Development of Student Skills in Reflective Writing

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Abstract: Due to the increasing importance of critical reflection as part of the key skills agenda in higher education in the UK, staff and students need to develop an awareness of the stages of reflection and how these may be employed to develop better quality reflective writing and more controlled and informed assessment of that writing if required. This paper considers the role of reflection in the learning process and its link to deep learning in taxonomies of learning objectives. A simplified model of the stages of reflection is used as the basis for two workshops where staff and students are encouraged to consider the importance of reflection, the development of reflection from the most simple observations to higher levels, where issues and problems may be resolved, and then evaluate pieces of reflective writing for quality. An analysis of the initial results of student work after these workshops shows that the key factors in improving the quality of student reflection are time to reflect, reinforcement of the process and stages of reflection, an institutional culture of reflection and assessment. In conclusion, the paper discusses a future student-centred initiative and considers how the development of a culture of critical reflection depends not just on awareness but also has curriculum and resource implications.

Keywords: Reflection, Assessment, Higher Education

1. Background

In the UK, the Qualifications and Curriculum Authority (QCA) has been responsible for setting National Standards for Key Skills for all university students. Level 4 key skills have been specified (QCA, 2001) for all undergraduates in the six areas of:

- communications,
- information technology,
- application of number,
- working with others,
- problem solving
- and, improving one's own learning and performance.

Consultations are taking place on a draft set of Level 5 key skills for post-graduates in UK universities (QCA, 1999). Activities and assessments on all programmes of study must help students to develop this set of skills. Individual lecturers are responsible for ensuring that each unit or module of study plays its part in delivering some aspects of the total set. A close examination of the skills to be demonstrated shows a remarkable similarity of wording at higher levels. In all categories, the students are required to 'critically reflect' on their use of skills, to evaluate their strategies in applying skills,

and, at postgraduate level, to 'evaluate their overall approach to work and their effectiveness in applying skills'. Critical reflection is defined by the QCA as follows:

> *Critical reflection is taken to mean a deliberate process when the candidate takes time, within the course of their work, to focus on their performance and think carefully about the thinking that led to particular actions, what happened and what they are learning from the experience, in order to inform what they might do in the future. (QCA, 2001, 8)*

It should be noted here that students are expected to *take time* and to *learn* from the process of reflection, aspects that will be dealt with later in this paper.

In a culture of increasing emphasis on critical reflection by students, it is not surprising that the external examiners, on both undergraduate and postgraduate programmes in the Department of Information Systems and the School of Computer Science and Mathematics at the University of Portsmouth in the UK, have looked for evidence of this in student dissertations and other assessments. Towards the end of 2000 it became apparent that the incidence and quality of reflective writing by computing students across all programmes needed to be improved. This resulted in one workshop for staff development on reflection in May 2001, and another on reflective writing for all postgraduate students in September 2001. The postgraduate students on the MSc in Information Systems were chosen because in addition to a major dissertation, they are also required to maintain a professional portfolio of their work and submit small pieces of individual reflective writing as part of their collaborative, group assessments. This paper outlines the content of those workshops and reports on the results obtained from the analysis of results for subsequent reflective writing by the student body.

2. Reflection and Learning

Jennifer Moon has defined reflection as:

> *A form of mental processing – a form of thinking – that we use to fulfil a purpose or to achieve some anticipated outcome. It is applied to relatively complicated or unstructured ideas for which there is no obvious solution. (Moon, 1999a, 23; Moon, 1999b, 10)*

Students may embark on pieces of reflective writing for many reasons; professional portfolio entries, in learning journals or logs or workbooks, as part of personal or professional profiles, for evaluating project work in dissertations, or specifically as part of directed assessments. As a result of reflection a variety of outcomes can be expected, for example, development of a theory, the formulation of a plan of action, or a decision or resolution of some uncertainty. Such outcomes would be likely as a result of some problem-solving activity. In addition, students may experience emotions, leading to self-development, empowerment, and knowledge about their own feelings and emotions. Finally reflection might well provide material for further reflection, and most importantly, lead to learning and, perhaps, reflection on the process of learning, (Moon, 1999b, 99). The potential for reflection in facilitating learning and understanding in the more unstructured areas of knowledge domains,

enabling students to tackle the 'messy corners' of even the most structured domains, is one of its most powerful features.

The ability to reflect has been associated with the higher levels of learning in a number of taxonomies of learning objectives. Bloom's taxonomy (1956) places the process of reflection resulting in evaluation and critique as the highest educational objective. John Biggs refers to the SOLO taxonomy (Biggs and Collis, 1982) which 'provides a systematic way of describing how a learner's performance grows in complexity when mastering academic tasks' (Biggs, 1999, 37). In Table 1, Biggs describes the process of reflection as indicative of the highest *extended abstract* level of learning. He maps the SOLO levels against the concepts of *deep* and *surface* learning (Marton and Säljö, 1976; Entwistle, 1996) and concludes that reflection is indicative of *deep* learning and where teaching and learning activities such as reflection are missing that only *surfa*ce learning can result.

Desired in Objectives/ Used in Learning	SOLO levels	Deep	Surface
reflect apply: far problems hypothesise	Extended Abstract		higher-level activities missing
relate to principle apply: near problems explain argue relate	Relational		
comprehend: main idea describe enumerate	Multistructural		------------
paraphrase comprehend sentence identify, name memorise	Unistructural		
	Prestructural		

Table 1: *Desired and actual levels of engagement, approaches to learning and enhanced teaching, adapted from John Biggs (1999,55).*

Biggs uses this mapping to highlight where teaching and learning activities such as those encouraging reflection must be inserted to promote *deep* learning.

Stages of Learning	Best possible representation of learning (BPL)
Transformative learning	Meaningful, reflective, restructured by learner – idiosyncratic or creative
Working with meaning	Meaningful, reflective, well structured
Making meaning	Meaningful, well integrated, ideas linked
Making sense	Reproduction of ideas, ideas not well linked
Noticing	Memorise representation

Table 2: *A map of learning and the representation of learning adapted from Moon (1999b, 126)*

Jennifer Moon (1999b, 138) takes a slightly different approach. She derives five stages of learning and indicates what she terms 'the best possible representation of learning' (BPL) which can occur at any one level. Table 2 shows her mapping, and how the ability to carry out meaningful reflective learning is indicative of the highest level of *deep* learning, which she terms *transformative learning*. While students will be restricted in the BPL's they can demonstrate depending on the level of learning they have reached, exposure to progressively higher levels of activities will move students up through the levels until transformative learning is possible. One of those activities is the encouragement to be critically reflective. Most importantly this 'upgrading' of learning will require a deliberate and conscious intention on the part of the learner (Moon, 1999b, 149).

The word reflection itself can have many meanings and there is a need to define carefully its use in the context of reflection in learning for post-graduate students in Information Systems where we are concerned with its expression in writing. Morrison (1996) working with student learning journals offers two models for the use of reflective writing in this context: practitioner self-assessment and personal development.

Regarding practitioner self-assessment, John Dewey made the case that such reflection should follow a rigorous process closer to the scientific research model, with the realisation of the potential significance of an experience being carried forward from the questions generated from that experience to hypotheses, and then the testing of these (Rodgers, 2002). From a university perspective this would have the advantage of making both the practice and assessment of reflection much easier. It also has relevance to this MSc student group as they are encouraged to use their reflective writing to record the development processes while designing and constructing software artefacts where experimentation to solve problems is common. However, as pointed out by Brown and McCartney (1998) who were working with MBA students, we are trying to develop a reflective approach that will be transferable to a busy and demanding work environment, so different from a university context. An immediately accessible and relevant model is needed for a practice context. The activity-reflection model of Lewin (1952) and Kolb (1984) is of particular relevance here. It is expressed in a learning cycle which starts with an initial experience and activity, and after reflection and observation (which is most closely allied to 'negotiation of meaning' or 'initial understanding'), a concept is formed which can then lead to experimentation and new experience. Three separate types of reflection can be mapped onto the Kolb cycle as shown in Figure 1. Schön's concepts of *reflection-in-action* (Schön, 1983) can be seen to be included within Concrete Experience (CE) expressing the reflection which expresses our use of tacit knowledge as we act to carry an experience forward or too conclusion. While it may give rise to on-the-spot experimentation (Brown and McCartney, 1998), reflection-in-action is very much of the moment and is least likely to be referred to in reflective writing. Schön's *reflection-on-action* is the first stage of making sense of an experience after it has occurred. Such reflection can occur in both the Reflective Observation (RO) stage, where it may range from just the noticing of the significance of an experience, to

naming the problems or questions that arise out of the experience, and in Abstract Conceptualisation (AC) where usable concepts or hypotheses are generated. Cowan (1998) introduces *reflection-for-action* when someone reflects to plan what they intend to do to confirm an understanding. In Figure 1 this maps naturally onto the Active Experimentation (AE) stage of Kolb's cycle where the implications of concepts are tested. However it may also occur during the forming of hypotheses in the AC stage as, for students doing technical work, the evaluation of software environments will directly affect development planning. It is these two later forms of reflection, *reflection-on-action* and *reflection-for-action* which will form the basis of student reflective writing.

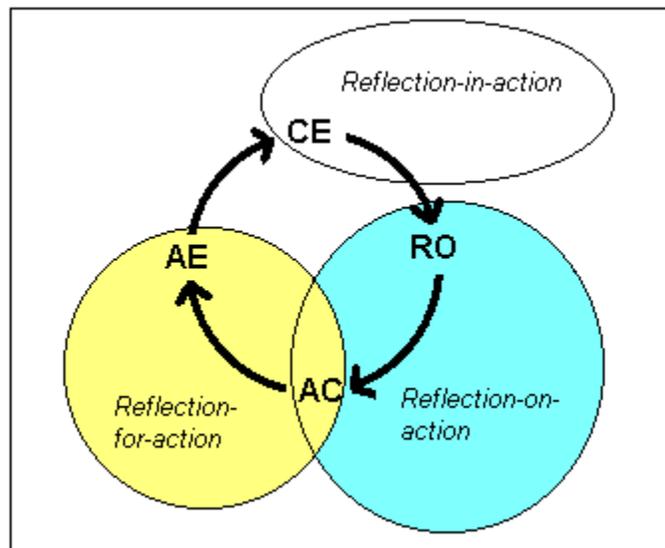The simplicity of this model does expose it to several criticisms.

Figure 1: Assigning types of reflection to Kolb's Learning Cycle

Rodgers (2002:864) draws attention to John Dewey's insistence that reflection is both complex and takes time to do well, and the importance of promoting 'reflection on reflection'. There is an emphasis on the encouragement of meta-reflection over a longer period of time. The model above implies a simple loop where errors are corrected or solutions to immediate problems are based on existing assumptions. In the work of Argyris and Schön (1974) this is referred to as single-loop learning. An alternative approach is to question the underlying values and challenge the appropriateness of the chosen ends (Greenwood, 1998). This leads to double-loop learning that, by implication, demands a model of reflection that would explicitly encourage standing back and looking at all the issues. Jenny Moon (1999b,160) in her book on reflection and learning considers Kolb's theory in some detail and concludes that the basic cycle really applies to learning from/processing of raw data and there may well be a difference in applying his ideas for those meta-cognitive processes which are applicable to reflecting on material already learnt. Also the kinds of reflection which are linked to high level learning processes can be seen to be associated more with 'mulling over' plans and theories, or reflecting on the implications of the outcomes of testing.

These criticisms do not in any way negate encouraging students to reflect *at a first level* and in an initially short time frame on their experiences and use that process to tease out the implications of experiences for immediate experimentation. But they do emphasis the importance of moving beyond these immediate concerns to reflection that can bring about personal growth. Boud et al. (1985) address these issues by introducing steps to reflection which encompass returning to the experience and recapturing the learning event as vividly as possible, attending to the underlying feelings (both positive and negative) which accompany that event, and re-evaluating the experience. The latter stage involves standing back and re-examining old experience from the perspective of one's current position and knowledge then using insights gained to formulating a new view in light of both. This way of approaching reflection maps well onto the common forms of reflective writing such as learning logs and journals. It also can cover all reflections including reflection-in-action which may be accompanied by strong feelings even if transitory.

3. Stages of Reflection

Because of the need to make the process of reflection intentional, it was clear that both the stages of reflection and how to get the best results from good reflective writing should be made explicit to both staff and students. Also the model used would have to facilitate reflection for professional development, when students will need to explore strategies for technical developments, and encourage students to revisit their reflections for personal development. Moon (1999a, 35) develops a suitable model of the stages of reflection and Figure 2 shows the simplified model developed from that for use in the development workshops.
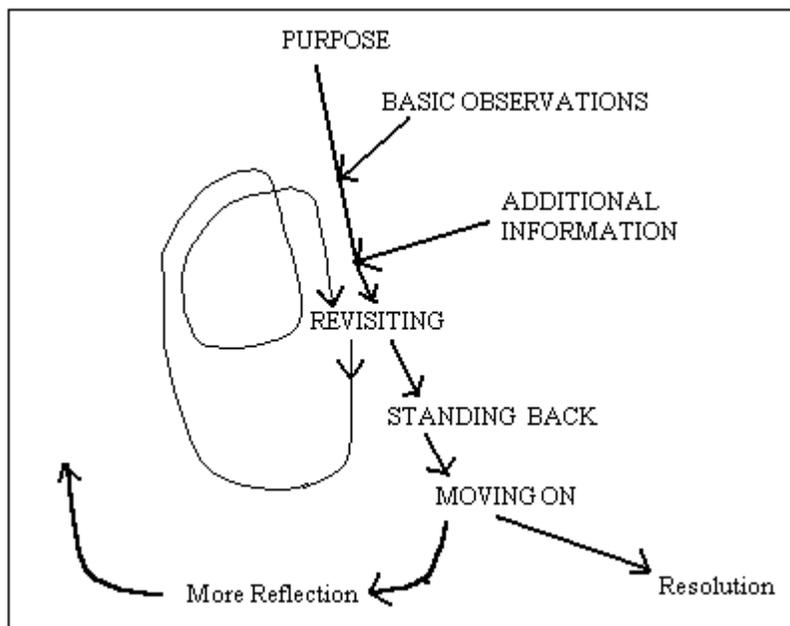

Figure 2: Stages of reflection – simplified model adapted from Moon (1999a)

There are seven stages to the model. The first three stages are introduced as the basic steps required for later reflection, i.e.

- PURPOSE – an understanding of the purpose of the reflective activity
- BASIC OBSERVATIONS
- ADDITIONAL INFORMATION – the addition of further observations, new information etc.

The first true level of reflection is REVISITING when earlier reflections are reviewed and there is a possibility for 'mulling over' issues and problems, so that it is possible to view an issue or event from a different point of view (Moon, 1999a, 107). Consideration can be given here to theorising and planning experiments or new actions.   STANDING BACK takes the reflection to a new level as the experiments or new actions are tested and the results discussed. This can result in MOVING ON which Moon describes as 'something having been learned or solved … there is a sense of moving on'. This may resolve the problem, or further possibilities for reflection may be generated, and the cycle of reflection started again.

The stages of this model may be used as a basis for assessing reflective writing. The initial three stages attracting a relatively low grade (perhaps D/E) with a satisfactory grade C for evidence of REVISITING, and higher grades A/B for STANDING BACK and MOVING ON. This is suggested as a tentative system for assessment as the ability to reach high levels of reflection depends to some extent on students giving themselves time to revisit early entries and build on them. This may not always be possible for all reflective exercises. However student awareness of these higher levels my make their attainment more possible.

4. Development Workshops on Reflective Writing

Two workshops on reflective writing, one to staff and one to students, were executed as follows:

4.1 Staff Workshop (Duration: 1.5 hours)

The aim of this workshop was to make the stages of the model explicit to staff and to get them to engage with some reflective writing and assess this. 9 members of staff participated. The programme carried out was:

- Opening session –The meaning of reflection, examples of reflective writing, outcomes and the importance of reflection.
- Exercise 1 – *Before* exposure to the model, staff were given some short examples of non-subject specific written material for *individual* scrutiny and a first grading. The examples were chosen to display a range of different levels of reflection.
- Discussion on the teaching of reflection and the need to both make the process explicit to students and agree such points as criteria, depth and range with the students in advance.
- Introduction to the stages of reflection
- Exercise 2 – A *small group* activity to reconsider the initial reflective writing examples in light of the stages of reflection and discussion about how they might be graded.
- Report back and wind-up.

Initial evaluation of the workshop revealed that staff found the non-subject specific material less successful and would have preferred subject-related material or real student reflections. In view of this, it was decided to use real examples when the workshop was devised for the students.

4.2 Student Workshop (Duration: 2 hours)

As part of the induction week before the start of the 2001/2002 academic year, a reflective writing workshop was held for 180 post-graduate students. The programme was as follows:

- Opening Session – Why learn about reflection; national standards for key skills; high level key skills and the value of reflection.
- Exercise 1: Students were given 20 minutes to write a reflective piece about their experiences of student induction at the University over the previous week. *They were then asked to exchange their written account with the student sitting next to them.*
- Stages of Reflection. The possibility of mapping the stages of reflection was covered, and then they were introduced to the first three stages of the model with a sheet of specific quotations from past students giving examples of each stage. These examples can be found in Appendix 1 to this paper.
- Exercise 2: Students were given 10 minutes to take the piece of writing they were then holding and find examples of the three basic levels of reflection.
- Higher Stages of Reflection. Returning to the model the students were introduced to the higher stages of reflection and a possible grading system. They were given 20 minutes to first re-read the piece of writing and grade it. Then discuss the result with the student next to them who had written the piece.
- Report back on exercises: as one group.
- Summary. Students were reminded to consider the stages of reflection when doing reflective writing, and to get into the habit of recording their first impressions and observations, to give themselves time to get a perspective on an event or issue.

5. Analysis and Results

5.1 *MSc student reflection*. Samples of individual reflective writing were obtained for the 2001/2002 cohort of MSc students from two different sources, and then graded and analysed as follows:

Supervised Work Session (SWS) Evaluations. The project management unit (PMAN) includes a collaborative, problem-solving assessment called a SWS which is carried out over one entire day. Although a group-based assessment, at the end of the day, each student is allowed 30 minutes to complete a short written, individual reflection on the how the day has progressed. These reflections are not assessed but are retained by the unit co-ordinator for unit evaluation. As the same exercise in exactly the same format had been held in the previous academic year, 60 student submissions were graded for both academic years 2000/2001 and 2001/2002. As the earlier set of students had received no information or formal training explicitly about reflection, the two sets of scores were compared using an independent samples t-test to see if there had been a significant improvement in the quality of reflection as represented by the

grades. It was found that there was only a slight improvement in the means (39% and 40%) and this was not statistically significant.

Learning Journals. Part of the assessed work for the unit on developing computer-aided learning materials (DL.EILAM) is a learning journal. The journal is kept over the full 10-week duration of the course and students are encouraged to keep a *double-entry journal*, making initial reflections 'on one side of the page', leaving space 'on the other side' for revisiting earlier comments and reflecting on them. In fact the journal is kept online using the WebCT environment, but the principle is the same. The same assessment had been given in the previous academic year with a comprehensive note of explanation and description of the effective use and advantages of learning journals, with suggestions on what might be included. Although students were encouraged to reflect on software development, in fact they could include any reflection that was pertinent. In preparation for delivery of this unit in Feb 2002, the content of the reflective writing session described in Section 4 above was recorded as a video clip of 11 minutes for video streaming across the Internet. The student cohort for 2001/2002 academic year received the handout, which was largely unaltered from the previous year, and in addition an activity to review the reflective writing session on video. During the 10-week period the lecturer encouraged the students to complete their journals each week and to review old entries. Emphasis was given to reflection and students were referred back to the video on occasions. An attempt was made to build-up a culture of reflection amongst this student group. A sample of 17 learning journals for both academic years were graded and the results compared. It was found that the mean of the grades for 2002 was considerably higher than for 2001, 53% and 64% respectively, and an independent samples t-test showed that they were statistically significant to a 90% confidence level. Further comparisons of means with the samples from the SWS are shown in the boxplot in Figure 3.
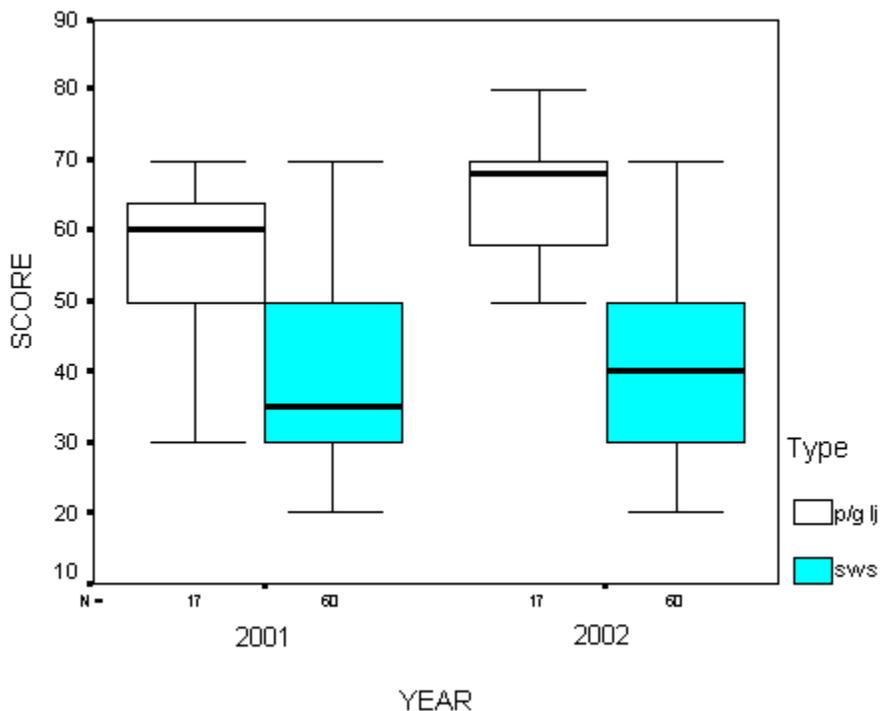

Figure 3: Boxplot showing comparison of scores for SWS reflections and learning journals

While the mean of the grades from the learning journals were significantly higher in both years (to a 95% confidence level), in 2002 the range of values was improved with the lowest grade for the journal being 50%.

5.2 *Undergraduate Learning Journals.* A member of staff who had attended the staff training on reflective writing introduced an assessed learning journal with set of 90 undergraduate students on an educational computing unit. The learning journal was maintained in the same way as described in 5.1 above and, as well as issuing similar explanatory notes about learning journals, the staff member used the original teaching materials from 4.2 to hold a one-hour session on reflective writing. However these students did not use the streamed video for review. A boxplot comparison for the three types of reflective writing in 2001/2002 can be found in Figure 4.
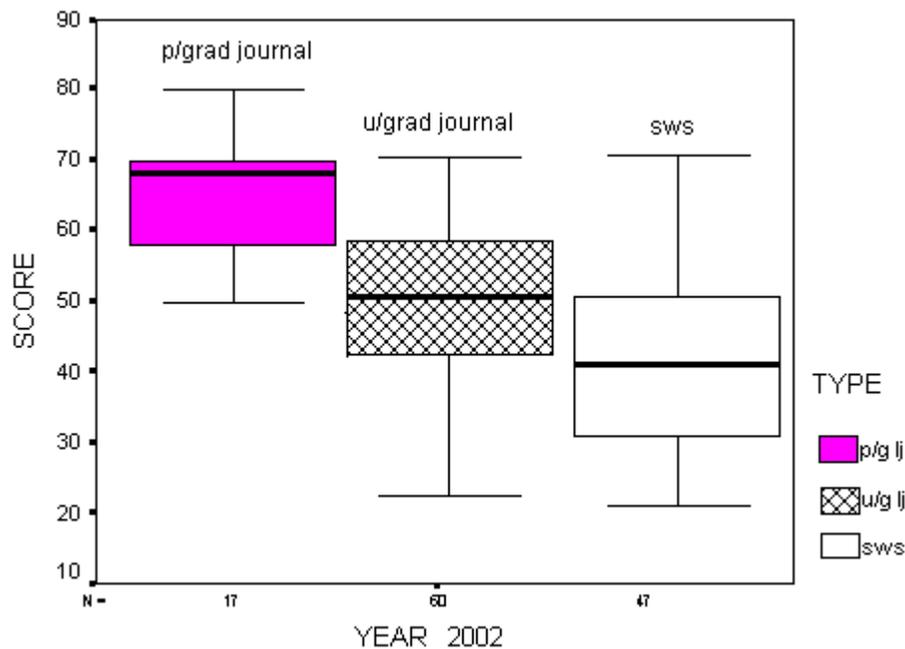
The mean score for the undergraduate journals at 53% was significantly different (to 95% confidence level) to the other two samples of reflective writing, and lay between them in value. The means and profiles of the post-graduate journal in 2001 (53%) compared well with the under-graduate journal in 2002 (50%) and the difference was not significant.

5.3 Results for staff.

Of the nine members of staff who participated in the original session, four did not build on the training in the following year. Of these four, one missed most teaching through illness, but the remaining three taught undergraduate units in engineering and mathematics and have currently found it hard to transfer the ideas on reflective writing to their units. Of the five who did pursue issues of reflection, all altered their assessments to include more opportunities for reflection.
- One lecturer amended his usual critical reflection after a SWS by developing a new example for students showing them a single example with both a poor

reflection and a high level of reflection. An example of this can be found in Appendix 2.

- Two other lecturers have altered assessments to focus on more developmental, evaluative exercises to encourage and enable students to be more reflective.
- One has assessed and graded short passages of reflective writing using the guidelines developed through the stages of reflection and felt 'more informed and in control of the grading process and was able to make much more useful formative comments on students work.
- The remaining lecturer adopted a learning journal as described in 5.2.

Three lecturers have reported a noticeable improvement in the quality of students' reflective writing as part of longer assessments. This has been especially evident to staff where the assessments used have been largely unchanged since the previous year. Students also seemed to have been given permission to refer to personal issues, emotions and developments in self-knowledge, which has proved instructive.

6. Evaluation

The evaluation of results revealed that these key factors could be considered to important in raising the quality of student reflective writing:

- *Time to reflect*. The instruction on reflective writing made no difference under SWS conditions, as there was insufficient time for reflection. Where time is given to students to reflect in a medium appropriate for personal reflection such as a learning journal then the students obtained significantly better results. These results however were a feature of the medium and time given and were unaffected by a single session on reflective writing. It is suggested that the current personal reflection exercises in SWS's for MSc students are altered to an non-assessed evaluations, which are favoured by students and useful to lecturers, as it is unlikely that high quality personal reflection can result in the limited time allowed.
- *Reinforcement*. Although learning journals were used by post-graduates in both years, in the second year, the stages of reflection were both explained and reinforced through the repetition of the lecture on video, and encouragement of the students to apply the model. This resulted in a significant increase in the quality of reflective writing. One student workshop although useful can in future only be regarded as an initial introduction.
- *Culture of reflection*. In both post-graduate learning journal experiences, there was an attempt by the lecturer to inculcate an 'ethos' of reflection, which was both continued, strengthened and made explicit in the second year through the application of the model. It is also interesting to observe that the five staff members who carried their own innovation forward on student reflective writing were all closely associated with the MSc programme where such a culture has been growing for some time. And in addition, after the training session, two of these lecturers carried these ideas into their undergraduate units, possibly demonstrating that the ideas are transferable as long as staff feel that they have the confidence and the support of like-minded colleagues.
- *Assessment of reflective writing*. Currently unresearched is the extent to which the assessment of learning journals and other short pieces of good reflection reported by staff leads to better reflection as students try to get a good grade. This may be a

factor, however it should be noted that results from the postgraduate journals in 5.1 show that even when they wish to get a high grade many students were not capable of this, but, after instruction, the poorest reflectors were able to raise the standard of their journals significantly. In doing so they were obliged to engage positively with the reflective process.

7. Conclusions and Future Developments

The initial results have been encouraging and plans are being made to return to the subject of critical reflection later in the academic year when students are starting the project work that will lead to their Masters dissertations. A voluntarily online discussion forum is being set up to seek student contributions to the issue of showing more evidence of reflection in written project work. This is currently being planned and will take the form of fortnightly discussion groups focusing on some aspect of reflection with direct relevance to student work. The issue of building a culture of critical reflection is clearly important and may be improved with the development of better subject related training materials and training at department level. However building such a culture is not only dependent on staff and student awareness but also has implications for the development of the curriculum across departments. For example, learning journals are a good tool for encouraging reflection but as students cannot be expected to keep more than one, sharing of such a journal between a group of subject modules could be considered requiring a modification to the assessment approaches of such modules. Finally there is an exclusive emphasis on written reflections at the present time, when research done on multimedia portfolios for reflection (Gale, 2000) shows that students benefit from more visual and auditory means of recording reflections. Students developing online journals often express the need for more varied media although not all software environments support this and resourcing implications (for both creation and assessment of additional media) would have to be carefully considered before this approach can be taken further.

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APPENDIX 1 – Some Examples of the Stages of Reflection *(from Terry King, DIS, UoP*)

BASIC OBSERVATIONS

This tutorial was fun and what we learnt about was interesting.

Having done other group projects in the past I believe that this one was far more interesting and therefore much more enjoyable.

I thought that this project was a good learning experience overall but think that maybe the grades that were awarded to our group could have been higher.

The real time online communication experience was fun and actually I found it quite addictive! I'm beginning to understand the attraction of chat rooms.

ADDITIONAL INFORMATION – FURTHER OBSERVATIONS – OTHER SOURCES

I strongly concur with the points clearly enumerated by {the text book} ie ..... { a list of points} ... According to the website, the CyberEd sampler, there are other motivating factors ie .. { a list of points}.

I did not think this educational website was particularly good for children. As an anecdote I would like to add that my 6-year old son came home from school today and was talking about what happened in class .... And he agreed that this site was not much fun!

Using this questionnaire I found that I had a marked preference for 'intuitive learning'. This was not a surprise. A few years ago I completed a Myers-Briggs type indicator questionnaire with my reported type being 'INTP' with a strong preference for the 'INT' dimension. So the new questionnaire just confirmed what I already knew about myself.

I do agree with the motivating factors in Chapter 10 of {the text book}. I think it is essential to make a student feel like an individual and important to outline the objectives of the course so the student knows what they will achieve at the end of the course. A website that I recently used (www.....) was useful because it gave you the objectives but then let you take a skills assessment beforehand so that you didn't have to work all the way through the course but just progress to the first level suitable for you.

REVISITING - REINTERPRETING - A DIFFERENT POINT OF VIEW /IN ANOTHER CONTEXT

Students commenting on group projects:

I can see now that I need to push myself forward next time, as with this group I let my own shortcomings get the better of me and some of the suggestions I made were really good but didn't get listened to.

What I will probably do differently next time it to better manage my time so that I am able to answer questions in the way I would like to.

I think organisation of the group was somewhat poor. Unfortunately on many occasions we seemed to be discuss points over and over again and wasted time. I think that an initial brainstorming exercise for each task would have been beneficial to us all.

Distributing the work load equally is vital to meet deadlines but then it is hard to keep track of everyone's train of thought to meet the common aim. To solve this problem it would be best if time allows to make sure all work is read by all members of the group to allow for amendments and modifications etc.. so that all the tasks tie up.

To generate ideas, we used brainstorming techniques. We also supported each other in bouncing ideas and evaluating their suitability. This gave us a sense of confidence. However we soon realised that this was also making it difficult for the group to focus, so then we relied on using out notes to focus our questions. I realised that the social communication part of Maslow's Hierarchy of Needs was coming into play here.

STANDING BACK – TESTING NEW IDEAS

Once we decided we needed a questionnaire it became out guide and concrete way of measuring the effectiveness of a website. Here I realised how useful a meaningful questionnaire could be. Although I had a personal rating based on my own perception and intuition, this was in contrast to some of the recorded scores given by the questionnaire – scores which could differ by as much as 30%.

This group project was planned more than past ones I have been in. After learning from past disasters we allocated a 'time plan' initially and followed it successfully. We also tried something new by managing to allocate different sections to individual members so multiple tasking was achieved while still managing to maintain the underlying 'threads' throughout. Effective communication played a major role in the success of this approach.

MOVING ON – PROBLEM RESOLUTION

I put my points across effectively. Usually I just put my point forward and 'that's it'. I have never tried to argue or persuade before but it actually worked! The group actually listened to me and said 'may be it is ..'. This gave me confidence and I will not be afraid to persuade people in future that something is wrong or it could be better.

I have recently started a new job in an IT company and have actively completed a 'learning journal', not just at the end of each day but continuously throughout the working day. ... As well as reflecting, I now no longer charge-in to situations but I

now find myself attempting to take in the meaning of what is being taught first…. I am no longer over-hyper but come across as more professional.

On reflection the tutorial did help me with designing and developing my own piece of CAL. Evaluating software makes you stop and think about what you are looking at. Looking at software on the day made me feel more confident that when it came to tackling my own course work that I could be extra critical when designing it. It is all too easy to get involved in your own subjective viewpoints. Now I know the value of sitting down and evaluating my own work using the same formal questionnaire we developed on that day.

APPENDIX 2 – Two Examples of Critiques for Student Use (*from Dr. Steve Hand, DIS, Uo*P)

As an example, look at the following two critiques – one is a better example than the other!

I woke up late because my alarm didn't ring. My own fault, but there you are. By the time I had finished my breakfast (my usual bowl of cornflakes, and a cup of black coffee with three sugars), I had missed my bus (that's the number 9a, picked up at the bus stop outside Halfords), which had left on time (just for a change).

So I got to University, and by the time I had found the right room, I was over 30 minutes late for the OOPR2 Exam. Unfortunately, the jobsworth invigilator wouldn't let me take the exam because it was "against University regulations". Didn't he realise how important it was for me to pass that exam? My overall grade depends on it, and now I stand to have a resit in September when I wanted to have my holiday in Ibiza.

I was over 30 minutes late for my exam, which meant I was not allowed to sit it. This will have repercussions on my degree mark, and on my holiday plans. This is the first time I have actually missed an exam, but not the first time I've actually been late to exams and important interviews.

I have learned that:
- *I need to improve my time-keeping for critical events*
- *The University has strict rules governing late arrivals at exams*
- *I need to be better prepared*

The reasons that I arrived late were:
- *My alarm clock didn't ring because I forgot to reset its time to BST on Saturday night (although I had reset all the other clocks in the house).*
- *I totally rely on the alarm clock ringing - I have no back-up system*
- *I rely on my bus – a break down or it leaving early would also cause me to be late*
- *I did not know in which room the exam was; if I had, I would still have been a few minutes late, but at least I could have sat the exam.*

In order to improve the situation for next year, I plan to:
- *Have a process to check all the clocks in the house when the clocks are due to change*
- *Make sure I have a back-up alarm system (using my digital watch) for all days when it's important to get up early*
- *On exam day, aim to catch the earlier bus ... its only 20 minutes earlier.*
- *Possibly consider missing breakfast, and buying a sandwich on the way from the bus to the exam room. I do believe that a good breakfast is important though!*
- *Make sure I know the correct room well in advance of the exam, by checking each room number when I first get the timetable.*

I suspect I need to reflect more on my priorities – this degree is really very important to me.

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