can say: codifying some sort of knowing how in the form of a knowing that (p. 8).

Educators can see the contemporary significance of this – and some of us have gone some way further with it already: workplace learning and especially the Schonian ‘reflective practitioner’ at work are redolent of this conversion of what is done (acted) into what is said (articulated). My claim is that the psychologist needs to give public justification for his practices – as do we all – and that he is turning what he *does* (such as with a client like the executive) into what he says. This is making explicit what is implicit in his practice; it codifies what we *do* by articulating it- it emerges as what we *say* (to our peers, the public, etc).

Brandom’s expressive ‘linguistic pragmatism’ sits well with certain educational and pedagogical innovation, in adults’ workplaces, and supports holistic competencies, as these emerge in contexts of ‘judgements-in-practice’ such as the organisational psychologist occupies. What we know *best* is thus an emergent, publicly-justified and therefore accountable achievement. As other epistemologists, DeVries and Triplett (2000), summarise:

...we know first the public world of physical objects. We can extend that framework to include persons and their language. What we know best, however, are those beliefs that are the most well-supported pieces of the most coherent, well-substantiated explanatory framework available to us...our best knowledge will be provided to us by the efforts of science. The picture of knowledge created is that of a *communal, self-correcting* enterprise that grows from unsophisticated beginnings toward an increasingly detailed and adequate understanding of ourselves and the world (p. xlvi) [emphasis added].

This suggests a way forward for the challenge presented in the last few pages of our recent book (Beckett & Hager, 2002) where we claimed:

Instead of asking how the learning (through training for example) is represented to the learner – “Has there been a change in the state of the learner?” – the more profound question is: “What inferences can now be articulated by the learner?” (p. 192).

I believe the way forward is to unpack that notion of the public articulation of inferences as a ‘communal, self-correcting enterprise’ (as DeVries and Triplett stated). Expressive, pragmatic understandings of experience are really *how adults’ workplaces are shaped*.

Beckett and Hager (2002) show in some detail what this centring of ‘knowing *how*’ does to and for traditional education. In a nutshell, ‘knowing how’ to proceed at work, for most adults, requires a series of decisional actions, some of them articulated, which issue in change, just as we read in the case of the executive who would not stop talking. The psychologist made interventions which discursively and materially changed the client’s situation. We may claim that the psychologist’s holistic competence, in respect of certain generic capacities, such as problem-solving and conflict resolution, for example, *emerged from his practices*.

To give these experiences the epistemological significance they deserve, we need to add the ‘knowing why’. The psychologist needs to publicly justify his judgements, thus establishing the competencies and the evidence for them in an accountable way. These are fluid and contestable, and a long way from the static, behavioural and reductive competency regimes more common in Western policy arenas. My argument is that inferentialism – the ‘communal, self-correcting’ justifications given by an individual at and through his or her work of why she or he acted thus-and-so, looks promising as an account of holistic competencies.

I now will develop this claim, by dealing with the nature of *competent practical judgements* amidst these public justifications (articulated inferences) in the workplace.

Judging

If we are serious about inferential understanding, then (as Beckett and Hager, 2000, 2002 argue) the reflective action of making a ‘judgement’ is central. Workers do this all day, every day, and I have claimed, right from the accountant’s 3 a.m. decision-making, that these adult learning experiences are central to a new concept of holistic competence.

Frequently, what humans find themselves doing – even at 3 a.m. - is making decisions (judgements) about what to do next. Workplace learning is increasingly shaped by this

sort of fluid experience ('knowing how' to go on), but it needs to be *made explicit* (as in Brandom's 'expressive approach', above). The 'making explicit' is what the best adult teachers and trainers can do, in facilitating, even revealing, adults' experiences for educational purposes. Mentoring schemes are an example.

Judgements under this latter, inferentialist, model, are *practical* in that they are expected to be efficacious: they deal in what is thought to be good (that is to say, appropriate) *in specific contexts in which they are embedded*. There has to be this pragmatic point to it all, especially for coming to understand practice through the emergence of holistic competencies. 'Problem-solving' for lawyers will carry inferences for and from practice differently than for masons, or accountants, or psychologists.

Earlier, we noted that Brandom locates inferentialism in the *pragmatic expression* of knowledge claims. He means to move the achievement of understanding beyond static representationalism (such as traditional behaviourist competencies display) into a more dynamic, process-focussed mode – what I am calling 'inferential understanding'. He unpacks this when he states:

According to the inferentialist account of concept use, in making [an explicit truth] claim one is implicitly endorsing a set of inferences, which articulate its conceptual content. Implicitly endorsing those inferences is *a sort of doing*. Understanding [sic] the conceptual content to which one has committed oneself is *a kind of practical mastery: a bit of know-how* that consists in being able to discriminate what does and does not follow from the claim, what would be evidence for or against it and so on. (p. 19) [emphasis added].

In expressing this personal mastery – this competence - at and through work, adults find themselves committed to and bound up in socio-cultural expectations, specific to their practices, that thus-and-so (whatever the course of action is) will be justifiable – and can be justified. That is the 'public' requirement for 'justification'.

This directly affects education and training. Now, workplaces that are serious about the productive exercise of generic competencies and skills are keen to support them in favour of novel, unexpected outcomes, albeit those that contribute to strategic as well as individual purposes. My inferential understanding thus provides a theoretical

underpinning for the making of a judgment ('knowing how and why' to go on). Such 'judgement-making' is a form of doing, where there are distinctive reasons articulable in that process of doing. These reasons can be distinctively novel, and unexpected. They provide the raw material for a claim on creativity. Thus the inference of understanding is perhaps *creatively* generative for others, as well as to the individual: "I/She did x, because I/we/they can justify it like this....".

The model of holistic, or integrated competence, which has been developed in Australia, in the 1990s (outlined in 1. above) instantiates this theoretical analysis. To reiterate: this model is explicitly based on the *inference* of competence from an array of performative evidence, and is sensitive to the 'contextual' nature of generic skill formation and development.

The Australian model fits with the judgement-driven nature of workplace learning, and it invites a diversity of assessment evidence in support of judgements – inferences – of competence. Furthermore, this model can generate novel and distinctive outcomes: the competent practitioner, whose practice is defensibly competent, by reference to the public standards of a work-based peer group (such as profession, or occupational association or industry), can create new practices.

Such a process is example of what Brandom called the 'communal self-correction' of individuals' actions – and even of identities. It also appears that holistic and generic competencies, if these were to have any purchase on particular workplace experiences (that is, in the case of graduates, enhancing their 'employability'), would need to make available opportunities for this 'communal self-correction'. Group-based project work would be a workplace-specific example of this communal self-correction, where a new graduate or someone on field placement (whilst still in tertiary studies) could endeavour to display her or his generic skills in real life with real peers. Without such a context for the claim to possess or to have acquired generic skills, they float off the planet.

Communal Self-Correction

The case of the lawyer who reflects on what he brings to workplace judgments. This practitioner acknowledges the technical aspects of his competency as a lawyer – broadly, these are compliance requirements, then he

launches in to less clear waters, where the ethic of legal practice is his standard of accountability for his ‘judgements-in-context’:

First of all you’ve got to comply with the rules - that’s the rules laid down by the court, and the government, and the Law Institute, or whatever professional body governs the actions of lawyers in this state.

Then you’ve got to live with your own conscience and then you’ve got to live with your client, and what your client thinks is right and appropriate. And maybe what is right for the client’s pocket. So you have to think about all those matters. That is you have to think about the legality of it, the ethics of it, and the client’s interest. It’s usually pretty obvious what the client’s interest is because that’s a minimal payout or resolution on the best commercial terms possible, or the best way of settling it in someone’s interests. That’s usually pretty clear. The legality is usually pretty clear - you usually know whether something’s legal or illegal.

Whether or not it sits with you morally can be a problem, but I have difficulty in thinking of ...I think you know what’s wrong and what’s right. And I would be instinctive in that. And if people put propositions to me on the phone...you’d instinctively say, ‘No that’s not right.’ Or, ‘I don’t think you can do that.’ Or, ‘You shouldn’t do that.’

Notice how embedded the lawyer is in his commercial and community context, and how receptive he is to what his instincts tell him. This ability to take community and personal ethical standards as the catalyst for such instincts marks out expertise, as is now more widely recognised. Gigerenzer (2007), taking a research perspective on ‘gut feelings’, indicates how the expertise of experts is shown in the speed with which they cut to the decisional moments, discarding the psychic and experiential scaffolding that has defined their competence in the past. We may say that having climbed the ladder (of competence), we kick it away.

Montgomery (2006), in analysing the clinical judgements in medicine, puts the same point this way, in drawing upon the landmark ‘novice to expert’ work of Patricia Benner, for nursing: ‘The acquisition of a clinical skill is a process that goes beyond mastery of rules...to a stage where the rules are no longer recalled: each case is comprehended wholisitically’. She acknowledges that Benner drew upon Dreyfus and Dreyfus, who ‘... maintain that experts reason not by methodical inference but

“holographically”...’ (p. 35).

Montgomery, just a few pages earlier, states that clinical judgements are marked by ‘practical reasoning necessitated by an absence of certainty’ (p. 42), and, central to this analysis, what practitioners bring such reasoning is ‘[d]escribed as intuition...essential to good practice, those “gut feelings”’. This is ‘a sort of know how: as nonscience, this must be art’ (p. 30).

Therefore, our lawyer, like our psychologist, and before that, our accountant, work as much on their hunches, gut feelings, instincts and intuitions as much as on their technical or theoretical knowledge, in making competent, even expert ‘judgements-in-context, through this capacity in inferential understanding.

The lawyer goes on:

I’ll discuss intuition, in a sense. Because I work in a very limited area which involves largely insurers, you get the feeling or the sense sometimes that some people are better than others at working out what the correct facts are. ...

Now it is very difficult to know whether someone is telling the truth, has told the truth, or will tell the truth. And it’s very hard to prove anyone wrong. But after a while I think you become more - stronger in your views. You work out that that’s more likely than not to have happened. I don’t know how you do it sometimes, except to say it’s intuition. I guess it’s something that just happens because people will ring me up on the telephone and put a particular fact situation to me, and I’ll just say I don’t believe it. Now why don’t I believe it? I suppose because it’s just something that I consider to be incredible. But I have to concede that sometimes I might be wrong.

Here is an explicit admission of the ‘absence of certainty’ Montgomery notes as a characteristic of clinical practice. The professional is casting about for communal self-corrections: he is embedded in the ethos of his profession, and in the public articulation of his decisionality – his judgements. How can we conceptualise this new epistemology of practice? I revive Aristotle’s approach to the art of balanced judgment – and I am not alone in doing so.

Phronesis Revived

The implication of the theorisation outlined in section 2 (above) for the epistemological ‘junk categories’ I named in the Introduction is profound. As Bent Flyvbjerg (2001) puts it:

Regrettably, the pervasiveness of the rational paradigm to the near exclusion of others is a problem for the vast majority of professional education, and especially in practical fields such as engineering, policy analysis, management, planning and organisation...

This has caused people and entire scholarly disciplines to become blind to context, experience and intuition, even though these phenomena and ways of being are at least as important and necessary for good results as are analysis, rationality and rules (pp. 24-25).

Flyvbjerg, however, directs us to the way forward, which I share:

The person possessing practical wisdom (*phronimos*) has knowledge of how to behave in each particular circumstance that can never be equated with or reduced to knowledge of general truths. *Phronesis* is a sense of the ethically practical, rather than a kind of science (p. 57).

Aristotle’s *phronesis* is indeed helpful (as Beckett and Hager 2002 claim) in making sense of this reliance upon strange experiences. Flyvbjerg goes on:

...Phronesis goes beyond both analytical, scientific knowledge (*episteme*) and technical knowledge (*techne*) and involves judgements and decisions made in the manner of a virtuoso social and political actor. I will argue that *phronesis* is commonly involved in social practice...(p. 2)

...and is [the] most important because it is that activity by which instrumental rationality is balanced by value rationality, and because such balancing is crucial to the sustained happiness of the citizens in any society, according to Aristotle’ (p. 4).

Moreover, throughout his chapter entitled ‘Rationality, body, and intuition in human learning’, Flyvbjerg (2001) refers for support to the ‘Dreyfus’ model of competences and skill formation, suggesting that old traditional models of learning skills are unhelpful:

Practical experience consists precisely in an

individual’s ability to readily recognise skill and virtuoso experience. [In relating an experiment with paramedics and experienced teachers of paramedics...]...The teachers attempted to identify a competent rescuer by looking for individuals who best followed the rules the teachers themselves had taught their students in CPR. The teachers concept of “good” resuscitation technique was simply to follow the rules...Being novices, the students could do little else (p. 23).

Again, Montgomery (2006) articulates a similar way forward, for her, based on research in to how our contextuality frames our practices:

Bourdieu’s habitus and Geertz’s common sense are useful concepts because, like Aristotle’s *phronesis*, they characterise a kind of knowing that is not hypothetico-deductive, not scientific, but nevertheless deserves the label ‘rational’. Those who possess this rational capacity or virtue in great measure are often regarded as wise...

Because competent clinicians embody a habitual and “automatic” commonsense method of responsive knowing, the idea of a rationality that is both deeply ingrained and largely unaware of itself is essential to understanding their enculturation, the formation of the professional self (pp. 165-166).

Conclusion

I have tried to show how ‘inferential understanding’ gives due significance to the dynamics and realities of adults’ workplaces, and to the processes now acknowledged in many workplaces – whether these be competencies or generic skills - as advancing this ‘communal self-correcting’ of claims to know something expertly, or proficiently. This self-correction is the public articulation of reasons for acting.

The emergence of inferential understanding at work will take any number of forms depending on the variables in particular workplaces. This should guide the way generic skills and holistic competencies are manifest: are there public ways workers (or learners, still in formal studies) can articulate their judgments about ‘know how’ which is by definition, located in ‘local, personal and the particular’ workplace experiences? This supplies the ‘knowing why’. Teamwork, and other forms of socially-reflective practice

(for example, 360 degree appraisals, 'retreats', role plays, simulations, project- and problem-based groups) are some ways these articulations are made public, and similar activities should be pedagogically central in formal studies, especially in tertiary education.

In summary, an adult's learning at and from work through inferential understanding requires two things. First, a prior commitment to undergoing diverse experiences from which one can learn, and, second, a continuing commitment to the public articulation of reasons for one's judgments at work - one's daily business. I claim that lists of holistic competencies and generic skills make no sense unless they show they are grounded in practical judgements and that the reasons practitioners can give for their judgements are publicly articulated amongst their peers.

Holistic competence based upon 'inferential understanding' requires not only one embodied practitioner but indeed a whole community of them, because the practices are public practices. Justifications of how one proceeded, or intends to proceed, or (more commonly) finds oneself proceeding are articulable in justifiable ways, depending on the values and norms of one's community. There will be a range of these, all overlapping, from the community of a workplace, of a profession, of a citizenry, and even up to the general level of humanity itself. Crane-drivers will have these, of significance in railyards where containers are to be moved. Western education and training policy-makers have not been able, or willing perhaps, to tap into these rich sources of knowledge. Rather than write off these 'knowings', as 'junk categories', my argument is that now, in this era of lifelong learning, on educational if not political grounds, we ignore them at our peril.

Let Montgomery (2006) have the last words here: our holistic competencies are fluid, tentative and dynamic since they are, she states, 'bottom up rules of practice or maxims...hedged and qualified, layered in memory with skepticism':

What experienced clinicians possess...is an immense and well-sorted catalogue of clinical cases and the clinical judgement to know how to use it, and that store of knowledge is activated by seeing, touching and questioning the patient. Such knowledge is varied and extensive enough so that the bottom-up rules of practice or maxims that the cases collectively embody are hedged and qualified, layered in memory with skepticism about their applicability to any

particular patient.' (pp. 34-35).

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David Beckett

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Received September 25, 2007

Revision received February 10, 2008

Accepted February 21, 2008