
Improving learning through reflection – part one

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Summary

Drawing on research into student learning this article provides a rationale for the introduction of reflection into programmes of learning in higher education. Reflection might be seen as both an approach and method for improving the quality and depth of student learning. Reflection is a way of thinking about learning and helping individual learners to understand what, how and why they learn. It is about developing the capacity to make judgments and evaluating where learning might take you. The following pages explore these issues and offer definitions, examples and links to websites and projects where reflection is currently being used.

Keywords

Reflection, learning, assessment, evaluation, judgment, self- and peer-assessment, portfolios, motivation, metacognitive.

Biography

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Karen's principal research interests are assessment, student learning and quality enhancement. She is currently working half-time on a [research project](#) looking at the perceptions and practice of law teaching, and is external advisor to a research project at the University of Gloucestershire looking at the implications of the introduction of personal development profiles for staff development.

Prior to joining UKCLE Karen worked as assistant project manager on an FDTL project exploring the use of self- and peer-assessment in higher education. She has undertaken consultancy work for the [Bar Council](#) and is a member of the [Institute for Learning and Teaching in Higher Education](#) (ILTHe).

Back to the future

Research into student learning has taught us a lot about learning styles, motivation and approaches to learning. It has also added empirical weight to what our instincts tell us, namely, that we learn by doing. We learn by experience and by trial and error. We have the potential to learn from our mistakes. In Western culture phrases such as 'that'll teach you' or 'you'll learn' are common reprimands when experience shows us the error of our ways. Yet we talk about these conditions for learning as if the experience leads directly to improved ability or understanding. However, what gets us from experience to understanding is reflection. True, repetition and practice help us to learn but they do not substitute for the process of actively thinking about how we did, what we did well and what less well. With the aid of a simple prompt question such as 'what might I do better next time?' or 'what could I do differently?' we have the potential to

draw on the past and present and direct ourselves into a better future. It is this power to effect change that makes reflective practice so fundamental to higher education and to the creation of lifelong learners.

A few definitions

What do we mean by reflection in an educational sense? Phil Race (2002) maintains:

'The act of reflecting is one which causes us to make sense of what we've learned, why we learned it, and how that particular increment of learning took place. Moreover, reflection is about linking one increment of learning to the wider perspective of learning - heading towards seeing the bigger picture.'

(<http://www.escalate.ac.uk/exchange/Reflection>)

Reflection helps raise our awareness of ourselves as learners and to see that we can direct and change our learning. Biggs takes this one step further and points out: 'A reflection in a mirror is an exact replica of what is in front of it. Reflection in professional practice, however, gives back not what it is, but what might be, an improvement on the original.' (Biggs, 1999). In other words reflection is not simply about acknowledging who we are and what went wrong but who we might become. It is a transformational process.

A favourite interpretation of mine comes from Guy Claxton who has suggested that, 'Learning to learn, or the development of learning power, is getting better at knowing when, how and what to do when you don't know what to do' (Claxton, 1999). It is about unpacking, understanding, constructing a response to a situation or problem. Reflection is also about developing, building upon, and in some cases, changing existing behaviour and practice.

Reflective practice, the term most commonly used in formal educational settings, can be seen as both a structure to aid critical thinking and improve existing understanding and a method for promoting autonomous and deep learning through enquiry.

Reflection as a structure for learning

We might think of learning as a network of co-existing ideas (Moon, 1999a). Learners construct their own meaning about situations drawing on both their cognitive skills (reasoning, knowledge) and metacognitive skills (intuition, self-awareness). When something new is experienced the learner recollects prior knowledge and tries to make a connection into the existing cognitive or metacognitive network of ideas. In other words we make the new piece of the jigsaw 'fit' into the existing picture that we have. Whether a perfect fit is possible depends on the existing 'pieces' of knowledge and the learner's ability to let the 'piece' float until connections can be made. The process of reflection provides a structure for these connections and enables us to distinguish between important 'cornerstones' of learning, prominent features and background 'sky' in a way that forms a meaningful and perhaps unique picture.

Laurillard (1993) draws a distinction between mediated learning (aided by a teacher) and non-mediated learning (experiential). Reflection can help to supplement mediated learning by helping the individual to make connections between the theory and constructs they have learnt formally. If we take driving a car as an example, the driver becomes more accomplished if she can make a connection between the learning theory and highway code mediated by the driving instructor and the process of changing gear, steering and road awareness. Reflection can also enhance un-mediated learning by providing a structure and framework by which the individual can 'unpack' an experience and consider the implications of what has happened. Extending the analogy we see that car insurance claim forms require drivers to reflect supplying prompt questions such as 'how could the accident have been avoided?' In this and many other learning events, we might not always like what we find when we reflect, since blame often rests with our own lack of judgement (eg the accident could have been avoided by noting the distance between my car and the one I reversed into). The structure of reflection helps us to deconstruct an experience and find an explanation for what happened.

Structures in the form of prompt questions help students to reflect and to make sense of their understanding. Students on the Certificate in Management Studies programme at the Gloucestershire Business School, University of Gloucestershire have to complete a personal development journal. Three simple questions prompt students to reflect: (1) Description of event/experience (2) How it made me feel/how I responded to the event or the experience (3) How I might respond to a similar event in the future/what I would do differently? (<http://www.glos.ac.uk/uogabout/content.asp?rid=1>)

These are very similar to the kinds of questions used by a number of personal development schemes (see the LTSN Generic Centre website for more details: <http://www.ltsn.ac.uk/genericcentre/index.asp?id=16911>). Morgan and Saxon (1991) claim that questions used in learning logs can generally be summarised into four types: those that develop supposition and hypothesis, those that develop personal feelings, those that focus on future action or projection and those that aim to develop critical assessment or value judgements. In developing questions many academic staff draw on the model of experiential learning developed thorough the work of Dewey, Kolb and Boud. (For further information on learning theory see <http://www.infed.org/biblio/b-reflect.htm>).

The experiential model follows four basic stages:

1. Taking stock of existing knowledge (What do I know?)
2. Identifying the gaps in learning (What do I need to know?)
3. Feedback and evaluation (How does what I now know contribute to what I already knew?)
4. Evaluation of the integration of new knowledge into existing knowledge (How well and how much do I now understand?)

As a structure reflection provides scaffolding for the individual to make sense of experience and make connections. It clearly has a role in helping individuals think more critically about how they learn. This next section explores how this takes place.

Reflection as a method for developing deep learning

Reflection is a way of maximising deep learning and minimising surface approaches. As Moon neatly highlights the very language involved in reflection correlates with a deep approach. 'In its use of words and phrases such as 'relating ideas', 'looking for patterns', 'checking' and 'examining cautiously and critically', it implies the involvement of reflective activity in the process of learning.' (Moon, 1999a)

As one undergraduate student described to me:

'The process of thinking and preparing for the learning logs was helpful. Having to think about your motives for doing things and to think it over in your mind about what went on and why. It helped me to clarify things more and expand on what I'd done'. (Hinett, 1997)

Perry (1970), Biggs and Collis (1982), and Bloom (1956) have all offered hierarchical taxonomies of learning. Jennifer Moon in her 'map of learning' identifies five stages; noticing, making sense, making meaning, working with meaning and transformative learning. The ultimate stages of each of these taxonomies involve multiple interpretations, constructions, evaluations and importantly, reflection. As the student quotation implies, thinking about what, why and how learning took place helps to clarify and make sense of what has been learned and locate it within an individual framework.

The structure of questioning forces learners to be self-sufficient and to rely on their own investigative powers. Reflection transforms what may have appeared to be acceptable situations into problems requiring further investigation by demanding a resolution to conflict or an answer to a question. In this way learners move beyond the passive assimilation of mediated knowledge and into the realm of enquiry and complex situations. In his much-cited work Kolb (1984) refers to these problematic areas as the 'swamps' of professional practice in which learners have to cope with unique and uncertain situations.

Reflection also aids deep learning by promoting independent thought. The fact that in many education settings learners are required to provide evidence of their reflection, either through a learning journal, personal development portfolio, or video, means that students have to focus their thoughts and articulate either verbally or in written form the results of their reflection. Expressing reflection means finding a 'voice' by which to express thoughts and inevitably this increases confidence and self-awareness in ability. Reflection aids not only deep learning of particular subject matter but also the development and utilisation of a bank of skills.

The following statements from students are typical of those who have been involved in reflection:

'I think it's very useful. It certainly helped me in the first weeks when I had no confidence and I didn't know what I was doing. Writing it all down gave me confidence in what I was doing.'

'You usually concentrate on the negative things and you don't think about the positive things. The learning logs force you to reflect on what you've done.'
(Hinett, 1997).

Seeing progress charted on paper also increases motivation to continue the learning journey towards a successful and personally satisfactory conclusion. Alverno College in the USA (http://www.alverno.edu/about/ability_curriculum.html) operates a system of assessment-as-learning. Students are constantly engaged in self- and peer-assessment and accept that making judgments about their own work is part of college education. During interview one final-year student told me:

'I like the self-assessment because I can reflect back and know I should study more in this area. If I can't answer my own self-assessment that means I wasn't really focussing on the question and that's something I have to learn on and strengthen.'

Another more bluntly said: *'It's painful, but it works and I learn more.'*
(Hinett, 1995)

The benefits of reflection and associated techniques such as self- and peer-assessment speak for themselves. Students develop interpersonal skills, improve confidence and sustain motivation for their studies by monitoring and taking responsibility for their own development.

Providing evidence of reflection and skill development

Pedagogic research has done much to persuade us of the value of teaching methods that support deep learning. In the context of a government commitment to lifelong learning, this enthusiasm for independent learning emerges as a licence to include reflective practice within the higher education curriculum. 'Key', 'transferable' and 'core' skills feature in policy papers and semantics aside, all these terms refer to the development of independent self-aware people who can respond to the complexities of contemporary society. The Skills Plus project (<http://www.open.ac.uk/vqportal/Skills-Plus/home.htm>) has identified subject understanding, social practices (skills), efficacy beliefs and self-theories and metacognition (reflection) as being central to the concept of employability. Knight (2002) argues that the concept of transferable skills is misleading since transfer requires what he calls 'meta-cognitive fluency'. In other words, individuals need to be aware of how and why they learn before they can apply learning to different contexts. In this sense reflection acts as a personal interpreter of experiences, filtering out what is relevant and what is not and making connections with existing beliefs and knowledge. Perry's work back in 1970 highlighted different types of students: those who actively seek cues about how to be successful in learning and those who are oblivious to such aids (what Perry in those days termed the 'cue-deaf'). Extrapolating from those findings it is possible that there are students who, consciously or otherwise, ignore the benefits of reflection and rely on surface approaches to learning.

Resilience, resourcefulness and reflection, says Guy Claxton, are the three key conditions for lifelong learning (Claxton, 1999). Add to this melting pot motivation, intuition and creativity and perhaps we are close to imagining the richness of personal achievement?

Performance-based learning

In performance-based subjects such as dance and music, reflection is a key component of the artistry. It forms part of the repertoire of skills that the individual learner draws upon in order to improve performance. Self and peer review are fundamental to the development and refinement of a piece of music or fashion collection. Structured reflection enables students to learn from their performance, building on the best elements and eliminating those that don't fit into the piece as a whole. Inherent in the idea of performance is the concept of development and re-working to produce a coherent whole.

Writing in the form of learning journals and reflective logs is often used as a way of capturing reflection and thought but another way is through oral critique. Videotapes can be useful prompts for reflection, offering those involved a permanent record of a performance. The advantage of a visual prompt is that strengths, weaknesses, tactics and relationships between actors and players can be viewed and reviewed at leisure and used to make comparisons with later performances. Often in academic settings work is presented as a set of distinct assessable parts, making it difficult to demonstrate development over time. The emphasis on learning outcomes means that theoretical constructs often take precedence over action. By contrast, a reflective curriculum respects knowledge, application and understanding seasoned with a healthy acknowledgement of the affective, emotional impact on learning.

Jayne Stevens, a National Teaching Fellowship Scheme winner in 2000, has helped to develop the Performance Reflective Practice Project (REP) (<http://www.hum.dmu.ac.uk/Research/PA/ReP/index.shtml>). The project explores issues of creativity and investigates how reflection can be used to effect in performance-based subjects.

Professional practice

Professional practitioners such as lawyers, medics, dentists, social workers and architects have a particular interest in the use of reflection as a way of developing professional conduct. Speaking about the discipline of law Macfarlane suggests:

'A reflective model encourages the development of both cognitive and affective theories of moral and ethical behaviour, challenging students to integrate these into their personal belief systems as a result of their experiences instead of (at best) passively absorbing the 'rules' of professional conduct.' (Macfarlane, 1998)

Learning about professional conduct and working with clients in different situations requires a particular flexibility of mind and range of responses. In his seminal work Schön (1983) refers to the uncertainty, uniqueness and conflict inherent in professional practice. He claims that if you are dealing with a unique situation in which the boundaries are likely to change it is not possible to apply standard categories of analysis and action. There is a need for alternative

strategies with which to cope with the situation. This is where Schön's now infamous terminology 'swamps' and 'high ground' come into operation as he explains that certain fixed situations can be approached by applying technical knowledge and skill. This is the high ground. By contrast, the unique and changing situation of a case or a client's requirements is 'swampy'. By this he refers to the 'messy', subjective process of thinking about what you know and attempting to find solutions to problems. He speaks of 'reflection-in-action', which may be interpreted as a body of personal knowledge that is implicit in your 'feel' for the subject. Reflection involves tacit knowledge, 'gut' instinct, and 'guild' knowledge about what is valued in a particular discipline. An example of this might be the way a student approaches an oral presentation for the first time. Ideally the student will have researched the content, planned a structure using visual aids and paid attention to the timing. This is the framework of the presentation. However, once performing the good student will draw on a personal bank of knowledge to supplement the argument. She or he will also tap into feelings about how well she or he is performing and perhaps deviate from the prepared script to illustrate a point. This reflection takes place during the action itself. It requires an awareness of context and the ability to evaluate progress during the course of the action. It is what we colloquially call 'thinking on your feet.'

The reflective, affective learner

Reflection is about more than cognitive skills such as 'how?' and 'when?', it also deals with the 'why?' Students need to make sense of and appreciate beliefs, values, understandings and perceptions. In considering what it is that we know and what we don't know, we are likely to face inevitable doubts and feelings of inadequacy. Admitting that we don't know something is embarrassing, particularly in front of peers, but it is necessary that we attend to these feelings in order to move on. The 'affective domain' as it is commonly termed:

'...involves the study of emotions: how they are expressed, how they are learned, how they are experienced consciously and unconsciously, how they influence and are influenced by behaviour, how they relate to other vital human characteristics, such as intelligence, language, reason and morality' (Price, 1998).

Emotion is important to learning because it affects motivation and our ability to understand what we experience. Learning requires an appreciation of how you learn best and what Goleman (1996) refers to as emotional intelligence. This is learned and shared behaviour and is a combination of personal and social skills.

As Schön (1983) points out, reflection involves tacit, intuitive thinking: 'we exhibit it by the competent behaviour we carry out but we are unable to describe what it is that we do.' This is not because our vocabulary is lacking or because semantics make precise articulation difficult but because the discourse of intuition and 'gut feeling' has more to do with emotion and feeling than with cognition. Undergraduate courses include cognitive and skill based elements but rarely do they comprise a meta-cognitive, that is, affective element. Eraut (1994) maintains that we should break down evidence of capability into three areas:

- Knowledge and understanding of concepts, theories, facts, rules and procedures which underpin current practice
- The personal skills and qualities required for a professional approach to the conduct of one's work;
- The cognitive processes which constitute professional thinking

It is the personal skills that we often forget. Similarly Kolb (1984) argues that in constructing programmes consideration should be given to content objectives, learning-style objectives and growth and creativity objectives. Emotions and feelings are often downplayed in educational settings. A brief analysis of programmes of law reveals that growth and creativity objectives are often compromised at the expense of content. Questions such as 'how much?' and 'what does the student know about x?' guide programme design.

Boud and Walker (1998) argue that 'it is common for reflection to be treated as if it were an intellectual exercise - a simple matter of thinking rigorously. However, reflection is not solely a cognitive process: emotions are central to all learning.'

Helping students to acknowledge and make use of their intuition and tap into their emotional responses is at the heart of reflective practice. Claxton (1999) refers to intuition as a 'loose knit family' of 'ways of knowing' which are less articulate and explicit than normal reasoning and discourse. Encouraging students to articulate their feelings about learning helps them to come to terms with strengths and weaknesses.

Reflective journals are one way of introducing students to the idea of reflection on practice and making their intuition explicit. Many law schools employ this approach both as a formative tool and form of assessment. At the University of Central England students have the opportunity to undertake a voluntary placement working at a law firm in the US. Students are expected to conduct themselves as professional lawyers. Their experience is captured as a reflective diary which forms part of the assessment for the unit. One student reflected on his development of communication skills whilst on placement:

'I had some advocacy experience on the course; however, this is still different from court advocacy, representing real people on issues that were still very new to me. This reinforced the need for adaptability in court, allowing me to think on my feet. There is no comparison between the mock courtroom where you are fighting for a good grade and a county court where you are fighting for someone's life.' (Placement journal from a second-year LLB student, UCE, Birmingham).

Clearly the experience is beneficial to students and they learn that the law is a complex subject steeped not only in principles and case law but also in the lives and experiences of real people. One of the big challenges in supporting experiential and problem-based learning is how to tap into students' different learning styles and self-image. Whether students are studying law as an academic subject or training for practice, extending their repertoire of experiences means they have more opportunity to utilise their knowledge, experience and affective capacities.

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