Balanced interests:
Towards a holistic sociology of higher education evaluation

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Abstract

This paper provides one model for reflecting holistically on the practice and outcomes of evaluation in higher education institutions. It identifies three discrete but related areas of activity, each of which has distinctive interests which determine appropriate and legitimate evaluation approaches. The three interests are a managerial interest in control of organisational operations, interests of participants in teaching and study activities and interests of learners in their learning. Concern is expressed that, in the current environment, there is an imbalance of power among these three areas of activity. The power of information technologies to monitor and coordinate activities in education institutions aligns with managerial interests establishing discourses of control that take priority over teaching and study processes and over the quality of learning itself. The paper applies the suggested tripartite model to analyse the primary interests in evaluations and applies this analysis to evaluations of interactive video-conferencing in one university.

Introduction

Higher education is under pressure from government, employers and community expectations to improve the quality of education, reduce costs and improve access (Ehrmann, 1996; Zipin & Brennan, 2003). One response from universities has been the introduction of flexible delivery of courses and the use of educational technologies to support institutional strategic directions, development of teaching/learning processes and promotion of personal learning and development. In responding to change, universities, academics and students themselves have developed, and continue to develop, new ways of being a learning organisation (Senge, 1992) and an organisation that supports learning.

The transition from traditional elite to mass higher education (Commonwealth of Australia, 2003) places pressures on universities to be accountable for resources and educational outcomes. Institutional managers appreciate the capacities of information technologies to assist with monitoring and evaluating organisational processes. Evaluation of courses and of teaching based on surveys of student perception are examples of evaluation responses to demands for accountability. Evaluation to support organisational management is often founded on measurement paradigms that seek to objectify and summarise complex organisational and individual processes in order to guide and justify institutional decision-making. Such evaluation provides knowledge required for the effective management of organisations. However, there is concern that other important interests in evaluation are not given appropriate weight (Nouwens, Ross, Harreveld, Thompson & Danaher, 2004).

There are other kinds of knowledge in organisations, knowledge that is not so easily quantified, or even articulated, but that plays important roles in collaborative activities and in personal development, two processes that are central to the education process. Such knowledge emerges in individuals and through relationships. Evaluation of these aspects of education can be problematic because such knowledge is often tacit and difficult to express (Polyani, 1967). Developments in our understanding of how knowledge emerges in organisations indicate that "recently there has been recognition that some knowledge cannot be quantified and cannot be codified, captured or stored" (Hildreth & Kimble, 2002, p. 1). In a critical reaction to 'knowledge managers' who seek to articulate and store individual and organisational knowledge using new technologies, Snowden (2002) explores the cost of converting tacit knowledge to valid, explicit knowledge. He suggests that in our dynamic and increasingly complex knowledge society it makes no sense to try to make all knowledge explicit. Those who seek to evaluate, improve and manage educational processes must accept that subjective, participative and formative approaches to evaluation are essential to complement and give meaning to objective and summative evaluations of educational and organisational processes.

The context of evaluation is further complicated by the understanding that organisations are not unitary cultures but are normally comprised of potentially conflicting subcultures (Luck, Jones, McConachie & Danaher, 1994). These social/technical groups tend to construct the organisation in different ways. The effective coordination of activities of these groups requires the sharing of subcultural assumptions. Thus, for example, evaluation that seeks to improve the use of new educational technologies in a university setting should draw a balanced perspective from the voices of the many practitioner groups. Where management evaluation discourses are dominant and imposed, staff and students will tend to justify their actions in terms of this discourse (Wenger, 1998) and distort evaluation. So evaluation should be inclusive and make serious attempts to articulate important but hard-to-get-at tacit knowledge to ensure that knowledge developed through practice can emerge and inform the practices of the whole organisation and help all groups adjust to the complex and dynamic environment. Unfortunately, traditional hierarchical organisational structures distribute power to various internal groups in ways that are inappropriate for organisations operating in a rapidly changing environment (Snowden, 2002).

A framework is needed to test whether evaluation processes address the primary educational processes in a university and the needs of the participants involved in that social/technical process. The framework should ask how the evaluation process assists these social groups articulate tacit knowledge and express the meaning of what they do for the benefit of the whole organisation, and how these groups may avoid submission to the dominating discourse of traditional institutional hierarchical structures. Patton (2003) and Stufflebeam (2002) support the development of evaluation frameworks, standards and/or checklists to determine the efficacy of processes and/or products. In this paper, we present a case for the articulation of a socially critical, yet responsive, evaluation frame within which the complex contradictions inherent in corporatised university life can be examined. To do this, we appropriate Habermas' (1989, 1996) constructions of three knowledge dimensions related to cognitive interests: technical knowledge; practical knowledge; and emancipatory knowledge. We deploy these three cognitive interests to identify three spheres of university activity, in order to gain a meta-level view and a holistic understanding of the activities that occur in the university's everyday life.

Accordingly, the paper is developed around the following questions:

- Whose interests are served by evaluation within a regional Australian university?
- What are the dominant discourses at work in the evaluation processes undertaken at this university?
- What are the consequences of the dominance of those discourses for communicating evaluation outcomes in the university?

To address these questions, we provide an explication of the holistic evaluation framework, followed by an analysis of three evaluations of interactive video-conferencing (IVC) at this university.

A holistic evaluation framework

Current debates about the Australian government's development of performance measures for rewarding good teaching through the proposed Learning and Teaching Performance Fund seem to focus heavily on how performance should be evaluated, on whether quantitative or qualitative measures should be used and on the efficiency of evaluation processes (Australian Vice-Chancellors' Committee, 2004; Department of Education, Science and Training, 2004). The focus on methodology is driven by an accountability discourse that runs the risk of distorting constructions of performance and rewarding substitute measures of teaching and learning performance. Developments in educational technology reinforce these pressures. We argue that evaluation of performance in educational organisations should begin by determining what rather than how to evaluate. A holistic model is required that identifies key interests in the educational process. The framework suggested here presents an educational systems view of a university that identifies three primary educational activity systems. It explores what evaluation means in these systems, what evaluation methods are most appropriate and how the three systems complement and relate to one another.

A useful model describing an educational institution in terms of three activity systems has been developed (Nouwens *et al*., 2004). The three activity systems are:
[1]   the learning activities and processes in which learners actually engage
[2[activities of the participants in teaching and studying processes
[3]   activities related to the management and support of [1] and [2].

This three-fold activity framework can be usefully interrogated using Habermas' (1996) analysis of human cognitive interests in knowledge and applying them to evaluation. Habermas identifies three cognitive interests in human activity as **emancipatory**, **practical** and **technical**. This framework can be applied to the cognitive interests of individuals in educational processes; it can be applied at another level to organisational learning, to processes of knowledge production within an organisation as it seeks to respond most effectively to pressures of the external environment (Snowden, 2002). At this whole of organisation level, evaluation can be seen as part of a cognitive process. It includes not only the 'official' evaluation supported by formal institutional discourses but also the often tacit forms of evaluation that are part of the day-to-day practice in the various 'subcultures' that make up a university. Thus Habermas' framework may be extended from analysis of personal interests in knowledge to analysis of organisational interests in evaluation.

Habermas (1996) identifies three areas of human cognitive interest, namely:
- *emancipatory* cognitive interest relates to the kind of knowledge required to exercise personal power in human activity and to develop effective self-theories (Yorke & Knight, 2004). It involves the development of a capacity to reflect responsibly upon social activity and to act autonomously (Smith & Lovat, 2003). **Emancipatory evaluative interests** refer

specifically to learners' interests in the educational process and to the capacity of learners themselves to reflect critically upon and to manage their own learning. A growing interest in the development of graduate attributes, professional capabilities and student identity supports the development of more effective approaches to developing and evaluating in this dimension of the educational enterprise (Howard, Jorgensen & Nouwens, 2003)

- *practical* cognitive interest relates to the kind of knowledge required to make, share and preserve meaning in order to support practical collaborative action. It is built upon cultural tradition, particularly on the social use of language and culture to create and share meaning and to organise human activity. **Practical evaluative interests** refer specifically to shared interests of students and teachers in developing a supportive learning environment and arranging the educational process for mutual benefit.

- *technical* cognitive interest relates to the kind of knowledge required to exercise predictive control over objectivised processes, over natural and social processes, to produce the goods and services that sustain life and society. In teaching and learning, technical interest relates to authoritative discipline and profession-defined knowledge. When applied to predictive control over the social processes within an educational institution, a **technical evaluative interest** refers specifically to the interests of managers in monitoring, improving and controlling the educational process.

Just as each of the three areas of cognitive human interest adopts a particular mode of inquiry or methodology to produce legitimate knowledge (Habermas, 1996), the three areas of evaluative human interest are supported by three distinctive 'legitimate' modes and methods of evaluation.

Cognitive/ evaluative interest	emancipatory	practical	technical
Evaluative interest group	learners	teachers–students	management
Inquiry mode	social-critical	historical-hermeneutic	empirical-analytical
Evaluation methodology	self-reflective	qualitative-interpretative	quantitative

Table 1: Relationship of cognitive and evaluative human interest to mode and method of evaluation

Table 1 can be expanded to explore the nature of evaluation for each interest group, to indicate the appropriate intent of evaluation in each case and to indicate what evaluation approaches could best be used. This expansion is based on Habermas' work (1996) and on Snowden's study (2002) of how organisations seek to manage productively the internal flow and development of individual and organisational knowledge that allows the organisation and individuals within it to adapt to changing circumstances. The evaluation framework proposed in Table 2 suggests that all three interests in evaluation are both legitimate and very different in purpose and method.

Thus a manager has legitimate interests in technical evaluation of organisational processes. However the evaluation approaches a manager uses to support organisational decision-making are unlikely to be appropriate for evaluating teacher-student interactions where practical evaluative interests and methods apply, or for evaluating individual learning where emancipatory interests and methods are likely to be more effective.

Those with an emancipatory interest in evaluation …	Those with a practical interest in evaluation …	Those with a technical interest in evaluation …
seek to promote the achievement of transformative and responsible personal development	seek to promote collaborative and productive teacher–student relationships	seek to promote the improvement of predictable, controlled, accountable learning
seek to develop personal autonomy, trust in learning networks, sharing of tacit and explicit knowledge, values, experiences through shared narratives	seek to develop a supportive community of learning through collaborative projects and activities with clear, shared objectives	seek to provide explicit, transparent policy, procedures, training
seek to encourage learners to reflect critically on personal activities and to develop graduate identity and efficacious self-theories	seek to encourage students and teachers to interpret and share meaning to guide, support and improve learning	seek to encourage managers to obtain generalisable, reliable information to make decisions about supporting emancipatory and practical interests
would use mainly reflective self-evaluation of personal action: self-reporting, journals, portfolios	would use mainly formative evaluation: dialogue and feedback, collaboration, coaching	would use mainly summative evaluation: best practice, measurement, ranking, performance indicators
recognise the legitimacy of evaluation based on personal values, beliefs and commitment and the authority of each learner's personal experience	recognise the legitimacy of evaluation based on authority negotiated and shared between teachers and students, and on discipline and learning community standards of good practice	recognise the legitimacy of evaluation based on objective, analytical processes and institutional authority

Table 2: A framework of intents in and approaches to evaluation

From an evaluation perspective, these three activity systems describe three markedly different cultures that exist within an educational organisation. Each of the activity systems has an essential and legitimate purpose within the organisation. The challenge for any university is to develop a balanced suite of evaluation processes that operate together to achieve the interests of all three dimensions of institutional processes. Our concern is that pressure from government policy changes and funding, supported by enterprise-based development of educational technology systems, leads to what Zipin and Brennan (2003) call a managerial approach to governance, in which the predominant discourse in evaluation is technical, seeking to measure performance and to control organisational processes. The following study provides an opportunity to use the framework outlined above to analyse the recommendations and results of three evaluation reports about the introduction and implementation of a particular educational technology, interactive video-conferencing.

Interactive video-conferencing at Central Queensland University[1]

Interactive video-conferencing (IVC)[2] was introduced at Central Queensland University (CQU) in 1992. In 2004 the IVC facilities across the Central Queensland campuses of CQU are a specialised and unique implementation of IVC using one of the most advanced IVC applications in Australia. The IVC network across the Central Queensland campuses allows students at up to five campuses to be linked together into the one video-conferencing class. The lecturer could be physically present at any of the campuses when teaching the class.

Development of the IVC system is seen as an important element in CQU's strategic plan to develop flexible approaches to teaching and learning (Central Queensland University, 2003, p.

2). The IVC facilities at CQU have been evaluated three times to seek assurance that it achieves the University's strategic intent. The first evaluation was by an external consultant, John Mitchell (Mitchell, 1993); the second was conducted internally by Associate Professor Chris Bigum and Ms Margaret Appleton (Bigum & Appleton, 1997); the third was also conducted internally (Luck, 2004).

| | **Educational organisation interest dimensions** | | | | | |
| | **Emancipatory** | | **Practical** | | **Technical** | |
	Learning interests	Both teaching/ studying and learning	Teaching/ studying	Both management teaching/ studying	Management interests	All three interests
Number of recommendations & implementations— Mitchell (1993) evaluation						
Number of recommendations in each process area	**0**	**1**	**8**	**6**	**19**	**3**
Number of recommendations implemented within five years	**0**	**0**	**0**	**0**	**9**	**0**
Number of recommendations & implementations—Bigum & Appleton (1997) evaluation						
Number of strategies in each process area (within the six major recommendations)	**0**	**0**	**1**	**3**	**12**	**0**
Number of strategies implemented within five years	**0**	**0**	(limited) **1**	(limited) **2**	**4**	**0**
Number of recommendations & implementations— Luck (2004) evaluation						
Number of recommendations in each process area	**2**	**1**	**4**	**1**	**5**	**2**
Number of recommendations being implemented immediately (2004)	**0**	**0**	(planning) **1**	(planning) **1**	**3**	(ongoing) **2**

Table 3: The number of recommendations in and implementations of evaluations into the use of interactive video-conferencing at Central Queensland University in 1993, 1997 and 2004

Table 3 summarises the evaluation recommendations and their implementation. The recommendations are classified using the proposed evaluation framework, according to the interests or combination of the three primary interests each recommendation serves.

The Mitchell (1993) evaluation was of the trial use of IVC between the Rockhampton and Mackay campuses of CQU in 1992. Mitchell interviewed managers, technical staff and teaching staff. He did not interview any students involved in the trial. He wrote positively of the IVC facilities, whereby CQU "has achieved much in its first year of operation" (1993, p. 3). He also noted that:

> [a] range of issues emerged during the first year and will need to be resolved in the near future. These include evaluation procedures, quality control measures, instructional design, management, technical support, network integration, room design, funding and charging, industrial conditions, professional development, privacy protocols, fault reporting, site coordination, research and development and cost benefit analysis. (p. 4)

He listed 37 recommendations to address these issues. Unfortunately the bulk of the 37 recommendations were not implemented. Many of the initiatives described in his

recommendations are still urgently needed in 2004. Examples of these include: the recommendations about evaluation; staff induction and training; the development of policies and procedures; and the need for research and development into the human and technical issues of video-conferencing. Table 3 shows a classification of both the recommendations and their implementation in terms of the proposed framework and its three interests in evaluation. Clearly the majority of recommendations focused on management interests, and the only recommendations implemented addressed management of the interactive videoconferencing system.

The Bigum and Appleton report was commissioned by the then Deputy Vice-Chancellor at CQU to evaluate the first year of widespread use of the IVC facilities for teaching and learning. The report shows evidence of interviews with teaching staff. The evaluators discussed student responses to the IVC but there was no evidence that they spoke to students or managers. Technical information was included in the evaluation so it is assumed that they spoke with technical staff. They listed six major recommendations containing a total of 16 specific strategies to be implemented. Again there is a strong bias towards management interests in recommendations and their implementation (see Table 3).

The third evaluation of the IVC facilities (Luck, 2004) used an evaluation framework created by Harreveld (2004) in her review of a suite of postgraduate programs in a multidisciplinary area of CQU. The evaluation sought input from management, technical staff, teaching staff and students. It contained recommendations for management, for technical staff and for teaching staff. The classification of recommendations using the proposed framework (Table 3) shows a better balance between technical/management interests and practical/teaching-studying interests. As the report has recently been completed, judgements about its implementation are premature.

Analysis of these reports in terms of interest, inquiry mode and evaluation methodology (see the framework presented in Table 1) shows some overlap between the inquiry mode and the evaluation methodology. While the earlier evaluations made some reference to students, there is little reference to information obtained directly from students, and no reference to the use of social-critical inquiry or self reflective methods with learners. However, the Luck (2004) evaluation did use all three modes of inquiry, and the three evaluation methodologies that were presented in Table 1.

Discussion

Returning to the questions raised in the introduction, we can ask whose interests were served in this set of IVC evaluations, and what discourses dominate in these evaluations? Table 3 suggests that these evaluations focused strongly on management interests, and it has been management discourses that have driven the development and decision-making processes.

An interesting point is that management recognises emancipatory and practical interests in - IVC. The evaluations canvassed students' ideas about the effect of IVC on learning outcomes, and consulted teachers and students in regard to the effect of IVC on the teaching/learning environment, but few changes to the IVC system address emancipatory and practical issues. It is clear that neither the mode of inquiry and evaluation methodology themselves nor the evidence gathered through them (see Table 1) gave emancipatory or practical interests weight in the evaluation and decision-making processes surrounding the three IVC evaluations. The technical/management discourse has been powerful in promoting the use of IVC so management interests clearly dominate the practical interests of promoting effective teaching-

learning dialogue, and the emancipatory interests of supporting learners to grow as autonomous and responsible citizens.

The strength of the technical/management discourse is derived from university flexible delivery strategies and the need to find ways to service a number of small, distributed campuses with limited resources. This strength is reinforced by the lack of flexibility of IVC infrastructure, the physical size and arrangement of rooms that limit pedagogical (practical) possibilities and the sense of relationship and trust required to engage learners in the challenging, emancipatory experiences (Curzon-Hobson, 2002). The introduction of IVC as an educational technology is recognised as a technical solution to a strategic problem. There is little recognition that the technology may present significant, long-term pedagogical and learning problems for the university.

The *emancipatory* interests in education would ask how IVC can be used to promote the personal development and growth of students. Evaluation from this perspective would ask how we can use this technology to assist students to develop graduate attributes and to build a personal, professional identity and capabilities. Such questions are also of strategic interest as the government, employers, accrediting professional associations, the public and students themselves seek assurance from universities that graduates can make a difference in society (Howard, Jorgensen & Nouwens, 2003; Scott & Yates, 2002). Table 2, Column 1 indicates some evaluation questions that might be asked—how effectively is IVC being used
- to support students to develop personally,
- to articulate and express their knowledge in trusting relationships with teachers and other learners,
- to promote critical reflection and the development of professional identity.

The kinds of learning experiences learners require to become capable, responsible, autonomous professionals would establish very different evaluation criteria from those derived by management interests who seek to provide a distributed student and lecturer population with an efficient means of exchanging information.

A *practical* orientation to the evaluation of IVC would ask what kind of learning environment is required for effective teaching and learning using interactive videoconferencing. Table 2, Column 2 suggests some evaluation questions. How effectively is the current IVC infrastructure used to promote collaborative activities and support the development of teacher-student and student to student learning relationships? Is there a sense from teachers and students that classes are supportive learning communities? How much dialogue and shared meaning-making occur? Knight and Yorke (2003) point to the importance of a productive social learning environment for motivating students at risk of withdrawal. Such an environment is an important element in building in students a sense of self-efficacy required to persist in their studies. This issue of student retention is another strategic issue for university management, but there has been a failure to relate the evaluation of videoconferencing to this issue.

Indeed, the initial designs for IVC at CQU were focused on facilities for flexible, small group learning, but the chosen infrastructure developed favoured large rooms with fixed furniture designed for large classes and 'lecture' presentation.

At the university level, there is a distinct need to establish a holistic evaluation framework that could be used to include and give voice to the discourse communities of practice regularly to evaluate and review the use of educational technologies. Because both the technology and the

practice of teaching and learning are developing, a systematic and sound methodological approach is required to make informed decisions to update, change or implement new educational technologies. It is essential to use a consistent evaluation framework to allow decisions to be made after conducting fair and comparable evaluations of different educational technology applications.

Conclusion

The IVC evaluations described above clearly indicate that, in institutional discourses, managerial interests predominated in evaluations and implementation of this educational technology, and that the improvement of teacher–student practices and the learning practices of students received little emphasis. In relation to the three guiding questions posed at the end of the introduction to this paper, the dominance of these management interests reflects the subordination of emancipatory and practical interests to technical interests in the university's formal evaluation practices. The consequences of this dominance and this subordination for the communication of evaluation outcomes in the university reflect the absence of an appropriate balance among cognitive and evaluative human interests, and the associated difficulty of facilitating the holistic sociology of evaluation in higher education advocated in this paper. These consequences can be summarised thus:

- *a narrowing of focus* of such evaluation outcomes on issues of 'how' rather than 'what' and 'why'
- *a propensity to implement management* rather than teaching/studying and learning *recommendations of evaluation reports*
- *an elision of officially sanctioned interest in and valuing of tacit knowledge* and the associated intangible but potentially powerful elements of evaluation outcomes
- *a consequent diminution of the efficacy of evaluation outcomes* feeding into continuous improvement of teaching and learning
- *a tendency to seek to assign accountability–and sometimes blame–*to teaching staff in ways that do not reflect the complexities of university teaching and learning.

All of this accords all too readily with Zipin and Brennan's (2003) argument that pressures on universities lead administrators to adopt managerial approaches suggest that management solutions are assumed to produce an environment in which teaching and learning practices will automatically fall into place. The analysis presented here indicates that such an assumption is misplaced–hardly auspicious for efforts to enhance the communication of evaluation outcomes at institutional and national levels.

Notes

1. Much of this section is based on the doctoral work of one of the authors and on a recent evaluation of the interactive video-conferencing network at CQU (Luck, 2004).
2. CQU uses the term Interactive System-wide Learning (ISL) when referring to the IVC network.

References

Australian Vice-Chancellors' Committee. (2004). *Assessing learning and teaching excellence: The AVCC proposal for the Learning and Teaching Performance Fund.* Canberra, ACT: Australian Vice-Chancellors' Committee (AVCC). http://www.avcc.edu.au/news/public_statements/publications/AVCC-response_ALTPF.pdf

Bigum, C., & Appleton, M. (1997). *From stage to screen: Learning to teach with ISL at CQU* (*Report to Deputy Vice-Chancellor*). Rockhampton, Qld: Central Queensland University.

Central Queensland University. (2003). *Strategic plan 2003 – 2007*. Rockhampton, Qld: Author. Retrieved June 10, 2004, from:http://www.cqu.edu.au/webmaster/Production/officialdocuments/STRATEGIC_PLAN_2003-2005_VERSION_04.pdf

Commonwealth of Australia. (2003). *Our universities – backing Australia's future*. Canberra, ACT: Department of Education, Science and Training.

Curzon-Hobson, A. (2002). A pedagogy of trust in higher learning. *Teaching in Higher Education, 7*(3), 265-276.Department of Education, Science and Technology. (2004). *Learning and Teaching Performance Fund: Discussion paper.* Canberra, ACT: Author.

Ehrmann, S. C. (1996). Responding to the triple challenge facing post-secondary education: Accessibility, quality, costs. In *Information technology and the future of post-secondary education* (pp. 9-41). Paris: Organisation for Economic Cooperation and Development.

Habermas, J. (1989). *The structural transformation of the public sphere* (trans. by T. Burger). Cambridge, UK: Polity Press.

Habermas, J. (1996). Knowledge and human interests: A general perspective. In W. Outhwaite (Ed.), *The Habermas reader* (pp. 96-104). Cambridge, UK: Polity Press.

Harreveld, R. E. (2004, June). *A review of current online delivery and future options for the postgraduate programs offered by the Institute for Sustainable Regional Development*: *LEID Centre report 4101* (81 pp.). Rockhampton, Qld: Learning, Evaluation, Innovation and Development Centre, Division of Teaching and Learning Services, Central Queensland University.

Hildreth, P. M., & Kimble, C. (2002). The duality of knowledge. *Information Research*, *8*(1), 1-23. Retrieved July 12, 2004, from: http://informationr.net/ir/8-1/paper142.html

Howard, P., Jorgensen, D., & Nouwens, F. (2003, April). Enhancing learning and employability of engineering graduates at Central Queensland University: A ten-year project. *B-HERT News,* 23-26.

Knight, P. T., & Yorke, M. (2003). Employability and good learning in higher education. *Teaching in Higher Education, 8*(1), 3-16.

Luck, J. T. (2004, August). *Vision '97 – Looking forward, looking back: A review of the Interactive System-wide Learning (ISL) network at Central Queensland University (LEID project no. 4102)* (67 + xii pp.). Rockhampton, Qld: Learning, Evaluation, Innovation and Development Centre, Division of Teaching and Learning Services, Central Queensland University.

Luck, J. T., Jones, D., McConachie, J., & Danaher, P. A. (2004, November, in press). Challenging enterprises and subcultures: Interrogating 'best practice' in Central Queensland University's course management systems. *Studies in Learning, Evaluation, Innovation and Development, 1*(2). Available from http://sleid.cqu.edu.au

Mitchell, J. (1993). *Becoming a habit rather than a novelty: An evaluation of videoconferencing at the University of Central Queensland 1992-1993*. Rockhampton, Qld: University of Central Queensland.

Nouwens, F., Ross, E., Harreveld, R. E., Thomson, J., & Danaher, P. A. (2004). Evaluation perspectives: Interrogating open and distance education provision at an Australian regional university. *Turkish Online Journal of Distance Education*, *5*(3), 11 pp.

Patton, M. Q. (2003, September). *Qualitative evaluation checklist.* Kalamazoo, MI: The Evaluation Center, Western Michigan University. Retrieved February 5, 2004, from: http://www.wmich.edu/evalctr/checklists/qec/index.htm

Polyani, M. (1967). *The tacit dimension*. London: Routledge & Kegan Paul.

Scott, G., & Yates, W. (2002). *Using successful graduates to improve the quality of undergraduate engineering programs.* Sydney, NSW: University of Technology, Sydney.

Senge, P. (1992). *The fifth discipline*. Sydney, NSW: Random House.

Smith, D. L., & Lovat, T. J. (2003). *Curriculum: Action on reflection* (4th ed.). Tuggeragh, NSW: Social Science Press.

Snowden, D. (2002). Complex acts of knowing — paradox and descriptive self-awareness. *Journal of Knowledge Management, 6*(2), 100-111.

Stufflebeam, D. L. (2002). *CIPP evaluation model checklist: A tool for applying the fifth instalment of the CIPP Model to assess long term enterprises*. Kalamazoo, MI: The Evaluation Center, Western Michigan University. Retrieved May 17, 2004, from: http://www.wmich.edu/evalctr/checklists/cippchecklist.htm

Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge, UK: Cambridge University Press.

Yorke, M., & Knight, P. (2004, February). Self-theories: Some implications for teaching and learning in higher education. *Studies in Higher Education, 29*(1), 25-37.

Zipin, L., & Brennan, M. T. (2003). The suppression of ethical dispositions through managerial governmentality: A habitus crisis in Australian higher education. *International Journal of Leadership in Higher Education, 6*(4), 351-370.