Beyond Expertise: Theory, Practice and the Reflective Practitioner

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When people use such terms as «art» and «intuition», they usually intend to terminate discussion rather than to open up inquiry. It is as though the practitioner says to his academic colleague, «While I do not accept your view of knowledge, I cannot describe my own.» Sometimes, indeed, the practitioner appears to say, «My kind of knowledge is indescribable,» or even, «I will not attempt to describe it lest I paralyze myself.» These attitudes have contributed to a widening rift between the universities and the professions, research and practice, thought and action.

Donald Schön

Expertise and reflection-on-action

One of the contributing factors to the rise in popularity of reflective practice in nursing over the past ten years must surely be Patricia Benner's influential book *From Novice to Expert.* Benner suggested five levels of practice, from the rule-bound novice or beginner who nurses literally by the book, following non-contextualized rule-governed procedures, to the expert who

«with an enormous background of experience, now has an intuitive grasp of each situation and zeroes in on the accurate region of the problem without wasteful consideration of a large range of unfruitful, alternative diagnoses and solutions.»

Benner based her notion of expertise on the work of brothers Hubert and Stuart Dreyfus, a philosopher and a computer scientist. The Dreyfus brothers were working in the field of artificial intelligence, and came to the conclusion that human experts process information entirely differently from computers. They used the example of a chess grandmaster to illustrate how the expert «zeroes in» on a chess problem, arguing that unlike the computer, the grandmaster does not consider every possible move (clearly an impossible task), but draws on her experiential
repertoire of similar board positions from past games. In the same way, claimed Benner, the expert nurse calls on a body of experiential knowledge, what she referred to as a repertoire of paradigm cases, and instinctively and intuitively matches the current situation with a paradigm case which has proved effective in a similar situation in the past.

Expertise is therefore an unconscious, intuitive process, which Benner, drawing on the terminology of the philosopher Gilbert Ryle, referred to as «know-how». She claimed that this know-how consisted of tacit knowledge that did not follow a logical analytic process and could not be expressed in words, but is rather «understanding without a rationale». Furthermore, if the expert nurse does attempt to consciously gain access to her know-how, it mysteriously evaporates, such that «if experts are made to attend to the particulars or to a formal model or rule, their performance actually deteriorates». The expert cannot say how she knows what to do, and if she deliberately tries to practice according to a conscious logical procedure, she is no longer functioning as an expert.

This can be seen clearly from examples such as driving a car or playing the piano. Expert car drivers or pianists are not conscious of their performance; they drive or play without having to pay attention to what they are doing. The expert driver changes up and down through the gears intuitively, and it is only when she is forced to consciously think about what she is doing that she makes mistakes, as for example, when she is driving a car she is not used to.

However, although the «intuitive grasp» underpinning expert practice is unknown, and according to Benner, unknowable, it is not a magical process and «intuitive grasp should not be confused with mysticism since it is available only in situations where a deep background understanding of the situation exists». Intuition is based on an experiential knowledge-base, on knowledge gleaned from individual concrete experiences, but Benner is quick to recognise that this experiential knowledge does not necessarily come merely from exposure to situations; not every nurse that has been practising for twenty years is an expert. Thus, «experience, as the word is used here, does not refer to mere passage of time or longevity», and «there is a leap, a discontinuity, between the competent level and the proficient and expert levels». Clearly, something has to be done with the experience to transform it into expertise; it needs to be processed. Benner had probably not read the work of Donald Schön when she was writing her book (Schön’s seminal work The Reflective Practitioner was published only a year before Benner’s), but if she had, she would surely have recognised the process of turning experience into the knowledge-base of expertise as what Schön referred to as reflection-on-action.

For Schön, reflection-on-action was a way of generating knowledge from the messy and unpredictable «swampy lowland» of the practice setting by actively processing experiences after, and usually away from, the situation in which those experiences were acquired. Reflection on-action can therefore be summarised as
the retrospective contemplation of practice undertaken in order to uncover the knowledge used in a particular situation, by analyzing and interpreting the information recalled. The reflective practitioner may speculate how the situation might have been handled differently and what other knowledge would have been helpful.\(^5\)

Two necessary conditions for reflection-on-action are highlighted in this definition. Firstly, as Andrews\(^6\) pointed out, the experience must be actively processed if it is to be converted into knowledge, and «reflection is, therefore, not to be confused with thinking about practice, which may only involve recalling what has occurred rather than learning from it». And secondly, reflection-on-action can only take place after the event. It is retrospective contemplation of practice, and, as Van Manen noted:

«a person cannot reflect on lived experience while living through the experience. For example, if one tries to reflect on one’s anger while being angry, one finds that the anger has already changed or dissipated. Thus, phenomenological reflection is not introspective but retrospective. Reflection on lived experience is always recollective; it is reflection on experience that is already passed or lived through.»\(^7\)

This is an important point; if we attempt to reflect on an experience while we are still immersed in it, then the reflection on that experience changes the nature of the experience itself. Schön\(^1\) referred to this kind of reflection as reflection-in-action, and as we have seen, reflection-in-action is not only reflective but reflexive, changing the nature of the situation while we are in it.

To take Van Manen’s example: by reflecting on our anger, after and away from the situation in which it occurred, we can learn some important lessons about the nature of that anger and its effect on ourselves and others, and this learning can contribute to our repertoire of paradigm cases. But by reflecting during our anger, we transform it into something else. We are no longer angry, or at least, our anger has to some extent dissipated. Furthermore, by reflecting on our new mental state, that too is transformed; we are not only generating knowledge about the situation we find ourselves in, but in the process of generating knowledge we are changing the situation in a reflexive spiral.

It could reasonably be argued, then, that although Benner was probably not aware of Schön’s work while she was writing her book From Novice to Expert, the process which Schön described as reflection-on-action is very similar to the way in which Benner envisaged the expert nurse as processing her experiences and turning them into paradigm cases. What Benner’s expert was not doing was reflection-in-action, what Schön\(^1\) called «thinking on your feet», which requires a conscious attention to the underlying thought processes of practice actually during that practice. This can be seen quite clearly in Benner’s account of an expert psychiatric nurse attempting to explain her clinical judgement:

«When I say to a doctor «the patient is psychotic», I don’t always know how to legitimize the statement. But I am never wrong, because I know psychosis from inside out. And I feel that, and I know it, and I trust it.»
As the nurse says, she cannot legitimize her statement with a reasoned chain of argument; she simply feels that she is right (and, as Benner pointed out, she probably is!).

As we have noted, Benner was heavily influenced by the work of Dreyfus & Dreyfus on expert computer systems, and it was these writers who introduced her to the idea that human experts employ an unconscious pattern-matching strategy in their practice. Dreyfus & Dreyfus' cited an experiment in which a chess grandmaster carried out complex mental arithmetic whilst playing chess, and noted that his game was hardly affected. This led them to the conclusion that intuitive grasp transcended logical thought, and accounts for the fact that Benner's expert psychiatric nurse could make complex clinical decisions without understanding the rationale behind them. There simply was no rationale. The nurse could be mentally compiling a shopping list (or, indeed, doing mental arithmetic), and her judgement would be unaffected.

For Benner's expert, then, the conscious, rational thought processes take place after and away from practice; it is through reflection-on-action that raw experience is transformed into paradigm cases, which are then somehow matched to whatever clinical situation the nurse might find herself in. And if she has no cases which match the situation, then she has to return to a lower level of practice and consciously think out her next move, but this of course results in inferior judgements.

The limitations of expertise

Although now widely accepted by the nursing profession, this model of expertise is not without its critics. The most common objection is that Benner's model of expertise as unknowable intuitive grasp leads to a form of elitism in which self-styled experts need not justify their practice to the 'lower orders' of nurses. Like Benner's psychiatric nurse, the expert is never wrong, and because her expertise is unfathomable, it is also safe from attack; she does not have to justify her decisions because she cannot justify her decisions. She just knows that she is always right.

There is, however, a more important and far-reaching objection to Benner's notion of the intuitive expert. Whilst unconscious intuitive grasp, whether it is employed in diagnosing psychosis or in driving a car, might lead to smooth, effortless, spontaneous practice in which conscious thought is not required, it also has certain dangers:

"As a practice becomes more repetitive and routine, and as knowing-in-practice becomes increasingly tacit and spontaneous, the practitioner may miss important opportunities to think about what he is doing. He may find that [...] he is drawn into patterns of error which he cannot correct. And if he learns, as often happens, to be selectively inattentive to phenomena that do not fit the categories of his knowing in action, then he may suffer from boredom or burnout and afflic his clients with the consequences of his narrowness and rigidity. When this happens, the practitioner has 'overlearned' what he knows..."
The expert might well be able to nurse and do mental arithmetic at the same time, but if she does, then an important learning experience will be lost to her. And furthermore, by restricting her reflective practice to reflection-on-action, to what Van Manen earlier referred to as retrospection rather than introspection, she is leaving the development of her practice largely to chance, to the unknown and unknowable process of intuitive grasp and pattern matching.

When most nurses write about reflective practice they are referring almost exclusively to reflection-on-action, the retrospective contemplation of practice, and when reflection-in-action is mentioned, it is usually rather obliquely. Detailed explorations of reflection-in-action are unusual in the nursing journals partly because it conflicts with Benner’s notion of expertise, and as we have seen, «if experts are made to attend to the particulars... their performance actually deteriorates».  

The legacy of Benner’s model is therefore almost a denial that reflection-in-action is possible. As Dreyfus & Dreyfus (1986) pointed out:

«Have you ever been driving effortlessly along a city street in a stick-shift car and suddenly found yourself consciously thinking about the gear you are in and whether it’s appropriate? Chances are the sudden reflection upon what you were doing [reflection-in-action] and the rules for doing it was accompanied by a severe degradation of performance; perhaps you shifted at the wrong time or into the wrong gear.»

Dreyfus & Dreyfus are undoubtedly correct in their observation that reflection-in-action detracts from driving a car, but the flaw in their argument is to attempt to apply the same model to cognitive decision-making processes such as chess playing or clinical nursing judgements. Motor skills such as driving a car rely on an interplay between brain, body and eye which circumvents rational cognition, and as most expert car drivers and pianists will tell you, their performance does indeed degenerate when attended to.

However, cognitive abilities such as chess playing and making clinical judgements are of a different order, and whereas expertise in motor skills is acquired by repeated mechanical practice, the expertise of a chess grandmaster is clearly not. As Dreyfus & Dreyfus themselves pointed out:

«Not all people achieve expert levels in their skills. Some areas of skill – chess, for example – have the characteristics that only a very small fraction of beginners can ever master the domain [...]. Other areas, such as automobile driving, are so designed that almost all novices can eventually reach the level we call expert.»

The difference between chess and driving is not merely a difference of degree as Dreyfus & Dreyfus seem to be suggesting; it is the difference between a motor skill and an advanced and complex cognitive ability. For the vast majority of people, no amount of practice will ever result in their becoming a chess grandmaster because expertise in chess is not acquired in the same way as expertise in driving, but requires an active, conscious process of introspection.
Thus, while unconscious expertise is the highest stage of attainment for motor skills, cognitive abilities are somewhat different. Dreyfus & Dreyfus themselves recognised this when they asked the question: «What does a masterful chess player think about when time permits, even when an intuitively obvious move has come spontaneously to mind?»

The answer, they tell us, is that she thinks about chess in a process of «deliberative rationality», unlike the expert car driver who generally thinks about anything but driving. Of course, the chess grandmaster does not have to think about chess. She can, as Dreyfus & Dreyfus demonstrated, do mental arithmetic, and her performance will not be significantly impaired. But the point is that thinking about chess will make her a better chess player in a way that thinking about driving will not make for a better driver. As Van Manen pointed out, reflection-in-action changes the situation in which the reflection is taking place, but unlike with motor skills, when we are reflecting about cognitive process the changes are not necessarily for the worse.

Beyond expertise

A number of writers are now coming to recognise the limitations of Benner's model, and are arguing that although what she called «intuitive grasp» might well be unconscious, it is not unknowable. Brook & Champion\(^9\) rejected the notion of irrational intuition and argued that expert performance involves the formulation and testing of hypotheses during the process of practice, Elstein & Bordage pointed out that «it seems practically impossible to reason without hypotheses whenever the data base is as complex as it typically is in clinical problems»,\(^10\) and Andrews\(^6\) claimed that so-called intuition is a complex critical skill closely related to reflection-in-action. And as Schön noted:

«When the practitioner reflects in action, in a case he perceives as unique, paying attention to phenomena and surfacing his intuitive understanding of them, his experience is at once exploratory, move testing, and hypothesis testing. The three functions are fulfilled by the same actions. And from this fact follows the distinctive character of experimenting in practice.»\(^11\)

It would appear then that intuition might not be the unknowable and irrational process that Benner made it out to be, but rather an unconscious form of hypothesis construction and testing. Even Benner herself appeared to recognise this when she wrote that «expertise develops when the clinician tests and refines propositions, hypotheses, and principle-based expectations in actual practice situations».\(^7\) And if the process is rational and knowable, then it should be possible to elevate it into consciousness. Indeed, there is evidence to suggest that some nurses actually do make clinical decisions by employing a conscious process of hypothesis testing.\(^12\)
It might on first sight seem that the only difference between conscious and unconscious hypothesising is simply that one is a conscious process whilst the other is not. However, as Van Manen pointed out earlier, conscious reflection-in-action entails a reflexivity which modifies the object of the reflection and has a direct impact on the practice situation. Expertise and reflection-in-action might look the same, but whereas the expert is acting intuitively and without conscious thought, almost at spinal cord level, reflection-in-action requires a particular sort of mindfulness which involves intense concentration on the task at hand, and has a direct impact on the situation in which it is taking place. Thus:

«When someone reflects-in-action, he becomes a researcher in the practice context. He is not dependent on the categories of established theory and technique, but constructs a new theory of the unique case... because his experimenting is a kind of action, implementation is built into his inquiry.»

Practice based on conscious reflection-in-action therefore moves beyond expertise. Whereas the expert is a reflective practitioner who builds up a repertoire of paradigm cases through reflection-on-action which she then applies through unconscious pattern matching, the nurse who is employing conscious reflection-in-action is a reflexive practitioner who directly modifies her practice on the spot in response to her hypothesis testing. Even with very simple and seemingly mechanical tasks such as wound dressing, the difference is striking: the expert nurse would perform the required actions swiftly and deftly and without conscious thought, whereas the reflexive practitioner would think about every move, every decision, relating them to this patient in this situation.

More importantly, the reflexive practitioner would be learning from her performance, thinking about how it could be done differently, constructing theories, testing hypotheses, and modifying her actions on the spot, and this requires mindful attention. Reflection-in-action therefore serves to focus the concentration of the reflexive practitioner on the here-and-now and on the uniqueness of her individual relationship with each of her patients, and reduces the possibility of boredom and burn out that comes from overfamiliarity with the tasks to be performed.

In fact, the notion of reflexive practice, in which hypotheses are formulated and tested in a continuous spiral, is not a new idea in nursing, and is implicit in the nursing process cycle of assessment, planning, implementing the plan and evaluating the outcome, which in turn leads to a new assessment of the transformed situation. The process is also recognised in education and research. Kolb's learning cycle contains the elements of observation and reflection on an experience, conceptualizing an explanation for that experience, active experimentation based on the explanation, and new reflections on the transformed situation. Similarly, the action research spiral includes «repeated cycles of analysis, reconnaissance, problem reconceptualisation, planning, implementation of social action, and evaluation».13
The central feature of all these models is the notion of constructing a personal theory based on an individual assessment of the situation, the testing of that theory in a real life setting, and the subsequent modification of the theory. In each case, the model is self-reflexive; it both modifies the practice situation and is itself modified by the changes it brings about. Thus, the reflexive practitioner is not only learning from a situation by formulating personal theories which express her understanding of it, but she is also changing the situation by testing out hypotheses derived from those theories in the clinical situation.

The fact that this process involves hypothesis generation and testing should not lead us to associate it with the hypothetico-deductivism of the scientific method. The hypotheses or theories that the reflexive practitioner forms are theories which account for a specific situation, and are not intended to be generalized beyond that situation.

Furthermore, they are a synthesis of scientific knowledge from empirical research, experiential knowledge drawn from similar clinical encounters, and personal knowledge about herself and this particular patient. Reflexive practice consists not only of the possession of these very different forms of knowledge, but in knowing how to combine them to form the most likely hypothesis or personal theory: how much weight to give each element, which to include and which to leave out, and how to choose between competing hypotheses.

I believe that there is a logic to this process of clinical judgement, but that it is not the formal logic of science. Rather, I have suggested elsewhere that the expert nurse employs a form induction known as abductivism which turns formal Aristotelian logic on its head. In claiming that expertise is rational, I am therefore not suggesting that it follows the logic of empirical science, merely that it is a logical and potentially understandable process. This, of course, is in direct contrast to Benner’s position that expertise is unknown and unknowable and that it is a form of intuition.

It is not my contention that intuition does not exist, nor that nurses do not sometimes rely on it in their practice, merely that Benner has fallen into the logical trap of the principle of the excluded middle: that expertise is either based on scientific logic or else it is based on no logic at all. Contrary to what many scientists would have us believe, there are other logics and other rationalities besides those of the scientific method, and rather than expending time and energy saying what expertise is not, perhaps we should be actively exploring what it is.

**Conclusion**

I have argued in this chapter that whereas Benner’s fifth and final level of expert might be appropriate for activities based largely on motor skills, professions which rely on advanced cognitive abilities such as on-the-spot decision making and clinical judgement will benefit from a conscious, reflexive level of practice which goes beyond expertise. The reflexive practitioner, unlike Benner’s expert,
In consciously shaping and modifying her practice through a process of theorising and hypothesis testing in direct response to feedback from, and evaluation of, her previous actions. She is therefore constantly learning from her practice by developing theories which attempt to explain it, and she checks out her learning by testing the theories in her own practice.

But the reflexive practitioner is not only acquiring knowledge; she is also generating it through on-the-spot experimenting in a process which looks a lot like the action research cycle of «a circle of planning, action, and fact-finding about the result of the action». Thus, by reflecting-in-action, the nurse integrates education and research into her everyday practice.

This model of the practitioner as an active learner and researcher challenges many of the nursing profession's existing notions about education and research. It implies a revision in the current educational philosophy inherent in Project 2000 nurse training of a technocratic model in which theory is taught in universities and colleges of higher education and is then expected to be applied to practice situations. It also challenges the Department of Health's elitist strategy for research in which «not... all practitioners should be carrying out research as part of their professional role or professional development».

Most importantly, however, the reflexive practitioner, unlike the expert, is able to justify her clinical decisions and provide reasoned argument for acting the way she did. This is of particular significance given the Department of Health's (DoH) current drive towards «evidence-based practice», and whereas the expert cannot always justify her statements (she just knows that she is always right!), the reflexive practitioner can produce evidence for her actions, albeit not necessarily the kind of evidence that the DoH had in mind.

But if nursing is to move forward as a profession, then we must not only do, but be able to describe what we do and how we do it. The expert's defense that her practice is unknowable is not good enough; we must uncover the rational process behind our decisions and judgements (even though it might not be the rationality of Western empirical science), and reflection-in-action is one much overlooked way of doing so.

References
