

ORIGINAL ARTICLE

## How postgraduate pharmacy students develop professional understanding: Re-conceptualising deep, reflective learning

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### Abstract

Published literature has shown that learners conceptualise and approach learning in different ways. The research reported in this paper explores postgraduate pharmacy students' perceptions of learning and their understanding of the learning strategies employed whilst undertaking a postgraduate prescribing course.

Twenty-six individuals, who had been registered on Keele University's *Supplementary Prescribing Course*, participated in focus groups and individual interviews. Data are presented relating to one of the eight key themes that emerged, that is, *traditional, academic learning and non-traditional, reflective learning*.

Participants clearly perceived, and had experience of, approaches to learning which they articulated as being of qualitatively different types. They perceived reflective learning to be analogous with a deep learning approach. Participants indicated a synergistic relationship between knowledge accumulation and reflective learning, resulting in higher levels of learning. Further, the findings show that behaviourist and constructivist orientations to education appear to be compatible, despite contrary views in the published literature. The authors describe the complexities of learning through the development of a model that articulates a re-conceptualisation of deep, reflective learning for professional practice.

**Keywords:** *Learning, pharmacists, postgraduate, professional practice, reflection*

### Introduction

Professional education is an important element in the continuing development of pharmacy practitioners. Recent work undertaken by, for example, Austin, Marini & Desroches (2005), Ashcroft and Hall (2006a), Ashcroft and Hall (2006a, 2006b) and Black and Plowright (2005, 2007), has investigated the use of a reflective portfolio to both support and demonstrate the learning undertaken whilst on a course of professional pharmacy study. Employing such a strategy fits with the developing agenda of the Royal Pharmacy Society of Great Britain towards using a reflective learning model for continuing professional development (CPD).

This model is already well established in other professions such as teaching (Birenbaum & Amdur,

1999) and social work (Plowright & Watkins, 2004) where the idea of the reflective practitioner (for example, Schön, 1987) underlies many programmes of study. However, although this model is spreading across all the health professions in the UK, Pharmacy is still at an early stage in applying reflection for learning and practice development. Learning, for the pharmacy profession, has traditionally been embedded in a community of professional practice that shares historical educational roots and a repertoire of practice based on a significant vocational orientation. Such an approach might be described as the "how to" orientation and is embedded in a *behaviourist* approach to learning. Perhaps not surprisingly, the UK is not unique in this respect (Driessen, van Tartwijk, Vermunt, & van der Vleuten,

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2003; Kember et al., 2001; Nolan, Raban, & Waniganayake, 2005; Rouse, 2004). However, this is gradually changing within the UK for health professions in general (Tate & Sills, 2004).

At Keele University, the Department of Medicines Management launched its Supplementary Prescribing course (*SP Course*) for pharmacists in 2003. The course forms part of a larger CPD programme for prescribers. The design and implementation is embedded in a *constructivist* epistemology that views the learning process as the construction of meaning through the cognitive processing of stimuli from the environment. However, as we will later demonstrate, participants were generally unfamiliar with such approaches from previous educational experiences.

Course participants are expected to critically engage with their own learning through the compilation of a *Reflective Portfolio*, enabling them to reflect on selected experiences that underpin their own professional development. The design of the portfolio was influenced heavily by the work of Moon (1999).

The research reported here was part of a larger study that aimed to explore learning and dialogue-with-self in facilitating reflection on learning and professional practice. Postgraduate pharmacy students' perceptions of learning, their understanding of the learning strategies employed whilst undertaking the programme, and how they employ reflective learning in order to develop their own professional understanding and practice are presented in this paper.

## Method

An interpretivist paradigm was employed to underpin the research, thus enabling the focus to rest firmly on developing an understanding of:

... the complex world of lived experience from the point of view of those who live it (Schwandt, 1998, p. 221).

It was exploratory in nature and employed an inductive, grounded theory approach to data collection and analysis (Glaser & Strauss, 1967). The selection of the participants was that of a case study. All 48 pharmacists who were registered on the course in 2003–2004 were invited to participate. Twenty-six individuals took part in focus groups and individual interviews as shown in Table I.

They represented pharmacists working in community practice, primary care and secondary care. Their mean age was 41 years.

All focus groups and interviews were audio-recorded and transcribed in full. Data were analysed and grouped according to each theme/sub-theme for analysis for the study.

The study is a typical example of practitioner-research, which has been well described and critiqued in the literature (for example, Campbell, McNamara, & Gilroy, 2004) and can, therefore, be fully justified.

## Results

Eight key themes emerged from the whole study. One principal theme is presented in this paper, *traditional and non-traditional learning*, and related sub-themes. It provides an insight into how pharmacists perceive learning and the approaches that they adopt.

Findings from the data analysis revealed a number of both predictable and unforeseen results. It will come as no surprise that participants' views tended to polarise learning, referring, on the one hand to traditional or academic learning and on the other to non-traditional or reflective learning. The former was described as:

...very factual, it was sort of like traditional education as we did at school and university... (Participant:5)

One participant described it as:

...regurgitating facts... (Participant:2)

These views were attributed to the pharmacy courses they had previously undertaken at both undergraduate and postgraduate levels. Further, before they started the *SP Course*, they felt comfortable with this "factual" approach to learning:

... as a scientist, I felt that the touchy-feely bit about learning is a waste of my time, and I don't really need to do that. I'll just deal with facts thank you very much. I'm comfortable with that. (Participant:26)

They also felt that some traditional pharmacist roles, for example, checking prescriptions and dispensing medicines, which required accuracy at all times, facilitated by robust routines and procedures, had helped to embed the "traditional", scientific, behaviourist approach to learning. They perceived that,

Table I. Participants and data collection methods.

From	To	Data collection	Number of participants
December 2003	June 2004	Focus groups × 3	13
October 2004	January 2005	Individual interviews	18
Total number of participants			26*

\* Five participants took part in both a focus group and an individual interview.

in general, pharmacists held a view of learning that required things to be “right or wrong”, “black or white”, with none of the “greyness” or lack of structure that the “non-traditional” ways of learning introduced:

...as pharmacists you need to have some sort of structure. It's ingrained in the [undergraduate] training, and probably still is [in daily practice]... it's to do with dispensing... you have to get it right all the time... there's no half measures... and that changes the way you think about the rest of the world ... (Participant:23)

Schön (1987, 2002) also found this in his studies of major professions, in which there was “...presumed to be a right answer for every situation” (Schön, 1987, p. 39) for those operating within the technical-rationality model.

Some focus group participants expressed reservations that the new, “non-traditional”, reflective way of learning might be at the expense of the traditional way of accumulating the “scientific” knowledge and facts that they felt were necessary to ensure up-to-date clinical practice. However, they viewed the two as synergistic rather than in opposition. Some referred to a social awareness that had emerged in their interactions with patients that had previously been unknown or gone unrecognised:

...it's really useful to take in the human dimension which I suppose in the past, I have to admit, was lacking... what it did do [reflection] was make me think more deeply about the human side [of professional practice]... what you're doing you're adding a new dimension to it [professional practice]... they are compatible [traditional learning methods and reflective learning] and they can run along side each other... (Participant:29)

### *Levels of learning*

The findings reported here indicate that participants clearly understood that learning ranged from the simple to the more complex, with a hierarchy from accumulation and repetition of facts through to the application of knowledge:

...but in terms of learning, you know, where it's just regurgitation of facts [surface learning], it doesn't actually prove that you understand [deep learning] or can develop that principle...I think that's the important thing, so you apply it [deep learning]. (Participant:16)

It was interesting that when participants referred to “traditional” or “academic” learning, they predominantly described these as lower levels of learning or surface learning. In contrast, they believed that reflective learning was a better way of learning.

They highlighted the differences between the transient learning employed, for example to prepare for formal examinations, and the much more permanent, “fixed” learning that reflective learning nurtured:

Fixed is a good way of describing the more in-depth learning that you get when you've [reflected] rather than just memorising a page of writing for example...it fixes in your head then. (Participant:26)

All interviewees specifically expressed the view that one key approach to learning they adopted was at a lower level and was “about increasing my knowledge”.

They felt that it was fundamental to the development of their professional practice and their ability to keep up-to-date. They felt that this knowledge would be specific for their own individual professional needs:

... [learning] is about increasing my knowledge, but specific to me. (Participant:22)

However, increasing knowledge alone was not viewed by participants as a viable stand-alone approach to learning. They felt that this was a potential source of reflection for application to practice, as shown in the following:

...‘learning by increasing my knowledge’, that would apply... there are probably a lot of facts that you have to know as part of your work certainly... that ties in to reflective learning...‘cause it's the understanding that's important’... (Participant:16)

They appeared to view this as accumulating a bank of knowledge that was *learner-centred* and relevant to their professional practice, as opposed to the traditional view of “banking” that is based on the “teacher as expert” model (Brockbank & McGill, 1998; Freire, 1974). Atkinson and Claxton (2000, p. 23) refer to this type of knowledge as “professional knowledge...grounded in real, live contexts”. Participants felt that this knowledge could be drawn on and reflected upon when required for future learning and professional practice:

...you sometimes opportunistically attend courses that you know are going to be useful to you although perhaps not at the time... I do sometimes arrange to go on particular training courses, clinical courses, that I'm going to bank [what I've learned]... it is reflective learning...you reflect when you revisit them [learning materials from courses]. (Participant:26)

Participants, therefore, appeared to articulate an emerging and increasing complexity in their approach to learning. It suggests they had experienced a change

from essentially a surface to a deep approach to learning. They also seemed to be expressing a sense of liberation from the technical-rationality/vocational model that was inherent in their undergraduate pharmacy courses. However, the transition to “non-traditional” ways of learning posed some challenges. Some participants felt that, for a period of time, this challenged their comfort zone:

... when I first started [reflective learning] ... I was completely lost and thinking ‘oh my god’ ... I’ve gone past this, I can do this now ... which is nice. (Participant:17)

This same participant went on to specifically attribute the difficulty and emotional trauma that she had experienced in initially engaging with reflective learning to her being a victim of the “traditional” ways that she had felt subjected to as an undergraduate:

... certainly, as I say, being a victim of the educational system that was ours, I find that, sometimes very difficult to do [referring to deeper levels of learning]. (Participant:17)

#### *Raising standards of professional practice*

Participants also related the use of reflective learning to actual work experiences, rather than just “theoretical learning”. One pointed out that:

... by learning how to reflect with the [prescribing] course this year, I can sit at work now and think ‘how is this going to affect my work situation’ and I’m actually using it, and that’s real life. That isn’t just academic learning, it’s happening ... (Participant:25)

Participants also expressed the view that standards of professional practice could improve as a result of applying non-traditional, reflective learning:

... that it [reflective learning] is a bit deeper ... effectively you’ve moved your [professional] standards higher ... (Participant:29)

They drew a clear distinction between continuing education (CE), and CPD. They viewed CE as an accumulation of as much knowledge as possible within a required amount of hours of learning; as a traditional method of learning within a technical-rationality model. In contrast, they placed CPD in the non-traditional, reflective learning context and generally welcomed the change to the CPD model as being more relevant to professional practice:

... continuing education, and the impetus was more to get up to your required number of hours ... now, with the reflective element of it [CPD], I think there’s far more likelihood that you’ll put what you’ve learned into practice ... (Participant:31)

## Discussion

Participants in this study clearly perceived, and had experience of, two qualitatively different approaches to learning. These parallel the deep and surface approaches that have been much discussed in published literature (particularly Marton & Saljo, 1976a,b). However, previous findings do not appear to have explicitly reported students’ feelings regarding qualitative differences between alternative approaches to learning. Subjects of previous research were not studying on courses that used an explicitly reflective learning method so they perhaps did not have the experience from which to make such a comparison.

In the research reported here, the structured, systematic reflective activity required for the *SP Course* provided the stimulus for this “new” approach to learning. Despite this, it is likely that participants intuitively adopted this approach to learning in their professional practice prior to the course. This was probably achieved in an unstructured and unsystematic way, and was a natural progression in their development as mature, adult learners. In addition, the findings show that learning, initially, was seen as being highly structured and content-based or teacher-centred. It provided a sense of comfort and a mechanism to cope with developing new understandings. Subsequently, as a result of shifting to a reflective strategy, learning evolved into a more complex, personal and deeper experience.

Meyer and Land’s (2003, 2005) notions of *threshold concepts* and *troublesome knowledge* appear to fit this transformation in learning approach that participants underwent. These authors argue that there are “conceptual gateways” or “portals” through which learners move and, as a result, develop an insight into previously inaccessible and “troublesome” ways of thinking about issues. One consequence of this new awareness is a different, more developed way of understanding, interpreting, or viewing a new experience. In the research reported here, this new way of learning was also recognised as a naturally occurring phenomenon related to participants’ roles as health professionals, and the fact that they could exercise choice in their learning at this stage in their life.

It is also likely that the new learning approach had been stimulated by the change of emphasis within pharmacy’s professional body to promote CPD over CE. The former was perceived as being compatible with non-traditional, reflective learning, the latter with the traditional, surface learning approach with which they had been familiar and comfortable as undergraduates and qualified pharmacists before the *SP Course*. Newble, Hejka & Whelan (1990) and Powell (1989) also referred to this surface and deep approach view of learning for CE and CPD respectively in relation to medical practitioners and nurses.



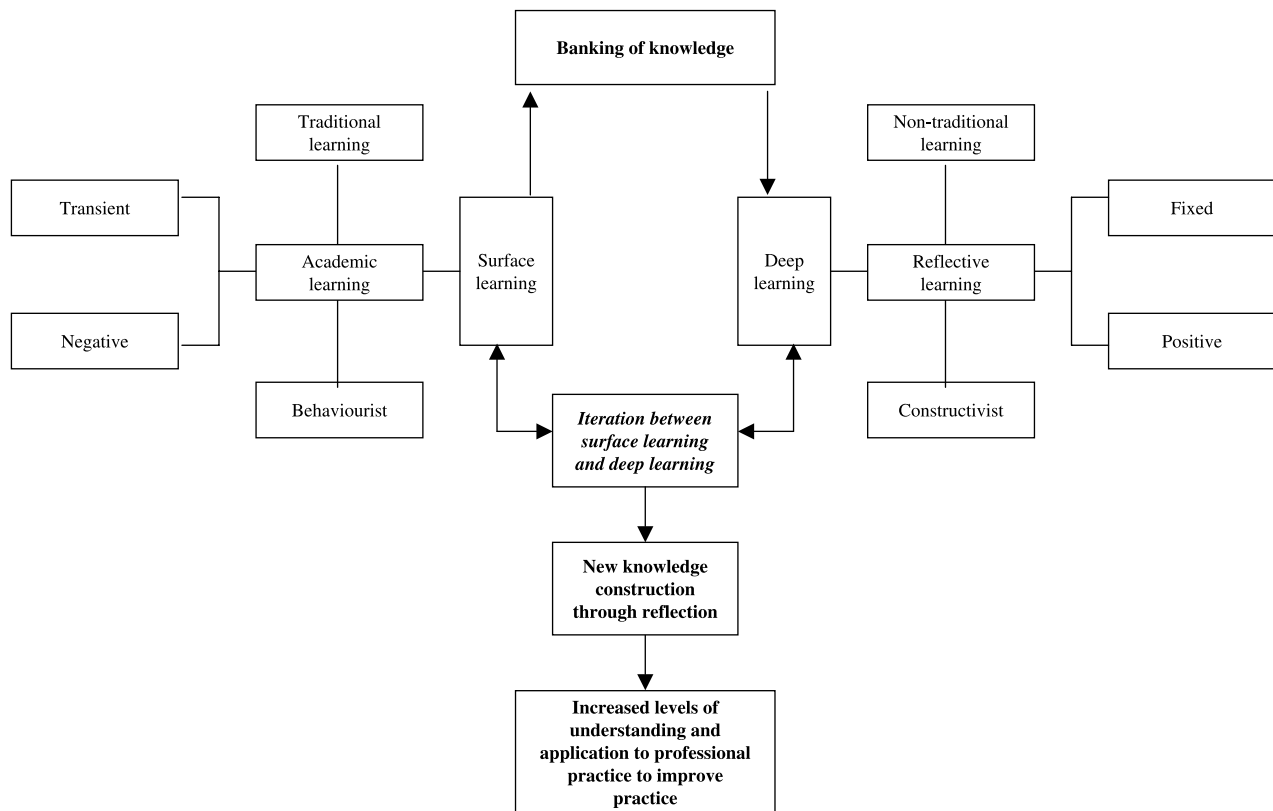


Figure 1. The iterative process between deep and surface levels of learning.

*SP Course* participants also expressed the view that standards of professional practice could improve as a result of applying non-traditional, reflective learning. Dental therapy students and their tutors also expressed this view (Pee, Woodman, Fry, & Davenport, 2000). Schön (2002) implies this in his discourse on knowledge-in-action and reflection-in-action when he argues that the constraints imposed on the "...major professions..." (p. 40) by the technical rationality model can produce "...boredom or 'burn-out'..." (p. 56). Other researchers have reported similar findings for other disciplines such as medicine (Newble et al., 1990) and natural science (Ramsden, 1997).

*SP Course* participants also related the conventional approach to learning with the more traditional elements of their professional practice, such as dispensing medicines. This appeared to encourage a technical-vocational/technical rationality approach to learning and professional practice in this context. It should come as no surprise, therefore, that the move to an engagement with reflective learning caused a number of tensions and dilemmas for the participants in this current research. It challenged participants' identities as scientists deliberately using an evidence-based, "right or wrong" approach in their professional practice. However, by the end of the course, participants appeared to have achieved Schön's quest to:

... place technical problem solving within a broader context of reflective inquiry... and link the art of practice in uncertainty and... [the] scientist's art of research. (Schön, 2002, p. 60)

The ability of pharmacists to successfully adapt to non-traditional ways of learning bears similarity to research findings from Newble et al. (1990). These authors argued that, as a result of undergraduate learning experiences, medical practitioners could become entrenched in employing surface learning until such time as they participated in further postgraduate academic education. However, the transition to a deeper, more meaningful experience can cause some distress among learners, as our study has shown. It also indicates that the dichotomy between surface and deep approaches to learning is not as clear cut as is often portrayed in the literature. In the research reported here, participants were able to synergistically link a surface approach underpinning knowledge accumulation with a deeper reflective learning. They not only articulated their awareness of different approaches to learning, but also felt that each of these different approaches was needed. This depended on the purpose of learning, and in particular, its perceived relevance to professional practice.

One outcome of this research is that the lower levels of learning described in the literature, where the data has been collected principally in relation to undergraduate students, may need to be re-conceptualised. There is evidence here that participants appeared to articulate a step in the reflective process that included “banking” knowledge for future reflection. They felt that knowledge accumulated and banked as a result of surface learning had a place in reflective learning. It could be used as a source of reflection. The term “banking” has previously been used by Freire (1974) but only in the context of an inferior surface approach to learning that was not generally encouraged.

*SP Course* participants’ views in this respect also add strength to the proposition that behaviourist and constructivist orientations to education, that involve knowledge accumulation and reflection respectively, are more compatible than originally thought. This appears to involve a strategic approach to postgraduate level learning that is different from the notion of strategic that has previously been applied to undergraduate student learning (Aggarwal & Bates, 2000). These postgraduate *SP Course* participants adopted a more sophisticated approach to their learning. This involved a “lower” level of learning providing a source or input for higher level, reflective learning. This can be represented in the model shown as Figure 1.

Shown in this way, it demonstrates that lower levels of learning are not discrete. They play an important role in a deeper and more reflective strategy aimed at achieving a higher level of learning for professional practice development. There are similarities in this respect with what Ramsden (1997, p. 210) found in his interviews with science undergraduate students that:

...a deep approach to learning tasks...often demands an initial concentration on details which [are]...hard to separate from a surface approach...[this] descriptive category needs to be redefined...to include this prior stage.

Moon (2004, p. 85) has also referred to this as “...upgrading of learning...”. Rogers (2002, p. 18) provides support for this view with his assertion that “...without new knowledge there can be no critical reflection”. We would add that without reflection there can be no new knowledge construction.

## Conclusion

This paper contributes to an understanding of how postgraduate pharmacy students employ reflective learning in order to develop their own professional understanding and practice.

Participants held the view that there was a strong association between a surface approach to learning, described as “traditional, academic learning”, and

their experiences as learners on undergraduate pharmacy courses and postgraduate courses that they had completed prior to the *SP Course*. On the other hand, they perceived reflective learning as “non-traditional” and analogous to a deep, reflective learning approach. The former is based on a behaviourist and the latter on a constructivist orientation underpinning the epistemology and application of learning. Participants saw a non-traditional, constructivist approach as being a better way of learning and one that could help improve standards of professional practice.

In addition, there is evidence here that knowledge accumulated and “banked” as a result of surface learning has an important role to play in deeper and more meaningful reflective learning.

The findings show that learning is more complex and sophisticated in relation to postgraduate professional practitioners when compared with undergraduate learning reported in the published literature. We suggest, therefore, the need to re-conceptualise how students use reflective learning to develop new knowledge and understanding, and professional practice, through the iteration between deep and surface learning. Future research could explore this further with pharmacy graduates who will have studied on undergraduate courses where reflective learning is a requirement within the overall learning and teaching strategies.

Finally, no attempt is made to claim that this case study is representative of the wider population of supplementary prescribing courses or pharmacists, or indeed other health professionals, undertaking a professional development programme. However, the case study approach supports analytical generalisation or logical inference as opposed to statistical generalisation or enumerative inference (Tripp, 1985). Educationists in the UK and internationally, who are working with pharmacists or other health professionals on postgraduate courses that employ similar learning strategies, are likely to recognise the views reported here. Therefore we would argue that this particular example contributes to the development of an understanding of postgraduate learning in a wider context.

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