Portfolio based learning as a tool for insider practitioner research:
Developing professional knowledge

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Abstract

Portfolio Based Learning has been introduced at the Northern School of Anaesthesia, Newcastle upon Tyne in September 2000. This involves the trainees in a process of selecting and evaluating materials relating to their training as they go through the Portfolio Development Process (PDP). It is the proposition of the authors that PDP may serve to answer questions raised by the literature about 'learning from reflection' and 'developing professional knowledge'. It is proposed that writing down reflection on experiences in the form of a portfolio may help in learning from experiences and documenting that learning. It is further proposed that sharing of such portfolios prepared by individual professionals among the community of practitioners may help generate a debate on individual findings and learning from each other's experiences, leading to development of professional knowledge.

The main purpose of the research is to understand the types of learning occurring through the process of developing a portfolio. Since the portfolio has been introduced to assist in learning and assessment of SpRs, the focus of research is also to understand its feasibility and problems in its implementation.

Background

Evaluating the effectiveness of portfolio based learning at Northern Schools of Anaesthesia

Portfolio Based Learning has been introduced at the Northern Schools of Anaesthesia, Newcastle upon Tyne in September 2000. This involves the trainees in a process of selection and evaluation of materials relating to their training as they go through the Portfolio Development Process (PDP). It is the proposition of the authors that PDP may serve to answer questions raised by the literature about 'learning from reflection' and 'developing professional knowledge'. As a preliminary to any evaluation it has been necessary to develop the habit of using portfolios in the learners. It has therefore been decided to introduce the portfolio at the stage of work based education for training medically qualified anaesthetists. This educational programme lasts for five years and caters for Postgraduate students (known as Specialist Registrars or SpRs). They learn in the course of real work under supervision by consultant anaesthetists. They are advised to prepare individual portfolios based on reflection about their experiences. A template is used that requires them not only to record their experience and training but also to evaluate both their performance and their learning. The template repeatedly prompts the trainee to such written reflection. They are free to share their portfolio with their peers and supervisors.

The main purpose of the research is to understand the process of compiling and using PDP. Since this has not been done before, the focus of the research is also its feasibility and the problems in its implementation.

The research methodology involves questionnaires about their beliefs on assessment and learning as well as focused interviews about PDP and documentary analysis of their portfolios.

Questionnaires from 50 SpRs have been received, while 30 SpRs have been...
interviewed about PDP. Analysis of the data received and further data collection is going on. This paper does not report on the results of the ongoing research but discusses the theories on which it is based.

**Rationale**

“…..The knowledge development potential of practitioners is under explored…….Much of their knowledge creation is particularistic, transferred from one case to another only by associative or interpretative generalisations. Further reflection and discussions can enhance the knowledge derived from case experience and organise it in ways that encourage its further development. But there is no tradition of engaging in such behaviour in most professional work contexts; and knowledge development receives little attention in an action-oriented environment. Moreover, communication between practitioners is such that only a small proportion of the newly created knowledge gets diffused or disseminated. Thus there is no cumulative development of knowledge over time: the wheel is reinvented many times over.” Erat (1994, page 56)

The concerns shown by Erat have their roots in debate about the nature of practical knowledge (in comparison to theoretical knowledge), which is created and used by professionals during day to day practice. This debate dates back to the days of Aristotle (quoted by Grundy, 1987). However, there has been an intermittent lull and flip in this debate. Philosophers and academics at different points of time have highlighted that practical knowledge is created during practice and reflection on experience is important aspect of the learning process according to Rousseau in 18th century (quoted by Bloom, 1991), Dewey (1933).

More recent debate has focused on developing practical knowledge, This debate is triggered by Polanyi (1967) and is carried forward by Argyris and Schon (1974), Kolb (1975), Boud et al (1985), Schon (1983, 1987), Erat (1994), and Fish and Coles (1998). It goes beyond accepting the importance and existence of practical knowledge and learning from experience. This debate has drawn attention from an educational point of view since it has focused on techniques and methods of making use of experiential knowledge. In addition to accepting the use of this knowledge for improving the practice of the individual, this debate also makes a case for sharing this knowledge among professionals for improving practice.

In summary, the research cited above makes the following key points:

(i) Practical knowledge is different from theoretical knowledge and is needed for expert performance. Acquisition of this type of knowledge leads to ‘professional artistry’, which is different from ‘technical rationality’ (Polanyi, 1967; Schon, 1983).

(ii) This type of knowledge can be gained only by experience (Dreyfus and Dreyfus, 1986; Kolb, 1975).

Accepting the above points leads us to two related questions, of direct educational value. Each is dealt with in the next section.

1. **What is the educational mechanism by which professionals can learn effectively from their experiences?**

Schon (1983,1987) has addressed this issue in great detail and, according to him, learning can be made more effective by reflecting on experience. His argument is in agreement with Dreyfus and Dreyfus (1986) and accepts that experts take most decisions based on their intuition, derived from their experiences. However, he argues further that the process of reflection is a conscious process and leads to conscious intuition. Hence according to him, reflection can be helpful in making intuition explicit.

However, Ecclestone (1996) warns that reflection in professional learning has become something of a mantra, and should be a means and not an end in itself. She draws on the work of Carr (1985, 1995) and argues that reflection can be technical, practical, critical or emancipatory. Nevertheless, she is apprehensive that in many development programmes for professionals, reflection is limited to technical enquiry. Argyris and Schon (1974) raise another type of apprehension, namely that reflection can be ‘single loop type’ i.e. justifying one’s own actions instead of the ‘double loop type’, in which the professional questions his/her goals and assumptions on which his/her decisions are based. These concerns raise the question of whether there is a way to improve the quality of reflection.
Two possible remedies have been offered:

a) Argyis and Schon (1974) have suggested that sharing reflection with others can avoid the problem of ‘single loop reflection’ and can make it a ‘double loop reflection’. Implementing this suggestion requires some mechanism for sharing the reflection, either orally or in writing. Oral discussion may be time efficient if reflection is to be shared between two persons, but if it is to be shared widely, then it must be written down.

b) Since writing is not just a mechanical phenomenon, the process of writing itself may help in improving reflection. Walker (1985) has recognised the need for writing reflection and argues that:

- Writing promotes objectivity about the experience. It happens because writing requires dissociating from the experience and thinking about it from a distance. It helps in distinguishing between what happened and the learner's interpretation of what has happened.

- Use of writing in the learning situation helps learners recognise and take account of affective aspects of the learning process.

- The process of writing can create in the person a dynamic, in which the person’s existing knowledge is held in a more fluid state so that whatever new knowledge comes in, it can be more easily integrated with the existing knowledge. However, before this integration, a creative interaction between existing knowledge and new knowledge takes place which leads to insight and self-development. This prevents the situation arising where new knowledge lies on top of old knowledge, without integration taking place.

- Writing helps document learning from experience and hence it makes it possible to review learning from different experiences at a later date and aids to the development of an overall perception.

- It facilitates interaction between learners. It develops the ability to express their learning and views in words. It is very important since this ability is essential for any fruitful deliberation amongst the professionals about their experiences.

The above discussion therefore suggests that the process of writing down reflections about experiences, and sharing those written reflections with others, helps to improve the quality of reflection and avoids single loop reflection. The conclusion to be drawn from this discussion is that for professionals to learn effectively, even from their own experience, writing down their reflections on experience may prove useful.

The process of preparing a portfolio is one way to encourage learners to write down reflection on their selected experiences. It is therefore assumed that this process, and obtaining feedback on it with peers and seniors voluntarily, can work as an effective technique for learning from experience for the individual professional.

2. How can reflection by individuals on their experiences be used for improving professional practice?

Fish and Coles (1998) have conducted research to understand the effectiveness of reflection on experience in improving professional practice. In their research, they asked six colleagues to write down reflection on their practice. They analysed these reflections and showed that they revealed the dilemmas faced by practitioners and how practitioners have used rules of thumb and values to take decisions in situations where interests of different clients, institutes and themselves clash. They supported their findings by reference to the work of Reid (1978), which is based on Schwab (1970), and argued that the art of making professional judgements involves deliberations. These deliberations must weigh alternatives and their costs and consequences against one another and choose not the right alternative, for there is no such thing, but the best one. They concluded that:

"Writing down of the experiences and reflecting upon them has given the professionals significant insight into themselves, their practice and their
profession: for them experience took a new meaning, they begin to recognise that true expertise lay in that part of their practice which until then had been hidden from view." Fish and Cole (op cit, p 305)

Based on these findings, they argued that professional decisions required something more than technical rationality and there is a need for making hidden parts of their practice explicit. A 'technical rationality' view of professional practice assumes that professional decisions are based only on some precise scientific rules, which can be applied exactly without any consideration of the context of the problem and values of the professional. Their argument is in agreement with Schon (ibid) that, in addition to technical rationality, professional artistry is required by professionals to improve their own practice.

Research by Fish and Coles (ibid) has also shown that sharing written reflection on self-performance helps in learning from each other's experiences. This in turn may help in improving professional practice. They express their observations on written reflections by their colleagues as:

"This is because they describe the artistry of their practice in consciously shaped narrative which acknowledges its complexity. This means that the power of their writing conveys more than what appears on the surface of the words used, and eloquently reveals some of their deeper (tacit), unrecognised levels of personal theories (beliefs, assumptions and values) that lie under their practice. And this in turn enables the reader who looks with critical appreciation to see something more than the writers themselves can articulate. Where the work focuses on the most inflamable elements, professional judgement (which is often at once fleetingly made and yet based upon profound moral issues), critical appreciation, which senses the more subtle of nuances, is uniquely equipped to attend what is being said and therefore to learn from it." Fish and Coles (ibid, p256)

This concept of learning from experiences of others brings us back to the issue of context, since this is the reason for which theoretical knowledge has been criticised. Eraut (op cit, p43) has argued:

"Another difficulty, ..........., is that theoretical ideas usually cannot be applied 'off the shelf': their implications have to be worked out and thought through. .......Thus the functional relevance of a piece of theoretical knowledge depends less on its presumed validity than on the ability and willingness of people to use it. This is mainly determined by the individual professional and their work contexts, but is also affected by the way in which the knowledge is introduced and linked to their ongoing professional concerns."

Similarly, a question may be raised about the utility of practical knowledge. How can practical knowledge created by one professional be useful for other professionals, working in different contexts? Fish and Coles (op cit) have suggested that writing down reflections by professionals is akin to writing a case study which can be used by others. This is an important observation since a case study approach has been already accepted as a method of research, even in the case of theoretical knowledge (Yin, 1989).

Golby (1993) has argued that a case study should not be seen as a portrayal of uniqueness; rather it should be considered as a description and study of particularity.

His argument about using case studies can be summarised in following points:

(i) A case study involves practical rather than philosophical enquiry.

(ii) It is a grave error to portray a case study as uniqueness. If a case or incident is truly unique, it would be impossible to see where it lies in relation to other observations, and thus it will be impossible to make sense of it.

(iii) It should be seen as a particular manifestation of a general case, and both its individual nature, as well as its generic nature, should be discussed.

(iv) In understanding a specific case, it is necessary to see and relate it in some way to a wider context. This involves a need to be aware of a specific context (historical, professional, political, cultural and social).

Fish and Coles (op cit) have emphasised that the expertise of professional lies in having a body of knowledge and accessing that knowledge in relation to a particular case; whilst writing down reflections in the
form of case study involves relating the experience to wider traditions. So, according to the above discussion, the iterative process of selecting appropriate knowledge, applying it, reflecting upon the outcomes and relating the reflection in writing to the existing body of knowledge, is a kind of research. This process is termed as 'insider practitioner research' by Fish and Coles (ibid).

Erut (1994, page 44) has also highlighted for need of this type of research. His views on this issue can be summarised in the following four points:

(i) The effectiveness of most professionals is largely dependent on the knowledge and 'know-how' they bring to each individual problem.

(ii) Much of this knowledge comes from experience with previous cases, so its use involves a process of generalisation. Some idea, procedure or action that was used in a previous situation is considered to be applicable to a new one.

(iii) One possible way to develop the knowledge base of a profession may be to study this generalisation process; to make it more explicit so that it can be criticised and refined, and to give close attention to specifying the conditions under which any given practical principle or generalisation is held to apply.

(iv) Such systematisation of practical knowledge is neither part of the practitioner's role nor a popular academic pursuit and its feasibility may therefore be open to question.

The above discussion shows that there is a general consensus about Erut's first two points. But with regard to point number (iii), the answer is given by Erut himself as point number (iv) namely that neither practitioners nor academics are giving enough attention to the study of the generalisation process adopted by professionals.

**The Portfolio Development Process as a tool for advancing professional knowledge**

We propose that the sharing of a portfolio by professionals within the community may work as part of a solution to the problem identified by Erut. We suggest that PDP, which has been hitherto considered as an educational tool for self-assessment and self-development, may also be considered as a tool for developing professional knowledge. This may address point number (iii) above.

However, this will require the active promotion of a portfolio-based approach and its institutionalisation. This is one of the considerations for introducing portfolio-based learning at the Northern Schools of Anaesthesia. This is again in line with the spirit of the model for developing of professional knowledge proposed by Erut (op cit, P57). In this model, he suggests the need for close collaboration between higher educational institutions and professional communities for the joint responsibility of knowledge creation. He proposes measures such as joint research projects, continuing education and mid career education programmes and problem-oriented seminars. But the authors of this paper propose that the PDP may be more relevant in comparison to these measures: we discuss these ideas next.

**Relevance of the 'Portfolio Development Process' (PDP) for 'Insider Practitioner Research'**

The PDP involves a similar approach to "insider practitioner research" and can be expected to be of similar value. It has the following special features, which are relevant:

(i) It caters for experiences in day-to-day practice

Fish and Coles (1998, p309) propose that examples of insider practitioner research include critical incident analysis, video recording of practice, and case studies. Its scope is the individual practitioner's world, and its purpose is to understand the knowledge and personal theory that underpins one's practice, and, through this, to improve it. It is worth mentioning that the content of the portfolio is same as suggested for insider practitioner research i.e. critical incident analysis and case studies. It is our understanding that measures suggested by Erut (op. cit.) may lead to interaction and integration of theorectical knowledge and practical knowledge but may not lead to development of practical knowledge per se. We propose that a portfolio is more suitable
for this purpose. This claim has yet to be proved. As Getner (1993) argues,

“Portfolio based assessment accords with one of the key principles of adult learning i.e. the importance of drawing on students’ lived experiences and providing opportunities for independence, self direction and personal control of learning. Further portfolio assessment is grounded in practice, it is more authentically related to the complexity of real life. By being ‘situated’ or ‘contextualised’ in this way it more accurately measures leadership behaviours and activities that take place in actual setting.”

This comment about portfolio-based assessment is related to students’ work based learning and assessment of that learning, but it is easy to appreciate that this concept can be extended to the development of professional practice.

(ii) It does not require expertise in research

Insider practitioner research does not require professionals to be expert in research itself. Fish and Coles (op cit) have suggested that it requires professionals to bring only their expertise to the research, because this is the focus of the insider research process. It means that narration of experience and reflection on that experience can happen without formal research techniques. Portfolio permits writing down the details of selected experiences and reflection on them without using any formal or prescribed way of analysing and writing. It also does not necessarily require professionals to link their ideas and experiences with the existing body of knowledge. Its strength is in its informality. What is more important is making explicit dilemmas faced, rules of thumb and values used to find answer to those dilemmas. It is more valuable if the professionals can give an account of what went in their mind and how it went while solving the problems faced by them during their practice, i.e. if they could explain the meta-cognition process.

(iii) The leadership rests with the practitioners

“Insider practitioner research is conducted by practitioners themselves, and primarily serves the interest of the practitioners in developing his/her practice.” Fish and Coles (op cit, p310).

This requirement means that the practitioner should be the leader of the research in his/her own capacity, and s/he must be free to choose the course of the research.

Getner (op cit) argued that

“Through the process of building a portfolio, the student operates as the active agent of the process, not the receiver, as a participant in the process, rather than an object of such a process. Lodging responsibility for the selection and evaluation of worth of such evidence with the student places ownership of the development of professional judgement and expertise with the learner.”

This statement is in the context of the work-based learning of students, where there is great concern that the learning process in most cases is teacher/trainer centered and not student/trainee centered. It is similar to the concerns raised about conventional research that it fails to take account of all aspects of real life situations and hence knowledge created by such research cannot be applied as it is in practice. Insider practitioner research and recording, and reporting of that research in the form of a portfolio, may pass some leadership of the research to the practitioners.

(iv) It provides flexibility of time and content

In comparison to conventional research methods, insider practitioner research does not require any planned research pursuit. It requires merely dealing with some new type of problem or some more complex problem in a more conscious way and to write down the reflection on these experiences for future use. It requires compiling reflections on the experiences of solving the problems, as and when they present themselves. It is then up to the practitioner to choose the relevant experiences and arrange them in an order, which may form a long case study or a group of similar but short case studies. This is important, since most practitioners are already so hard pressed that it is difficult to expect them to devote time for formal systematic research. However, it may be convenient and enjoyable for them to just write down their reflection whenever they have to deal with a new or complex situation.

We hope that this flexibility of time and content will suit most professionals and may motivate them to pursue this type of
research. The most commonly cited definition of the portfolio is that "Portfolio is a collection of reflection on selected experiences".

It seems from this definition of the portfolio that it may serve the purpose of insider practitioner research.

Fish and Coles (op cit) have suggested that time devoted in formal continuing education, which is provided mainly in the form of short term and long term mid-career programmes, may not be as effective in terms of improving the practice. They draw on the work of Davis et al., (1995) and suggest that it will be more useful if time devoted on formal continuing education is diverted to insider practitioner research i.e. writing down reflection on experiences and sharing them within the community.

Proposed Model for developing a 'Body of Practical Knowledge'

Based on above argument, we propose a model for developing a "body of practical knowledge", (Figure 2). (Figure 1 depicts the existing model for developing individual practical knowledge.) However, this model needs to be tested and proved. This model is self-explanatory; the salient features of it are:

(i) It assumes that a body of theoretical knowledge already exists which is being updated by theoretical systematic research.

(ii) It recognises that a body of professional knowledge has an extra dimension and that is a body of practical knowledge. However, there is a need for a mechanism to develop a body of practical knowledge.

(iii) It assumes that, normally, practical knowledge is developed individually by professionals, by learning from reflections on experiences. These reflections can be conscious (explicit) or sub-conscious (implicit).

(iv) It proposes that professionals should write down their reflections on experiences and should try to make more explicit the dilemmas faced by them, and the rules of thumb and values used to find solutions to those dilemmas.

(v) Such reflections should be shared within the community of professionals and should generate a lively debate based on different reflections of different professionals about experiences of solving similar problems.

(vi) Conclusions from these debates should be used for generalising and systematising practical knowledge. However, this generalising and systematising should not ignore context and should have a rich description of the context to which this generalised and systematised practical knowledge applies.

(vii) The 'body of practical knowledge' so developed, and the existing 'body of theoretical knowledge', will interact with each other. This interaction will lead to development of a 'body of professional knowledge'.

As suggested earlier, the first step for establishing this model will be to promote the habit of preparing and discussing a portfolio amongst professionals.

Conclusions

Literature about 'learning from experience' and 'developing professional knowledge' suggest that PDP may help in the process of developing the individual professional as an expert. In addition to this, we suggest that, if individual portfolios are shared within a community of practice, and if a debate is generated about individual experiences, then this can lead to developing a body of practical knowledge. This, along with the similar concept of insider practitioner research, which is proposed by Fish and Coles (op cit), can work as a model for developing this practical knowledge. However, there is a need to verify these claims by conducting in-depth research in this area. Introducing PDP at Northern Schools of Anaesthesia, along with research to evaluate its effectiveness, are steps in that direction.

References


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Note: This paper reflects research in progress and should not be cited or quoted without prior discussion with the authors.
FIGURE 1: EXISTING MODEL FOR DEVELOPING PRACTICAL KNOWLEDGE INDIVIDUALLY

- Theoretical Systematic Research
- Selecting appropriate knowledge based on context of problem
- Applying the selected knowledge to solve the problem
- Reflection on the experience
- Explicit and Implicit Practical Knowledge Possessed by Individual Professional
- Body of Theoretical Knowledge
FIGURE 2: PROPOSED MODEL FOR DEVELOPING A ‘BODY OF PRACTICAL KNOWLEDGE’