



M253 Resource Sheet

Reflective practice

1 Overview

The purpose of this Resource Sheet is to get you started on the process of reflection. Learning takes place most effectively in situations where the learning experience is consciously revisited and reviewed, so that the lessons learned can be used to improve our future performance.

2 Learning from experience

Much modern educational theory focuses on the idea that knowledge is most effectively gained from experience, and suggests that acquisition of knowledge comes from 'learning by doing', in some relevant (and possibly pre-planned) context. We frequently encounter phrases like 'experiential learning', and educationalists have spent much time and effort considering ways in which suitable experience can be provided from which students can learn. That experience may take the form of the planned provision of relevant 'real' experience or the provision of 'contrived' experience of a nature thought to be valuable, such as the activities you are undertaking on this course. In general, students are encouraged to look, habitually, for the learning that is available to them from *any* experience that they undergo.

There have been many attempts to devise models of learning from experience, and it is generally agreed that mere exposure to the experience is insufficient to provide an effective learning situation. Indeed it has been suggested that the old saying 'I do and I understand' is more likely to be replaced by the statement 'I do and I am even more confused'. There is another old saying that 'some people gain ten year's experience in ten years, others just gain one year's experience ten times'. In order to learn from experience we have to engage in a process of thinking about what happened, and that is where 'reflective practice' comes into its own.

3 What is reflective practice?

A good place to start answering this question is to consider Kolb's experiential learning cycle, which has four major phases.

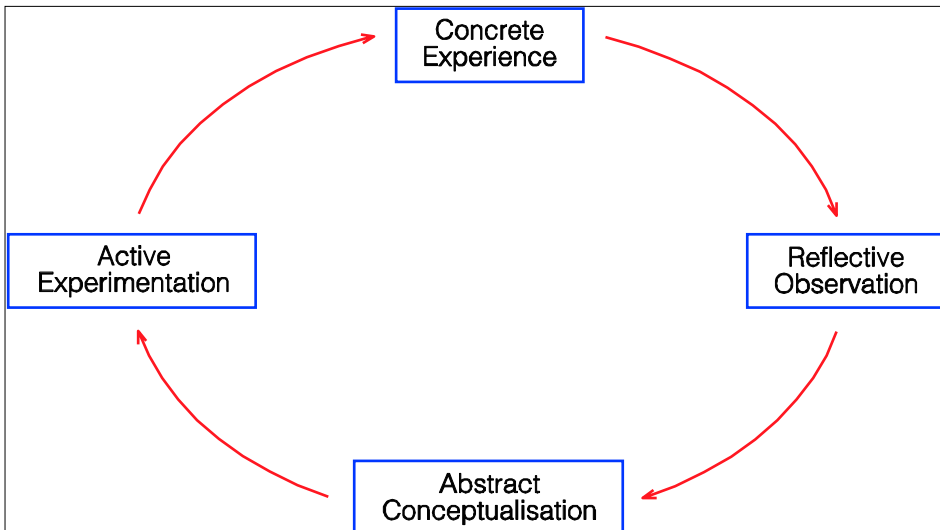


Figure 1 The experiential learning cycle (after Kolb 1984)

You start with an experience – which may be selected or constructed, and for which you may have been given, in advance, some idea of the purpose of the experience.

You (replay and) interrogate that experience for meaning – and reflect on questions such as ‘why did a particular reaction occur?’

You abstract and generalise from the experience and generate a hypothesis about the meaning of what took place.

You test this hypothesis in new situations in order to confirm or negate the generalisation.

Then off you go again on a new cycle...

The idea of reflective practice is not new. It dates back at least to the work of the American educational philosopher John Dewey in the 1930s, when he was writing papers with titles like ‘How we think’ (Dewey 1933a) and ‘Why reflective thinking must be an educational aim’ (Dewey 1933b). Dewey’s distinction between ‘routine action’ and ‘reflective action’ has become a much more mainstream concept in the last few decades. Three major approaches can be identified in the current debate on the nature of reflective practice.

Firstly, we have the idea of the experiential application of received theory – trying things out and observing whether what happens is what you would expect to happen (Cruikshank 1987).

Secondly, we have the idea of knowledge-in-action – of making knowledge explicit through observation and reflection. This separates the concepts of ‘reflection-in-action’ (thinking about it at the time) and ‘reflection-on-action’ (thinking about it later, setting aside time to think about it), with a Kolb-like cycle of Appreciation, Action, Re-Appreciation, and Further Action (Schön 1987).

Finally, we have the idea of reflection as critical enquiry in a more generic sense. This is based on questioning not just what happens but also the aims, values and purposes (goals) of the activity being undertaken and the potential effects on the environment (which includes people), rather than just taking an instrumental approach of thinking about doing things competently, effectively and efficiently (Zeichner 1994).

We might take the following as a good working definition of what we understand to be the nature of reflective practice:

‘practical enquiry undertaken for the purposes of understanding and improving one’s professional practice...focusing on issues of immediate relevance in order to develop practical solutions and enhance understanding of personally significant problems...entailing active, persistent and careful consideration of knowledge or belief in the light of the grounds that support it and the consequences to which it leads.’

Bleach (1999)

4 What is the value of reflective practice?

One question that perhaps needs answering at this point is: why do people think that reflective practice is a good thing to encourage? The simple answer is that reflection is what allows us to learn from our experiences. It is an assessment of where we have been, and of where we want to go next. It is the vehicle that enables us to move towards a state in which we are continually improving our performance and at the same time deepening our understanding of that performance. It is an activity that should lead to greater confidence both in our ability to perform and also in our justification for what we do when we perform, as implied by the following quotation:

'[teachers who study teaching deliberately and become students of teaching] can develop lifelong assurance that they will know what they are doing, why they are doing it and what will happen as a result of what they do. Foremost they can learn to behave according to reason. To lack reason is to be a slave to chance, irrationality, self-interest and superstition.'

Cruikshank (1987)

In discussing the idea of reflective practice in the context of software engineering, two authors have recently stated:

'The working assumption is that by guiding professional people to rethink and re-examine their professional creations during and after the accomplishment of the creative process they will improve their professional proficiency and performance.'

Hazzan and Tomakyo (2003)

Hazzan and Tomakyo indicate that there are two major factors requiring reflection as a habit of mind in software engineering. Firstly, there is the issue of coping with complexity, and secondly, of coping with (communicating with) colleagues. There is an implication of the need to improve both our awareness of our own mental processes, and also our awareness of the mental processes of others.

One of the ways that Schön explains all this is to point out that we all know more than we can say. We exhibit the 'more' that we know in what we do and in the way in which we do it. This is what he means by 'knowledge-in-action'. Our capacity to respond to surprise through on the spot improvisation is what he means by 'reflection-in-action':

'It involves a surprise, a response to surprise by thought turning back on itself, thinking what we're doing as we do it, setting the problem of the situation anew, conducting an action experiment on the spot by which we seek to solve the new problems we've set, an experiment in which we test both our new way of seeing the situation, and also try to change that situation for the better... I ask myself, 'What is it that I'm really doing when I do this?' And I find I'm asking myself a surprising question: I don't know the answer to it. In order to get the answer I have to actually think about what I do, and observe myself doing it.'

Schön (1987)

And so the final stage is 'reflection-on-action', where we take the opportunity to stand back from the activity we have been engaged in and attempt to answer this question in an explicit way. We 'learn by doing', but only if we can verbalize and systematize our experience in such a way that it enables us to do things better in future because we have developed a deeper understanding about what we are capable of doing.

If we consider the matrix of awareness / competence indicated by the table in Figure 2, then we want to use our experience to move us towards the right-hand side of the table, and preferably to the bottom right-hand corner.

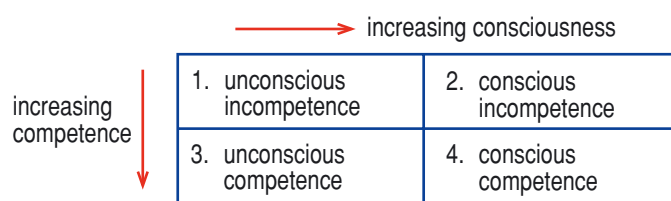


Figure 2 States of awareness

We need to know more about what we cannot do, as well as more about what we can do, with the ultimate target being to move into a state where we are both competent and aware. There is a need for us to develop of what could be described as meta-cognition, an awareness of our own mental processes, and the ability to reflect on them, which is essential to effective learning.

5 The reflective process itself

Reflection implies purposeful thinking, not just vaguely musing on events. It is useful to impose a time line on our reflection and to think of it as an ongoing process of reflection before action, reflection during action, and reflection after action. We need to take some time thinking in advance about such questions as why we are undertaking a given activity, what assumptions we are making about the skills needed to undertake the activity, how we intend to carry it out, what we hope to get out of it, and how much time and resources we expect to have to devote to it. During the activity there is perhaps less chance of conscious reflection, but as we proceed we may find that our subconscious is active in parallel and that useful ideas occur to us as a result of what actually happens, which we had not thought of in advance of undertaking the activity. After the event we have the opportunity to ask ourselves such questions as whether the products of the activity are of an acceptable quality, what went well and why, what did not go well and why, what did not go as expected and why, how well the time and resources needed for the activity corresponded to our predictions, and what we would do differently if we had to repeat the activity.

6 The need for evidence

Successful reflection is based on the collection, analysis and presentation of evidence, and any conclusions need to be based on both qualitative and quantitative data – you need to refer to the facts to back up your feelings and to justify your conclusions.

Given the need for evidence to answer many of the questions posed in the previous section, this is where your project log comes into play. All your deliberations and observations need to be collected and recorded in a form that will allow us to revisit them at a later date. What you need to record is more than just the bare facts of what happened, or what you decided. You need to record who was involved and what the circumstances were, what issues or concerns you had about undertaking the activity, and why you eventually decided on a particular action. You also need to note your intentions and your emotions at the time of undertaking the activity, since they are usually distorted if you try to recall them some time after the events to which they relate.

When you have specific questions to answer which relate to the activities you have undertaken you then have a wealth of accumulated data with which to answer those questions. You need to *select* relevant evidence and *incorporate* it into your evaluation of what you produced, how you produced it, and how you interacted with any other people involved. From your evaluation you then need to record what you have learned from the experience that might be valuable when engaging in future activities.

7 Learning from our mistakes

Oscar Wilde is reputed to have said that experience is the name we give to our mistakes. You should not be afraid to get involved in activities where you might make mistakes – provided that you are working in a way that allows you to learn from them. It

is often the case that you are able to learn more from things that go wrong than from things that go right first time. This is because when things go well you rarely think about why this was the case, you just move straight on to the next task on your list. When things do not go according to plan, you are forced to think about what went wrong and why. If you can identify the causes of, and even see patterns emerging from, your common mistakes then, hopefully, you can document this new knowledge and use it to inform and improve your future performance.

Analysis of an extended series of articles entitled 'My Biggest Mistake' (Hodges 1996), in which successful people looked back on major problems that they had encountered, indicated four major reasons for failure. Firstly, many people did not set clear goals, or they had too many competing priorities. Secondly – and this was by far the biggest category – people did not handle the information available to them adequately. They tended to ignore information that did not fit their suspicions or their preconceptions. Thirdly, people tended to act on impulse rather than thinking before they undertook an activity. Finally, people failed to observe what they were doing carefully enough, in the sense that they did not check whether what they thought happened actually did happen.

8 Specific issues of reflection arising from group work

One question that might have occurred to you is whether working in a group or a team introduces any new issues when it comes to reflective practice. One answer, given by David Jaques, an author specialising in the analysis of group behaviour, is the following:

'If you haven't got problems in your group then something is wrong! ... A productive group is one that realizes there will be process problems and is willing to evaluate its progress in managing these problems effectively.'

Jaques (2000)

He also indicates that:

'Evaluation presents an opportunity not merely to gauge the quality of group work but [also] to give individuals the chance to reflect on their own behaviour in groups.'

Jaques (2000)

Jaques suggests that, when evaluating the success of group working, you need to answer questions such as the following.

- How is the group working out for you?
- What about your own part in it?
- Is there anything about the way you are in the group that you would like to change?
- What kind of things are you learning about groups?
- Is there anything about the group that you would like to change? How might you do that?
- How effectively are you learning?
- What seems to be getting in the way and how could you deal with that?
- What did you like best about it?
- What did you like least about it?
- What sort of things, apart from content, do you believe you have learnt from it?
- How would you describe the climate of the group?

- How would you describe this group, as distinct from any other group you have experienced?
- How would you change the handling / the work of the group next time round?
- What else stood out for you?
- Putting all this together, what do you plan to do, by when and how?

He also stresses the need to avoid the temptation to concentrate the evaluation on a critique of the course and to concentrate on the success (or otherwise) of the group itself, in terms of things such as the following.

- The behaviour of individual students (dominant, passive/lurker, etc)
- The roles adopted by individual students (leader, organiser, initiator /stimulator, reconciler, clarifier, consensus-taker, etc)
- The commitment of individual students
- The length and frequency of each member's contribution
- An assessment of harmonious (cooperative) or discordant (conflicting) behaviour
- The rules adopted / observed by the group

This is by no means intended as a complete list of the issues about which you might ask yourself in relation to working with others on a common task, but it should provide you with enough to get started.

9 Reflection on reflection

In the longer term you may want to look back over a series of related activities and to consider how well the process of reflection itself is assisting you in improving your skills, improving the quality of the processes that you are undertaking, and improving the quality of the products you are developing. This takes the whole process of reflection up the meta-reflection level, to reflection on the way you carry out your reflective activity. If you have developed an organised, systematic, and well-documented approach to your reflective activities then you should be able to stand back and look for ways in which the process itself can be improved. Questions like when you do it, and where you do it, as well as how you do it might be worth considering in this context. Ultimately, the aim is to find the structure and method of reflection that is most effective and efficient for each of you as individuals, and also for all of you as a team.

10 Summary

We all need to learn not just to act professionally, but also to think professionally, to move from mere competence to self-awareness, to reflect on your aims and values, to reflect and act self-critically, and to do this in a wider perspective that also takes ethical issues into consideration, especially in a situation where we are working with other people and making personal judgments on them as well as on ourselves.

In this Resource Sheet we have introduced you to some of the reasons why we think that reflective practice is an important skill to develop, and have given you some ideas about how you should proceed in developing it.

11 Further resources

You might like to read a 1996 interview with Schön, about bringing reflection into the software design process. It is available online at:

<http://hci.stanford.edu/bds/9-schon.html>

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