Reflection in Workplace Learning:
A Literature Review

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Definition of Reflection
Although the concept of reflection as an intellectual activity has been recognised since ancient times, John Dewey is commonly credited as being its key originator. Dewey (1933 p 104) saw reflection to be a particular form of problem solving, which could be used to resolve particular issues. Dewey distinguished reflection from more general thinking, by suggesting reflective thought was underpinned by evidence. Reflective thinking, rather than being a random chain of thoughts, relied upon each thought carefully relating to its predecessor and successor. He saw reflection as a deliberative process, that can profoundly influence one’s experiences.

Since Dewey, many authors have proposed varying definitions of reflection, which represent differing conceptions of the term itself (Moon, 1999). Hatton and Smith (1995) suggest that four key issues inform our understanding of the term reflection. They refer to the extent to which reflection is related to action; the time frame within which reflection occurs (immediately or delayed); whether reflection is problem centred; and the extent to which reflection accounts for contextual beliefs and values. This leads to a definition of reflection as “deliberate thinking about action with a view to its improvement” (p40). In this project, which specifically looks at how students reflect upon professional experience, the definition provided by Hatton and Smith of might be appropriate although it suggests a narrow definition, related to a desire for continuous improvement. Nevertheless Boud and colleagues’ definition of “those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations” (Boud et al., 1985 p 19) may also be appropriate suggesting reflection will result in a wider intellectual development.

Purpose of Reflection
Students, particularly in the fields of teacher education and the health sciences are commonly encouraged to reflect on their experiences, particularly during periods of practical experience. As a result a wide body of literature has been developed on the subject of reflective practice in these areas, with writers arguing that reflection facilitates the linking of theory and practice, and encourages critical evaluation (Bain et al., 1999; Calderhead, 1988). It provides the link between an experience and learning from that experience (Blackwell et al., 2001), providing meaning to something that is personal and subjective (Platzer et al., 1997 p 104). Much of the literature focuses on how the reflective capacity of students can be developed, some of which will be reviewed later. There appears however to be rather less literature, that provides evidence that by encouraging students to reflect, improves their resultant actions. To some extent this remains an
assumption, albeit one that us underpinned by a number of seminal pieces of literature.

Schön (1983) argues that reflection is a key element of professional thinking, suggesting that this is how professionals deal with complex and often ambiguous problems. Rather than attempt to apply some readily available theory or procedure to a situation, he argues that professionals use more intuitive processes which he refers to as Reflection on Action, and Reflection in Action. Both suggest that reflection is closely bound with action, but the latter suggests reflecting on something whilst doing it, rather than at some subsequent period in time. Hatton and Smith (1995) suggest that it is this Reflection in Action that is the ultimate goal for the development of reflective capacity in students (P46).

For Kolb (1984), reflection represents a key element of his development of Lewin’s experiential learning cycle. He suggests that students reflect upon a concrete experience that they have undertaken. They then use this reflection to draw conclusions and further conceptualise what they have experienced, which they can feed into further concrete experience though experimentation. Again reflection is closely bound up with action, and Kolb claims that the pursuit of this cycle leads to new learning. Moon (1999) provides a more sophisticated cyclical model based around how meaningful learning is assimilated and subsequently accommodated into what Ausubel and Robinson refer to as the cognitive structure. This implies the network of ‘facts, concepts, propositions, theories and raw perceptual data that the learner has available to him at any point in time’ (Ausubel and Robinson, 1969; cited in Moon, 1999 p 108).

As the cognitive structure accommodates new material, students are able to progress to further levels of learning and cognitive challenge. Moon argues that by reflecting, students are able to ‘upgrade’ their learning to even higher levels after the original time of learning (Moon, 1999 p 147).

Whilst for many, encouraging reflection might be considered to be a means to develop students as more competent practitioners, some would argue that the development of reflective skills might be considered to be an ends in itself (LaBoskey, 1993; McIntyre, 1993). More negatively, Betts (2004) argues that in many cases reflective practice can have no greater implication than providing a form of personal therapy for an individual, or as a means to encourage conformity to a corporate norm.

Categorising Reflection

Whilst the previous section suggests that reflection is likely to lead to some direct or indirect educational benefit, how students approach reflection, and the level of reflection achieved can vary between students and contexts. A number of approaches have been taken into how we might categorise the different types of reflection. Van-Manen (1977) developed a hierarchical classification of three types of reflection. At the lowest level (technical), reflection would simply be an evaluation of efficacy of an action; the second level (practical) would see reflection on the goals and assumptions that underpin a particular action, whilst the highest level (critical reflection) would attempt to relate, and question the activity as part of its wider social, political and ethical context (Hatton and Smith, 1995). It represents questioning the goals, values and assumptions that guide a professional’s work.

Betts (2004) highlights a similar high level of emancipatory, possibly rebellious reflection which she describes as ‘standing on the picket line’. Hatton and Smith (1995) develop Van-Manen’s hierarchy further into 4 levels ranging from a non-reflective Descriptive Writing, through basic Descriptive Reflection, a more analytical Dialogic Reflection and finally to Critical Reflection, which in a similar way to Van Manen accounts for multiple contextual perspectives. In some respects Van Manen’s classification, and those that follow confuse the focus of reflection, that is the issue or event that students reflect upon, with the level of reflection, in terms of the level of cognitive...
sophistication (LaBoskey, 1993; Valli, 1993). LaBoskey (1993) argued that the focus and level of reflection represent two separate dimensions. These dimensions have been further developed by Bain et al. (1999) who have provided a taxonomy by which reflective work can be analysed. They suggest 5 levels of reflection, ranging from reporting, through responding, relating, reasoning and reconstructing. They also suggest 4 different foci of reflection specific to teaching, which might be generalised to focussing on the activity being undertaken, the self, professional issues and the context in which the activity takes place.

Kember (1999) has developed a scale, derived from the work of Mezirow on transformative learning. The scale represents a typology by which passages of reflective writing can be categorised. It differentiates between non-reflective activities, reflection on process, reflection on content and a high level premise reflection, later referred to as critical reflection (Kember et al., 2000), which leads to a transformation in perspective. Whilst laudable, Kember recognises that this transformative learning is rarely evidenced in students work, partly because they find it difficult to recognise whether a transformative shift has occurred.

Such taxonomies might be useful both as aids to research, and also as a means by which students work can be assessed. Nevertheless, Sumsion and Fleet (1996) question the reliability of attempting to evaluate student work in this way, particularly in terms of consistency across multiple assessors. Kember (1999) suggests that reliability can be improved by ensuring a degree of clarity in the criteria for assessment.

**Encouraging Reflection**

In addition to content and focus of reflection, Laboskey (1993) argues that the context within which reflection takes place with the provision of ‘structural aids to reflection’ impact upon the quality and outcomes of the reflective act. This is supported by other studies that suggest that some form of intervention is required to support a level of reflection that goes beyond the basic level of description (Smith et al., 2007; Bain et al., 1999; Samuels and Betts, 2007). Nevertheless, this may need to be something more than simply asking students to complete a piece of reflective writing (Bean and Stevens, 2002). It may also be necessary for different strategies may be required for those new to reflection and those who need to take reflection to higher levels (LaBoskey, 1993; Samuels and Betts, 2007). Bean and Stevens (2002) suggest a need to provide a ‘scaffolding’ in terms of both cognitive and emotional support. This might include the selection of activities to undertake, providing hints and prompts to encourage deeper reflection and providing feedback on their reflection to ensure motivation is maintained. Samuels and Betts (2007) argue that engaging in dialogue has the potential to promote deeper levels of reflection, which might take place orally or in the form of feedback on journal writing.

For the purpose of this research, the assumption is made that students engaged on workplace experience within Built Environment subjects will be situated remotely from their academic institutions. This reduces the opportunities to engage in certain dialogic and group reflection sessions. The emphasis is likely to be on written techniques such as logs, diaries, journals and portfolios. Techniques such as E-Learning, and short courses do provide opportunities to enhance these written reflections and to allow the sharing of practice. Those wishing to integrate reflective practice into their curriculum need to consider the tasks that students are required to undertake, and the support that tutors are able to provide.

**Determining the tasks to encourage reflection**

Providing students with a blank sheet of paper and expecting them to write something reflective is unlikely to prove successful, particularly for a novice student (Cox, 2005; Moon, 1999; Walker, 1985). Some form of prompt or question format
may help students to reflect, or to enable students
to reflect at a higher level. The nature of these
prompts is likely to vary from discipline to
discipline, but models have been created that
might help to develop these prompts. Boud,
Keogh and Walker (Boud et al., 1985) present a
cyclical model which starts with students
recording an event that had happened (returning
to an experience). They then record their
thoughts, feelings and emotions related to that
event – both negative and positive. The final stage
requires students to re-evaluate that experience, a
complex process where students can make
connections between their experience, thoughts
and feelings and to prior knowledge. They
recommend the use of concept or mind maps,
brainstorming, writing and drawing as a way to
achieve this. Moon (1999 pp 198-202) also
provides a series of ‘creativity’ exercises to assist
students in writing in a reflective manner.
Johns (1994) provides a five stage model which
can also be used to derive prompts for reflection.
His model was written primarily to assist with
guided supervision in nursing, but has been revised
by Cox (2005) to cover more generic issues. See
Figure 1. The model suggests that student should
commence by returning to the experience. They
then reflect, using a series of prompts highlighting
why they did what they did and the implications of
what they did. The model then goes on to look at
the factors that influenced their actions, both
internally and externally. Finally the model
prompts students to think about what they have
learned.

Critical Incident Analysis (Tripp, 1993) can
provide a further framework for reflection by
which students focus upon a significant moment
for their reflection; the benefit of this approach is
that it is difficult to concentrate on all experiences
so it is preferable to concentrate on a small
number. Within the field of teacher education
Hamlin (2004) describes a project in which

![Figure 1 Cox's version of John's model of structured reflection (Cox, 2005 p 464)](image-url)
students used a series of prompts supplied within George Posner’s Field Experience: A Guide to Reflective Teaching. Students are asked to list a sequence of events that they experienced or observed. They are then asked to highlight and describe one or two significant events and then analyse the events using a series of prompts.

- Why did it happen?
- What was my role?
- What beliefs did my actions reflect?
- Did my actions reflect beliefs and assumptions about which I was not aware?
- Did the consequences of my actions raise doubts or reinforce my beliefs?
- How should I act in the future on the basis of what happened?


Through the analysis of critical incidents, Hamlin’s students were able to move beyond merely describing what they observed to a deeper level investigation of the social implications of educational practices. Similarly Griffin (2003) found that writing critical incidents significantly improved student’s levels of reflection. Nevertheless identifying what might be considered to be a critical incident might be problematic, as some students feel that the events they have experienced are ‘too small, insignificant and routine’ (Cox, 2005, p. 470).

A further technique sometimes used in proprietary E-Portfolio systems is a facility where students can self-assess their skill levels, perhaps using a recognised list of discipline or employability skills. They can then attach documentation and evidence to support that self-assessment and suggest ways in which these skills might be developed (Maddocks and Wright, 2004).

One assumption made by many of these models is that the students participate actively an event. In reality learning may occur though casual social interaction, or through being a passive observer (Eraut et al., 2000). As a result the prompts highlighted may not be appropriate. Furthermore, many of these prompts are based around a model of personal improvement and development, closely focussed on the incident being described. Many of the high levels of reflection identified earlier also require students to question the goals, values and assumptions that guide the professional’s work, which requires a broader, more holistic perspective. A similar issue can arise when practitioners stick rigidly to the cue questions, and fail to see the broader perspective of their experience, suggesting a need for some third party discussion around the students reflection (Johns, 1994; Boud and Walker, 1998).

The question also arises as to when students are expected to reflect, and how frequently. Walker (1985) for instance suggests setting aside time for reflection on a weekly basis. He also advocates the revisiting of revisit reflections after a period of time, allowing students to update those reflections.

Supporting students in reflection

In order to encourage high levels of reflection it may not be sufficient to rely on students completing a learning journal, diary, log or e-portfolio, even when questions have been written to encourage reflection. Intervention by other individuals may be necessary to steer the direction of thought, or to ensure that misconceptions do not occur. John’s (1994) for instance argues that reflection should always be coached or supervised. Cox (2005) highlights the importance of one to one debriefing, which can be used to draw out reflections from a student. Pearson and Smith (1985) outline a number of debriefing techniques that include group workshops. Boud et al (1985) suggest that some form of cathartic discussion is needed in order to deal with negative thoughts that arise as a result of reflection.

Students engaging in workplace experience may not necessarily have the necessary skills to be able to reflect at a sufficiently high level. Furthermore students may arrive at a learning situation with a variety of attitudes towards personal development, some with a willingness to engage in reflection, and others who believe that reflection
is not a necessary part of their development. LaBoskey (1993) for instance recognised that her students fell into two distinct types, the Alert Novice, who is willing to reflect, and learn from their reflection, and the Common Sense Thinker, who bases actions on what they see to be common sense, rather than by reflecting on the implications of that action. Some learners may have a learning style that predisposes them towards reflection (Kolb, 1984) so different approaches may be required with different students. (Moon, 1999 p 174) argues that reflection should not be perceived by the students to be a new or different skill, rather than it should become part of the learning process. She suggests arranging classroom activities which encourage reflection on the students own learning skills and abilities as part of their general learning. She also suggests techniques such as peer and self assessment help to facilitate reflective abilities. Presumably these could happen prior to period of workplace experience. Walker (1985) provides a set of guidelines, based upon his own experience which can be of assistance when introducing reflection to novice students.

The remote location of students from the university, clearly presents difficulties in providing suitable tutor input. Furthermore, the provision of coaching and supervision requires a level of staff input that may be unsustainable. There is however some evidence to suggest that using self and peer assessment may be an acceptable alternative. For instance Bain et al (1999) found that students who received tutor guidance showed similar qualities of reflection to those engaging in self assessment. Samuels & Betts (2007) found that the implementation of a self-assessment tool helped to improve the quality of reflection in students. Peer assessment was also valued by students. This concurs with Hatton and Smith’s (1995) findings that those who based writing on dialogue with a critical friend demonstrated a higher level of reflection.

E-Portfolios as a means to encourage reflection

A further way to encourage students to reflect on their experience is to ask them to compile a portfolio related to their experience. This portfolio could contain a variety of pieces of work and information which might represent evidence that some degree of learning has occurred. A portfolio is typically developed over time and hence can tell a story of an individual’s development (Barrett, 2007). A portfolio however is more than just a collection of evidence, as it is commonly expected that some degree of reflection will be present in its contents (Butler, 2006; Rees, 2005). Smith and Tillema (2003) argue that it is the process of constructing the portfolio, rather than the final product itself where the actual learning takes place.

An E-Portfolio is essentially the same as a portfolio, except that its contents are kept electronically, rather than in paper format. They are commonly maintained on-line, via the internet, or saved on some form of removable media such as a CD-ROM. The electronic version of the portfolio presents some additional features not possible with paper-based systems such as the CECE E-Portfolio’s in the workplace project
ability to archive content, to make hyperlinks between items and to allow collaboration and sharing between students (Barrett, 2007). The main principal differences between a traditional portfolio and an e-portfolio are in terms of practicality, rather than pedagogic benefit (Butler, 2006) although the practical benefits may allow the tutor to provide a more interactive framework, which can encourage reflection.

Although encouraging reflection is considered to be one purpose for the completion of portfolios, they can also be used to demonstrate an individual’s credentials or competencies for professional accreditation or as a ‘showcase’ in order to obtain employment (Zeichner and Wray, 2001; Barrett, 2007). Orland-Barak (2005) rewords this distinction as between a product and process portfolio, a product portfolio being a documentation of evidence to demonstrate learning, with a process portfolio being about the documentation of learning processes. A further distinction is between whether completing the portfolio is a mandatory requirement or some thing that can be completed voluntarily (Smith and Tillema, 2003). Smith and Tillema (2003) identify 4 types of portfolio that result from these distinctions:

A dossier portfolio, provides a mandatory record of achievement, or evidence in order to demonstrate particular professional standards, for example in order to gain entry into a profession.

A training portfolio is a mandatory collection of evidence collected during a course of study to demonstrate the knowledge, skills and competences gained.

A reflective portfolio is a personally constructed portfolio demonstrating growth and development. The emphasis is on self appraisal, and the commentary and reflection on any evidence is considered to be the focus, rather than the collection of evidence itself.

A personal development portfolio is a reflective account of development over a period of time, and is used for refining and structuring ones future development.

Smith and Tillema’s categorisation sees the mandating of a portfolio as a key element, suggesting that outputs will differ if a portfolio is constructed voluntarily. In its nomenclature, it also suggests that mandatory portfolios are not reflective. For instance reflection may occur in a training portfolio, provided that it has been set up appropriately. Their model also pays little attention to the nature of the student, and their willingness to reflect for instance as described by (LaBoskey, 1993) where those students classified as ‘Alert Novices’ who are pre-disposed to reflection, may generate a more positive output to a mandated portfolio, than the ‘Common Sense Thinker’ who are less willing to reflect. Zeicher and Wray (2001) make the distinction between whether individual pieces of content are mandated, or left to the compiler to determine. Again it is possible that some students may need additional structure to help them to reflect, whilst others require more freedom. Orland Barak (2005) argues that the type of portfolio does not necessarily impact upon the level of reflection. In her studies, she found that a more important aspect was to encourage student collaboration in compiling a portfolio.

A further issue to emerge from the literature is whether there is sufficient trust in what is written in a portfolio (Smith and Tillema, 2003; Barrett, 2007) and whether it is possible to authenticate the contents. This is a particular issue, when the goal of the portfolio is about demonstrating levels of competence.

A potential difficulty arises when a portfolio attempts to achieve more than one purpose. For instance a portfolio which is designed to help students in their personal development, by encouraging reflection, may not necessarily be an ideal vehicle to demonstrate credentials to a future employer (Butler, 2006; Zeichner and Wray, 2001). Not only is it important to have a clarity of purpose for a portfolio but there also needs to be clarity about how portfolios are
assessed: Barrett (2007) contrasts portfolios that are used for the assessment of learning (in other words the evidence contained within the portfolio forms the basis of assessment) and portfolios that are used to support assessment for learning. In the latter emphasis is upon formative assessment, to assist students in further personal development, rather than to provide an assessment grade. This concurs with the research by Bain and colleagues (2002) on the feedback given to students. There is also concern that when students know that their portfolios they will be less open in terms of their reflection (Walker, 1985), but at the same time, assessment provides a motivating factor, and if work was not assessed, students may not engage with the portfolio (Biggs, 2003)

Butler (2006) has conducted an extensive review of literature on Portfolios and E-Portfolios. They conclude with a summary of those conditions required for successful portfolio implementation. "To be successful users of electronic portfolios, students need to understand the reasons for constructing a portfolio, be given clear guidelines, and have access to an electronic portfolio system that is easy to use and gives them as much flexibility or as much structure as they require. They also need the support of their lecturers. Academic staff need to be committed to the portfolio process, and willing to give students regular and useful feedback on their work and reflections" (Butler, 2006 p 19)

References
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