The New Covert Curriculum:
a Critical, Actor-Network Approach to Learning Technology Policy

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ABSTRACT

The overt curriculum of the industrial era, the "3 Rs" was reading, 'riting and 'rithmatic. The covert curriculum, inculcated by early modern schooling was punctuality, tolerance of repetition and subordination: compliance with which was important for the functioning of capital intensive industry. Overt curricula are presented as being beneficial for all. Covert curricula benefit particular positions: dominant elites or their powerful oppositional forces. In light of the current consultation on the DfES document, *Towards a Unified e-Learning Strategy* (DfES 2003), this paper problematises the key affordances of e-learning: flexibility, community and individualisation in order to draw attention to their distopian covert possibilities. Against flexibility might be set a return to piecework and insecurity. Against community and team working might be set normalisation and a re-expression of hierarchies. And, against individualisation or personalisation might be set an increased tolerance to surveillance and a willingness to surrender personal information to anonymous, autonomous agents offering only predatory reciprocity.

Keywords

e-learning, education policy, mediated discourse analysis, actor network theory, cultural production

INTRODUCTION: "THE BOUNDARY OF THE FIELD IS A STAKE OF STRUGGLES"

Education[3]

Workers in education and training today, among whom I include policy makers and teachers, funding council staff and researchers, learning technologists, managers and lecturers, as well as all learners are involved in what could be called the greatest educational project of at least the past two hundred years. Education policy has largely replaced industrial policy as the means by which governments seek to maintain or improve the economic well being of the nation state (Ahier and Esland, 1999, Avis et al. 1996, Carnoy, 1997). The prominence given to skills and workforce development by the UK Department for Trade and Industry (see DTI website) and to funding for education programmes by the Department for International Development (see DfID website) go some way towards illustrating the apotheosis of the education domain. Rawnsley (2001, p. 147), indeed, asserts that David Blunkett used his stint as Education Secretary to "... fashion an alternative, more expansionary economic strategy..." to that offered by the Treasury. And, today, under Blunkett at the Home Office, education entitlements are an important pillar of the national identity card strategy. As Tony Blair famously asserted, it is education, education, education.

Education policy is shaped by four key factors: globalisation, deregulation (or liberalisation), widening participation and innovation. While all four factors are part of a neoliberal zeitgeist, the first two can be seen as a backdrop against which the other two are being played. The widening participation agenda, signaled in British higher education by the 50 percent participation target is supported by the innovation agenda, signaled by the DfES consultation document, *Towards a Unified e-Learning Strategy* (DfES 2003). Critically, innovation in education is not primarily expressed in terms of pedagogies or institutional structures. Here there remains a conservative tendency to rely increasingly on examination, managerialism and a back-to-basics curriculum conceived as a service to major employers. The innovation agenda consequently struggles to be seen as other, or anything more, than technical innovation in content packaging and delivery systems, while the participation agenda struggles to be emancipatory and empowering for the individual while at the same time ensuring a supply of post-industrial cannon fodder for the outsourced, global call-centre serviced, fast-food fed consumer

relationship management industry. One result of this policy context is, however, that learning technology might reasonably be argued to be one of the more important features on the national and international economic, social and cultural landscape and a critically important *locus belli* or battlefield of beliefs. To a great extent the DfES e-learning consultation is to be congratulated for going a long way towards exposing and articulating, if not resolving, the new overt and covert curricula that are expressed and enacted through learning technologies.

The critical ANT

But, what is learning technology? To what extent can learning technology be said to be or represent a curriculum? Are there canonical texts or a body of knowledge? Are there learning technologists as there are mathematicians or scholars of English literature or physicists? On the one hand there may be an emergent "field" or specialism that is, or is becoming, learning technology. On the other it may be more productive to see learning technology as symptomatic of a more general tendency: the rise of interdisciplinarity and the realignment or decline of specialisation. Popper (1996, pp. 106-107) encourages a "new critical style" of scientific writing to counter the, "...present situation in science in which high specialization is about to create an even higher Tower of Babel." He goes on, "... the replacement of the inductive style by something like this new critical style is one of the few ways in which mutual interest and mutual contacts between the various fields of research can be preserved." In discussing the problems, aims and responsibilities of science he encourages us, "... to shun the danger of narrow specialization: a scientist who does not take a burning interest in other fields of science excludes himself [sic.] from participation in that self-liberation through knowledge which is the cultural task of science (p. 109). This approach: science without a framework, or at least science that challenges frameworks and treats all frameworks critically is at the heart of the new curriculum represented by and through learning technology.

As Bourdieu observed with respect to artistic and literary movements, when a new group makes its presence felt in a field the whole problem is transformed, "...since its coming into being, i.e. into difference, modifies and displaces the universe of possible options; the previously dominant productions may, for example, be pushed into the status either of outmoded [*déclassé*] or of classic works," (Bourdieu, 1993, 32). The ramifications are substantial. Conole and others have argued that learning technology and learning technologists represent a community of practice (Conole et al., 2003, but see Oliver, 2003 for a counter position). Useful as the concept is, change on the scale here discussed is not easily understood only through communities of practice as an organising theory. Even Wenger begins to discuss "constellations of practice". More useful is to think of learning technology and practitioners in education as defined above, as a network of actors and actants (cf. Fox, 2002, p. 114 and see ANT). Actors are individual human agents. Actants are non-human entities that exert agentive influence within and between networks: "technological actors", i.e. artifacts of technology, "social actors" such as orgnisations, companies, institutions, etc., and "natural actors", e.g. animals and plants (Latour cited by Kendall and Michael, 1998). This framework has an advantage in that it allows discursive force to institutions both at the concrete level (specific firms, schools, universities, hospitals, etc) and at the abstract level (bureaucracy, technology, religion, marriage, the economy, language) without falling wholly to linguistic, economic or technological determinism. It acknowledges the commonsense expression of the feeling that we are in part being driven or swept along by, for example, the tide of technological change and in thrall to the artifacts of technology (we love our phones and PDAs) but allows us as people to come to know critically, or to construct knowledge of, such determinism as the product of relations of power and struggles for power (cf. Fairclough, 2001, 1) and through that knowledge to engage with that struggle. Learning technology as an actor network has reshaped the field of possibilities that is education today.

Scollon (2001) provides another useful dimension to the argument. In the light of mediated discourse analysis actants may be seen as "mediational means" and their role can be exposed, as components of symbolic systems, through and in which beliefs are embedded and reproduced. For Scollon, mediational means are:

> ... not just abstract or cognitive systems of representation such as languages or systems of visual representation, but also any and all material objects in the world which are appropriated for the purposes of taking a social action. This would include, for example, the layout and design of the room as well as the grammatical structure of any utterances made by the social actors.

The primary institutions through which cultural and economic reproduction are carried out are religion, the family, education and the "fourth estate": the press and other media. Until the early modern era the productive institutions of the economy: farming, mining and manufacturing were inevitably positioned in service to the reproductive function of the economy, chiefly religion, often through the transforming power of state violence, conquest, colonialism and other military endeavour: e.g. by grace of god this land is conquered in order that its wealth might further the work of the church. In a similar fashion, farming served the family, often the wider family (clan, people, folk, nation) with a remote and aristocratic royal head. The end of the age of faith was co-

incidental with the inversion of the relationship between the productive and reproductive functions. Today this is most clearly seen in the relationship between education and industry, where the culturally reproductive function: education is called upon to serve the needs of industry. The education system can be understood, "... as a field of competition for the legitimate exercise of symbolic violence," that is a locus of conflict between rival principles of legitimacy and competition for the power to grant cultural consecration (Bourdieu, 1993, 121). It is also a system for reproducing actors who are both producers of certain cultural goods as well consumers of those goods. As with all social practice, learning technologies and e-learning participates in the on-going discourses of emancipation and subordination. Through learning technologies, the frontiers of education are made extremely permeable, and the most disputed frontier is the one that separates education from the field of power; "... the boundary of the field is a stake of struggles" (Bourdieu, 1993, 42).

THE NEW COVERT CURRICULUM: EDUCATION AS POLITICS

As Fox (2002, p. 116) asserts, "Networked learning opens a door to a new politics of education." The macroeconomic function of education as one of the principal means of cultural reproduction means that the the field will always be highly politicised. There are many established actors with vested interests and many new actors who wish to become involved. Among both new and old actors there many different views as to what the balance between public, private, corporate, co-operative, individual and collective should be. At extreme ends of the scale it is often accepted that there may be appropriate roles for private enterprises and appropriate roles for public enterprises. Under pressure from many directions education policy may well be shaped as much by the telecommunications and entertainment industries as by the traditional education industry. Education does not fulfil its cultural function through explicit means, only. There are both overt and covert curricula.

3 Rs good

The overt curriculum of the early modern, industrial era, was the "3 Rs": reading, 'riting and 'rithmatic. Reproduction of these cultural goods, universal literacy and numeracy, would benefit both the individual as well as society. Overt curricula are presented as being beneficial for all. Educational policy is articulated in terms of overt curricula. Educational performance and added value are measured in terms of overt curricula. However, it is through covert curricula that the frontiers of the field of education are contested. Covert curricula benefit particular positions: dominant elites or their powerful oppositional forces. The early modern covert curriculum, inculcated by industrial era schooling was punctuality, tolerance of repetition and subordination. The covert curriculum was important for reproducing the actors required for the functioning of capital intensive industry. According to Taylor (1993, p. 139), "Society requires literacy (which is literacy rather than a literate person) because in the power-knowledge relationship of the modern world, literacy defines who controls the means of production, that is the means to produce wealth (industry) and the means to reproduce knowledge (education)". Education policies adopted by successive British governments in response to globalization have been focused in two conflicting directions: the desire to stimulate the growth of autonomous, entrepreneurial, IT-literate, multi-skilled individuals capable of creating and taking advantage of the opportunities inherent in a post fordist economy; and the desire to create a compliant low-expectation labour force inured to the demands of flexibilisation in order to attract inward investment not on the basis of high skills available but on the basis of low costs.

The UK Department for Education and Skills (DfES) strategy consultation paper, *Towards a Unified e-Learning Strategy* (DfES, 2003, para. 14), articulates the new overt curriculum. It is remarkably explicit about the wider aims for e-learning, or the application of learning technologies. e-Learning should help to raise standards and improve attainment, increase retention and improve outcomes, broaden choice, provide support for children at risk, increase access to learning for disadvantaged communities, remove barriers to achievement, reduce the number of adults without level 2 qualifications, and ensure wider participation and fairer access to higher education. This is a tall order for any policy. It is expected that e-learning might make this contribution because of certain attributes, or affordances of the technologies. e-Learning is said to provide for individualised learning, personalised learning support, collaborative learning, tools for innovation, virtual learning worlds, flexible study, online communities of practice and quality at scale (DfES, 2003, para. 19).

The affordances of learning technology: flexibility, community and individualisation

A closer analysis of the affordances of the technologies enables three broad categories to be constructed: flexibility, community and individualisation.

Flexibility is to employers today as punctuality was to employers of the previous century. Flexible scheduling need not mean lack of discipline or application however flexible scheduling may mean that learners are unable to attend courses at the usual meeting time. By ensuring that every effort is made to provide current information and key learning objects on a course web site, those learners who are unable to attend regular face to face sessions for any reason need not be penalised. The principle of time-shifting study may be applied minimally to enhance face-to-face teaching, or may be extended to fully distance learning courses. Location shifted study brings some of the same benefits of time shifted study, together with what is widely held to be the key e-learning affordance, "Its ability to support distributed collaborative interaction and dialogue" (Beaty et al., 2002). According to Robin Mason (2002), "... it is not the electronic nature of e-learning that captures its true value, but rather the opportunity to integrate working, learning and community..." The distributed yet connected nature of the Internet and related network technologies today enables integrative, distributed, collaborative learning to be actively encouraged over stand-alone computer assisted learning, or solitary-learner distance education models. As Manton et al. (2002 pp. 3-4) observe, learning technologies enable flexible sequencing. Students can work against the model of tutor-sequenced learning. This affords particular benefits to learners with different prior knowledge of the course domain and to learners with different learning preferences.

The other side of widening access "in" is reaching "out" through distributed real and virtual communities. As Fox (2002, p. 116) says, "Networked learning can either continue as an auxiliary, a cyber-annex, to the 'teaching machine' or it can engage with networks of learning beyond; which are undoubtedly forming the political community of the future. Here again e-learning techniques can help to provide new ways for learning to reach into communities. The World Wide Web (WWW) is the largest multimedia database that has ever existed (Decker et al. 1999). The UK, through the Joint Information Systems Committee (JISC http://www.jisc.ac.uk/) and the National Grid for Learning (NGfL http://www.ngfl.gov.uk/) leads the world in cataloguing and making digital resources available. Adaptive simulations and e-laboratories such as once were the preserve of the stand-alone workstation are beginning to appear that combine the benefits of computer-based training such as simulation of hazardous environments (e.g. battlefield medicine) and safety-critical operations (e.g. flight simulation), with the benefits of accelerated communication, distributed collaboration, and time and location shifting. Simulation technology coupled with digital curricula offers an attractive solution to the dilemma of practice without risk in health care. By definition, simulations imitate but do not duplicate reality, allowing limitless opportunities to "go wrong" and providing corrective feedback for future action.

In addition to the benefits of time and location shifting in enabling flexible scheduling for people with employment, domestic or other social obligations, learning technologies afford opportunities for participation to people whose preferred learning style might not be well suited to face to face participation. A learning style is a way in which a learner concentrates on, processes, and retains new knowledge, skills and awareness (Taylor 1997). There are many schemas and classifications of learning styles (see e.g. http://www.indstate.edu/ctl/styles/articles.html). The visual learner might prefer learning online, while the auditory or kinesthetic learner might prefer face-to-face lectures (McVay Lynch, 2002, p.16). Abstract Sequential learners (Gregorc 1979) might be expected to thrive online while Concrete Sequential learners might not. Creating courses that accommodate multiple learning styles should be a pedagogic imperative regardless of technologies. If technology can help, it should be employed. But, note that according to O'Connor (1997), "One consequence of studying learning styles is the recognition that teachers also have their own approaches to the classroom." Teaching to learners with multiple learning styles might require additional support for course leaders, instructors and lecturers. E-learning technologies may also provide access for people who are unable to participate in face to face learning for reasons other than learning style preference. Such reasons may be transitory, e.g. injury, illness or incarceration; or persistent, e.g. long-term disability or other forms of social exclusion.

Problematising the curriculum: insecurity, normalisation, surveillance

However, while overt curricula are presented as benefiting Against the benefits of flexibility we might set insecurity, piecework and a reduction of social security. Against the benefits of community we might set conformity, normalisation and collaboration with unconstituted authority. And, against the benefits of individualisation we might set surrender of privacy, categorisation and tolerance of continuous monitoring or surveillance.

Clegg and Steele (2002) observe that "... the notion of flexibility, as facilitated by learning technologies is generally under theorised". They argue that system constraints mean technology imposes a limited notion about what it means to be a student. Batch processing resists anomalies. Flexibility as a result is available within a relatively narrow band of possibility. The frontiers, or boundaries of this band of possibility are largely delimited by economic demands for flexibility in the labour force. Flexible learning, as much as creating

putative opportunities for individuals to study at a time and at a place of their choosing is as much about producing flexible workers to meet the needs of transient capital. With capital mobility increasingly facilitated by global agreements on trade and human mobility increasingly restricted by similar agreements (cf. Bauman, 2002, p. 84, "Travelling for profit is encouraged; travelling for survival is condemned...", and cf Brown and Lauder, 1996), the flexible student is socialised into work culture in which piecework is disguised as self-employment, insecurity is packaged as a portfolio of opportunity and reduced social security is sold as an investment opportunity.

"The idea of community carries a heavy burden," (Fox, 2002, p. 110). Bauman (2002) observes the rise of communitarianism in response to globalisation and the perceived failings of society and the nation state to protect people from insecurity. This, "...cannot help but be targeted against the infidels, the heretics and the lukewarm inside the ranks as much as, or more than, against the enemy outside." The myth of community is propagated through the internet and manifested in ever increasing numbers of groups set up by businesses for the purpose of increasing (paid-for) traffic. Through online communities and what might be called other "spectral phenomena" (Land, 2002) normalisation and individuation are re-negotiated. The rhetoric of community pervades contemporary management training with the firm appropriating the concept of a community of practice and subverting it to a means-ends rationality of external bureaucratic purpose and internal control of people.

Education, through learning technologies is a key tool in the instrumental bureaucratisation of society as a whole. As Wood (2002) observes:

> The infiltration of surveillance technologies into everyday life is a key development in contemporary society. CCTV cameras, satellite imaging, computerised databases of personal information, employee performance monitoring and drug testing, and telephone and e-mail tapping: these are all aspects of an increasingly sophisticated and comprehensive attention to the lives of individuals and groups in different arenas.

Fairclough (2001, pp. 175ff) argues that discourse technologies, "...the more or less self-conscious application of social scientific knowledge for the purposes of bureaucratic control," are increasingly colonising and manipulating the relational and subjective aspects of society in much the same way as commercial organisations adopt a synthetic personality and seek to manufacture corresponding synthetic personalities in their customers, whereby "we" can provide "you" with a more personal shopping experience. Your supermarket is likely to know before many of your friends when your baby was born and is more likely to send you a card to celebrate the joyous occasion ...with a special offer on disposable nappies. Similarly the promise of learning technologies is increasingly to provide education "just in time and just for you". One aim of bureaucracies is to maintain themselves against destablising influences: to minimise risk. As discourse technologies become more powerful they are able to extend their colonising reach farther and farther into the realms of the social and personal. In education, Land (2002) observes that, "Asynchronous time for reflection, relative anonymity, compartmentalisation of activity, sophisticated surveillance and tracking tools in cyberspace education would all seem to signal [that] ...online learning environments may be seen to minimise risk through mechanisms of control."

Reconstructing the space of the educationally possible

There is an emerging consensus that excellence in learning and teaching involves learners in the active construction of knowledge. This requires learners to become self-directed, to draw on their own resources as well as those of others, to construct rich understandings of the world in authentic contexts and to show how new knowledge and skills might be applied to current problems or situations (cf Grabinger & Dunlap 1995, p.22, McVay Lynch 2002 pp. 31ff.). Achieving such excellence requires innovative teaching. Although there has been much made of changing roles under the influence of learning technology applications, for example, Grabinger and Dunlap (1995 p. 22) assert that, "Teachers become facilitators and guides, rather than presenters of knowledge", Jones (1999, p. 133) shows convincingly that in virtual learning environments, " ... even when relying on the students' own experience, the arbiter of the validity of these experiences remains the tutor, who is assumed to have superior subject knowledge..." And, Stephen Brookfield (2001) recognises that instructors own experience of learning provides "... a powerful lens through which we can view our own practice as educators in a more formalized and purposeful way." Educational institutions and educators have a responsibility to create the environments, to provide the "scaffolding", within which self-directed, active learners can be formed. As Mehrotra et al. (2001, p. 29) and many others (cf Kember & Murphy pp. 15-16) have observed, "... learning theories and principles that have been found successful in the traditional classroom remain constant regardless of the delivery mechanism." While recognising that much of what education might achieve could be done in the traditional classroom without the use of new technologies, there are e-learning techniques, a new

curriculum, that afford significant and, in some cases unique benefits. But this must be regarded highly critically. As Postman and Weingartner (1969) asserted, "... we are serious professional educators, which mean that we are simple, romantic[s] who risk contributing to the mental health problem by maintaining a belief in the improvability of the human condition through education." They went on to propose an education system that, "... has the potential for becoming one of the most useful social-political instruments possible for dealing fruitfully with the problems of the city..." While their language is located in their place and time (urban America, the 60s), their student-centred, problem-posing methodology (cf. Freire, 1970) remains, I will argue, widely effective.

Learning technologists acknowledge that they are working from multiple positions. It is also recognised that these positions are implicitly or explicitly theorised, and that the theoretical positions are related somehow. Bates (1995) recognises the difficulty in positing ideological neutrality for any educational use of technology: "... there is a direct link between the use of technology and different ideologies of teaching and learning." But, as Beetham (2001) says, we have moved beyond the simplistic behaviourist: bad. constructivist: good arguments. However, are we left in either a theoretical vacuum or a similarly valueless state of absolute relativism? The challenge of this paper is first to understand, value and encourage a problematising methodology and then to discover how to reconstruct what is educationally possible in a field radically transformed by the network of novel possibilities represented by and enabled through learning technologies.

REFERENCES

Ahier, John and Geoff Esland (1999), Education, Training and the Future of Work I: Social, political and economic contexts of policy development. Routledge, London and New York in association with the Open University

ANT, Actor Network Resource, an Annotated Bibliography. <www document >

http://www.comp.lancs.ac.uk/sociology/antres.html accessed 27/01/2003>

Avis, James, Martin Bloomer, Geoff Esland, Denis Gleeson and Phil Hodkinson (1996), Knowledge and Nationhood: Education, Politics and Work. Cassell, London.

Ball, Stephen (1990) "Industrial training or new vocationalism? Structures and discourses", in Ball, S (ed) Politics and Policy Making in Education. London, Routledge.

Bates, A. W. (1995), Technology, Open Learning and Distance Education. London, Routledge studies in distance education.

Bauman, Zygmunt (2002), Society under siege. Cambridge, Polity.

Beaty, Liz, Vivien Hodgson, Sarah Mann, David McConnell (2002), "Understanding the Implications of Networked Learning for Higher Education." <www document http://www.shef.ac.uk/nlc2002/manifesto.htm accessed 20/06/2002>.

Beetham, Helen, Tom Boyle, Grainne Conole, Cathy Gunn and Bruce Ingraham (2001), No blue skies without firm foundations: developing theory for learning technology. Panel discussion at ALT-C, the Association for Learning Technology conference, Edinburgh, 12 September 2001.

Bourdieu, Pierre (1993), The field of cultural production, edited by Randal Johnson. Cambridge, Polity.

Boyer, Ernest L. (1997) Scholarship Reconsidered: Priorities of the Professoriate. San Francisco, Jossey-Bass.

Brookfield, Stephen (2001), "Through the lens of learning: how the visceral experience of learning reframes teaching", in Paechter, Carrie, Richard Edwards, Roger Harrison and Peter Twining, editors (2001), Learning, Space and Identity. London: Paul Chapman, SAGE Publications in association with the Open University, pp. 67-78.

Brown, Philip and Hugh Lauder (1996), Education, globalization and economic development, Journal of Educational Policy, ii(1), pp. 1 - 25, cited in Ahier & Esland, 1999.

Carnoy, Martin (1997), The great work dilemma: education, employment and wages in the new global economy. Economics of Education Review, 16(3) pp. 247-54 (cited in Ahier & Esland 1999)

Clegg, Sue and John Steele (2002), "Flexibility as Myth? New Technologies and Post-Fordism in Higher Education". Networked Learning 2002, proceedings of the 3rd international conference, Sheffield, 26 - 28 March 2002: Lancaster University and University of Sheffield

Collis, Betty (1996), Tele-learning in a Digital World: the Future of Distance Learning. London, International Thompson Computer Press.

Conole, Grainne, Bruce Ingraham and John Cook (2003), Learning technology as a community of practice, in *Research Proceedings of the 10ᵗʰ Association for Learning Technology Conference (ALT-C 2003)*. Held 8-10 September 2003, The University of Sheffield and Sheffield Hallam Universities, UK.

Decker, S., Erdmann, M., Fensel, D. and Studer, R. (1999), "Ontobroker: Ontology Based Access to Distributed and Semi-Structured Information", in Meersman, R. et al. (eds.), *Semantic Issues in Multimedia Systems. Proceedings of DS-8*. Kluwer Academic Publisher, Boston, 1999, 351-369.

DfES (2003) Towards a Unified e-learning Strategy, http://www.dfes.gov.uk/consultations2/16/

DfID website http://www.dfid.gov.uk/

DTI website

Fairclough, Norman (2001), *Language and Power*, 2ⁿᵈ edition. Harlow, Pearson

Fox, Steve (2002), Networks and communities: an actor-network critique of ideas on community and implications for networked learning. Networked Learning 2002, proceedings of the 3rd international conference, Sheffield, 26 - 28 March 2002: Lancaster University and University of Sheffield

Freire, Paulo, 1970, *The Pedagogy of the Oppressed*, translated by Myra Bergman Ramos. London, Penguin, 1996

Grabinger, R. Scott and Joanna C. Dunlap (1995) "Rich environments for active learning: a definition", ALT-J, 3(2), 5 - 34, cited in Squires et al (2000), 8-38

Gregorc, A. F. (1979). Learning styles: Differences which the profession must address. *Reading through content,* 29-34

Jones, Chris (1999), "From the sage on the stage to what exactly?", *ALT-J*, 7(2), 27-36. Cited in Squires et al (2000) 126- 136

Ingraham, Bruce (2001a) "ALT-C 2001 Theory Panel - Some after thoughts". Posting to LT-THEORY@JISCMAIL.AC.UK Mon, 8 Oct 2001

Ingraham, Bruce (2001b) "Some other Mumblings and ramblings". Posting to LT-THEORY@JISCMAIL.AC.UK Wed, 10 Oct 2001

Kember, David and David Murphy (1994), *53 Interesting Activities for Open Learning Courses*. Bristol, Technical and Educational Services

Kendal, Gavin and Mike Michael (1998), Order and Disorder: Time, Technology and the Self. *Culture Machine* 1.1, November 1998 <www document http://culturemachine.tees.ac.uk/InterZone/kendall.htm accessed 27/01/2003>

Land, Ray (2002), Simulacra, embodiment and risk in cyberspace education. Paper from Ideas in cyberspace education (ICE) symposium, 30 October – 1 November, 2002, <www document http://mcdept.qmuc.ac.uk/ice/abstracts/Land.htm accessed 27/01/2004>

McVay Lynch, Marguerita (2002), *The Online Educator: a Guide to Creating the Virtual Classroom*. London and New York, Routledge/Falmer Studies in Distance Education

Manton M., Darby J. & Jones S. (2002) OPUS: Developing a personalized online learning environment for Continuing Professional Education. *Uace Annual Conference Proceedings 2002*. <www document http://www.tall.ox.ac.uk/opus/resources.asp accessed 28/07/2002>

Mason, Robin (2002) "Review of e-learning for education and training", in *Networked Learning*, 2002: proceedings of the third international conference, Sheffield University, 26 - 28 March 2002, 19-26

Mehrotra, Chandra Mohan, C. David Hollister and Lawrence McGahey (2001), *Distance Learning: Principles for Effective Design, Delivery, and Evaluation*. Thousand Oaks, CA, London, New Delhi: Sage

O'Connor, Terry (1997), "Using Learning Styles to Adapt Technology for Higher Education". Indiana State University <www document http://www.indstate.edu/ctl/styles/learning.html accessed 31/07/2002

Oliver, Martin (2003), Community, identity and professionalism: are learning technologists a community of practice, in *Research Proceedings of the 10ᵗʰ Association for Learning Technology Conference (ALT-C 2003)*. Held 8-10 September 2003, The University of Sheffield and Sheffield Hallam Universities, UK.

Popper, Karl (1996), *The Myth of the Framework: In defence of Science and Rationality*. London, Routledge

Postman, Neil and Charles Weingartner (1969), *Teaching as a subversive activity*. Harmondsworth, Penguin

Rawnsley, Andrew (2001), *Servants of the People: the Inside Story of New Labour*. London, Penguin

Scollon, Ron (1998), *Mediated Discourse as Social Interaction: a Study of News Discourse.* Harlow, Addison Wesley Longman Ltd.

Scollon, Ron (2001), *Mediated discourse: the nexus of practice*. London, Routledge.

Squires, David, Grainne Conole and Gabriel Jacobs, editors (2000), *The Changing Face of Learning Technology*. Cardiff, University of Wales Press

Taylor, Melba (1997), "Learning Styles". *Inquiry*, 1(1), Spring 1997, 45-48 Virginia Community College System

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

Wood, David (2002), Panoptic prophecies: visions of surveillance in science fiction writing. (Panel XIX: Literatures of Technology 5: Contemporary Science Fiction). <www document http://www.strath.ac.uk/conferences/technotopias/panel19.html accessed 27/01/2004>