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### Original Citation

Iredale, Alison (2006) Successful learning or failing premise? A situated evaluation of a virtual learning environment. In: The next generation. Research Proceedings of the 13th Association for Learning Technology Conference (ALT-C 2006). Association for Learning Technology, Oxford, pp. 1-10. ISBN 0-9545870-5-7

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# Successful learning or failing premise? A situated evaluation of a virtual learning environment

## Abstract

*There is a growing premise among educational policy makers and funding bodies that the inclusion of e-learning strategies into a traditionally delivered course in a mainstream educational setting provides a solution to some of the barriers to learning which can affect retention and achievement at an individual, institutional and national level. On the back of this premise considerable funding has gone into promoting the embedding of VLEs into accredited courses. (Consortium.hud.ac.uk 2005)*

*This research paper evaluates Virtual Learning Environments as a tool to enable improvements in retention and achievement and enhancement of learning skills. Findings from this situated evaluation raise key concerns and issues about the soundness of the nature of engagement and participation of learners using VLEs, particularly in terms of alignment of learning objectives with assessment, technical reliability and robustness, ease of navigation, and learner motivation, and the value of **Situatedness** within a VLE as a “**learning how to learn**” environment.*

*The findings from the research, whilst supporting the premise overall, highlight some important issues and opportunities for future research for teachers, designers of computer aided learning systems, and institutions, not least in questioning of the very future of the VLE in an educational setting.*

## Introduction

My focus derives from a “learning package” entitled “**Successful Learning**”. Originally designed as paper based learning material, but also re-designed as a program capable of being delivered online, via the internet, or as a stand alone package on a CD, **Successful Learning** allows learners to explore learning as a personal skill, and is intended to supplement a tutorial programme of support and guidance specifically at the beginning of a course. It is written generically, in that it can be adapted to suit a variety of learning experiences, and its content is based on common learning skills, allowing the learner and tutor to develop a relationship through reflective deliberation and conversation.

The scope of this paper encompasses two current (2004/5) year groups of trainee teachers undertaking a Post Graduate Certificate in Education/Certificate in Education (*PGCE/Cert.Ed.*). Trainees were invited to participate in the research as part of their own professional and personal skills development into e-learning, and while the interest generated was encouraging, we will see later how this translated into levels of active participation.

Research into literature explores the following areas:

- Research relating to initial trainee teachers on University of Huddersfield CPCET courses, linking the elearning interventions with improvements in retention and achievement
- an examination of the question of whether current literature supports the use of elearning as a vehicle for supporting learners with learning skills

- a broad view of social learning theory in an attempt to weave the learning skills development strategies contained within *Successful Learning* into the affordance of structured, meaningful learning envisaged by Laurillard et al (1999) that e-learning facilitates.

It was anticipated the scope of the evaluation would become problematic in the context of a scientific response to a hypothesis, and this resulted in sourcing a methodology which would take into account variables which would account for the socially situated context of Virtual Learning Environments. I found an acceptable methodology in the guidelines offered by Gunn (1997). This qualitative approach was more suitable for my purposes, as the basis of the research, a case study, contained variables which would be difficult to replicate elsewhere. It also became problematical to clearly relate the contribution of a VLE to improvements in retention and achievement, because of the small scale nature of the case study. Nevertheless this aspect is important, and worth pursuing, with a view establishing a basis for further research. I was grateful for the important contribution that the research undertaken by Penny Noel on behalf of the Post Compulsory Education and Training Consortium (CPCET) provided to my research, (Noel 2004) and I will refer to her work in my discussions on retention and achievement.

A useful starting point is to define the terms which will be used throughout this paper, that of E-learning, and Virtual Learning Environments.

### E-learning

The DfES defines e-learning as

“E-Learning exploits interactive technologies and communication systems to improve the learning experience. It has the potential to transform the way we teach and learn across the board. It can raise standards, and widen participation in lifelong learning. It cannot replace teachers and lecturers, but alongside existing methods it can enhance the quality and reach of their teaching.” (DfES 2003)

In this definition there appears to be an underlying sense of nervousness from the DfES about the concept, seeking to reassure teachers about their continued existence, despite the advent of this technology. Other definitions attempt to integrate traditional distance learning programmes which have existed for many years by describing the traditional and emerging communications tools available to the teacher and learner, from the early uses of postal communications, to the advent of the telephone, email and more recently the internet and the World Wide Web. Asynchronous interactions of this sort merge freely in the 21<sup>st</sup> century with synchronous interaction through the use of video and audio teleconferencing, and computer mediated conferencing including mobile telephone technology. (Garrison, D.R and Anderson, T. 2003)

### Virtual Learning Environments

JISC (Joint Information Systems Committee) seeks to define VLEs thus:

"While recognising that the world at large will continue to use terminology in different and often ambiguous ways, the Steering Group recommends that the term Virtual Learning Environment (VLE) be used in our own discussions and specifications to refer to the components in which learners and tutors participate in 'on-line' interactions of various kinds, including on-line learning." (JISC 2000)

It is interesting to note the prevailing view that VLEs are about more than content (Ferl Becta (2002). This misses the point that without content there can be little in the way of motivation to engage from the learner, and support and encouragement by the tutor. I like to think of the

content as the end of party 'goody bag', whereas real party is going on inside with the opportunities for communication, collaboration, and group to group networking. More worryingly for institutions and teachers, and despite the considerable investment by Further Education (FE) and Higher Education (HE) institutions in VLEs, academics and key thinkers in the field of elearning are already questioning their value, particularly as they are currently used, looking towards a future where the VLE

“will act like a personal organiser that helps users coordinate tools and services from learning providers. It will also have a very strong social networking capability, so that users can discover other people with shared interests and goals, and forge instant connections. If a user wants to host a sim or a role-play, then they will be able to use their VLE to discover people to take on the other roles based on their published interests and availability.”

Wilson (2005)

Lewis (2005) even questions the pedagogical basis of VLEs, particularly in the sense of their widest use: that of distributing content:

“The reality is that solutions like proprietary VLEs have merely provided a more efficient way for pushing content online and yet again supporting and indeed magnifying the knowledge transfer model” (Lewis 2005)

## **Section 1: Literature review**

Established literature and research exists in the broad areas of my aims for my research, but what is difficult to find are any firm findings or causal links that verify the use of innovative teaching methods within a strategy that seeks to achieve improvements in retention and achievement among learners in the further and higher education sector. Defined as “supply – side” concepts, analysis of retention and achievement is concerned with the effectiveness and efficiency of an educational institution to retain its learners, and maximise achievements against a set of values (benchmarks) and compared to other institutions, either similar or very different in nature, and against economic indicators set more broadly. (Yorke and Longden 2004: p5). While the Higher Education sector in the UK actually compares favourably with other OECD countries in this area (OECD 2002 in Noel 2004) it is vital not to undervalue the importance of success for learners in further and higher education in terms of the socio-economic benefits for the country. The simple act of measuring and benchmarking can have significant implications for future and potential student success, however, particularly within the political imperative at FE and HE level of widening participation. Concentration on achieving an arbitrary benchmark is likely to influence enrolment decisions, and Yorke and Longden (2004 p5) highlight the risks of taking the safer option at the point of entry to a course, rather than concentrating efforts on improving the overall course experience. Despite this retention and achievement data has been studied for some time now as a result of changes to funding criteria and the growth of adult learners in the further education particularly. McGivney (1996) writes about an economic imperative to retain learners, not just at government and institution level, but also for the learner him/herself. Costs are incurred by all parties to the learning contract when a learner withdraws from a course, and the concept of the learner as a 'rational economic person' (Rickwood 1993: 1-2) has resulted in wholesale decisions which can affect the very survival of some vocational disciplines within institutions. At an individual learner level the decision to withdraw from a course can often be a positive one, which involves a complex interplay between the costs and benefits of staying or leaving the course (National Audit Office 2001). However positive the decision is for the

learner and his individual tutor though, the impact on the institution is generally negative. Following on from investigation of literature and research surrounding retention and achievement of learners generally, there is also a small but growing body of research which attempts to tie in elearning interventions to improvements in retention and achievement. Current report findings written for the Consortium for Post Compulsory Education and Training (CPCET) reveals links between centres that actively use the VLE (**Blackboard**®), and improvements in their retention and achievement rates for the PGCE/Cert.Ed. courses. Ahmed (2004) suggests that a correlation can be made between “low frequency” users of **Blackboard**® and their likely withdrawal from the course, creating an “at risk” category which can be identified and therefore targeted for greater academic and pastoral interventions. Whereas it is accepted that there are many other risk indicators, Ahmed (2004) highlights the immediacy of the information available, in comparison to other information, such as attendance and assignment deadline problems, which may not come to light for some time.

Ahmed (2004) concludes that:

“These results lend weight to the notion that the adoption of the VLE has a positive impact on retention figures. Clearly retention is a very complex issue and many other factors will come into play. None-the-less, the data is consistent with the possibility that higher levels of use of the VLE can contribute to good retention rates.” (Ahmed 2004)

He does offer a cautionary note however, in that he accepts that the data falls short of providing a clear causal link, but I agree with his premise that there is great potential for further case study in this area.

Various strategies have been identified to improve retention (McGivney 1996), one of which is academic support. A key factor affecting adult learners, whether they come straight from school, or more usually after a break from education is the barrier they face in 'learning how to learn'. The skills of managing time, work, outside commitments and information processing are not acquired naturally by learners, despite many subject teachers assuming that this is the case (Munn, Macdonald and Lowden 1992).

This leads to an examination of the question of whether current literature supports the use of elearning as a vehicle for supporting learners with these learning skills. Stephenson (2001) writes about the trend to online everything, with the drivers being the Government, teachers, and learners for their different reasons. The question for educators is whether the primary focus for the drivers is pedagogical added value above speed and immediacy, economies of scale and widening participation. Academics from across the world have yet to agree that online learning is anything more than a support function, where the true learning happens elsewhere, and by experience (Alexander and Boud 2001). Teachers and learners need to be aware of this embodiment of learning as a holistic activity and to take account of the accumulated experiences of both parties.

Various mediation methods are discussed by Alexander and Boud (2001) under the umbrella of computer conferencing, and their ideas on debates, role plays and simulations with reference to experiential learning add weight to a 'health warning' regarding learner centred environments, that of the risk of an unravelling of the control over the pedagogy (Harasim 1995). Learners need support encouragement and feedback and Laurillard (1996) cautions us against taking one benefit of interactive media too far, that of freedom from imposed structure, in that:

"Learners need to discern structure if there is a message to be understood". (Laurillard 1996)

The uploading of content, in effect simply providing another space for the content to be delivered is not sufficient for 'affordances' for learning, the changing of behaviour by engaging learners actively in the curriculum (Laurillard et al 1999). If a book affords reading and a lecture affords listening, what behaviour does content within a VLE afford? Laurillard states that:

"It is the responsibility of teacher and designer to create the environment that makes it possible for them to maintain a focus on the development of the argument: clarify the overall goal, keep reminding them of the goal, help them define their own sub-goals, motivate their own articulation of what they know, motivate them to refine it, and enable them to assess for themselves the extent to which they are achieving the goal. With such design features, the non-linear medium is able to afford something more than mere browsing: it will afford structured, meaningful learning." (Laurillard et al 1999)

Other contributors to Stephenson (2001) discuss the applications of constructivist theory, and in particular situated learning. Relationships with others who are engaged in similar learning experiences are a function of successful learning, and this is described in Wenger (1998) as a community of practice.

Situated learning sees the transfer of learning to be problematic, especially when it involves significant lengths of time and space between the learning and the performance. Lave and Wenger developed the concept of legitimate peripheral participation to help to solve this particular problem, in that learning is more likely to result in performance, or competence, when the learner is actively participating in the legitimate activity, however sidelined they are at first. The learner is legitimate when he/she has an authentic link to the activity, a permission to be there in effect. Peripherality is a sense of full participation, but with a sense of lessened risk, more support, closer supervision, or less pressure to perform against a standard. Wenger's description of a community of practice, provides a seductive concept for the purposes of this research that allows a myriad of interpretations, but as Wenger puts it

"We all belong to communities of practice. At home, at work, at school, in our hobbies – we belong to several communities at any given time. And the communities of practice to which we belong change over the course of our lives. In fact, communities of practice are everywhere". (Wenger 1998: 6).

***Successful Learning*** is concerned with improving generic learning skills and their importance in creating an environment where achievement is possible. Previous research explored the development of critical thinking skills through a web based learning environment (Oliver 2001), and the results appear to suggest several weaknesses in the use of an online setting as a medium for producing the required outcomes. It would appear that one of the stumbling blocks hinges around learner motivation in that there is usually no direct link between successful completion of the package and the formally assessed components of their main programme of study; their main function being to support the learner academically. It appears, however, from Oliver's case study that providing extrinsic motivators can actually be counter productive in terms of the depth of learning achieved. Learners view the course as a hurdle to get over, rather than a target to reach. The importance of deep learning is crucial to this debate (Marton and Säljö 1976), and Petty (2002) assists us here in providing practical strategies to encouraging a deep approach to learning. It is my experience with learners that they begin their courses preferring the surface learning, as a quick fix to satisfy what they perceive as their immediate learning needs. Commercial learning packages delivered online in small "chunks" with accreditation are therefore highly attractive to learners and entrepreneurs

alike. However these same learners value the effect of higher order thinking, or deep learning, and it is the challenge of educators to motivate beyond the "quick fix", and thereby to add pedagogical value. Gagne and Medsker (1996) describe motivation as "cognitive persistence", the drive, tendency or desire to undertake or complete a task, expend effort, and do a quality task". Beyond extrinsic and intrinsic motivators there is also the process and level of engagement and participation of learners in any task, which, depending on the degree, can move a learner beyond extrinsic factors. If learners are motivated purely by extrinsic factors, then the efforts necessary to participate in an online discussion, respond to questions about their learning preferences, and to complete an online programme based on reflective deliberation may be weighed against the lack of immediate reward (credits) and seen to be not worth the journey. We will see how well *Successful Learning* within the VLE fared from a motivational perspective, and whether it provides any effective response to the issues surrounding motivation.

## **Section 2: Methodology**

### *The Qualitative and Ethical Paradigm*

The choice of the Situated Evaluation of Computer Assisted Learning framework (SECAL) as a methodology offered a qualitative approach which was constructive in nature. Squires (2000) raises the question of the lack of informed evaluation of the effects of using learning technologies. My methodology was informed by the views of Gunn (1997) where she advocates a conceptual approach to evaluation based on the common findings from individual cases. It is her view that a scientific approach has inherent failings in that there is a lack of 'situation' and 'context', leading to results which are too general and isolated to be meaningful to others. Barbera (2004) confirms this view, advocating the use of evaluation methodology which focuses on the relationships and dialogue which are inherent in educational communities. My role as researcher was not an independent one, as I was also actively engaged, during the case study, as teacher and personal tutor. While this appears to present an ethical conflict, it actually worked well in terms of the methodology selected as I was able to use my position of trust to glean important soundings which, although interpreted in a subjective way, provided a depth of information which would have been difficult for a truly objective and independent researcher to unravel. The scope of this case study encompasses two current year groups of trainee teachers undertaking a Post Graduate Certificate in Education/Certificate in Education (*PGCE/Cert.Ed.*). Wider groups, forming the basis of many of the observations, discussions and trial runs, included a previous year group of trainee teachers, and a current group of trainee teachers from a Pre-Service PGCE/Cert.Ed group, who while unable practically to participate in the research directly, offered valuable insights into the field of case study. Research was conducted using observations, a questionnaire, discussions (online and face to face), focus groups and individual interviews over the academic year 2004/5. As previously stated, it became problematic to draw significant conclusions due to the nature, scope and scale of the research, particularly in relation to the issues around the impact of VLEs on retention and achievement, but this does not detract from the importance of the findings as a focus for discussion on the future of VLEs.



### Section 3: Research Findings

The SECAL framework (Gunn 1997) guides the evaluator to a consideration of a nine factors within a case study or small scale research activity. These are listed as:

1. A detailed statement of Learning Objectives and appropriate means of assessing achievement
2. Hardware/Software Issues
3. Effective Use of Technology
4. Instructional Strategy
5. Design Quality
6. Teaching method and Learning Support
7. Motivation factors
8. Integration issues
9. Institutional issues

This paper summarises the findings into common issues and concerns for future research.

In terms of learning objectives, those for *Successful Learning* are embedded within the PGCE/Cert.Ed. course as a whole in that they support the learning skills development of the learner in order that he can achieve the module outcomes. However, engagement with the package was not summatively assessed, and thereby did not contribute to a record of achievement. Review of literature around learner motivation, added to other findings confirms the need for more alignment between learning objectives and assessment. Technical problems dogged the progress of the research. Ahmed (2004) recognised that the VLE needs to be robust and well maintained at the start of the course. The sense of frustration caused by technical problems for trainees had a significant impact on their engagement and participation, particularly for those whose computer literacy skills were only basic to begin with. One trainee, contributing to the VLE evaluation forum summed up many of his colleagues feelings when he responded to a discussion thread entitled “Virtual learning – learning what? Patience?” contended:

“I suspect there is much that we could do with VLE’s as learners and as tutors, but there are quite a few problems in the way....

To name a few:

Technical problems with the software

Techno phobia amongst learners and tutors

et al....”

(Jon 2005)

Effective use of the VLE is clearly dependent on ease of use and the ability to navigate purposefully and certainly the structure of the VLE as a whole, based around a modular structure with a hidden depth of folders, was problematic for many, if not all the trainees. Reflection, discussion, collaboration and mediation were features of the instructional strategy. It is clear from the literature, previous research and these research findings that trainee teachers value personal tutorial support, and that they felt that there was a risk that the VLE could be used to replace that support. Issues with design and general functionality have

already been highlighted but overall the feedback from trainees was highly critical. The following quotations represent the general mood of the group in this respect: (place names have been replaced with an asterisk).

### *Homepage*

“First impression is: overwhelming - lots of links and keywords which do not really help me decide where to go. I do not relate the word "Blackboard©" to a Cert Ed student from (\*) College (I'm not from (\*) so please no quips and don't use that as an excuse!). If I don't remember the path I would not be able to find it.

I am used to home pages being very uncluttered with very general keywords rather words I would not normally use. Perhaps someone could look at websites which sell e.g. supermarkets, airlines etc.

### *Blackboard©*

“Same impression - lots of links and 'foreign' words. How about using the following words to signpost me to where I need to go: "Faculty/School of ...", "Cert Ed 1st year Students" etc. I will always know what I case study and where but I don't know/am not used to (\*) terminology.” (Ingrid)

This trainee describes herself thus:

“I am a (grumpy, old ..., tsk,tsk!) non-academic working woman and have never attended a university. I can imagine that as such I belong to a growing demographic group of non-academic people who are studying away from campus on a part-time basis.

I consider myself more than average computer literate due to my working background which entails the following:

- virtually exclusive use of electronic communication, planning tools and project management
- creation, design and use of teaching material for/on VLE sites
- web research and web site editing
- e-trading
- research, design and testing of accounting software and interactive teaching material for business and accounting.” (Ingrid)

Advice from Jacob Nielsen, albeit meant for commercial web designers, is clear in this respect:

“The mastery ideology provides the best match with the Web's fundamental nature: it lets users go where they want. Web users want instant gratification and have little patience for the mystery approach's detours and puzzles. Users are getting ever-more **goal-driven** in their approach to the Web, which they see more as a tool than an environment. Surfing to check out cool sites is a thing of the past.” (Nielsen 2004)

At the time **Blackboard©** did not have a search facility, and this was a major design drawback in that users who get lost would prefer to search than to use the back button.

One trainee who expressed severe misgivings about the technology during the induction session finally contributed this message (sic):

“With work commitments, teaching commitments, essay writing commitments, shopping ,cooking ,cleaning, if there is any free time after that, sorry to say I could find much better things to do than search for a web site which is not only difficult to access, but also temperamental, which dos`nt have a spell check facility (sorry for all my mistakes)and to be frank I find unenspiring.” (Kathryn) (sic)

The trainees felt that they required more support from the tutor, at least while they gained familiarity with the system. In general the feeling was that the teaching method, that of facilitating discussion and sharing resources was a useful enhancement to the course, however this conflicted with the issues around learner motivation. Extrinsic motivators, such as making access and contributions a module learning outcome, were not a feature, however,

early attempts made to engage, by sharing resources with trainees, and by encouraging them to share did bear some small fruit. *Jon* reflected on this aspect:

"Picking up Alison's suggestion on sharing some resources, I have attached something here that you might be able to adapt for your own purposes.

Also, following on from Mary's point, if we can all put something on here it might encourage us all to have a go and keep visiting" (*Jon*)

Relevance was not clearly perceived by all, as a significant proportion of trainees failed to contribute to the discussion threads at all. Previous research into creating virtual social spaces reached the unsettling conclusion that:

"mature, full time professional, part time students have neither the time not the inclination to spend effort on non-essential and unrewarded tasks" (McPherson and Nunes (2004)

Whilst it is accepted that this research concentrated on the social aspects of VLEs, the warning is clear.

*Successful learning* is designed to integrate with the early modules of the PGCE, as trainees are developing their study skills, academic writing skills and familiarising themselves with the modular structure of the course. As such it integrates well for those who are identified as needing support at this stage. However, because of previously identified issues integration was not helped by the point at which most trainees were able to access the system as a critical mass. There is an organisational commitment to the VLE for the foreseeable future; however one issue is that many of the trainees work in educational settings where their own institutions have invested in alternative e-learning infrastructure, including intranets, VLEs, video and computer mediated conferencing facilities and interactive classrooms. This plethora of technology is a source of confusion and frustration for many, an example of which is the process of logging on to the various systems.

Several key issues clearly arise from the findings, those of accessibility, integration, navigation, learner motivation and technical reliability and robustness.

### **Section 3: Conclusions, Discussion, and Suggestions for Future Research**

It was interesting how the research supported the effectiveness of retention and achievement strategies, (Noel 2004) but seemed to fail to make a concrete link between the use of a VLE and improvements in retention and achievement (Ahmed 2004). The growing premise about elearning solutions as a basis for successful learning at an individual, institutional and national level is therefore not made as yet, in the authors view, and again there is scope for more detailed research, both quantitative and qualitative if funding is to be maintained at a policy level. Certainly if recent weblogs (Lewis 2005 and Wilson 2005) created by key thinkers in the field of elearning are anything to go by future research may be hampered by the lack of research base, because of the actual demise of the VLE in preference to:

"The emergence of the 'open' movement and technologies as represented by SourceForge, MIT Courseware, Wikipedia etc was of particular note. Also, of particular note is the meteoric rise of social networking software and services where user-generated content and metadata (folksonomies) take precedence, e.g. Weblogs, Flickr, RSS/Atom et al." (Lewis 2005)

Social Learning theory, and the work by on motivational design allows us to draw some conclusions about the design and use of VLEs, that of the necessity to create a meaningful experience for the trainees, one where they can perceive both extrinsic and intrinsic motivators and one where there is potential for the development of a sense of community. To apply Lave and Wenger ideas around Situatedness, communities of practice and legitimate peripheral participation within a “learning how to learn” environment could be viewed as problematical, unless we accept that the very skills necessary to develop learning skills are in fact embedded in the professional standards for teachers working in further, adult and higher education. With regard to the SECAL methodology, the findings from the research confirmed its suitability for research of this type, creating as it did a useful framework on which to base the analysis and findings, and allowing for the positive benefits of context and subjectivity. The following issues formed the basis of the evaluation findings, and thereby opportunities for further research and development of future practice:

- Maintenance of a reliable and robust VLE system at an early stage in the course.
- Consideration of access and navigation particularly login, interface and folder design.
- Lack of intrinsic and extrinsic motivators, deriving from the lack of a sense of integration with the course.

Future practice will be guided by the research and evaluation undertaken in this case study and despite the soundings about the likely demise of VLEs, for my trainees the present educational environment represents a professional imperative to engage with the technology.

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Appendices

## **Appendix 1**

### **Successful Learning**

#### **Original paper based tutorial pack**

**Computer Based Learning programme format (Launched from CD and uploaded into Blackboard)**

**Screenshots of VLE Discussion forum format**

## **Appendix 2**

**Analysis of Questionnaire**