

Blue sky, white paper: conducive learning environments in the workplace

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Abstract

Quality enhancement and innovation rarely feature in workplace-based learning, which is most often concerned with quality assurance and compliance. Little attention has been focussed on "non traditional non traditional" learners¹, for whom quality is considered 'fitness for purpose'. While not a panacea, learning technology (e-learning) can help fit-for-purpose learning to emerge.

Introduction

Learning in the workplace presents many challenges, not only to the worker/learner but to employers, employer organisations and educational organisations. These challenges can only be addressed meaningfully when the competing aims and agendas of employers, employees and educational institutions are acknowledged and accommodated.

Britain and the advanced economies depend on quality enhancement and innovation in order to sustain economic development. Even in an extreme "sweatshop Britain" scenario, the UK and all the advanced economies would find it difficult to compete on the cost of adding value, where the principal component of cost is labour. Quality enhancement and innovation are the aims of a 'knowledge economy'; however, quality enhancement and innovation rarely feature in workplace-based learning, which is most often concerned with quality assurance and compliance. Traditionally, workplace-based learning has been focussed as narrowly as possible on providing highly job-specific skills, just in time. Broader learning programmes are believed to lead to undesirable employee mobility.

However, recent studies show that the psychological contract between employer and employee, particularly amongst younger people (the so-called called generation X's) may be changing with more intrinsic rewards such as self development associated with loyalty and performance rather than traditional external factors such as pay.

In order to frame this discussion it we consider two key question areas. First, what models of quality in respect to learning, generally, are available against which to evaluate workplace-based learning, and of those models, which are most appropriate for the evaluation of workplace-based learning. Quality issues are in turn challenged by the impact of the wide adoption of information and communication technologies (ICT) in education and work. ICT simultaneously offers both solutions and new problems to be solved when developing and delivering workplace-based learning.

Context

Business is the dominant productive institution in society today and education is arguably the dominant - or perhaps the most readily dominated (compared, say, with the family) - reproductive institution. Moreover, current British policy holds the productive function to be dominant over the reproductive function, that is, education is conceived as serving business, much as the family once served agriculture. The recent White paper on HE (DfES, 2003)

¹ ... phrase we adopt to differentiate between "traditional non-traditional", i.e. PT and mature students following award bearing courses and those "non-traditional non-traditional" students who do not engage with the learning process and who are often workplace based.

encourages HEIs to engage with business community, and the current Minister for Education is bluntly unequivocal on the primacy of business needs in respect of education.

However, the UK is unable to compete on basis of cost even in low-skills arenas but only as part of an international knowledge economy where quality enhancement and innovation are the predominant differentiating features of British goods and services.

Pursuit of a world class workforce

The Government shares the vision set out in the Performance Innovation Unit (PIU) Report (2001 p. 5) that 'in 2010, the UK will be a society where Government, employers and individuals actively engage in skills development to deliver sustainable economic success for all'. The PIU highlighted particular problems associated with 'low skill equilibrium'; 'a self reinforcing network of societal and state institutions which interact to stifle the demand for improvement in skills levels...(resulting in) the majority of enterprises staffed by poorly trained managers and workers producing low quality goods and services. If employers believe that there is a low supply of skilled workers, they are likely to adopt production techniques that require less skilled workers'.

While it is asserted that one indirect effect of workplace learning on businesses is the reduction in labour turnover — employees feel valued and the psychological contract between employee and employer is enhanced resulting in greater motivation and commitment — particularly when related to small businesses and small to medium enterprises (SMEs), which make up 99% of UK businesses, (SBS, 2000) the alternative may also be true; workplace learning may increase staff turnover as businesses are unable to meet the raised expectations of more highly developed staff.

This is recognised as one of the major market failures which affects levels of investment in training, particularly within smaller firms, who see little motivation to invest where they are not able to capture all the benefits of that investment. Investment associated with traditional qualifications eg. MBAs, may lead to individuals leaving one company for a competitor. Flexibility is acceptable when convenient to the employer (Clegg and Steele, 2002), but employee instigated flexibility adds cost. Employers prefer to invest in 'poaching' trained staff rather than to invest in staff training for fear of being 'poached'. Therefore, the development of wider, knowledge-based, transferable competencies is not often held to be the responsibility of the employer but of third parties, principally, the state.

Unless training pays off quickly or is not very transferable, firms may be reluctant to provide it to their workers. Small firms are more likely to fear poaching because they have smaller internal labour markets and therefore fewer opportunities for individual progression, making it harder for them to retain staff in the longer run. Employers may also be particularly unwilling to provide training for low skilled individuals as they are often in less permanent jobs in sectors with high staff turnover.

Quality learning and the workplace

It was noted in the Chief Inspector for Further Education's report 1999-2000 (Cited in PIU 2001) that workplace training quality assurance procedures were not rigorous enough; this was especially true for short courses and CPD programmes which, 'received scant attention'. This issue was more recently identified as problematical in the PIU report which, whilst recognising the importance of qualifications, also noted that, 'there is a more fundamental question as to the future role of qualifications in a changing workplace requiring an increase in the value of informal workplace learning' (2001, p. 52) It may be in the area of capturing and measuring these informal learning experiences that technology offers the greatest opportunity. Technology must, however, be presented as the most 'appropriate' assessment tool for the stated aims and objectives (in terms of time/flexibility/target audience/level).

In higher education, on the other hand the notion of quality is a contested one. At least five interpretations have been identified in the research literature (Green, 1994):

- Quality as excellence
- Conformance to specifications or standards
- Effectiveness in achieving institutional goals
- Meeting customer needs.
- Fitness for purpose

As Green (1994), notes, these interpretations are neither exclusive or exhaustive. In practice, several of these interpretations may be held alongside each other, and the contradictions between different interpretations may only become apparent as the work progresses.

There has however been relatively little research into effective quality assurance models that can support the creation of e-learning courses specifically designed for the workplace. Where research has been undertaken there is tendency to focus on quality of academic content (Oliver et al, 2001) rather than on quality of learning experience or the quality of the assessment. As O'Shea, Bearman and Downes (1997) have argued, quality is particularly important and unusually difficult for open and distance teaching.

Much attention has been focused on the needs of traditional and traditional non traditional learners but little on 'non traditional non traditional' learners. We adopt these terms to differentiate between part time and mature students following award bearing courses (traditional non-traditional) and those "non-traditional non-traditional" students who do not engage with the learning process and who are often workplace based. For these students, quality is more aligned to the 'fitness for purpose' model than supply side notions of quality as excellence, that is, quality as determined by higher education institutes, which tend to focus on abstract or intrinsic definitions such as "excellence". That is not to say that quality in all its interpretations is not laudable, but that engaging employers, a key to workplace learning, requires programmes and approaches where the benefits of education and training are obvious and immediately applicable. Whilst there have been many government attempts to engage large workplaces with many learners, for example through Individual Learning Accounts (ILAs)² and Learner Representatives³, nevertheless, there is little evidence that they have penetrated smaller businesses.

ICT enables ...

Breaking down barriers

Breaking down barriers between education and work may require time shifted study⁴, location shifted study, flexible sequencing, improved access to resources and acceleration of information return (faster notification of results). Equality of opportunity and social responsibility require widening access to the institutions of both work and education, and require business and education, together, to reach out to the community: local and global. There is an expectation that contemporary educational institutions will be using ICT creatively for the enhancement of learning, work and leisure. In the world of work, employers expect graduates to be fully ICT literate and employees, developing skills and knowledge, expect and require a learning experience that makes best use of new learning technologies.

² ILAs were introduced by the UK Government in 2000 as financial subsidies to improve workplace skills. They were suspended in 2002 amid accusations of inappropriate and possibly criminal mispractice on the part of some training providers who might have been billing for services that were never delivered.

³ Trade union organisers who are specially trained to advise their members on learning needs and opportunities. given statutory rights under the Employment Relations Act 2002. Various other terms e.g. Learner Champions are also used to describe non union individuals providing a similar function.

⁴ Term derived from the practice of recording television programmes to view later: "time-shifted viewing", i.e. viewing at a time other than when the network has scheduled the event. "Location shifting" is by extension from the former.

Time and location shifted study

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. 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 affordance⁵, ‘its ability to support distributed collaborative interaction and dialogue’ (Beatty 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. Together, time and location shifting technologies may supplement, complement, substitute or replace face-to-face learning. It follows that such technologies must be implemented in conjunction with appropriate pedagogies and that both learners and their employers may need training in these methods.

Flexible sequencing: widening access and increasing diversity

As Manton *et al.* (2002) observe, learning technologies enable students to work against the model of tutor-sequenced learning to determine their own sequence of study activities. This affords particular benefits to learners with different prior knowledge of the course domain and to learners with different learning preferences. In addition to the benefits of time and location shifting in enabling flexible scheduling for people with employment, domestic or other social obligations, e-learning technologies afford opportunities for participation to people whose preferred learning style might not be well suited to face to face participation.

Access to resources

The World Wide Web (WWW) is the largest multimedia database that has ever existed (Decker et al. 1999). The UK leads the world in cataloguing and making digital resources available. While recognising that using the Web requires sound critical faculties, incorporating Web and other Internet resources into workplace learning has the potential to greatly enrich the learning experience (cf. McVay Lynch). Internet resources are developing rapidly. It is not only static resources that can be accessed. Adaptive simulations and e-laboratories such as once were the preserve of the stand-alone workstation are beginning to appear. They combine the benefits of computer-based training such as simulation of hazardous environments (e.g. battlefield medicine, offshore oil installations) and safety-critical operations (e.g. flight simulation), with the benefits of 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.

Improved communication and acceleration of information return

The area where e-learning techniques appear to be able to greatly accelerate processes is in computer aided assessment (CAA), although there are those who (Brugha, 1996. In Salmon, 2000) question its reliability. CAA introduces the opportunity to broaden and refine assessment methods and strategies. As time and location of instruction are shifted, the physical classroom itself becomes less important as a locus for communication.

Practical applications of eLearning to provide fit for purpose programmes

⁵ The term affordance originated in environmental biology to describe the relationship between a creature and its surroundings. For large creatures a lily pad may afford very little, while for a small frog it affords seating. The affordances of an object are always in relation to and dependent on who or what might make use of the object. The term has been adopted into many design disciplines, including the design of human-computer interfaces. One speaks of the affordances of the desktop metaphor. In the case of technologies applied to learning (including but not limited to ICTs), they are said to afford users the opportunity to study at a time and in a place of their choosing.

Business wants immediacy

The just-in-time approach to e-learning most recently associated with UK workplace learning, and described by Salmon (2003) as 'planet Instantia' tends to be prevalent in organisations with a unitarist philosophy and strong human resource culture. The rationale for 'training' is clearly focused on the direct and immediate needs of the organisation, particularly the development of flexibility within work teams and fostering the adoption of strong in-house knowledge culture. Certain organisations that embody this approach develop units to support organisational learning describing them as 'universities' or 'faculty on the floor'. Employers assess value of learning on the basis of application of skill to a given task, and encourage teams to suspend production in order to introduce 'improved' practices. Thus employers evaluate the speed and effectiveness of the learning provision by considering the extent to which organisational performance improves. Assessment tasks are always related to specific work or professional needs and are deeply embedded in the learning/training activities. Gaming technologies are used to create 'real life' scenarios that combine learning and assessment in seamless environments. There is a high level of tracking of outcomes that are automatically transferred to employees' development accounts. Despite the focus on skills rather than knowledge the advocates of lifelong learning have come to see the benefit of this use of technology to support learning in the workplace.

Business wants portability

Many commentators on the subject should remember that e-learning is a process and not an event; and within this process portability has played, and will continue to play, a key role in opening up new learning environments and engaging new learners. (It would be well to recall that one of the key barriers to workplace learning is 'time'). This approach, where technology is used as a delivery system transmitting content via increasingly sophisticated virtual learning environments, VLEs is popular amongst UK universities and provides the opportunity to develop highly individualised learning programmes through the creation of sharable learning objects.

The Business for Bioscience course at the Enterprise Centre of the Business School in Oxford Brookes University was developed with and for industry. Content, learning outcomes and duration, were all largely determined by a steering group comprising local companies, network groups and academics. This ensured that the programme was 'fit for purpose'. The key criteria was the development of content that could be readily accessible by busy scientists with links through to bespoke search facilities such as a virtual library. Technology allowed the programme to be developed on a 7:3 model: that is, seven generic business and management modules, and three bioscience modules. It was in the application of the seven to the three that the course became bespoke. This 'case study' model, facilitated by the use of technology, enabled the development of four other online courses aimed at other high tech sectors, for example ICT and automotive engineering. Subsequently, this model has formed the basis for development of key generic and interactive learning objects, such as SWOT analysis and business plan templates, which can be used and reused. This interoperable content enables providers to address the needs of a diverse workforce, responding to government's desire for demand led initiatives whilst also working within their own business constraints.

Economies of scale are very much an advantage offered by the use of frequently asked questions FAQ's. The Bioscience programme integrated a dynamic knowledge management tool, called e-mentor, which generated a database of FAQs, which, in turn, rather than producing static lists, would respond to questions from learners with particular answers. This format has been used on other e-learning programmes developed in association with the Enterprise Centre at Brookes such as the S3 project developed in collaboration with Business Boffins Ltd. The S3 project created a database associated with start up and sustainability of small businesses in collaboration with a team of professional advisers. Part of the data base of FAQs was generated in response to questions from Business Boffins and part initiated by the

advisers themselves who were asked to consider questions that were not asked by small firms but ought to have been asked.

The blue sky: what technology may be able to do to improve fit for purpose models

The one disappointing area in our experience has been the integration of asynchronous chat rooms into demand-led industry e-learning programmes. Disappointing in the sense that this environment offers great opportunity to contextualise learning, and also in that within this environment computer mediated communication (CMC) offers the opportunity to validate individual performance/participation. According to Salmon (2000, p.13):

‘The CMC environment offered as good, perhaps better learning environment than face to face tutorials. This was because students read messages, went away and thought about the issues and ideas, and came away the next day with a *reflective* and thought out comments. Such a process isn't possible in a face to face meeting’.

This approach (Salmon's Planet Caf  lattia) is based around bespoke learning communities and interaction, where the roles of reflection, professional development and sharing of tacit knowledge are of critical importance. Learning in this environment is contextualised and given authenticity by the learning group and the learning community. Assessment is based on complex problem solving and knowledge construction skills, is learner driven and negotiated with peers. Assessment is not seen as restrictive but an enhancement and motivation for learning. Hence the scope and level of assessment are largely the product of interaction with other like-minded learners. Tutors are experts in mentoring on line, facilitating discussion and contextualising action. This is the role Salmon calls e-moderation and is key to the success of the learning experience. This concept appears to address the needs of employers with learning outcomes negotiated between employers and learners and where learning is focused on organisational needs but goes beyond the application of a particular group of skills.

Whilst conceptually very strong, this approach will often require learners who are intrinsically motivated to learn through non-traditional means and have the time and resources (including the embodied social capital to access networked technologies. Learner self-directed learning can therefore sit uncomfortably with just-in-time skills based training and mitigate against engagement.

Such a network of learners could constitute a work team within an organisation or could encompass an entire supply chain with the learning process facilitated by a particular 'node' SME. This company, which maintains the relationship with a given client or customer organisation could provide much of the technical support and facilitation, ensuring that lack of resources does not become a barrier to engagement. Motivation within the small firms which may make up the supply chain comes from quality guarantees required by the client. Perhaps this initiative could be supported by Organisational Learning Accounts (OLAs), based on the same principle as Individual Learning Accounts (ILAs), but targeted to allow the bundling of purchasing power of a number of employees (employers) with a view to purchase relevant development activity (Westwood 2001).

The creation of a world class workforce is closely linked to innovation and enterprise, with the illusive search for the Holy Grail; that is the entrepreneurial mindset. There remains of course a debate as to whether entrepreneurs are born or whether individuals can be taught to become the next Richard Branson. In line with current policy, the most conducive environment is considered to be the business world, although it is worth considering how technology may be harnessed to support entrepreneurial learning. Whilst a number of on line courses have been developed with the ostensible aim of creating entrepreneurs, many of these are largely content driven with little consideration of cognitive processes. Initial evaluation of the Business for Bioscience course found that whilst content was appropriate for both

objectives and target audience, nevertheless, the manner in which the cohort of scientists engaged with the material required amendment. The result was the development of a module entitled 'Changing coats', based very much on Hudson's findings (Hudson 1966). Changing coats, which envisaged the changing from a laboratory coat into a business suit, introduced learners to creativity and produced much more dynamic learners and innovative business plans.

Another example, building on the above model, would use technology to establish communities or demilitarised zones (DMZ). The rationale is based largely on Suskind's (2001) 'disruptive technology'. Suskind argues that radical changes in the technological basis underpinning a market or industry (in his case law firms), introduce serious disruptions that threaten the future of businesses and individuals. He recommends that businesses cope with such disruptions, and exploit them to their advantage, by creating subsidiaries, partnerships or de-militarised zones in which new ideas, technologies and markets can be experimented with. Knowing the best way in which to construct and operate in such spaces is therefore essential. Perhaps this is the key function of enterprise education — in both providing these DMZs and facilitating activity within them. The very least that e-learning can contribute to this would be to provide effective but secure communities of learning in which that practice can happen, and to collect together good ideas and best practice.

References

- Beaty, L., Hodgson, V., Mann, S., McConnell, D. (2002) *Understanding the Implications of Networked Learning for Higher Education*. <http://www.shef.ac.uk/nlc2002/manifesto.htm> accessed 20/06/2002
- Clegg, S., Steele, J. (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
- 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), *The Future of Higher Education*. Crown Copyright.
- Green, D. (1994), *What is Quality in Higher Education?* Buckingham: Open University Press
- HM Treasury. (2002), *Developing Workforce Skills: piloting a new approach*. April
- Hudson, L. (1966), *Contrary Imaginations: a psychological study of the English school*. Penguin
- Manton M., Darby J. & Jones S. (2002) OPUS: *Developing a personalized online learning environment for Continuing Professional Education*. UACE Annual Conference Proceedings 2002. <http://www.tall.ox.ac.uk/opus/resources.asp> accessed 28/07/2002
- Mason, Robin (2002) *Review of e-learning for education and training*. Networked Learning, 2002: proceedings of the third international conference, Sheffield University, 26 - 28 March 2002, 19-26
- McVay Lynch, M. (2002), *The Online Educator: a Guide to Creating the Virtual Classroom*. London and New York: Routledge/Falmer Studies in Distance Education
- Oliver, M., Bradley, C. & Boyle, T (2001) 'The distributed development of quality courses for a virtual university', in *ALT-J*, 9(2), 16-27

- O'Shea, T., Bearman, S. and Downes, A. (1997) *Quality assurance and assessment in distance learning*. The Commonwealth of Learning, Vancouver, 1997, <http://www.col.org/10th/about/images/qa.pdf> accessed 27/05/03
- PIU (2001), *In demand: adult skills in the 21st century*. Performance and Innovation Unit Report, Cabinet Office, December 2001
- Salmon, G. (2000), *E-Moderating: the key to teaching and leaning on line*. London, Kogan Page
- Salmon, G (2003), *UK SEC eLearning Seminar*, University of Warwick, March 2003, also available at <http://www.ed.ac.uk/altc2001/keynotes/index.html>
- Small Business Service (SBS 2000), *Small and Medium Enterprise (SME) Statistics for the United Kingdom, 1999*. Research and Evaluation Unit, SBS, September
- Susskind, R. (2001), *Transforming the Law*. Oxford, OUP
- Westwood, A. (2001) *Not Very Qualified. Raising skill levels in the UK workforce*. The Industrial Society Policy paper.