



UNIVERSITY  
OF WOLLONGONG  
AUSTRALIA

University of Wollongong  
Research Online

---

Faculty of Creative Arts - Papers (Archive)

Faculty of Law, Humanities and the Arts

---

2006

# Reflection and graphic design pedagogy: developing a reflective framework to enhance learning in a graphic design tertiary environment

Grant Ellmers

*University of Wollongong, [grante@uow.edu.au](mailto:grante@uow.edu.au)*

---

## Publication Details

This paper was originally published as: Ellmers, G, Reflection and graphic design pedagogy: developing a reflective framework to enhance learning in a graphic design tertiary environment, 2006 ACUADS Conference: Thinking the Future: Art, Design and Creativity, Faculty of Art & Design, Monash University & School of Art, Victorian College of the Arts, Melbourne, 27-29 September 2006, 1-10. Copyright 2006 The Australian Council of University Art and Design Schools.

Research Online is the open access institutional repository for the University of Wollongong. For further information contact the UOW Library:  
[research-pubs@uow.edu.au](mailto:research-pubs@uow.edu.au)

# Reflection and Graphic Design Pedagogy: Developing a Reflective Framework to Enhance Learning in a Graphic Design Tertiary Environment

**Grant Ellmers**

University of Wollongong, School of Art and Design, Graphic Design and New Media

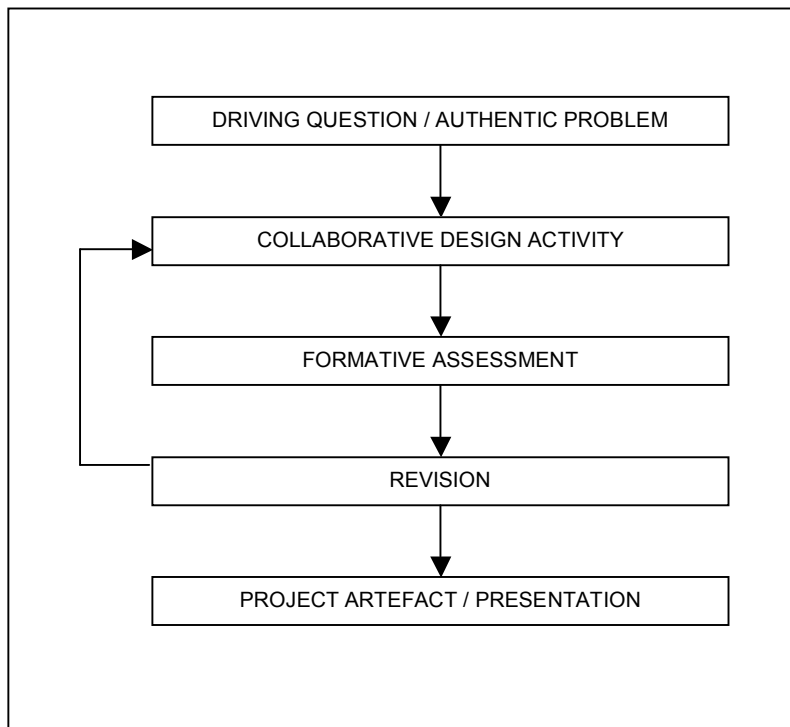
## Research Background

While there is a tradition of research in design pedagogy, literature specifically engaging with graphic design pedagogy is an emerging area. The main area of interest to this study is the loss of learning opportunities in traditional graphic design pedagogy due to a primary focus on project outcomes without formalised design process discourse. A component worthy of further investigation is the role reflection can play to provide a framework for engagement with the design process to enhance learning outcomes for the graphic design student.

The current pedagogical approach employed at the University of Wollongong is based on a blending of project-based and studio-based learning. Utilising either of these strategies or a combination is a common approach in many graphic design tertiary programs. (Davies & Reid, 2000)

Project-based learning has been identified as a 'comprehensive approach to classroom teaching and learning that is designed to engage students in investigation of authentic problems'. (Blumenfeld, Soloway, Marz, Krajcik, Guzdail & Palincsar, 1991) By placing students in realistic, contextualised problem-solving environments, project-based learning can serve to establish bridges between knowledge gained in the classroom and real-life experiences. (Blumenfeld et al, 1991)

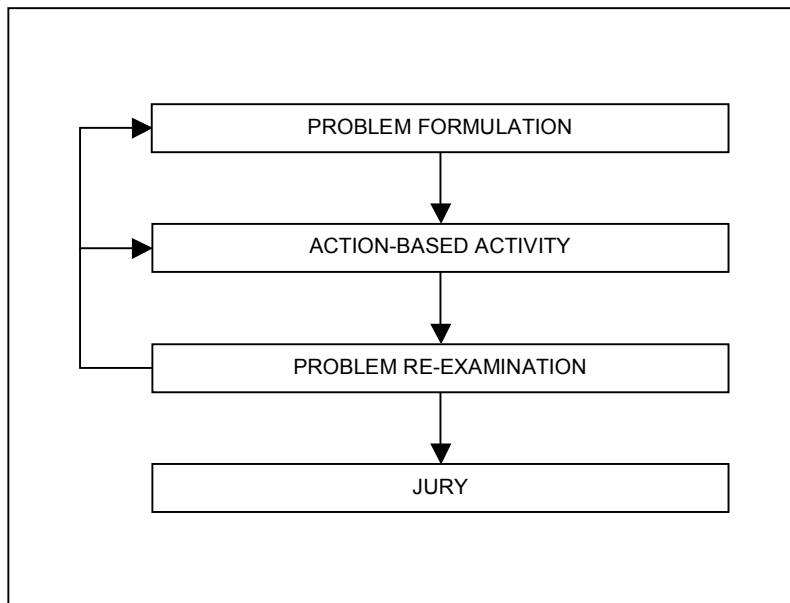
Drawing on Blumenfeld et al. (1994), Barron, Schwartz, Vye, Moore, Petrosino, Zech & Bransford (1998) I have articulated a generalised representation of project-based learning (see figure 1). First, there is the articulation of a driving question from which the students then enter into the activity of designing, which is usually collaborative in nature. As the project develops, the work is formatively assessed from which the students then revise their work entering into further design activity. The students cycle through these three steps before proceeding to the final step of project presentation.



**Figure 1:** Project-based learning (generalised model); based on Blumenfeld et al. (1991), Barron et al. (1998).

Studio-based learning has emerged from the design discipline of architecture. Lackey (1999) identifies the important features of studio-based learning, setting the design problem, periodic lectures, critique of student work (four distinct types: desk critique; pin-up; interim/midterm critique; and final critique), and assessment by jury. In the studio, the design teacher engages the student in action-based activity. (Kvan, 2001) The relationship in this setting between teacher and student, is framed by the master-apprentice approach. (Schön, 1987)

The four fundamental steps in the studio-based learning process have been described (Kvan, 2001) (see figure 2). First, there is the formulation of the design problem, then exploration of solutions through action-based activity, followed by problem re-examination. The student recycles through these steps before the student proceeds to the final step of examination by jury.



**Figure 2:** Studio teaching cycle (Kvan, 2001).

Over time the author has observed that students do not necessarily take forward their knowledge from project to project, or subject to subject. Many students focus on the project outcome with limited ability to articulate the design process. Understanding the design process is an important aspect of becoming a professional graphic designer as this can provide a platform to transfer expertise to different design contexts.

The inclusion of a reflective framework in traditional graphic design pedagogy has the potential to provide a scaffold for the learner to engage with the design process. Reflection as a means to enhance learning in education has been well documented. (Dewey, 1933; Boud, Keogh & Walker, 1985; Eraut, 1994; LaBoskey, 1994; Hatton & Smith, 1995). However, as previously stated, literature engaging specifically with graphic design pedagogy is limited. The literature that does exist primarily revolves around Donald Schön's reflective practitioner framework (Schön, 1983; 1987) and engages with architecture (Quayle & Paterson, 1989; Proudfoot, 2000), industrial design (Valkenburg & Dorst, 1998) or design education in general (Waks, 1999; 2001; Tonkinwise, 2005).

The concept of 'reflection' in the twentieth century is commonly credited to the educationalist and philosopher John Dewey (Schön, 1987; Ghaye & Lillyman, 1997; Waks, 1999; Griffiths, 2000; Rolfe, 2002). Drawing on Dewey, Hatton & Smith outline reflection as 'an active and deliberative cognitive process, involving sequences of interconnected ideas which take account of underlying beliefs and knowledge. Reflective thinking generally addresses practical problems, allowing for doubt and perplexity before possible solutions are reached'. (Hatton & Smith, 1995:34)

Of particular importance to design pedagogy is establishing an environment in which the student engages in a professional context and activity. Schön (1983; 1987), drawing on Dewey's theory of reflection, outlines the concept of the 'reflective practitioner' as a means of engaging in professional activity. This provides a framework for understanding and plotting the process of design practice and activity. Schön's theory is based on a constructivist view of human perception and thought processes; that the designer constructs their view of the world based on their experiences (Valkenburg & Dorst, 1998).

Schön (1987) maintains that reflection is intimately bound up with action. He rejects the theory of technical rationality that distinguishes professionals by the extent of their 'book knowledge'. Design practice is action-oriented and relies on an implicit knowledge that resists definition within the paradigm of technical rationality (Schön, 1983; 1987; Valkenburg & Dorst, 1998).

Schön (1983) highlights reflection as a critical element of professional design activity and articulates two types of reflection; reflection-in-action and reflection-on-action. Reflection-in-action takes place when the design professional is 'surprised' by, or experiences a unique situation during the development of the design solution where as reflection-on-action involves the review of actions from the recent past (Schön 1987). Eraut interprets Schön's reflection-on-action as the 'process of making sense of an action after it has occurred and possibly learning something from the experience which extends one's knowledge base' (Eraut, 1994:146).

Boud, Keogh, & Walker, building on the work of Dewey, define reflection in a learning context as 'a generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations' (Boud, Keogh, & Walker, 1985:19).

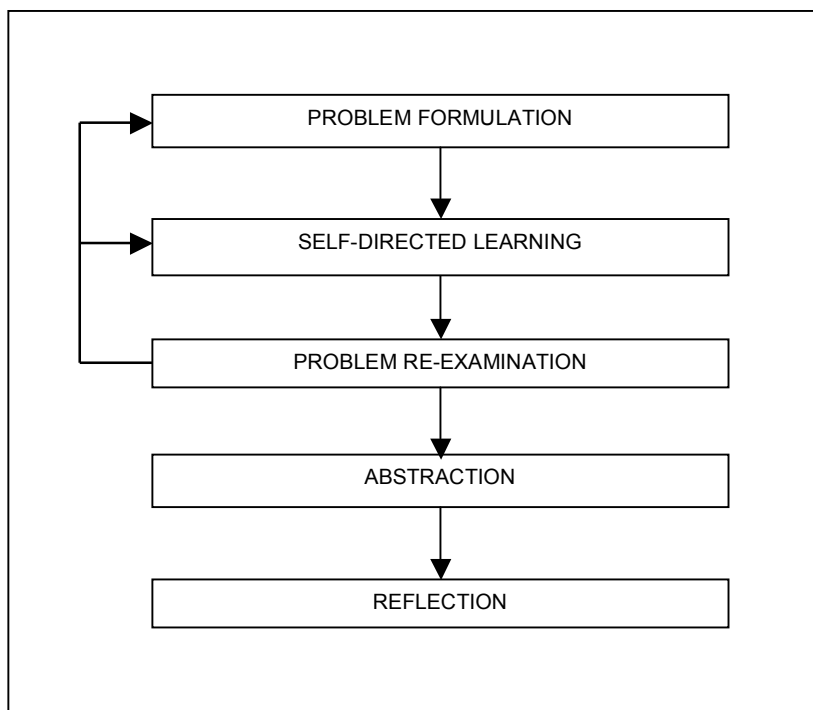
While acknowledging that reflection does take place at an unconscious level, of importance to Boud et. al. is the role of conscious thought in the reflective process as a means of formalising an intentional learning from experience. This could be interpreted as a process of 'conscious detachment from an activity followed by a distinct period of contemplation'. (Hatton & Smith, 1995:34) This process as outlined has similarities with the final two problem-based learning stages of abstraction and reflection, as described by Koschmann, Myers, Feltovich, & Barrows (1994). As such, problem-based learning has the potential to inform the integration of reflective strategies in a traditional graphic design educational framework.

Problem-based learning has been described as an instructional educational methodology in which students engage with contextualised problems and look to discover meaningful solutions (Rhem, 1998). An essential aspect of problem-based learning is the use of 'real-world' problems to frame the approach to learning (White, 1996). Students work in small groups to discover solutions to the problem. It is through this discovery that the students identify what they know and importantly what they don't know, establishing a framework in which to approach the problem (Duch, 1997; Major & Palmer, 2001).

Five fundamental steps in problem-based learning have been identified:

1. problem formulation;
2. development of a solution through a self-directed learning approach;
3. a re-examination of the problem to test the proposed solution;
4. abstraction where the solution is contextualised with other known cases;
5. final reflection stage where the students reflect and critique their learning process seeking to identify areas for future improvement (Koschmann et al., 1994).

The student group cycle through the first three stages until a satisfactory solution is developed before moving to the stages of abstraction and reflection (see figure 3).



**Figure 3:** Five steps in problem-based learning (Koschmann, Myers et al., 1994).

The inclusion of the abstraction and reflection steps, are of particular interest to this study as these steps have the potential to inform the inclusion of a reflective framework in a traditional graphic design education environment.

### **Development of a reflective framework**

The proposed reflective framework is based on the foundation principles of studio and project-based learning, incorporates elements of Schön's reflective practitioner framework, and includes the abstraction and reflection steps of problem-based learning as articulated by Koschmann, Myers et. al. (1994) (see figure 4)

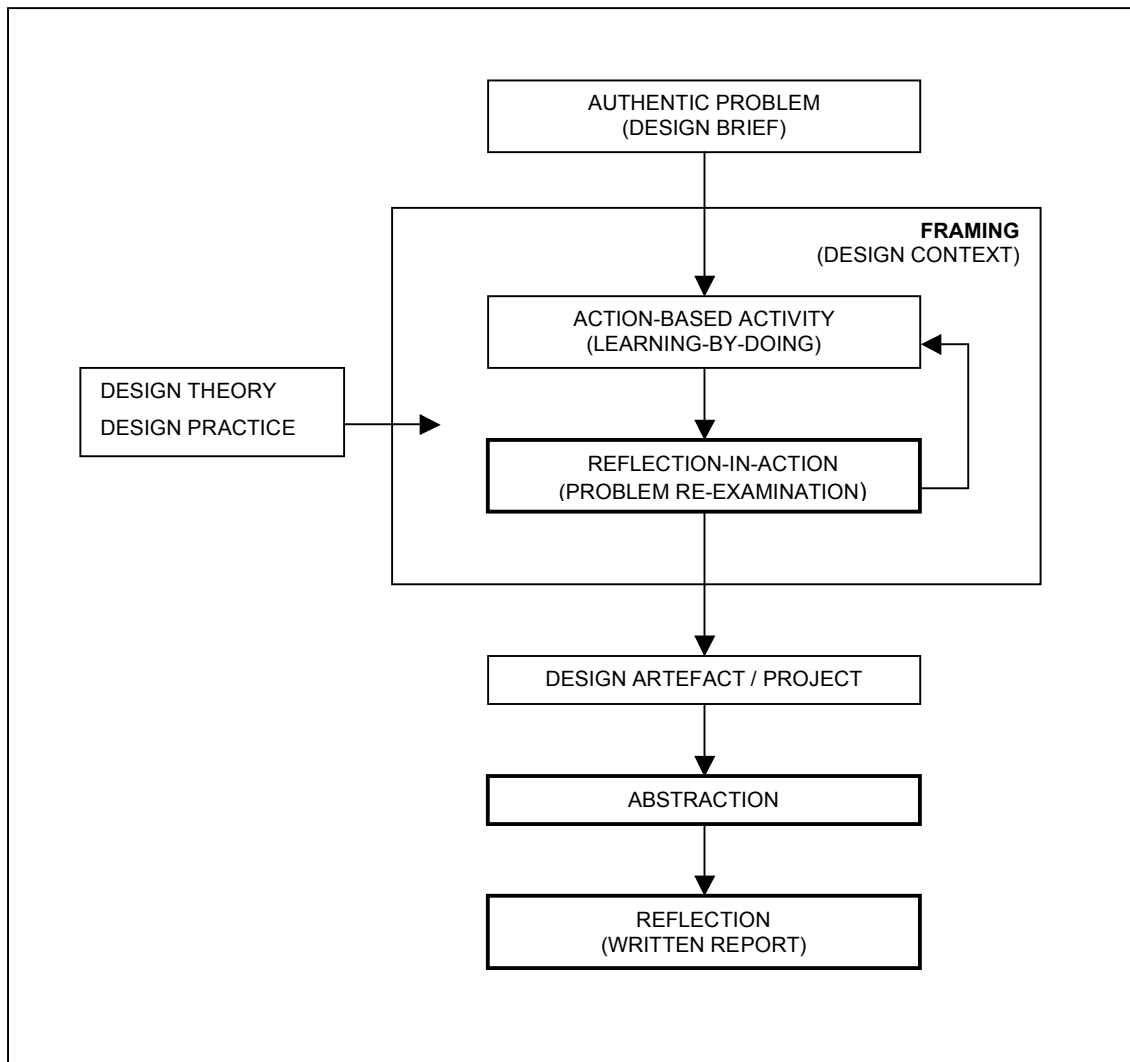


Figure 4: **Reflective Framework developed by the author.**

The students are given an authentic design problem, which is then framed through the establishment of the design context. Within this frame the students develop a solution in the form of a design artefact through a cyclic process of action-based activity and a reflection-in-action process, before presenting the final design artefact for assessment. During this process the students receive aspects of design theory and practice relevant to the subject objectives and the posed design problem. Once the design project has been presented the students commence the final stages of abstraction and reflection, which is articulated through a written assessment task.

Assessment has been identified as an integral aspect of learning (Gibbs & Simpson, 2004; Drew & Shreeve, 2005; Ehmann, 2005) that motivates and directs student learning (Boud, 1990; Briggs, 2003). The inclusion of a formalised assessment task in the reflective framework motivates and focuses the student to engage with the final stage of reflection and provides them a platform to articulate their understanding. ‘Assessment that explicates process, how students work, has the potential to redirect the learner toward reflection and understanding.’ (Boud, 1990; Ehmann, 2004:76)

Journals can be a useful learning strategy to encourage students to actively engage in the reflection process (Cantrell, 1997; Langer, 2002; O'Connell & Dymont, 2006) and document evidence of learning (Davies 1998). The journal can provide a valuable vehicle for the development of reflective professional practice (Ghaye & Lillyman, 1997; Clifford, 2002) and establish a means for the student to distance themselves from their experience (Walker, 1985). Quayle & Paterson note the importance of techniques such as journal keeping and visual note taking in the design process to 'encourage internal dialogue'. (1989:32) The journal process has been credited as a means to evidence a deep approach to learning and as a more reliable means of establishing student understanding than relying exclusively on the final design artefact. (Davies, 1998)

Concerns with the journal as a learning tool have been identified and include 'procrastination, superficial and unreflective entries, waning enthusiasm, and unwillingness or inability to reflect'. (Ghaye & Lillyman, 1997:57) Identifying critical incidents in the design activity which learners document in their reflective journal, have the potential to address these concerns. Tripp states 'incidents happen, but critical incidents are produced by the way we look at a situation, it is an interpretation of the significance of the event'. (Tripp, 1993) It is through the reflecting and analysis of these critical incidents that 'assist the practitioner in moving their practice forward and obtaining the expert . . . status'. (Ghaye & Lillyman 1997:80)

The process and reflective assessment task encourages the student to identify critical incidents from the design process and contextualise them within the outcomes of the final design artefact. This is significant in that the student assumes responsibility for identifying important moments of the design process there by encouraging them to be independent learners. Of significance for the assessor is that the students process journal is then not required, side-stepping ethical issues that can arise when viewing a personal document, and reducing the need for the assessor to trawl through a potentially detailed journal fishing for critical incidents.

## **Applying the reflective framework**

The reflective framework was initially introduced into a final third year undergraduate subject primarily in the form of the process and reflective assessment task, undertaken after completion of the design artefact. The students are asked to respond to a fixed set of headings, which are designed to explore their engagement with, and understanding of, the design process and how their learning might be applied in future situations.

While assessing the student submissions, I observed that most students did not make the most of the opportunities to reflect on the design process and analyse the design outcomes. In response, I have introduced the process and reflective assessment task at the second year level and have carried it through two third year subjects. This allows the students to practise and refine their approaches through feedback and further discussion of reflection in the teaching program.

The students are asked to submit the process and reflective report one week after the major



project presentations. This allows the students time to distance themselves from the project (abstraction stage) and reflect on the final project outcomes that, importantly, are informed by the feedback provided at the presentation stage.

## **Observations**

After 12-18 months of implementation anecdotal evidence suggests an improved learning as the result of the introduction of the reflective framework. This can be evidenced in an improved design dialogue from the students and increased engagement with the postgraduate program. However it was also felt student opinion would play an important role in the continuing development of this framework. In the first instance this has been achieved by incorporating three questions specifically engaging with the reflective framework within a fourteen question survey that was seeking feedback on aspects of subject delivery.

The survey was presented in an online anonymous format using a five-step Likert scale of: strongly agree; agree; uncertain; disagree; and strongly disagree. Of thirty-nine students enrolled in the subject, twenty participated in the survey providing a 51% response rate.

60% of the respondents agreed or strongly agreed that the reflective assessment task aided their understanding of the design process. 10% were uncertain, with 30% disagreeing and 5% strongly disagreeing. With 40% of the students uncertain or disagreeing this would perhaps suggest further work is needed developing and/or clarifying the assessment task in relation to the design process.

When asked whether the lecturer had encouraged them to reflect on what they had learnt, 75% agreed or strongly agreed, 10% were uncertain, 10% disagreed and 5% strongly disagreed.

Finally, while 50% of the students agreed or strongly agreed that formalising reflection in this subject provided an effective model for thinking about practice, which is a significant outcome, 40% of the students remained uncertain. This is an important issue and would suggest that further work needs to be done within the subject to scaffold the linkages between reflection and thinking about practice.

The process and reflection report has provided a successful platform for the design students to develop an application for postgraduate study. This has seen an increase from one or two candidates in the course work masters program to fourteen in 2005. This sudden large increase in numbers posed a number of other problems of course. There are currently six enrolments in the 2006 program and it will be interesting to note what happens in 2007.

## **Future directions**

The next stages will involve:

- Inclusion of further teaching and learning material engaging with the process and techniques of reflection;

- The development of a more comprehensive survey to gain an understanding of why a significant portion of the students remained uncertain about the role of reflection has to play to encourage thinking about practice.

## References

- Barron, B.J.S.; Schwartz, D. L.; Vye, N.J.; Moore, A.; Petrosino, A.; Zech, L.; Blumenfeld, P.C.; Soloway, E.; Marz, R. W.; Krajcik, J.S.; Guzdail, M.; & Palincsar, A. (1991) 'Motivating Project-based Learning: Sustaining the Doing, Supporting the Learning.' *Educational Psychologist* **26**(3 & 4): 369-398.
- Bransford, J. D. (1998) 'Doing with Understanding: Lessons from Research on Problem- and Project-based Learning.' *Journal of the Learning Sciences* **7**: 271-311.
- Boud, D. (1990) 'Assessment and the Promotion of Academic Values.' *Studies in Higher Education* **15**(1).
- Boud, D., Keogh, R. & Walker, D., (Eds.) (1985) *Reflection: Turning Experience into Learning*, (London: Kogan Page).
- Briggs, J. (2003) *Teaching for Quality Learning at University*. (Buckingham, UK: Society for Research into Higher Education and Open University Press).
- Cantrell, R. J. (1997) 'K-W-L Learning Journals: A Way to Encourage Reflection.' *Journal of Adolescent & Adult Literacy* **40**(5): 392-393.
- Clifford, V., A. (2002) 'Does the Use of Journals as a Form of Assessment put into Practice Principles of Feminist Pedagogy?' *Gender and Education* **14**(2): 109-121.
- Davies, A. (1998) *Using Learning Journals to Identify Critical Incidents of Understanding*. 6th Improving Student Learning International Symposium, Oxford Centre for Staff and Learning Development, Oxford Brookes University.
- Davies, A. & Reid, A. (2000) 'Uncovering Problematics in Design Education: Learning and the Design Entity', <http://www.arts.ac.uk/cltd/resea/adpapers.html> [Accessed 13th April 2005].
- Dewey, J. (1933) *How We Think: A Restatement of the Relation of Reflective Thinking to the Educational Process*. (Boston: Heath).
- Drew, L. and Shreeve, A. (2005) *Assessment as Participation in Practice*. The 13th Improving Learning Symposium, Imperial College, London, UK.
- Duch, B. (1997) 'Problems: A Key Factor in PBL.' <http://www.udel.edu/pbl/cte/spr96-phys.html> [Accessed 23rd March 2005].
- Ehmann, D. (2004) 'Futuregraduate: The Role of Assessment within Design Education', in *Futureground*. (Melbourne: Monash University).
- Ehmann, D. (2005) 'Using Assessment to Engage Graphic Design Students in their Learning Experience' *2005 Evaluations and Assessment Conference*. University of Technology Sydney.
- Eraut, M. (1994) *Developing Professional Knowledge and Competence*. (London: Falmer Press).
- Ghaye, T. and Lillyman, S. (1997) *Learning Journals and Critical Incidents : Reflective Practice for Health Care Professionals* (Dinton, England: Quay).
- Gibbs, G. and Simpson, C. (2004) 'Conditions Under which Assessment Supports Students' Learning.'

*Learning and Teaching in Higher Education* 1: 3-31.

Griffiths, V. (2000) 'The Reflective Dimension in Teacher Education.' *International Journal of Educational Research* 33(5): 539.

Hatton, N. and Smith, D. (1995) 'Reflection in Teacher Education: Towards Definition and Implementation.' *Teaching and Teacher Education* 11(1): 33-49.

Koschmann, T. D.; Myers, A. C.; Feltovich, P. J.; & Barrows, H. S. (1994) 'Using Technology to Assist in Realizing Effective Learning and Instruction: A Principled Approach to the Use of Computers in Collaborative Learning.' *The Journal of the Learning Sciences* 3(3): 227-264.

Kvan, T. (2001) 'The Problem in Studio Teaching - Revisiting the Pedagogy of Studio Teaching'. *1st ACAE Conference on Architectural Education*. Milton, T. Centre for Advanced Studies in Architecture, National University of Singapore; 95-105.

LaBoskey, V. K. (1994). Development of reflective practice : a study of preservice teachers. New York, Teachers College Press.

Lackey, J. A. (1999). 'A History of the Studio-based Learning Model.' Accessed 12th April 2005 (<http://schoolstudio.engr.wisc.edu/studiobasedlearning.html>).

Langer, A. M. (2002). 'Reflecting on Practice: using learning journals in higher and continuing education.' *Teaching in Higher Education* 7(3): 337-351.

Major, C. H. and Palmer, B. (2001). 'Assessing the Effectiveness of Problem-Based Learning in Higher Education: Lessons from the Literature.' *Academic Exchange Quarterly* 5(1).

O'Connell, T. and Dymont, J. (2006). 'Reflections on using journals in higher education: A focus group discussion with faculty.' *Assessment and Evaluation in Higher Education* 31(6): 671-691.

Proudfoot, P. R. (2000). 'Structuralism, Phenomenology and hermeneutics in Architectural Education.' Quayle, M. and Paterson, D. (1989). 'Techniques for encouraging reflection in design.' *Journal of Architectural Education* 42(2): 30-42.

Rhem, J. (1998). 'Problem-based Learning: An Introduction.' *The National Teaching and Learning Forum* 8(1).

Rolfe, G. (2002). 'Reflective practice: where now?' *Nurse Education in Practice* 2(1): 21-29.

Schön, D. A. (1983). The Reflective Practitioner: How professionals think in action. New York, Basic books.

Schön, D. A. (1987). Educating the Reflective Practitioner. San Francisco, Jossey-Bass Inc.

Tonkinwise, C. (2005). The Idealist Practice of Reflection: Typologies, Techniques and Ideologies for Design Researchers. Futureground, Monash University.

Tripp, D. (1993). Critical incidents in teaching: Developing professional judgement. London, UK, Routledge.

Valkenburg, R. and Dorst, K. (1998). 'The reflective practice of design teams.' *Design Studies* 19(3): 249.

Waks, L. J. (1999). 'Reflective practice in the design studio and teacher education.' *Journal Of Curriculum Studies* 31(3): 303-316.

Waks, L. J. (2001). 'Donald Schon's philosophy of design and design education.' *International Journal Of Technology And Design Education* 11(1): 37-51.

Walker, D. (1985). Writing and Reflection. Reflection: Turning Experience into Learning. Boud, D., Keogh, R. and Walker, D.: 52-68.

White, H. B. (1996). Dan Tries Problem-based Learning: A Case Study. Stillwater, OK, New Forums Press and the Professional and Organizational Network in Higher Education.