Creating and Sustaining Effective Learning Environments[*]

Kate Day

University of Edinburgh, Scotland

Abstract

The nature of learning environments and how they can be enhanced to the benefit of student learning are central matters of concern for all of us involved in higher education. The first part of this paper discusses some of the issues which arise if you start thinking about 'what is a learning environment anyway?'. It involves considering the role of representations, and particularly metaphors, in articulating and analysing the structures, processes and interactions entailed in learning and teaching, and leads on to a closer look at 'learning environments' and how students in particular are positioned. The focus in the second part is more practical, turning attention to some of the general challenges entailed in creating and sustaining effective learning environments and to some strategies and teaching approaches that may prove productive. Particular use is made of the findings of the ETL Project ('Enhancing Teaching-Learning Environments in Undergraduate Courses', 2001-05).

Keywords: Learning environments.

---

[*] Invited article. URL: http://ojs.aishe.org/index.php/aishe-j/article/view/9

Based on a keynote address given at the AISHE International Conference, 1st September 2006.

1. Introduction and overview

The nature of learning environments and how they can be enhanced to the benefit of student learning are central matters of concern for all of us involved in higher education. As Hiemstra makes clear, understanding and enhancing learning environments is no small task:

> A learning environment is all of the physical surroundings, psychological or emotional conditions, and social or cultural influences affecting the growth and development of an adult engaged in an educational enterprise.
>
> The task of understanding the multiple aspects of learning environments and then attempting to make these environments more effective is a complex undertaking.
>
> – Hiemstra (1991, pp. 8, 93)

The first part of this paper discusses some of the issues which arise if you start thinking about 'what is a learning environment anyway?'. It involves considering the role of representations, and particularly metaphors, in articulating and analysing the structures, processes and interactions entailed in learning and teaching, and leads on to a closer look at 'learning environments' and how students in particular are positioned. This more conceptual foray will be tempered by remembering Alfred Cobban's critique (1964, p. 23) of "the weakness of much social thought" that "it is so largely concerned with packing its bag (or even with working out a general theory about the way a bag should be packed) for a journey which is never taken".

Accordingly, the focus in the second part is more practical, turning attention to some of the general challenges entailed in creating and sustaining effective learning environments and to some strategies and teaching approaches that may prove productive. I will be drawing on practical experience and on recent research with various colleagues, principally Charles Anderson. Particular use will be made of the findings of the ETL Project ('Enhancing Teaching-Learning Environments in Undergraduate Courses', 2001-05)[1].

2. Representations of teaching and learning

Imagery of all sorts – models and schematics, metaphors and similes – is not in short supply as regards teaching and learning. It may be as simple, for example, as the mental pictures we try to conjure up for students when tackling specific academic tasks. We may discourage a 'haystack' approach to essay writing (it not being the marker's role to extract what's relevant), or we may commend the value of giving a 'tip of the iceberg' impression in an exam answer (as if many additional illustrative examples could be given but for the time constraints). We might suggest thinking of an academic presentation as a 'diamond rather than a pyramid'. You can no doubt readily summon to mind a range of imagery related to teaching and learning; confirming both its frequency of use and its potential to trump extended explication.

---

1   http://www.etl.tla.ed.ac.uk/

Nevertheless, representations have their own complications and limitations. A combination of factors will affect the power of any given representation to clarify and illumine, but with models and schemata, for example, there is always a difficult balance to be struck; make it too simple and it may be thought simplistic, make it too complex and it may be found confusing. Two recent examples at either end of the spectrum are the use by Barnett and Coate (2004, pp. 73, 75, 77) of three intersecting circles to display schematically the patterns of HE curricula in various subject areas and the elaborate ecological model of learning/teaching developed by Frielick (2004, p.329).

2.1   Metaphorical representations

What I want to concentrate on however are metaphorical representations and in particular how they frame our understandings. Some people would of course come close to arguing that language *is* metaphor. But even if one eschews such a strong stance language is replete with metaphor, and in the words of Nardi and O'Day (1999, p. 43), "Metaphors matter because they suggest pertinent avenues for action and intervention."

Like all representations metaphors bring certain aspects of a phenomenon or process to the forefront of attention and background other elements, thus both sharpening and constraining vision; 'highlighting and hiding' to use Lakoff and Johnson's terminology (1981, p. 10). Metaphors encapsulate certain sets of insights and provide a focussed but partial way of looking at something. At the same time the mix of resonances and feelings invoked by a metaphor can vary from person to person, and from group to group - according, for instance, to our prior experiences, cultural reference points, and familiar ways of viewing the world.

Take for example the notion of students as 'customers'. It is a metaphor often resisted by academics due to the nesting of education within a consumerist context and the vocabulary and criteria emphasised as a consequence. Yet the metaphor, by placing students in a strong position serves to foreground the importance of seeking to ensure that what is provided for them takes account, in well thought-through ways, of their learning needs and preferences. Moreover, the less congenial connotations of 'students as customers' may be somewhat ameliorated when the metaphor is expanded on by commentators from within its 'home' disciplinary field. Marketing academics Kotzé and du Plessis, for instance (2003, p. 182), emphasize how "customer participation does not happen automatically but depends on customers' role clarity, ability and motivation" and how "through their participation in an array of learning activities, students actually 'co-produce' their own education. At the same time they do contribute directly to their own satisfaction, quality and value perceptions". Such an interpretation leads Kotzé and du Plessis to keep company with analysts coming from quite different orientations; for example, Lewis Elton (2006), drawing on Humbolt, and viewing teachers and students as 'collaborators in the learning process' or those endorsing Etienne Wenger's 'joint enterprise' notion (1998) of teaching and learning.

So if, as I have been arguing, metaphors have a 'spotlighting' and 'screening' function, carry with them a range of resonances, can be imbued with different meanings and built upon in various ways, what then are we to make of learning environment(s) as a metaphorical representation?

2.2   Learning environment as a metaphorical representation

Although the notion has been around for quite a while there is rather little consensus about what constitutes a learning environment; what kind of boundaries can or should be drawn, what the key elements are and how they interact, how to take micro as well as more macro level influences into account, etc. This lack of agreement is unsurprising given, firstly, the complexities of the dynamics involved in everyday teaching and learning, and, secondly, the variety of perspectives that have informed analysis.

Not only are learning environments conceptualised and researched in different ways across a range of disciplinary areas, literatures and discourses, there are also few signs of intersection or interchange between them. Whilst there is more cross-fertilisation and debate within particular streams of interest in learning environments, there is still considerable diversity. The editors of a 2003 publication aimed at "unravelling and identifying basic components and dimensions of powerful learning environments", for example, explicitly comment in their introduction on "the contrasting theoretical frameworks, methodological approaches and empirical outcomes" (De Corte et al. 2003). Contributors to the same volume often draw attention to the unavoidable partiality of their own take on the complexities of learning environments.

The nature of learning environments was very much a central matter in the large–scale ETL Project. Concerned with enhancing the quality of learning in undergraduate courses, we worked in four different subject areas (Biological Sciences, Economics, Electronic Engineering and History) and in contrasting course settings (first and final year modules in different kinds of higher education institutions). Early work on the project underscored the intricate web of further-out and nearer-in contributory factors which play upon, and help constitute, learning environments. The initial mapping was very complex, taking account of broad social, cultural and political contexts, and their interconnections with disciplinary, institutional and departmental contexts. In subsequent phases of the ETL Project our focus tended to be on the interactive elements highlighted in Noel Entwistle's delineation (2003, p. 5) of the 'inner' teaching–learning environment, which concentrated on elements related to course contexts, teaching and assessing, students and student cultures, and staff-student relationships.

In the History strand of ETL Charles Anderson and I were unsettled by a tendency in some quarters outside the Project for learning environments to be thought about as if they were 'containers' within which students were placed and operated. Even people as strongly wedded to constructivist ideas as John Cowan and John Biggs can on occasion give a similar impression. Cowan (1998, p. 112) defines teaching as "The purposeful creation of situations from which motivated learners should not be able to escape without learning or developing", and Biggs (2003, p. 27) writes that "In aligned teaching, there is maximum consistency throughout the system. … The students are 'entrapped' in this web of consistency". A clear strength of this way of viewing learning environments is that it highlights the important value of well-articulated course design and how local activity is shaped by wider imperatives and constrained or enabled by social structures. It runs the risk, however, of failing to give a sufficiently prominent role to the human purposes that are being pursued within a particular environment or to participants' histories and what they are bringing with them. Different individuals can experience the same learning environment quite differently and in that sense inhabit different worlds. A container-like emphasis also presents a somewhat static picture,

neglecting the dynamic way in which environments can be seen both to sustain particular forms of human activity and to be created by those very forms of activity.

In an article about purposive environments we have traced out how we were led, influenced by Cole's portrayal (1996) of "context as that which weaves together", to finding analytical value in taking a relational view of environment and context and to thinking of students, along with their lecturers and disciplinary practices, as a constitutive part of university learning environments (Anderson & Day 2005b, p. 325). A similar query "about the practice of considering learning environments as separate from the participants in a community" emerges in the work of Barry Fraser and his collaborators, who since the 1970s have been developing and using questionnaires to assess the perceptions of teachers and students in school settings. A *Learning Environments Research* article by Roth (1999), for example, sets out a detailed argument (making strong use of Rorty) to challenge what he sees as misplaced, assumptions made about relationships between Environment, Self and Other and to suggest that "it makes sense to theorise learning environments as an integral part of the learner".

A view of students as a fundamental part of, and having at least some shaping effect on, university learning and teaching environments, informs the remainder of this paper. I will now turn to identifying some of the challenges entailed in creating and sustaining effective learning environments, particularly those thrown into relief by the ETL Project. Thereafter, I will add into the melting pot a handful of practical strategies and approaches that are very much geared to furthering student learning

3. General challenges in creating and sustaining effective learning environments

3.1   Recognising contextual constraints and affordances

One of the dominant challenges is self-evident to any practitioner: many of the factors and variables which affect the patterning and productiveness of a given learning environment may well not be within our control – whether as individual teachers, members of course teams, departments, schools, or colleges. In the History strand of the ETL Project, for instance, where we deliberately worked with course modules in contrasting settings, there was clearly an impact upon the contexts in which teaching and learning were taking place (Anderson & Day 2005a). The three institutions were a well-established HEI that became an independent university in the late 1960s, a post-1992 metropolitan university strongly committed to serving local needs and an old university attracting students from across the UK. This meant that there were distinct variations in the type and level of the incoming undergraduates' qualifications, in the proportion of time devoted to the study of History in first year (varying from one sixth to two thirds or more of a students' curriculum), and in the kinds of assessment (the balance between formative and summative, between coursework and exams, between written and oral performance).

More generally, as teachers we only have access to certain kinds and levels of resources in terms of finance, plant, people, or time, and there may well be pre-determined priorities. We also need to work within variously configured webs of rules, regulations, and procedures, for example in relation to assessment, that have usually, (though not always), been put in place for the best of equity, consistency and accountability reasons. Together they affect the nature

and amount of scope for local action that actually exists.

At the same time there are the more subtle ways in which our fields of vision are shaped, and perhaps limited by, for instance, disciplinary assumptions and traditions, the lure of the familiar, our own craft knowledge (what Shulman (2004) terms 'pedagogic content knowledge'), and ideas about what motivates students or what they can achieve.

3.2   Adapting to the normality of change

Another challenging feature – that again will be familiar to all higher education lecturers – is the amount of change to which learning environments are subject and the need for adaptations to be made, often at short notice. When you have the luxury of a four-year project it becomes very obvious that what researchers often refer to as 'blow–up factors' (because of the disruption caused to well-laid research plans and timetables!) are very much part and parcel of academic life, just as they are elsewhere.

In the History strand sites, for instance, staff had to deal with the knock–on effects of institutional reorganisation, semesterisation and a commitment to using a VLE in every course, a full curricular revamp, fluctuations in student recruitment, and staff changes due to sabbatical or funded leave, ill-health, or people moving to another post either internally or elsewhere. Fortunately, such changes did not happen all at once in a single location, but a lack of stability of some kind characterised all the project settings rather than being exceptional.

3.3   Developing some shared purposes

While some lack of control and restricted degrees of freedom, plus the dynamics of change are certainly key challenges when trying to create and sustain effective learning environments, much will also depend on the purposes being pursued within a module by staff and students.

Students' approaches to learning and studying have of course been a strong line of research enquiry over the past twenty years or more, and indeed was one of the indicators used within the ETL Project to try to gauge the effects of the changes made to the modules with which we were involved. At the same time it is also important to pay attention to the disciplinary and specific purposes which staff are wanting students to pursue in any given module, and the extent to which the nature and patterning of the various teaching, learning and assessment processes encourage students to engage with, share in, and pursue those module purposes.

In each of the subject areas investigated by the ETL Project it was possible to identify characteristic features of what came to be called 'ways of thinking and practising' (WTP) which were both intrinsic to a discipline and a valued outcomes of studying that discipline. In History, a subject with diverse concerns and theoretical frameworks, which is quite highly contested, and has no standard university curriculum or degree structure, the development in students of the kind of 'habits of mind' listed below, emerged as an important 'common denominator'. To achieve a high quality of engagement with historical topics, students were seen as needing to develop their conceptions of the nature of historical knowledge and evidence and their capacity to interact with that knowledge along the following dimensions:

• appreciation of history as socially constructed and contested

- skilled interpretation/synthesis/evaluation of historical evidence, topics

- placing particular events/topics within broader contexts

- alertness to interconnections among phenomena

- sensitivity to the 'strangeness' of the past

- ability to view events and issues from different perspectives

- readiness to separate out one's own preconceptions

- communicating representations of subject matter in appropriate forms of expression and argument

Such ways of thinking and practising are not simply transmissible, but involve dynamic and evolving processes of interpretation, construction, and performance by lecturers and students, within the possibilities afforded by particular learning contexts.

The challenge for the university teachers in the ETL Project sites was to find effective means of facilitating and furthering students' appreciation of, and competence in, disciplinary WTP. In Economics with its agreed body of foundational knowledge, assisting students in coming to grips with 'threshold concepts' such as 'opportunity cost' and 'elasticity', was identified as a matter of prime concern. Such threshold concepts (Meyer & Land 2003, p. 1) are ideas that once fully grasped by students provide a qualitatively different way of understanding. They seem to serve as portals, "opening up new and previously inaccessible ways of thinking" about certain aspects of the subject – "a transformed way of understanding … without which the learner cannot progress". However, such a transformation can be problematic as earlier, comfortable positions are left behind and disconcerting new ones explored.

3.4   Working towards 'congruence' in designing and running courses

A useful analytical tool which emerged in the course of the ETL Project was the importance of 'congruence' – not only in terms of a well attuned articulation or alignment between the various aspects of a course (such as curricular content aims, and structure, teaching and learning activities, guidance and support, assessment and feedback, course organization and management), but also as regards a congruent relationship of each of these elements with students' backgrounds, knowledge and aspirations.

When this framework was used to examine what the students involved in the whole ETL Project reported to be more or less helpful aspects of their learning environments, together with what the staff concerned identified as particular challenges for themselves as teachers, the three aspects of congruence that proved problematic across several settings were:

- engaging effectively with student diversity;

- providing adequate and supportive guidance and feedback; and

- ensuring coherence in the management of large undergraduate courses.

4. Possible practical approaches

Turning now to the last part of this paper, I will be considering in quite a broad-brush way how strategies for the design and running of courses and approaches taken to teaching can contribute to the effectiveness of learning environments. Naturally it makes a difference whether we are thinking about environments which involve very many students as in large first year classes, or a single student as in the Taught Masters dissertation situation, and also whether the students are relative novices or more experienced in a given subject area. However, there are some thematic suggestions to be made which, while they are neither altogether novel nor quite what David Perkins (1999) calls 'action poetry', could potentially contribute to the effectiveness of learning environments in Higher Education.

4.1   Clarifying aspirations for students and the nature of their learning

An important starting point, it seems to me, is being clear about what we are trying to help students achieve in relation to their study of a subject area. Ideally these aspirations would then permeate, and be reflected in, the structuring and conduct of all aspects of teaching, learning and assessment activities, at every level of our involvement with students.

Of course in practice this consistent permeation simply doesn't happen – for lots of reasons. But the difficulties don't detract from the value of seriously thinking through what we want students to be able to get out of studying our particular discipline, so that these overarching purposes can act as an influential touchstone for whatever element of learning and teaching is under consideration or in process. Clarifying what we want students to be engaging with and how, can perhaps be assisted by the growing body of disciplinary-based literatures and some of the subject benchmark statements may also provide useful pointers. At a personal level it can be helpful to reflect on those lovely moments in teaching when you think 'yep, they've got it', and to analyse the 'it' by recalling what students had done, said or written and then working out what kinds of understandings you took these 'performances' to signify.

The benefits of clarifying key disciplinary purposes exist whatever the context – talking with a student in an individual supervision session, designing an online science practical, whatever.

In the ETL Project it was very apparent how everyone involved in teaching modules, particularly those with large enrolments and correspondingly large numbers of staff, needed to have a set of sufficiently common core understandings. This was partly in order to provide students with experiences as consistent and similar as possible in the interests of equity. It was also so that those teaching on a module could make sense for students of relationships among its component parts and also make links with purposes being pursued elsewhere within the same disciplinary area.

4.2   Thinking explicitly and consistently about congruence to students

Paying attention to disciplinary purposes in relation to students raises the issue of 'congruence to students' as a second important consideration in creating and sustaining effective learning environments and one that is not always stressed. A question such as 'how would I or we like a student or students to be different from when they start and when they finish this session/module/course/degree?' implies thinking both *developmentally* and *laterally*.

The developmental dimension involves taking into account students' prior knowledge and experience, where they are headed, and what is appropriate at this stage in their progression.

The lateral thinking relates to the current commitments, academic and otherwise, that students have alongside whatever is your direct concern. Such reflection might lead, for example, to trying to stagger assessment deadlines across various modules, or in the context of professionals engaged in a master's programme part-time might involve recognising and learning about their professional expertise and striking a good practice/theory balance.

Being clear about what we are trying to help students achieve also leads to trying to work out what challenges are likely to arise for students; which aspects are likely to constitute what Perkins (no date) calls 'troublesome knowledge', and how students' efforts can be scaffolded so as to encourage them to come to grips with that troublesomeness. It also involves considering carefully what account needs to be taken of individual or subgroup differences – in students' backgrounds, motivations, cultural capital, future plans – and again how this can be translated into action.

4.3   Letting students in on often tacit academic assumptions and practices

A third productive strategy which suggests itself is for us to be more open and explicit with students about the nature of knowledge and of expertise, together with the processes by which they are developed.

The academic world can be rendered much more accessible by heightening students' awareness of, for example,

- the provisionality and contestability of knowledge,

- the grounding of expertise in knowing-how and knowing what is unknown, as much as in subject mastery,

- the contribution of focussed activity, practice, and time on task to the development of knowledge and expertise.

Yet our professional socialisation, if not our personal inclination, may be to keep things a bit of a mystery.

The academic convention in research, for instance, is to hide from view the messiness of the process, the strong reliance on peer critique for revision and reconceptualisation, and the role of mundane routines as well as serendipity in research outcomes and 'discoveries'. As Bargar and Duncan (1982) noted, "The formal discussions and presentations of research in texts, articles, and papers somehow do not communicate what we have experienced as an often unpredictable and dynamic process…. Through highly standardised reporting practices, [what Kaplan calls 'the reconstructed logic of science'] scientists inadvertently hide from view the real inner drama of their work, with its intuitive base, its halting time-line, and its extensive recycling of concepts and perspectives".

Writers such as Northedge (2003) and Haggis (2003), who draw on the literature about adult learning, communities of practice and academic literacies, have helpfully directed attention to the need not just for greater transparency *per se*, but for learning environments that are geared to enabling participation in academic discourse and creating student confidence and

competence in carrying out academic tasks.

In the History strand of the ETL Project, there were many examples of staff engaging in vital 'show and tell' activities. They were *taking out* to students a clear representation of historical purposes and practices, and communicating how to think about, as well as how to go about, historical tasks. In lectures and seminars there was the conscious modelling of historical reasoning and the highlighting of contrasting historical approaches. At the same time staff were acting *to draw students into* participating in historical debates and displaying historical ways of thinking, with plenty of scope and encouragement given for students to display their own agency in interpretation.

4.4   Sharing our rationales and the affective dimension with students

As well as reducing the academic mystique, by decoding what is entailed in academic tasks and leading students into appropriate ways of acting as they tackle them, it seems important for there to be more sharing of rationales and feelings within learning environments, on the part of students as well as staff.

Lots of energy and careful thought goes into course design and teaching processes and yet, whether due to reluctance or a lack of awareness of the potential benefits, we may well not go one step further and enable students to become more aware of why the elements of a course have been configured as they have, the reasons that lie behind the selection of content material or how certain activities, assignments or forms of questioning are intended to contribute to their learning in the subject area.

Again it is a matter of providing the means for students to enter more fully, in an appropriately phased way, into an appreciation of what they are involved in and why, and thus creating further opportunities for common ground and dialogue between staff and students.

Within the affective domain there is also scope for revealing and sharing – in terms of staff both conveying their enthusiasm for the subject and demonstrating their concern for students. The importance of staff displaying wholehearted involvement in the subject matter and engagement in the progress of learners was borne out in the ETL Project, just as in many other sorts of studies across a range of discipline areas.

In the affective area, where gaps between words and actions are rapidly exposed, it is of course all important for what is expressed to be genuine and to be experienced as authentic, which underscores the need for Parker Palmer's "inner resources" (1997) and Bruce Macfarlane's "teaching with integrity" (2004).

The reciprocal of staff openness is student openness which again can be part of, and contribute to, mutual respect and trust. For students the ability to be open depends partly on them becoming more aware of how they are going about their learning and applying this reflexivity to monitoring their own progress and diagnosing difficulties.

In addition students need to have the sense that learning environments are such that it is safe to reveal thoughts and feelings about their studying and understandings. This is a complex topic with large literatures about what staff can be doing to promote 'self regulation' and to foster positive 'learning climates'.

4.5   Appreciating the mutual dependencies between learners and teachers

The final theme picks up on some of my earlier observations about notions of learning environments and references to 'common ground'. It concerns the positioning of staff and students, their interrelationships and opportunities for what in the History strand of ETL we called 'dialogic' teaching and learning. There is an iterative interdependence of learners and teachers in how their attitudes and actions affect one another and in the extent to which learning is furthered.

In our research about Masters dissertations which considered supervisors' and supervisees' perspectives (Anderson et al. 2006) what emerged, apart from the centrality of the dissertation as the key purpose of collaboration, was the way in which supervisors needed to take on dual shaping and supporting roles and responsibilities. They needed to have commitments both to students personally and to the gatekeeping of academic standards. This meant assisting students to pursue topics of personal interest and to develop their sense of agency, as well as acting to help ensure the research worthiness of the work undertaken.

There seems to be value in finding appropriate balances in respective roles that get away from many of the dichotomous discussions about teacher or student centredness, about authority or autonomy, towards more interlocking sets of responsibilities with student agency an important component; but in the sense of a well-supported apprentice rather than a fully independent learner.

5.   In conclusion

It will have become evident that I would want to go along with the argument of Barnett and Coate (2004, pp. 128-129) that "If curricula are the intentional imagining and ordering of education experiences, it is through pedagogies – through the teaching approaches and the pedagogical relationships between lecturer and student and even student and student – that the curriculum is realized … A curriculum is always, in part, a *curriculum-in-action*. It is always being realized *in situ*".

Learning environments cannot simply be planned and implemented in some mechanistic fashion, but as the 'creating and sustaining' phrase in the conference title helpfully reminds us, they need to be sites of nurturing, sensitivity, flexibility, adaptability and responsiveness. Attentiveness to what is happening and how things are working out is crucial, as is a readiness to capitalise on the opportunities of the moment and to be careful lest an inappropriate style of behaving or tone of voice should sabotage our best endeavours. In the words of the old adage, it's not just what we do but the way that we do it which matters.

6. References

Anderson, C. & Day, K., 2005a. ETL Subject Overview Report: History.
URL: http://www.etl.tla.ed.ac.uk//docs/HistorySR.pdf

Anderson, C. & Day, K., 2005b. Purposive environments: engaging students in the values and practices of history. *Higher Education: The International Journal of Higher Education and Educational Planning*, 49(3), 319-343.

Anderson, C., Day, K. & McLaughlin, P., 2006. Mastering the dissertation: lecturers' representations of the purposes and processes of Master's level dissertation supervision. *Studies in Higher Education*, 31(2), 149.
URL: http://www.informaworld.com/10.1080/03075070600572017

Bargar, R.R. & Duncan, J.K., 1982. Cultivating creative endeavor in doctoral research. *Journal of Higher Education*, 53(1), 1-31.

Barnett, R. & Coate, K., 2004. *Engaging the Curriculum in Higher Education*, Open University Press.

Biggs, J., 2003. *Teaching For Quality Learning at University: What the Student Does,* 2nd ed., Open University Press.

Cobban, A., 1964. *The Social Interpretation of the French Revolution*, Cambridge University Press.

Cole, M., 1996. *Cultural Psychology: A Once and Future Discipline*, Belknap Press.

Cowan, J., 1998. *On Becoming an Innovative University Teacher*, Open University Press.

De Corte, E. et al., 2003. *Powerful Learning Environments: Unravelling Basic Components and Dimensions,* 1st ed., Pergamon.

Elton, L., 2006. Letter. *HEA Academy Exchange*, 3, 32-33.

Entwistle, N., 2003. Concepts and Conceptual Frameworks Underpinning the ETL Project, Occasional Report 3.
URL: http://www.etl.tla.ed.ac.uk//docs/ETLreport3.pdf

Frielick, S., 2004. Beyond constructivism: An ecological approach to e-learning. In R. Atkinson et al., eds. *Beyond the comfort zone: Proceedings of the 21st ASCILITE Conference.* Perth, Western Australia, pp. 328-332.
URL: http://www.ascilite.org.au/conferences/perth04/procs/frielick.html

Haggis, T., 2003. Constructing images of ourselves? A critical investigation into 'approaches to learning' research in higher education. *British Educational Research Journal*, 29(1), 89.
URL: http://www.informaworld.com/10.1080/0141192032000057401

Hiemstra, R. ed., 1991. *Creating Environments for Effective Adult Learning*, Jossey-Bass Inc.,U.S.
URL: http://www-distance.syr.edu/leindex.html

Kotzé, T. & du Plessis, P., 2003. Students as "co-producers" of education: a proposed model of student socialisation and participation at tertiary institutions. *Quality Assurance in Education*, 11(4), 186 - 201.
URL: http://www.emeraldinsight.com/10.1108/09684880310501377

Lakoff, G. & Johnson, M., 1981. *Metaphors We Live By* New edition., Chicago University Press.

MacFarlane, B., 2004. *Teaching with Integrity ; the Ethics of Higher Education Practice* 1st ed., Routledge.

Meyer, J. & Land, R., 2003. Threshold Concepts and Troublesome Knowledge: Linkages to Ways of Thinking and Practising within the Disciplines. ETL Project, Occasional Report 4. URL: http://www.etl.tla.ed.ac.uk/docs/ETLreport4.pdf

Nardi, B.A. & O'Day, V., 1999. *Information Ecologies: Using Technology with Heart*, MIT Press.

Northedge, A., 2003. Enabling participation in academic discourse. *Teaching in Higher Education*, 8, 169-180. URL: http://www.ingentaconnect.com/content/routledg/cthe/2003/00000008/00000002/art00002

Palmer, P.J., 1997. *The Courage to Teach: Exploring the Inner Landscape of a Teacher's Life*, Jossey Bass.

Perkins, D. No date. Video interviews: Key concepts related to Teaching for Understanding. ETL Project. URL: http://www.etl.tla.ed.ac.uk//publications.html#video

Perkins, D. & Wilson, D., 1999. Knowledge into action. *Knowledge Directions, The Journal of the Institute for Knowledge Management*, 1, 65-77.

Roth, W., 1999. Learning environments research, lifeworld analysis, and solidarity in practice. *Learning Environments Research*, 2(3), 225-247. URL: http://dx.doi.org/10.1023/A:1009953920993

Shulman, L.S., 2004. *Teaching as Community Property: Essays on Higher Education*, Jossey Bass.

Wenger, E., 1998. *Communities of Practice: Learning, Meaning, and Identity*, Cambridge University Press.