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Designing for reflection in online courses

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Abstract: Reflection can be described as both an individually-mediated and a socially-mediated process. In this paper we describe an online unit in a Graduate Certificate of Online Learning that has been designed to enhance the opportunities for students to reflect on their learning. Rather than being promoted as a learning strategy to supplement the unit curriculum, reflection has been integrated fully within the course design. Students are encouraged to reflect as they complete their chosen project (reflection-in-action) and in a more sustained and extended manner (reflection-on-action) as they write up their experiences in an article of publishable quality. The technology and tools that facilitate reflection are described, and issues raised in the unit are discussed.

Keywords: reflection, online learning, curriculum design

The renewed interest in reflection

Reflection is one aspect of higher education which is gaining increased attention in recent years, after almost disappearing from consideration for many years under the influence of learning models based on behaviourism (von Wright, 1992). Similarly, the view that reflection is a social process has also re-emerged, after being considered principally a quiet, individual and solitary activity over the last decades. Dewey (1916) described reflection not as a passive individual pursuit, but as an active, dynamic process which profoundly influences one's experiences:

> The material of thinking is not thoughts, but actions, facts, events, and the relations of things. In other words, to think effectively one must have had, or now have experiences which will furnish … resources for coping with the difficulty at hand (pp. 156-157).

In this paper, we describe a course unit in a *Graduate Certificate in Online Learning* that has been deliberately designed to incorporate reflection as the central element of unit design, not simply as a recommended learning strategy.Hatton and Smith (1995) referred to reflection as 'deliberate thinking about action with a view to its improvement' (p. 52). However, Boud, Keogh and Walker (1985) define reflection as: 'those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations' (p. 19). They suggested that the process of reflection as consisting of three closely related stages:

1. *Returning to the experience*: recollecting the salient features of the experience, recounting them to others
2. *Attending to feelings*: accommodating positive and negative feelings about the experience
3. *Re-evaluating the experience*: associating new knowledge, integrating new knowledge into the learner's conceptual framework

Schon (1987) proposed that practitioners can reflect *in* action and *on* action, that is, both on-the-spot, and also in a more extended and sustained manner. Others have pointed out that reflection is facilitated by learning environments which provide: an authentic context and task (Brown, Collins, & Duguid, 1989; Norman, 1993); the facility for students to return to any part of the learning environment if desired, and to act upon reflection (Boud et al., 1985; Kemmis, 1985); the opportunity for learners to compare themselves with experts and with other learners in varying stages of accomplishment (Candy, Harri-Augstein, & Thomas, 1985; Collins, Brown, & Holum, 1991); and the organisation of students into collaborative groups to enable 'reflection with aware attention' (Knights, 1985; von Wright, 1992).

In designing learning environments capable of sustaining an integral reflective component, it is important to consider both individually-mediated reflection and socially-mediated reflection.

Individually mediated reflection

One effective method to facilitate individual reflection is the learning journal. Costa and Kallick (2000) have described the 'inner voice of reflection' where self-talk can be used to reflect on experiences to develop self-knowledge, and the journal provides an effective means to accomplish this. Black, Sileo and Prater (2000) found that the use of personal journals promoted students' participation in learning by providing them with a formal means and structure for thinking, imagining and making choices.

Other researchers have found that journals facilitate learning: by enhancing students' ability to make multiple connections within a course (O'Rourke, 1998); by encouraging students to think more extensively and with more originality (O'Rourke, 1998); by developing writing skills (November, 1996); by enabling students to discover qualities in themselves of which they were unaware (Woodward, 1998) (November, 1996); by giving students' new perspectives on the learning processes they use (Woodward, 1998) (Costa & Kallick, 2000); by enabling confidential communication between the learner and teacher (Black et al., 2000); and to promote critical thinking (November, 1996) (Hatcher & Bringle, 1997).

There is no guarantee that the provision of reflective journals to students will result in the realisation of the claims being made for them (Hatcher & Bringle, 1997). Woodward (1998) noted that much of what was written in journals at her institution was often little more than a record of events and activities. This is consistent with Hatton and Smith (1995) who identified four different types of written reflection found in learning journals:
1. *descriptive writing,* which is not reflective at all but merely reports literature or events;
2. *descriptive reflection,* which attempts to provide reasons, based on personal judgement or reading of the literature;
3. *dialogic reflection,* which is a form of discourse with oneself, an exploration of possible reasons
4. *critical reflection,* which involves giving reasons for decisions or events which take account of the broader historical, social and/or political contexts (p. 53).

Some researchers argue that substantial support and guidance is required if students are to gain the maximum benefits from keeping a reflective journal. For example, November (1996) used reflective journal writing with students of commerce, and described the type of guidance that he used to help students benefit from the use of journals. He noted that in the beginning stages of journal writing, students are often preoccupied with writing neatly, completing drafts and so forth, and that they can be assisted with a list of questions to be answered in the journal, such as 'Who are you? Your background? Your interests? What are your personal objectives in this course? (p. 122). He goes on to describe more substantial support by helping students to think in terms of an agenda or list of issues that they face in the course. Even more prescriptive was the approach adopted by McCrindle and Christensen (1995), who provided explicit instructions on journal writing such as: 'Write what you have learned in today's session … then write how you learned i …[and] assess the way that you learnt it' (p,174).

Hatcher and Pringle (1997) describe personal journals used in service learning classes where students write double entries, reflecting on the course content in the first column and reflecting on their service experience in the second column. This approach would equate to Hatton and Smith's (1995) first level of *descriptive writing* in the first column, and the much more reflective level of *critical reflection* in the second column, where the students reflect on their professional practice in the light of the theory of the course content. Using such approaches, journal writing appears to be more productive in terms of learning outcome than greater opportunities to interact with course content (McCrindle & Christensen, 1995).

Socially-mediated reflection

Many theorists see reflection as both a *process* and a *product* (Collen, 1996; Kemmis, 1985), and that it is action oriented (Kemmis, 1985). Knights (1985) contended that reflection is a two-way process with the aware attention of another person: 'Without an appropriate reflector, it cannot occur at all' (p. 85). This view is strongly supported in the literature by others who point out that reflection is a social process (Kemmis, 1985), and that collaboration on tasks enables the reflective process to become apparent (von Wright, 1992).

Socially-mediated reflection is enhanced considerably by collaborative work, which is often readily achievable in on-campus course units. For online units, communication technology can be used to provide effective means for socially-mediated reflection. For example, Piburn and Middleton (1997) described the use of listservs and discussion boards as a very successful means to facilitate reflection. In their paper, they describe a class of preservice mathematics and science teachers where strong resistance to the use of a reflective journal led to the establishment of a dedicated listserv for the cohort. The types of dialogue the students used as they participated in discussions, led the researchers to believe that the listserv experience, while social rather than individual, was equivalent to or better than journal writing in facilitating reflection. Seale and Cann (2000) also found that a discussion board was successful in helping students to make links with other learning experiences and to see things in different ways. Such socially-mediated reflection can be enabled successfully in online units, using technology, and appropriate guidance and support strategies.

How can a unit be designed to promote reflection?

The research and theory on reflection described above can be used to inform the design of online courses. At Edith Cowan University, one unit in a *Graduate Certificate in Online Teaching and Learning* has been specifically developed to enhance students' abilities to reflect both individually and socially as they learn. The aim of the four unit course is to assist

teachers to have the confidence to design and plan effective learning environments using online technologies. The course consists of four units: *Online Teaching and Learning, Resources for Teaching and Learning Online, Designing Effective Online Learning Environments,* and an *Online Learning Project Unit.* In all the units, students are given access to technology tools that can help to enhance reflection. However, in the last unit, students are expressly required to reflect as a central curriculum component of the unit.

As a project unit, the final unit in the course encourages students to consolidate learning from the other parts of the course. In other units, the students have completed activities such as evaluating and designing online units, developing small learning modules using a variety of development tools, and choosing and implementing specific learning designs in the planning and design of online learning environments. The final project unit was originally conceived as one where students would develop and implement an online course or unit of study. However, it was recognised that many students would have already achieved this in other units of the course, and there was a desire to keep the last unit as flexible as possible to meet the varying needs of the practising professional - the typical student of the Online Learning course.

Instead, the unit was designed to enable students to choose any task related to online learning and to their own work or study situation, and to agree to perform the task for assessment. In addition, students' projects need to be informed by their reading of the literature and research in the area, to reflect on the process in a journal, and to produce a publishable article of their analysis and conclusions (Figure 1).
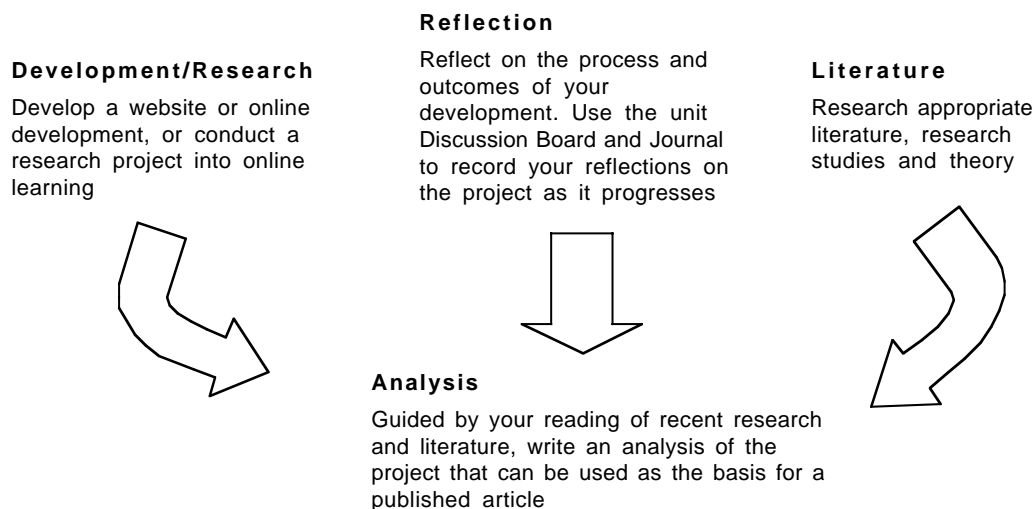
Development/Research

Develop a website or online development, or conduct a research project into online learning

Reflection

Reflect on the process and outcomes of your development. Use the unit Discussion Board and Journal to record your reflections on the project as it progresses

Literature

Research appropriate literature, research studies and theory

Analysis

Guided by your reading of recent research and literature, write an analysis of the project that can be used as the basis for a published article

Figure 1: Project unit plan for integrated reflection

The instructions to students are that their task is four fold: (1) they must design and implement a project that suits their own needs, apply their learning from the other units of the course, and observe and evaluate progress and outcomes; (2) they must refer to, and be informed by, current literature and research; (3) they need to monitor and reflect upon the process as it is happening; and (4) they need to write up their insights and analysis as a short article of publishable quality. Students submit a project proposal by Week 4 of the semester, where they outline their project and the components they will submit for final assessment.In order to give students some ideas on possible ways to approach the task, several examples are given, such as those shown below in Table 1:

Table 1: Reflective tasks given as examples

Example 1: Evaluate an online unit	
Your current role:	You are an online teacher in a school, university or TAFE
Your project:	For your project, you evaluate your online unit.
Your journal:	You keep a journal of the process including your day-to-day thoughts on teaching online, problems and difficulties, strategies that work, reflections on your reading.
Your research and literature base:	You refer to literature on evaluation, teaching and learning online, and constructivist learning environments.
Your assignment:	You submit a plan for the evaluation of your unit or course, the website (if approved), an edited journal (diary) and a short article on the experience of teaching and evaluating an online unit.
Example 2: Redesign a unit	
Your current role:	You are a teacher in a school, University or TAFE
Your project:	For your project, you take a unit you currently teach face-to-face and you redesign it for online delivery.
Your journal:	You keep a journal of the process including thoughts and ideas about the differences between the types of delivery, and how the design you are creating for online delivery may be weaker in some ways and stronger in others.
Your research and literature base:	You refer to literature on educational technology and constructivist learning environments.
Your assignment:	You submit a plan of an online unit, a prototype of the unit website, an edited journal (diary) and a short article from a teachers' perspective on the process of adapting a face-to-face unit to an online form.

Other examples are provided where the student's current role is: an *Instructional Designer*, where they might assist a content expert to plan an online course; a *Researcher*, where they might study online and reflect upon the experience from that perspective; and a *Professional Developer*, where they might develop a short course for teachers or academics on one aspect of teaching and learning online. However, it is entirely up to the student to propose a task that suits their own particular circumstances, with the proviso that their work is informed by current literature, and that they consciously reflect on the process as it is happening. In order to facilitate the reflection process, there are several supports and tools which can assist the students within the course design. The unit itself is accessed from a simple interface of a well-equipped resource centre (Figure 2).
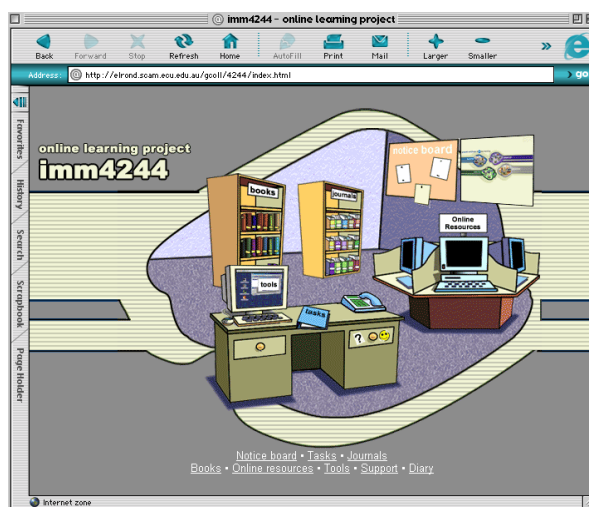

Figure 2: Main interface of the Online Learning Project

Students have access to a variety of resources and supports by clicking on the appropriate element, for example, by clicking on the *Journals bookcase*, students are provided with a list of useful journal articles on reflection, including a number with direct links to online versions. By clicking on the *Computer on the carrel*, students can access a variety of useful online sites, and the *Books bookcase* lists texts and books, together with online bookshops and the University Library website. The unit design implements several features which have been intentionally incorporated to facilitate reflection. These are summarised below:

Authentic task

An authentic and complex task is provided where students complete a project that is professionally appropriate and relevant to their own situations. The task is supported by a website incorporating a non-linear design, where students need to reflect on the nature of the problem and the particular resources that are needed to address the problem. The complexity of the task also facilitates reflection. As noted by Lin et al. (1999), when sophisticated decision making and reasoning is required, students are more able to see the need for reflection. They point out that simple, well-structured problems do not generally need decision-making or reflection on decisions and actions.

Online journal or diary

Students have access to an online reflective journal where they can record their thoughts and observations of the development of their project as it occurs. Each entry is submitted as it is completed, but students have access to, and can copy the complete journal at any time to edit it later. However, students also have the option of completing their journal as a word processing document. The provision of a journal space is no guarantee that students will use it to reflect, or even to use it at all (even at a descriptive level) unless there is a process which enables it to occur (Woodward, 1998), In this unit, the journal is a critical component of the central task, and it is difficult to see how a student could complete the unit without creating a learning journal.

Discussion boards and listservs

A discussion board is available for students to discuss any issues with other students and with the tutor. In this way, they can reflect socially. Students are also encouraged to join appropriate listservs, not only to be able to read, reflect and contribute to the discussion, but also to access the ideas and opinions of experts in the field.

Polished paper

The requirement for students to produce an article of publishable quality effectively requires them to consolidate their reflection on the entire project they have completed. While the journal and discussion board are examples of immediate, on the spot reflection—Schon's (1987) *reflection-in-action*, the preparation and writing of the article enable more extended and sustained reflection—*reflection-on-action*. Writing the article also enables students to translate the much more personal writing style of the journal and the discussion board, to the language of professional practice.

Issues arising from the reflective approach

A principal aim of the design of the unit in online learning described here was to create a learning environment where reflection was enhanced by students' being totally absorbed and immersed in issues of importance to them . (Csikszentmihalyi, 1992). The evidence from the students who have completed the course unit to date supports this notion. Feelings of vulnerability in exposing one's beliefs to others, as cautioned by Hatton (1995), did not appear to be an issue. Students have been extremely forthright, and wrote freely and honestly

about their experiences in developing, evaluating and/or researching the online experience. Some of their edited journals made riveting reading, particularly in those instances where the research and theory informed an approach, and practical day-to-day events transpired to make it all come unstuck. In these instances, students' reflections in their journals bring to the fore their fundamental beliefs about teaching and learning, and whether and to what extent they should compromise those beliefs.

Designing a unit to promote reflection, using tools such as described in this paper, enables teachers to encourage a process for examining past and reframing future actions, to assist students to engage in a cycle of reflection and action, and ultimately, to enhance the chances of those students become lifelong learners.

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