

Some insights into choosing a Platform for a Virtual Learning Environment

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1 Abstract

This report takes an introductory look at the trend toward more Internet enabled course delivery, with particular reference to the Higher Education market. It considers some common teaching and learning paradigms and some of the theory of Constructivist Learning and relates this to learning that is facilitated by Internet delivery within the context of a Virtual Learning Environment (VLE). A VLE is considered as one specialised tool itself may or may not be part of a Managed Learning Environment (MLE).

The report identifies some of the strengths and limitations of the VLE and MLE delivery platforms; it also looks at some student responses to on-line learning and the delivery systems.

The report's key conclusions are that:-

1. There is no one "best" VLE/MLE platform.
2. Successful introduction of VLEs requires careful institutional change management, on-going staff training.

The report recommends that any institution considering introduction of a V/MLE should establish a project team to manage the process. Such a team should have the mandate of and report directly to the Vice-Chancellor or equivalent officer.

2 Introduction

2.1 V/MLEs: a definition

JISC (2005) defines V/MLEs as follows:-

“While recognising that the world at large will continue to use terminology in different and often ambiguous ways, the term **Virtual Learning Environment (VLE)** is used to refer to the “online” interactions of various kinds which take place between learners and tutors. The JISC MLE Steering Group has said that VLE refers to the components in which learners and tutors participate in “online” interactions of various kinds, including online learning.

The JISC MLE Steering Group has said that the term **Managed Learning Environment (MLE)** is used to include the whole range of information systems and processes of a college (including its VLE if it has one) that contribute directly, or indirectly, to learning and the management of that learning.”

2.2 Programme types

Two technological programme types are involved in constructing web based learning materials and the way in which they are presented over the Internet. These are Management programmes that are designed for the management and delivery of such teaching and learning materials, e.g. FirstClass, WebCT and similar products and and Authoring Tools such as Dreamweaver, Final Cut and Premier Pro. The course designers skill must lie in integrating these two sorts of programmes and their idiosyncrasies so as to optimise rather than minimise the value that they can deliver. Hurley (2001) favours such combinations of systems as they can be formed into, or are virtual campuses. Hurley sees such systems and programmes as valuable, for the opportunities they give for introducing formal support structures into the teaching` area and for informal peer group inter-action within the learning environment.

2.3 The changing student profile

The population, as a whole, is becoming increasingly computer literate and conversant with the new technologies and this certainly includes the next generation of undergraduates, whether from the traditional late-teen age or the increasingly important mature age group.

Such students are increasingly looking for flexibility in their study patterns; many come with different skill sets to those with which academics and institutions are familiar, computer skills being but one. Those in employment or attending as mature students are becoming accustomed to working from home and increasingly using tele-working as an everyday tool. As this trend continues, it is certain that increasingly they will demand education free from constraints of time and place. The

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internet can deliver; but will academics and administrators allow the student experience to be satisfactory?

2.4 The changing pedagogy

The 1990s saw a widespread development in thinking about learning and teaching. One key change was the thought to put learning before teaching. Prior to this time, teaching had been seen as knowledge transfer process with the learning being facilitated by appropriate stimuli. Skinner (1958) suggested that: -

"learning by the student is measured, at its most simple, by the student matching his or her reply to the correct answer".

Later, Crowder (1960), among others, developed his work so as to give the student the choice to move down more than one path. Additionally there is difficulty in applying Skinner's simple model where there is no clear 'correct' answer or where different answers may be equally correct in theory and only proved by practical application in context.

Later, Bruner(1966) and Mandler (1985) rejected the behaviourist theory in total and espoused cognitive models, that is those that are concerned with student's understanding rather than their behaviour. Piaget quoted by Anderson (1984)

"suggests that a student naturally wishes to explore and learn ... but after some experience finds that they are in a situation that they do not understand".

Anderson (1984) suggests that the student wishes to restore a position of equilibrium (understanding) and does this by re-interpreting the experience to fit their existing internal structure, or if this fails, the student modifies the internal structure. When this happens, learning may be said to have occurred. This becomes the starting point for "Constructivist" models where the perception is that students themselves are active in the construction of understanding and knowledge.

Vygotsky, in Hanfmann and Vakar (1962) page 99 says : -

"Writing also requires deliberate analytical action (on the part of the child)."

Thus surely is so of all writing by persons of any age and is perhaps a key pointer to the design of courses to be remotely delivered, whether by traditional correspondence or electronic means. If we demand written assignments rather than multiple-choice tick-box answers, we cause the students to evaluate the information provided and to respond in a logical constructively argued manner. Thus, this should eliminate chance from the answer and aid the transformation of the previously learned (lower) concepts

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Ramsden (1992) suggests that: -

“learning is fundamentally about changes in the understanding of reality, and that teaching should be directed towards helping students understand phenomena in the way that subject experts do.”

Rodenburg (1998) declares that: -

“there has been a shift in pedagogical perspectives from a ‘transmission’ model to a more ‘constructivist’ model”

More recently a move has been made to “learning outcomes”, with a con-commitant move to assessing the ability of students to demonstrate the achievement of those outcomes. This moves some way to Ramsden’s ideal quoted above. If handled in a sensitive way it can and will lead to a deep approach to learning. (Deep learning is typified as an intention to understand and seek meaning, leading students to attempt to relate concepts to existing experience, distinguishing between new ideas and existing knowledge, and critically evaluating and determining key themes and concepts.) However to achieve deep learning even the move to outcomes will require the outcomes to be more widely drawn and to support demonstration of evaluation, analysis and evaluation rather than demonstration of rote learning. However the move to a paradigm that produces “learning” should change everything and in turn, the common student and staff purpose should become the achievement of learning and success in the student.

Hurley (2001) also suggests that, as the shift in learning programmes is away from input toward outcomes, so the role of the academic staff becomes more one of managers of learning and increases their role in providing guidance and support.

Work by Penelope Reed Doob (1995 in the Unites States and elsewhere has shown that: -

”students achieve more by participating in study groups out of class”

Quoting from an article in ERIC_Digests suggests that the developing available technology increasingly allows us to positively exploit this group learning effect by providing frameworks that will support the formation of: -

“heterogeneous groups where collaborative learning, problem solving and high order thinking skills can be developed...These are processes can be difficult to encourage in the normal classroom, but are the norm in well designed and constructed distance learning packages, including those delivered via Video-conferencing and the Internet.”

Alavi, Yoo and Vogel also find that: -

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“Students, faculty (staff) and institutions all learn while becoming actively involved in exploring concepts and removing uncertainties

There is an emergent view that there is no single solution to the process of teaching on-line. Hurley (2001) comments there are: -

" a wide range of on-line opportunities...(that) can provide additional resources for conventional, institutionally based learning and for distributed and distance learning".

The new learning paradigm moves the key activity from teaching to the facilitation of learning. In parallel there is a move from courses defining the input objectives to articulating achievable and assessable outcomes, within the context of the learner. Tutors will have to revisit theories on learning styles and take note of these in course design and embrace new forms of assessment. Above all, on-going staff development will need to take place as the form and style of writing learning outcomes develop.

The assessments will be couched in language synonymous to the learning outcomes and will seek to involve the majority, if not all, of the classes in Bloom's Taxonomy (Bloom, 1956). The tutoring process focuses on facilitating the learning process and necessarily becomes much more student centred. Exploration of primary source material (key texts, professional journals, newspaper articles and Internet sources, etc.) becomes a major part of student activity. Using different student groups, from within the same class, to explore and research differing topics, can encourage these activities. Findings may then be summarised and presented to their peers. These presentations come to be part of the formative learning process when they are assessed and commented on by the tutor/facilitator. This process of group/peer interaction is a key part of the learning process, Doob (1995).

The employment, of the new technologies, requires a careful and pedagogically sound approach to the design of the facilitation and learning activities that will employ the chosen technology.

This development will need to embrace the move from course learning objectives to measurable learning outcomes and the design of suitable and appropriate methods of assessment processes contextualised to embrace the students' learning environment.

As Laurillard (1993) states:

It means that in setting work for students...the teacher has a great responsibility to require the sort of thing that will help them learn.

This does nothing to diminish the importance of students taking

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responsibility for their own learning...inevitably they (students) will respond to the demands of the context, so the teacher must be sure that the demands of the context are pedagogically sound.

2.5 The role of the tutor

As we increasingly move to online learning there will emerge a new style of tutor facilitator, who is skilled at facilitating online discussions and moderating learning communities.

Reporting in "Online Learning: Implications for the University for Industry," Heppell & Ramondt (1998) state the importance of the role of the coordinator in keeping the project alive. They quote Berge (1996) as saying that one person rarely fills all facilitator functions, as the required skills are very diverse. Heppell & Ramondt (1998) additionally identify high-level technical skills and pro-active drive as necessary to sustain project participation. They also reported that some participants found difficulty in actively meeting their own learning needs and looked for structure while others enjoyed the freedom of the project. Heppell & Ramondt (1998) are clear that: -

"a better sense of audience and flagging more clearly a set of clues and cues for active participation"

would resolve some of those conflicts. This points to the need for a mix of learning strategies in the formal environment of a module or course.

The online learning environment is exposing and unforgiving. Within the online environment, the dissemination model is not effective and the role of the tutor has rapidly become that of coach or facilitator. In January 2001, The National Professional Qualification for Headship (NPQH), mandatory in the UK for those wishing to be head teachers, was being delivered online to 3,016 senior teachers, whilst a further 2000 commenced in September. Until recently, in similar online learning communities the model was of small groups of students with a single facilitator, typically around twelve candidates to a single tutor/facilitator. Chapman (personal communication, unpublished 2001) says: -

"Using our expertise in online learning communities, gained from a range of projects since the late 1980's, we were aware that this was much too small a group to sustain effective vibrant online communities."

Thus the model adopted for NPQH was one that combined four traditional tutor groups into a group of at least 48 candidates and 4 tutors. Most importantly perhaps,

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the communities achieve critical mass, since as some group members move out of active participation, others move in and sustain the community, widening the peer learning experience. Chapman (2001) who led two major on-line learning communities says: -

“The group size enables tutors to share concerns, disappointments, achievements and tasks and ensures that candidates have a lively and stimulating range of discussions”

A similar community for newly appointed existing Head Teachers was extended later to all Head Teachers (Talking Heads, 2000). Stephen Powell, (personal communication, unpublished 2001) Senior Researcher and a project manager in Talking Heads reports that: -

“The Talking Heads online community model is that of a high level conference with sub-conferences. A typical head-teacher is a member of a range of communities that they either opted into on the grounds of their personal interests or core communities they were automatically placed in. Each community has a different purpose and different membership profiles. Some communities are relatively large cutting across school phase, others are made up of schools with particular common features such as small rural schools, whilst others are ‘communities of practice’ addressing particular topics within a tightly defined domain”.

It is interesting that the findings of Powell and Chapman while observing different environments, are not dissimilar to those of Kim (2000), who suggests three underlying principles for building online communities: design for growth and change, the creation and maintenance of feedback loops, and the empowerment of members over time.

A similar community structure is employed in facilitating a fully online undergraduate degree (www.ultraveristy.net). All facilitators have access to all online communities, the students are divided into “private” common interest study groups and but can see all the communal social/non-academic spaces. Thus there is significant peer support of a generic nature and strong peer support in their contextualised common interest groups.

Shona Butterfield (2002) delivering a report to the New Zealand Government refers to her team’s convictions (amongst others) that: -

“ e-learning must be learner centred.”, “e-learning must be quality-based and informed by excellent pedagogy” and “e-teaching must be supported by capability development in institutions”

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The technologies employed must always be secondary to and informed by the pedagogical demands of the course. If the pedagogical perspective of ICT enabled course material meets the demands of distance learning, it will form excellent material for supporting traditional face-to-face delivery, the contrary is not necessarily the case. Good face-to-face material almost inevitably requires significant reworking to suit distance learning

McLuhan (1964) pp338 refers in some detail to the effects of restricting the breadth of the medium in delivering information as compared to allowing the information to be presented utilising all the capability of the medium. Suffice it to say that the way the information is presented on a particular medium affects greatly the effect that is achieved in the receiver of that information. He also points to the wider effect of this instant availability of information: in our own recent past we have seen the instant reporting and judgement made about conflicts in Iraq, whereas the older of us received more reasoned and analysed commentaries on conflicts like the Korean war.

It follows that the choice of teaching and learning styles available should ideally be informed by a phenomenological approach, that is considering the needs of all the students, their preferred learning style, the content of knowledge/information to be transferred, the learning outcomes, the location of the tutor relative to the students, the tutor's own preference for teaching style etc. Unfortunately for ease of management and support, resource managers, who may have little or no understanding of the pedagogical imperatives, frequently dictate the choice of software.

2.6 The Institutional perspective

At an institutional level there is a growing recognition of the need to meet changed student expectations if numbers are not to decline. Thus institutions are slowly having a culture change thrust on them. Some have adopted a positive position on the adoption of the Internet technologies to facilitate learning and teaching. Fewer have explicit published policies and anecdotally even less have clear implementation strategies and a small minority have clear staff development plans which address the challenges of internet. The result of this that in some instances on-line learning is thrust on students with less than adequate materials, unsound pedagogy, poor support mechanisms and inadequate institutional systems and even a Canute like stance on e-learning.

This situation can only be remedied if institutions move from a permissive to proactive adoption of on-line learning. The JISC (Joint Information Systems Committee) briefing paper 5 (JISC, 2002) is clear that: -

“ for all these changes to be achieved a whole college approach is necessary...
this process will need ‘buy-in’ from all sections and departments...”

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To achieve such buy-in will require re-thinking of policies and strategies and major changes in procedures and processes to embrace the significant differences between traditional face to face delivery and on-line delivery whether of distance learning or in support of traditional courses. Carol Moffat (2002) in conversation asserted her experience is that: -

“to effect pedagogical shift (in an organization) you have to have Institutional change.”

3 The student experience and technology.

As we move to a learning paradigm, whether at FE, Undergraduate or Postgraduate level we must increasingly recognise the need for facilitating learning that is not only delivered in a technologically efficient way but that is also effective. The two are rarely the same, the former beloved of resource and finance managers, the latter crucial to the success of the student experience.

Much has been written on the assumptions of how adults learn (Androgogy). Fidishun 2005 quotes Knowles Holton and Swanson (1998) as discussing 6 assumptions, which are as follows:

- The Learner’s need to know
- The Learner’s self-concept
- The role of the Learner’s experience
- The Student’s readiness to learn
- The student’s orientation to learning
- Student’s motivation to learn

In her expansion of these assumptions Fidishun refers to “the more standard pedagogy”. More standard than what? Is this a covert reference to the “College Instructional Paradigm”, Barr (1994) She develops the argument about technology enabling students to engage with the “Learner’s need to know” Fidishun draws several conclusions, amongst which are:

“Educators who are using adult education concepts in the development of their lessons must also become facilitators of learning” and

“They must ...make the presentation of topics relevant to those they teach.” , and

“Arguments for the use of technology many times include statements about its flexibility and the ability of the learner to move through lessons any time, anywhere, and at their own pace.”

These conclusions are well made from the arguments, but gives no consideration to the view that the “standard pedagogy” is in fact inadequate in

the on-line environment and that there is a need for a paradigm shift to a “Learning Paradigm”.

4 A limited Literature Search

4.1 Introduction

4.1.1 Scope and Rationale

This research was carried out to establish what currently published information was available about V/MLEs, their performance and influence on the practice of on-line teaching. It is not considered to be fully comprehensive, but appears to offer some considered views in an important area of educational advance.

This research was additional to that which the author had previously undertaken in conjunction with other papers in this area.

4.1.2 Methodology

The primary source of information was the Internet searched using Google and other search engines. The links referenced at the primary level were then themselves searched. All information sources considered relevant were downloaded and then read in greater depth for evaluation as to contribution to the topic area.

4.2 The review.

One major source of information was the Becta ICT Research document entitled “A review of the research literature on the use of learning environments and virtual learning environments in education, and a consideration of the implications for schools in the United Kingdom.” Whilst as its title implies the paper is concerned with the school environment, much of the content is relevant in FE and HE Sectors. As its name implies this is itself a literature review, presented under a number of topic headings, which makes it a valuable and easy to use resource.

In the section specific to HE, Lewis (2001) is reported to have found that adopting on institution wide solution is advantageous from the stand point of providing learning technology or IT support but that this may impose patterns of thinking on the way that courses are compiled. In the same report Simpson (2001) identifies that provision of electronically available resources does not necessarily mean learning for the student or pedagogical empowerment for the academic, later on p30, it is clearly identified that training is required in structuring and delivering courses in the new medium; on P31 the report clearly identifies the importance of buy-in by senior management and their commitment to facilitating the introduction and implementation of V/MLEs. This support must be overt by provision of adequate

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budget but also covert in terms of recognising the new pedagogy associated with V/MLEs. Increasingly VLE developers and vendors stress the inclusiveness of the features of their products and these attributes are a seductive message to senior managers who continuously seek greater administrative efficiencies without understanding the educational and pedagogical limitations of the products they purchase (for) and increasingly impose on academics.

Athabasca University has undertaken a series of evaluation exercises and projects in the field of V/MLEs and published a number of reports in this area that usefully inform the current debate. The source document for these is found at www.athabascau.ca/cde/softeval/reports.htm

Report R34/0404 looks at some of the issues surrounding “Growing Virtual Communities”. This short report is well worth reading in full (and may be downloaded from <http://www.irrodl.org/content/v5.2/technote4.html>). The conclusion quoted in full is as follows.: -

“Considering the meaning of community is important as we design and implement virtual learning processes in distance education. Social factors are central to the planning, nurturing, and life cycle of learning communities. Participation, communication, and interaction are at their heart. A community’s focus needs to be clear so that its members can build a common history and identity. Cooperation, trust and reciprocity are required, so that the community can fulfill its goal of knowledge acquisition grounded in experience. A sense of belonging and social presence sustains participants through the learning process. Virtual learning communities face the additional challenge of connecting people over time and space through the use of technology. Students may not always be able to define a virtual learning community in a way that allows them to participate and benefit from it. The instructor/facilitator must play an adaptive role in the community process, developing active and engaged learners. All of these social factors influence the life cycle of a virtual learning community, eventually leading it to a higher stage, or to decline and death, natural or not.”

Report R43/0410 concludes that: -

“...increasing integration of product features does not necessarily improve a product’s ease of use or educational effectiveness”. It further comments that:-
“...too much product integration can be counter productive...teachers and students may both benefit from a simple modular approach that allows them to expand their online tools and skills as and when they need to do so”.

In their evaluation of WebCT Vista R41/0410 concern is expressed as to the cost of training for academics in the use of the large number of tools integrated into Vista. In R44/0412 it is suggested that: -

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“...the packaging of electronic learning – the learning management system (LMS) – is becoming regarded as a hindrance and that its design, flexibility, functionality complexity and cost are being questioned. This is coupled to the growing understanding that the LMS is relegating the student to passive recipient of information.”

The report trenchantly identified that:-

“we have strongly embraced the idea of the opportunity of the web to personalise learning opportunities whilst neglecting the learning needs of the individual students on the grounds of cost and difficulty”.

Vipola and Ihämäki (2004) identify poor usability as a major obstacle to learning in V/MLEs and quote various authorities as identifying specific items such as unused features, navigational difficulty, difficulty in identifying content together with the overall environment. Specifically they identify that you cannot add usability to content, there is therefore a need to design usability into the programme right from the start.

Wenger (2001) carried out a wide ranging survey of community oriented technologies. This work is currently being revised but some of his observations are certainly relevant to this document, particularly section 1 referring to “Communities of practice”. He observes that: -

“...but communities of practice are a special kind of community. They are focussed on a domain of knowledge and over time accumulate expertise in this domain. They develop their shared practice by interacting around problems, solutions, and insights and building a commons store of knowledge.”

Later he identifies

“Membership therefore implies a minimum level of knowledge of that domain – a shared competence that distinguishes members from other people.” Later: -

“...members engage in joint activities and discussions, help each other, and share information.”... “Having the same job or same title does not make for a community of practice unless members interact and learn together.” And still later: -Members of a community of practice develop a shared repertoire of resources: experiences. Stories, tools, ways of addressing recurring problem – in short a shared practice.”

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Wenger has identified some thirteen fundamental elements that are seen as fundamental to a successful community of practice and which may be affected by technology. These are: -

1. 1. Presence and visibility.
2. Rhythm
3. Variety of interactions.
4. Efficiency of involvement.
5. Short-term value.
6. Long-term value.
7. Connection to the world.
8. Personal identity
9. Communal identity.
10. Belonging and relationships.
11. Complex boundaries.
12. Evolution: maturation and integration.
13. Active community building.

Wenger then expands on these thirteen fundamentals in tabular form and identifies the technological implications and provides useful examples against each fundamental.

5 Summary and discussion of literature search.

It is clear that V/MLEs are an area of ongoing research and publication. It is equally clear that there is no-one best solution. Significant tensions exist between academics of a traditional content rich persuasion and those with more constructivist tendencies; they exist between academics (of any persuasion) and corporate/institutional administrators; equally further influences on the student experience are the tensions between the features offered, the performance required and the procurement costs.

It is apparent that the nature of the feature rich platforms is such that administrators may view them as a cure all to be adopted institution wide and more so when the platforms can capture student results etc and integrate them into the institution's wider administrative functions. This may be acceptable where the platform is used purely as a content delivery mechanism and where traditional forms of assessment are employed and/or where multiple choice answers can be utilised. But even in these circumstances, the research clearly shows that, irrespective of the features of a

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particular platform, the user perception is that the only those features required for the programme delivery should be evident; un-used additionality confuses.

Where more constructivist paradigms are utilised the rigidity of the platforms tend to be regarded as restrictive: the further the move to student centred and exploratory learning, the greater the perception of unsuitability. As a result more than one institution has decided to develop its own platform. However this is not strictly logical since all the developed platforms have been derived from a minimum set of performance criteria. Thus a new self-developed platform is likely to mirror the very development processes that have lead to the development of the platform(s) and will itself be of limited application. In many cases, adequate staff training both pedagogic and in the actual features and capability of a particular platform will alleviate the academic perception, of platform unsuitability. This lack of training often results from inadequate recognition of the process of change that adoption of a V/MLE will force on the organisation and hence significant lack of dedicated staff development and training budgets.

Some of the open source platforms are seen as a potential solution to the suitability problem. Certainly Plone and Drupal amongst others are seen as having significant potential as they have many easily accessed features and certainly give significant power to the Learner. However they too have what might be considered as having a “reverse” suitability problem. At the cutting edge, the Learning Paradigm and its constructivist philosophy is quite at odds with traditional assessment and evaluation frameworks. Applying traditional values and frameworks of assessment to the student produced work, which may be freeform in its style and rendition e.g a video essay, may become problematical, causing yet another change requiring management. The pedagogic demand is for flexibility of application, not necessarily more built in features. It may be that open source platforms will deliver this. If this comes at the price of less integration with administrative systems, this may be a price that institutions are not willing to pay.

In the wider context it needs to be recognised that software development is an ongoing process and platforms are regularly updated, giving (in sales terms) enhanced performance, whether or not these additional features are either academically required or even desirable. Such arguments may be difficult for administrators to ignore. The cost may be decreased student satisfaction.

6 Conclusions.

1. There is no one best V/MLE solution.
2. There is a significant need for all institutions to evaluate clearly their learning and teaching strategies and how these will be delivered
3. All institutions should at the same time examine the business model under which they operate and how this model will be affected by the adoption of and form of V/MLE

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4. The adopted V/MLE solution will require a skilled change management process.
5. The successful implementation of a V/MLE platform requires investment not only in initial purchase but also in ongoing staff development and training.
6. Platforms are continuously updated and institutions need to recognise that once a platform has been adopted there will be pressures to adopt new releases, not least because older versions will cease to be supported over time.

7 Recommendations

Due to Institutional differences and idiosyncracies there can be no universal detailed recommendation as to how V/MLEs can be successfully introduced and developed.

In light of the conclusions of this report the recommendation are that: -

1. Any institution considering introduction of a V/MLE should establish a project team to manage the process.
2. The project team should have the mandate of and report directly to the Vice-Chancellor or equivalent officer.
3. The project team should be as concerned with the student experience as with the administrative efficiency of the proposed platform.
4. Adequate funding should be made available for the project.

8 Bibliography

www.athabasca.ca/cde/softeval/reports.htm

Alavi, M, Yoo, Y, and Vogel D.R. (1997) Using information technology to add value to management education, Academy of management Journal Vol40 No 6 pp1328

Anderson, R.C., & Pearson, P.D. (1984). A schema- theoretic view of basic processes in reading comprehension. In P.D. Pearson (Ed.), Handbook of reading research (255-291). New York: Longman

Barr, Robert B (1994) A Learning paradigm for colleges, Cair 94 proceedings. Downloaded from www.cair.org.conferences/CAIR94?barr.html

Becta (2004) VLE report.doc, downloaded via <http://www.becta.org.uk/search.cfm> ,February 200525-Apr-05

BERGE, Z. L. (1996). The Role of the Online Instructor/Facilitator. available at http://cac.psu.edu/~mauri/moderate/teach_online.html, accessed on 27th August 1997.

Bloom, Benjamin S, (Ed) 1956(reprinted 1972) Taxonomy of educational Objectives, Longman ISBN0582 32386X p.19

Bond S &. Lemasson J.P (Eds.) 1999 Baggaley, Jon, The Impact of Information Technology on National and Transnational Education chapter in A New World of Knowledge: Canadian Universities and Globalisation in Ottawa: International Development Research Centre

Bruner, J.S., (1966), Toward a theory of instruction, Harvard University Press.

Butterfield,S , Chair Highways and Pathways: Exploring New Zealand's e-learning opportunities ISMN: 0-477-04770-X

Chapman, C (2001) personal communication.

Cleborne, Johnson, and Willis (1997) Educational Computing: Learning with Tomorrow's Technologies,

Crowder, N.A. in Kingery, R.A., Berg R.D., Schillinger E.H., (1967) Men and Ideas in Engineering: Twelve Histories from Illinois Urbana: University of Illinois Press, 1967.

Some insights into choosing a Platform for a Virtual Learning Environment

Doob, Penelope Reed (1995) Speaking of teaching, York university Gazette downloaded from www.yorku.ca/admin/cst/sppse23.html

ERIC_Digests found at www.ed.gov/ERIC_Digests/ed412815.html Sept 1999, no currently visible (May 2005)

Fidishun, D (2005) Andragogy and Technology: Integrating Adult Learning Theory As We Teach With Technology found (may 2005) at <http://www.mtsu.edu/~itconf/proceed00/fidishun.htm>

Hammer, M & Champy, J (1994) Reengineering the corporation Nicholas Brealey Publishing ISBN 1-85788-056-0

Hanfmann,E and Vakar, G (1962) Editors and Translators, Thought and language L.S Vygotsky 1934 (posthumous), MIT Press, Cambridge Massachusetts.

Heppell, S., & Ramondt, L. (1998, June). Online learning: implications for the university for industry. Printed online at Ultralab.

Honey, Peter & Mumford, Alan (revised 1986) The manual of learning styles

Hurley, J, Smith,J & Hurley,L (1995) Tutoring for achievement - frameworks, Learning partners/FEDA

Hurley, John (2001) Supporting on-line learning , Learning partners Winchcombe Glos. ISBN1 899692

International Society for Exploring Teaching Alternatives 30th conference October 2000

JISC, (2002)., JISC briefing paper 5 currently (May 2005) found at http://www.jisc.ac.uk/index.cfm?name=mle_briefings_5

JISC, (2005).,definition found at http://www.jisc.ac.uk/index.cfm?name=mle_briefings_1

Kim, A J Community Building on the web : Secret strategies for successful online communities Peach Tree Press

Knowles, Malcolm S., Elwood F. Holton III, and Richard A. Swanson. 1998. The Adult Learner. Houston: Gulf Publishing.

Laurillard, D. (1993). Rethinking University Teaching: A framework for the Effective Use of Educational Technology. New York: Routledge.

Some insights into choosing a Platform for a Virtual Learning Environment

Lewis, G., (2001) The future of VLEs at Warwick, in Interactions 5 (1) found at <http://www.warwick.ac.uk/ETS/Interactions/Vol5no1/Lewis.htm>

Mandler, G., (1985), Cognitive Psychology, Lawrence Erlbaum Associates

McLuhan, M, (1964) Understanding Media, reprinted Routledge 2001, ISBN 0-415-25549-X or 0-415-25397-7

McVay, Maggie (1998) Facilitating knowledge construction and communication on the Internet, found at <http://horizon.unc.edu/TS/Commentary> (December 1998)

Moffat, C. (2002) Manager ICT Strategy Eppel Group, New Zealand Ministry of Education.

Open University found at <http://www.open.ac.uk/about> 20/10/2001

Open University found at <http://www.open.ac.uk/factsheets/Background.pdf> 20/10/2001

Open University found at <http://www.open.ac.uk/factsheets/NewTech.pdf> 20/10/2001

Powell.S (2001) personal communication.

QAA Distance Learning guidelines (1999) found at <http://www.qaa.ac.uk/public/dlg/contents.htm>

Ramsden ,Paul (1992) Learning to teach in higher education, Routledge, p 30

Rodenburg, Dirk (1998) Shifting perspectives in Educational Technology, downloaded from <http://horizon.unc.edu/TS/vision> on 8/12/98.

Salmon, G. (2000). E-Moderating: The Key to Teaching and Learning Online. London: Stylus Publishing.

Simpson, V., (2001) VE or VLE: Don't forget the L! ALT-N 31 found at <http://www.warwick.ac.uk/ETS/Interactions/Vol5no1/Simpson.htm>

Skinner, B.F., (1954), The Science of Learning and the Art of Teaching, in Lumsdaine, A.A. et al, (1960), Teaching Machines and Programmed Learning -a Source Book, Vol. 1, National Education Association, Dept of Audio-Visual Instruction

Skinner, B.F., (1958), Teaching Machines, in di Cecco, J.P., (1963), Human Learning in the School, Holt Rinehart & Winston.

Some insights into choosing a Platform for a Virtual Learning Environment

Stephen Heppell found at <http://imics.ultralab.anglia.ac.uk/IT-Freedom-and-Constraint/session1.htm>

UFI found at <http://www.ufi.com/strategic%20plan/sec1.htm> 14/5/2002

Virginia University found at
<http://jefferson.village.virginia.edu/~meg3c/id/AGB/V1/v1p1.html>

Vygotsky, L.S (1935).Mental Development of Children and the Processes of Learning. Translated 1978

Vipola, Inka & Ihamä, Heli (2004) How to remove the major obstacle of learning: Poor usability. Downloaded December 2004 from
http://www.elearningeuropa.info/index.php?page=doc&doc_id=4833&doclng=6&menuzone=1

Wenger, Etienne (2001), Supporting communities of practice: a survey of community oriented technologies, downloaded December 2004 from
<http://www.ewenger.com/tech/index.htm>

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