

# Learning from Reflection: Practitioners as Adult Learners

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## Abstract

*Although all learning in higher education is considered adult learning, there are characteristics of practitioners returning to formal education that sets this group aside. This paper looks at these characteristics as exemplified in a reflective journal – maintained as a component of a course in RE, taught in a Studio Learning environment. The results of student reflection shows that while, unlike school leavers, the motivation and will to succeed can transcend every obstacle, adult learners' approaches to study can impinge on their learning.*

## 1. Introduction

Early in 2006 there was an opportunity to facilitate a course in Requirements Engineering (RE) within an organisational setting. The student cohort had undergone a comprehensive selection process for admission to a project management programme, and was to complete a variety of learning modules over an academic year. Each of these was delivered in a block mode format, with assessment due over a period of several subsequent weeks.

The students would not become practitioner REs. However, they would be expected to manage the RE process, the RE practitioners and the products of the RE effort. What was important was that they had an understanding of the characteristics of the domain at a high level and of the issues that are problematic in its practice. The course was developed to provide them with a foundation in subject matter while at the same time

- exposing them to the inherent characteristics associated with real RE problems
- addressing the knowledge required to solve them, implying a explicit focus on the skills related to higher order learning and strategies to develop a reflective understanding of the discipline.

The learning environment was based on the Studio Learning model developed for the BE(SE) programme at Murdoch University [1]. Underpinned by research in cognitive psychology and adult learning theory, this model places the learner within an authentic context where the problem can only be tackled by engaging with the techniques required by the domain. The model adapts concepts in reflective learning advocated by Schön and others, and incorporates elements drawn from Problem-based Learning approaches to education.

The focus of this paper is on the reflective aspect of learning within that environment. Section 2 provides some theoretical background, while Section 3 introduces the context in which this work was undertaken. Section 4 tests the assumptions made in student learning (eg by [2]) by exploring student journals. Section 5 draws some conclusions from these writings.

## 2. Learning as reflective

Mezirow [3]'s transformation theory describes a process of learning through critical self-reflection - using prior experience to understand a new or revised interpretation of that experience in order to guide future action, while Smyth [4] develops a four stage

sequential model of reflection to describe, inform, confront and reconstruct experiences.

## 2.1. Learning in studios

Interest in reflective practice dates back to Dewey [5] and his work with experiential learning theories. He concluded that each (learning) experience influences the quality of future experiences – they are a dynamic continuum. Although there is as yet no authoritative educational explanation of teaching and learning centred on reflection [6], some models of learning describe reflection as part of the process (eg [7]). Consistent with the cognitive psychology [8] and social constructivism [9] perspectives, learning is presented as a process in which the learner creates knowledge through transformation of experience.

A rethinking about professional education has been triggered by ideas such as those of Argyris & Schön [10]. Although weaknesses and inconsistencies have been identified in their approach (eg [11]), there is an emerging recognition that programmes for the professions need to provide opportunities for students to develop reflective skills and sensibilities, embedded as a normal part of the professional programme [12]. The success of this learning is based on factors including the adoption of strategies identified as contributing to reflection.

Environments for reflective learning are generally informed by the studio approach (itself modelled on the 19th Century atelier-based training at the Parisian *Ecole des Beaux-Arts*). The pedagogy underlying studios has its theoretical origins in social constructivism (that emphasises the collaborative nature of much learning), and is influenced by work in many strands of educational research and research in the IT disciplines (eg [9], [13]). Characteristics of the studio environment include:

- student work is organised primarily into complex and open ended problems
- the ability to draw effectively on past experience, is a key feature
- critique is frequent, and occurs in both formal and informal ways [14].

## 2.2. Learning through journals

Journals are a mechanism for processing the raw material of experience to integrate it with existing knowledge and create new meaning. Among its many purposes (eg to break habitual ways of thinking; to enhance the development of reflective judgment and metacognition; to increase awareness of tacit knowledge; to facilitate self-exploration and personal growth [15, 16]), improving learning is a prime reason for including journals in the educational environment. Moon [17] and Carroll [18] discuss theories and research that support a number of assumptions about learning from journals:

- learning is improved by articulating connections between new and existing knowledge
- the reflection required encourages deep rather than surface learning
- they accentuate favorable learning conditions - demanding time and space for reflection, encourage independent thought and ownership, enable expression of feelings, and provide a place to work with ill-structured problems.

Thus several themes prevalent in adult learning are enhanced by the use of journals. They are a less formal, less threatening way for older reentry learners to approach writing in a course - to 'talk' in a way they might not in class [19]. The journal becomes a critical ingredient in meaning making, enabling learners to articulate connections

between new information and what they already know. This personal engagement adds a necessary affective element to the learning process.

However, Ducharme & Ducharme [20] point to the fact that little research had been conducted on the outcomes achieved through reflective journal writing. Sinclair & Woodward [21] support this view: *the effect of reflection and reflective journal writing upon the development of [learners] as reflective practitioners is [not] clear* (p. 51), although changes in student thinking have been reported [22].

### 3. The learning context

The teaching block for the RE module was based on full-time attendance over five consecutive days (although after-hours meetings also took place). Underpinned by the PBL model of learning [12], the cohort of 14 was provided with an overarching task (the group assignment, due one week later). Students needed to work in teams to learn what was required in order to complete this by the due date, with the product of each group integrated into a single artefact. The lecturer acted as a resource in addition to those provided physically – access to appropriate web sources, a reader and a selection (about 15) of texts available within the workspace as a ‘Studio Library’.

Modern learning models acknowledge that students bring a complex assortment of beliefs, past experiences and expectations to a learning situation, and that these influence the approach to learning they take. This student cohort was mature – the youngest approaching 30 years, the oldest in his mid-50s. Lindeman [2], strongly influenced by the work of Dewey, laid the cornerstones for a theory of adult learning. His andragogical (as opposed to pedagogical – pertaining to children) model is based a number of assumptions adult learners bring to the learning environment. These include the need to know; the learner’s self-concept and readiness to learn; the role of the learners’ experiences and their orientation to learning. As an examination of the journals completed within this learning environment shows, this cohort exhibited very strong characteristics in these areas.

**Table 1. ASI scales for Reproduction and Meaning Orientation [23]**

| Scale                           | Meaning   |
|---------------------------------|---|
| <i>Meaning Orientation</i>      |   |
| Deep Approach                   | active questioning in learning                          |
| Use of evidence                 | relating evidence to conclusions                        |
| Interrelating ideas             | relating to other parts of the course                   |
| Comprehension learning          | readiness to map out subject area and think divergently |
| <i>Reproduction Orientation</i> |   |
| Surface approach                | pre occupation with memorisation                        |
| Syllabus-boundness              | relying on staff to define learning tasks               |
| Improvidence                    | over-cautious reliance on details                       |
| Fear of failure                 | pessimism and anxiety about academic outcomes           |

At the commencement of the course students completed the ASI (Approaches to Study Inventory) [24]. This is one of the most widely used questionnaires on student learning in higher education, and addresses a range of concepts, including motivation and study methods (see Table 1) as indicators of learning either at surface level (eg just to pass) or deeply (eg for understanding).

The results for this cohort are shown in Figure 1. While most students exhibited moderate *Meaning Orientation* (MO) (mean 2.59 – highest possible score is 4) many also exhibited

significant *Reproduction Orientation* (RO) (above the mean of 1.81). Based on research undertaken (eg in Finland [25]) some of these students would be classed as strongly coherent in their approach to study (eg, students 1, 2, and 11). However, a considerable number of the cohort shows orientation dissonance, where scores for MO and RO are close. An examination of the journal entries provides possible interpretations for why this is so. A high level of dissonance indicated, in the Finnish study, an individual student's study habit problems and lack of (metacognitive) skills to evaluate study practices and quality of learning.

|                     |          |          |          |           |         |           |
|---------------------|----------|----------|----------|-----------|---------|-----------|
| 1 Alex <sup>1</sup> | 2 Carl   | 3 Frazer | 4 Fitz   | 5 Herbert | 6 Henry | 7 Malcolm |
| 8 Morris            | 9 Oliver | 10 Paul  | 11 Peter | 12 Percy  | 13 Mick | 14 Colin  |

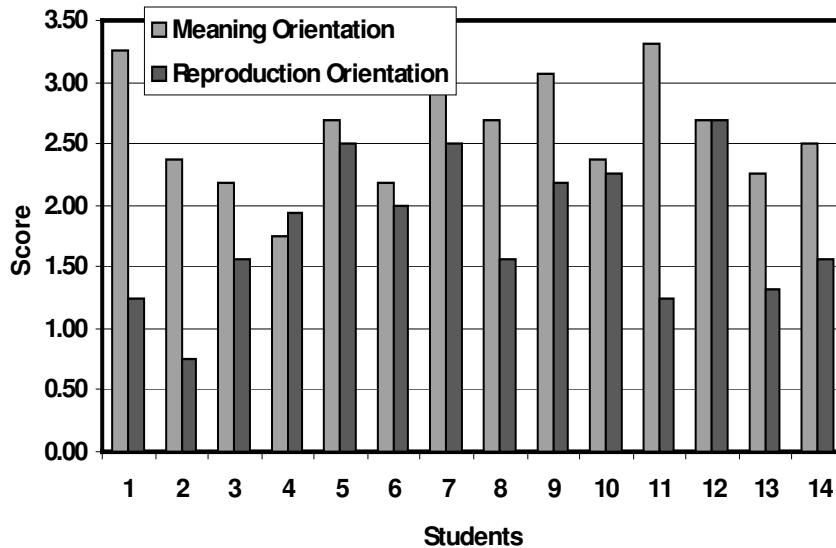


Figure 1. ASI for RE cohort

#### 4. The student voice

Journal entries were examined to test the assumptions made by Lindeman regarding adult learning. Entries were documented in several ways – task description added to an activity log were often reflective, while each day's journal entry was completed by addressing the following questions: *What did I achieve? What issues did I have? What can I do to address these issues?* from the perspective of learning, personally and in the group.

##### 4.1. Barriers to learning

At the heart of learning through journal writing is reflection, the process of exploring events or issues and accompanying thoughts and emotions. However, barriers to reflection, and journals as a means to expressing this are identified in the literature: resistance may be due to attitudinal or situational barriers [22, 26] as well as attempts to 'play the game' [27]. In addition the 'culture' of the learning environment may not support journal writing as a strategy.

**4.1.1: Attitudinal barriers:** These relate to issues of self-doubt or fear of exposure. Finding the reflection uncomfortable, threatening or painful is also considered attitudinal.

<sup>1</sup> Aliases are used. There is no discernable link between alias and actual student name, although gender is preserved

**Colin** – *I have no confidence in my ability to pass this unit*

**Alex** – *we are programmed to just go off and do the job, so to adapt to this style of learning I would have to change that and rely more on asking for assistance, something I am not normally comfortable doing*

Alex and Carl were the most open about describing their issues with journals – their study orientation suggests a possible reason. Interesting, however, was the projection of these issues onto other students as well as taking ownership:

**Carl** – *the task of keeping a reflective journal and writing about the journal and how a student learns is not an idea that many students are comfortable with*

The barrier may also be linked to personal characteristics:

**Herbert** – *avoidance of the artistic, holistic, imaginative and conceptualising and...an avoidance of interpersonal, emotional aspects...I have a long way to go to feel comfortable with this way of learning*

**Fitz** - *I guess I don't like putting down in print my thoughts, never have and never will as well as realisation that a comfort zone was being breached...initial feeling of insecurity, confusion and frustration of not knowing what needs to be known*

**4.1.2: Situational barriers:** The strong motivation the cohort exhibited reduced the importance of lack of time and overconcern with spelling and grammar as a barrier to journal writing – it was assessable, therefore would be completed. This is not to say students were not concerned about situational aspects of the programme:

**Alex** – *I am also very lonely being away from the family and this is contributing to a poor attention span*

**4.1.3: Playing the game:** Awareness that the writing will have an audience, particularly a teacher or external assessor in a certain power relationship to the learner, may inhibit thought, encourage self-censorship, and shape what is written. The learner may ‘play the game’ [36] and give the assessor only what the course requirements demand:

**Colin** – *my journal entries from Wednesday onward appear to be shallow platitudes (perhaps aimed at pleasing the assessor). Yet they are sincere*

**Herbert** - *[I] ensure that the issues are indicated in my journal for [the teacher]’s knowledge*

**Fritz**- *no issues or is it easier to write no issue? However, if I have issues with everything then I need serious psychological help*

## 4.2. Learning through reflection

The strongest theme to emerge from the journal entries was student perception of the task itself – for some a pleasing experience, for others less so:

**Henry** – *author does not recall having tried to reflect deliberately either during or after a learning event to enhance the experience*

**Paul** – *it revolves around opening ones self up (potentially for criticism) and has never been something I enjoyed or found easy*

**Morris** - *not many of us were willing to discuss the journal any more. I think the reason that we've gone cold on it is because such introspection is not a normal practice in our lives, nor is it one we have perhaps actively contemplated (whereas other subjects on this course will not catch us by quite such surprise)...I'll be interested to read what I write in my conclusion. This ‘learning journey’ has been a very different experience for me*

**4.2.1. Self-concept:** Several of the students felt the need to describe themselves. This could be seen as providing context for the journal entries. Another interpretation acknowledges the

power play of such declarations – an undercurrent during the course was awareness that within the organisation each member of the cohort was in a position of some power.

**Morris** - *it would be useful for the reader to have some awareness of my character and qualifications... [yet] despite having almost 30 years experience in the workforce I don't seem to be uniquely qualified for any of the 12 subjects on this program*

**Colin** – *selected from the ranks of (chronic, perhaps serial) over-achievers*

**Oliver** – *first I need to establish what sort of person I may be, why I am undertaking this study and what I have achieved in studying RE*

The assumption of leadership was also a strong sub-theme, in keeping with the students' perception of their standing, but also indicative of a jockeying for position for the duration of the course:

**Alex** - *I find it hard to motivate people to do better when you only have a short time frame*

**Carl** – *I attempted to provide a bit of direction (some might say take charge)*

**Colin** – *I drew comfort (and perhaps confidence) from moving more into a 'leadership' role than performing a 'doing' role*

**Carl** – *I believe that my credibility with the whole group has gone up because of my efforts in getting the assignment pulled together – maybe I'm just comfortable that I've confirmed it to myself*

Thus, for this student, the environment could be seen to be supportive:

**Carl** – *got a confidence boost from discussing the issues with some people with a lot more expertise than me which actually confirmed I was understanding things.*

**4.2.2. Need to know:** Within the cohort there is a strongly bipolar perception of the value of learning about learning and reflection:

**Henry** - *our efforts are concentrated on learning what we have to know to stay with the overall program*

**Alex** – *the concensus seemed to be that we were here to learn about RE and that is what we have to concentrate on, not different learning styles*

For some students this became a balancing act while others acknowledged the value of the experience and were happy to say thanks, or no thanks:

**Alex** - *the point was to use reflective learning during the course to enhance our learning. However, I will have to alter and make it 'my' learning as we will not be doing this part of the course as a group*

**Fitz**– *reflecting on what was learnt is a good thing however this is more reflection than I've ever done...[but] unless there is a reason for change, the author is unlikely to apply reflection-in-action as his primary learning tool*

**4.2.3. Perception of the environment:** Students indicated that, as individuals, an approach that differed from 'normal' teaching was a challenge that could be embraced, or not:

**Malcolm** – *only 7 slides. I found this intriguing and confronting at the same time*

**Alex** – *as a group we are used to being taught the basics and are then required to go from there...this course seemed to be about something quite different... [I] was pretty daunted by what I found in the pre-course reading*

**Colin** – *the RE course paradigm of 'discover as you go' presented a range of uncomfortable and almost incomprehensible challenges to most participants*

**Carl** - *spun my wheels quite a lot but then discovered that my spinning was to be expected. Lesson was I should respond/recognise it earlier*

**Peter** - *I was often stretched outside my comfort zone, perhaps a worthy learning experience in itself*

**Fitz** - analysis of his learning style and skills through reflection of his study journal merely reinforced his belief that his learning is efficient enough for his professional career development

While some students acknowledged the value of learning to learn, others could not reconcile their expectations with what was offered:

**Alex** – *I don't have a base degree so I don't have the knowledge of how to learn that I think many of the others have...I need to become more efficient at learning and studying*

**Oliver** - *the course was challenging but fell short of what I need to effectively do my job*

**Colin** – *my inability to reconcile [my] expectations with the course outline meant that my morale and ability to cope deteriorated during the first few days. In short my centre of gravity was compromised and a comfortable learning environment was not achieved*

This dichotomy was reflected in student's indication of their readiness to learn (and in their perception of others in the group)

**Alex** - *clearly some of the class are not approaching this year as team members, which is surprising noting that we are training to be Project Managers, and we need to work as part of a team to ensure our success.*

**4.2.4. Orientation to learning.** Students reflected backwards – on how they had previously tackled learning - and forward, on how they were using what they had learnt in this course:

**Carl** – *my approach to learning...was quite unfocussed and informal...I basically relied on my intellect and the large general knowledge I have acquired over the years...and built on this to understand and apply new ideas and concepts...the [courses] that have required me to step outside my comfort zone and also try to think in a different manner, have seriously challenged this approach...came to a bit of a watershed in terms of dealing with my frustration at the slow pace of my learning certain areas. Realised that this is part of the journey when it comes to learning – just that it is really the first time I've had to really focus and work on understanding something*

**4.2.5. Motivation:** It was clear from the journals that the cohort was very strongly motivated. As practitioners and adult learners who had been selected to undertake this programme, they were not about to fail:

**Colin** - *past experience has demonstrated to me that ... I am not well reconciled to failure... anything less than total success is often difficult to accommodate personally and professionally*

For some, the motivation was clearly strategic while others could reconcile between strategic and deep(er) understanding:

**Alex** - *noting that this journal was worth 20%, I spent some time trying to work out how I would approach it*

**Frazer** - *this 'scan and nibble' is not giving value to me... the read and digest method I am going to employ on this assignment may result in lower marks*

Student perception of the motivation of others in the cohort is also noted:

**Carl** – *I have been frustrated...as there is some tension amongst the group...this is partly led by the different ways that the groups learns (or is willing to learn)...Another [member] appears to be quite closed to learning (mainly because they believe they already know it) as is an acceptance that everyone's motivation was not the same, but had to be harnessed:*

**Alex** - *one of the things I have against groups, you all have a different perspective of what level should be achieved, and I find it hard to motivate people to do better when you only have a short time frame...I guess that is the main thing I have learnt from the week: our [group assignment] could not have been produced by 14 individuals in the time we had...I*

*need to be cognisant of the fact that this person [who missed a meeting] has a very different learning style from myself, and we need to work to our different strengths next block.*

#### 4.3. Reflection on reflection

Among the many benefits of journal keeping, the aspect that consistently emerges as a special strength is its value in assisting students to discover personal meanings - students were required to reflect on their journal entries and sum up their learning experience. As the following excerpts show, perceptions were both positive and negative. However, almost in spite of themselves, students gained from the experience:

**Carl** – *by nature I am an introspective person but I have never really applied this introspection to reflect on my approach to learning. I have found this exercise to be an interesting, thought provoking and at time amusing experience*

**Malcolm** - *I have learnt significant, even life changing information about myself that I will use for the rest of my life so I appreciate your efforts J. Thank you!*

**Herbert** – *I have remembered and learnt a lot about myself during the unit. I don't know that I could ever say that I was comfortable but I do know that I have increased my abilities with more than just RE knowledge*

**Percy** - *I would be lying to all and sundry if I was to say I completely changed in the way I approach the learning process... however, for the first time in my life, I am now conscious of some of my learning deficiencies...gives me the opportunity to do something to improve*

**Peter** – *it wasn't a fun process...for the most part the experience has been highly frustrating, which is disappointing as I believe there is much merit in the reflective experiential learning pedagogies. It is a different and refreshing approach from the norm*

Time to reflect, however is an acknowledged issue. Students suggest that, while there is some merit in a reflective learning environment, the contracted nature of the course is an inhibitor:

**Alex** - *unfortunately there is not enough time to really study this now as it doesn't add marks immediately to the course...that is a problem of Reflective Journals, I think, problem identification is easy, problem solving is much harder and not necessarily possible through this process.*

#### 5. Conclusion

Schon suggests that wisdom can be learnt by reflection on dilemmas that are encountered in practice and that by using reflection-on-action practitioners can continue to develop their practice. This reflective transfer enables the learner/practitioner to carry some explicit theory to new situations where it can be tested, found valid and interesting, or reinvented.

Examination of journal entries indicates that, although Lindeman's assumptions about barriers to adult learning are valid, students have benefited from an approach that has a strong emphasis on reflection. Through a process of describing, informing, confronting and reconstructing the learning experience, students demonstrated what has been learnt:

**Herbert** - *I have learnt to open my eyes and ears and to step back [from]...teacher speak - student listen learning environment...I totally understand now what I have gained from it and how I will increase my learning opportunities in the future*

**Paul** - *I realised that if you can recognise your strong and not so strong points in relation to learning you have a number of options as to how you approach learning*

**Malcolm** - *it would be ideal if everyone could be [Kolb] tested and wear a sign... however until then I must accommodate all learning styles - for this year at least*

As Williamson [28] p. 98 notes



*The journal holds experiences as a puzzle frame holds its pieces. The writer begins to recognize the pieces that fit together and, like the detective, sees the picture evolve.*

The next stage of this project will address the orientation dissonance exhibited in some of the cohort, so that the teacher, too, can fit the puzzle pieces together.

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