Factors that Influence Take Up of an Institutional VLE by Individual Lecturers Preliminary Findings

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ABSTRACT

This paper reviews progress on a project investigating the roll out of an institutional VLE at the University of Wolverhampton. The paper concentrates on some of the social, cultural and institutional aspects of a complex and incomplete process. It discusses the framework within which individual lecturers make decisions about the nature and extent of their engagement with the VLE and rehearses some of the methodological concerns involved in trying to elucidate these decisions. This paper represents a snapshot of investigative work near its mid-point.

Keywords

VLEs, educational cultures, questioning, institutional take up, technology supported learning

INTRODUCTION

Many universities and colleges in the UK have a policy to install and embed institution-wide virtual learning environments (VLEs) in the course of the next two or three years. The institutions themselves and the developers have a keen interest in this process being successful. The University of Wolverhampton is currently halfway through its Technology Supported Learning (TSL) Project. It is using its own in-house VLE, WOLF, available commercially as Granada's Learnwise system. It has a TSL Strategy that is broadly similar to many other institutions in the sector and faces similar problems.

The University has installed the system and created appropriate structures and support units. A considerable volume of training has been delivered, TSL champions have been nominated and exemplar material has been created but beyond these champions and the early adopters, the take up by individual rank-and-file lecturers has been slower and less systematic than originally envisaged by the University.

In an attempt to improve its understanding of this problem both at Wolverhampton and elsewhere, the DELTA Institute, the original developers of WOLF, has set up a project to explore the non-technical factors that influence the nature and extent of VLE take up by individual lecturers. This project is now near its halfway point and the current paper represents an account of progress and outcomes to date.

The Development of an Institutional VLE at Wolverhampton

The current nature and extent of VLEs in UK HE

Most, if not all, UK universities and colleges now have an institutional Teaching and Learning Strategy that looks to ICT for enhancing the quality of learning in the face of reduced resources and growing student numbers. These Strategies often specifically identify institution-wide VLEs as the mechanism for delivering these outcomes and expect the VLE to be "rolled-out" across the institution in the coming three to five years. (One recent survey [Jenkins, 2001] says VLEs are recognised in institutional strategies in 76% of institutions surveyed in either a Teaching and Learning Policy or in an ICT Strategy and that 26% of institutions surveyed have stated targets for using VLEs) This means that all teaching staff will have a substantial and meaningful engagement with their

institution's VLE by the end of this time. As most institutions had only a limited and tentative involvement with VLEs two or three years ago, this means there is currently considerable change and expansion within the sector.

Consequently, whilst there are several surveys that attempt to describe the current state-of-play, they must all be treated with a measure of caution. Nevertheless, the general picture they describe is interesting. The same survey [Jenkins, 2001] shows most institutions acquired their VLEs very recently (over 40 institutions in the last year compared to 23 in the previous year and 28 in the year before that). Most staff do not yet use these VLEs (19% of institutions have less than 10 staff involved in using a VLE and 34% have between 11 and 29 staff involved). So we can infer that the institutional use of VLEs is still in its infancy.

The situation at Wolverhampton is typical of the sector, perhaps slightly ahead of the field and so any exploration of the factors at work as individual Schools and individual lecturers begin to grapple with VLEs is useful.

Early developments at Wolverhampton

The current VLE, WOLF, the Wolverhampton Online Learning Framework, has its origins in the mid-1990s in a project and a product known as BroadNet. For several years, the BroadNet organisation acted as an interface between university teachers, acting as content providers, and trainees amongst the SMEs and amongst the local communities. It was funded largely by the ERDF, Telewest Communications and ICL Education Systems and enjoyed considerable autonomy from the mainstream of university administration, procedures and structures.

BroadNet's educational activities concentrated on reversioning existing undergraduate module materials as network-based versions for wider external consumption. In doing so, it effectively exported validated and credit-bearing courses outside their original academic environment and the university began to see the need for a quality assurance overview in the form of an evaluation procedure. These various developments came to the notice of mainstream school managements within the university as a more systematic and overarching form of delivery and as an alternative to the use by individual academics of the Web.

In the course of late 1998, the Wolverhampton Business School began the process of developing and validating an on-line – but not fully online – BA in Business Administration, sometimes known as "eBABA", using the BroadNet platform and its own new Courseware Development Unit (CDU). This development was intended to exploit a particular market niche. This course still runs and represents the high-water mark of development in the direction of course-wide deployment of off-campus network-based learning.

CeLT, ICT, WOLF and TSL

Roughly in parallel with the growth of BroadNet and discussions on eBABA and in common with most other universities, Wolverhampton became aware of the virtues of a central university unit to support and develop good practice in teaching and learning (later to become, learning and teaching) at the university.

In early 1999 a new Vice Chancellor was appointed and so too was a new Pro-vice Chancellor, an advocate of Lotus Notes and networked learning in general. A considerable number of major and inter-related projects and re-organisations were initiated at this time, addressing perceived short-comings in the university estate, IT infrastructure, academic organisation, research profile, learning resources, business processes and much more.

A Centre for Learning and Teaching (CeLT) was designated in 1999 and its first Director appointed in March of that year followed by three other academic staff members including a Coordinator for ICT. The Director of CeLT, partly due to growing HEFCE encouragement, produced a University Teaching and Learning Strategy and this contained the first definitive statement of how the university would move forward on ICT in teaching and learning.

The "ICT Project Strategy" as it was known was formulated with little obvious public consultation, except for the deliberations of an *ad hoc* "Group A" and set out its aims:

> *All level 0 and level 1 modules will engage with TSL in some form.*
>
> *There will be a phased roll-in of modules over the three calendar years from 2000 to 2002.*
>
> *The University will promote the use of the Wolverhampton On-line Learning Framework (WOLF) as a standard environment for TSL.*
>
> *WOLF will not be the only means by which staff may choose to develop an engagement. Where some other means is chosen (commercial courseware, TLTP*

> *products, Courseware application packages such as Question mark, CD-ROM, intranet, web pages etc.), this should be identified and managed.*

(The BroadNet platform had by this time become known as WOLF and the ICT Project eventually became the TSL Project)

University policy and School policy

It was the role of all the individual Schools to show how this University policy would be operationalised. Schools were required to develop and submit a TSL Strategy that showed how the University TSL Strategy would be operationalised:

> *Schools will be responsible for determining their own strategy, with priorities, for achieving these outcomes.*
>
> *The nature of the initial engagement for each module will be defined within the strategy, as will the criteria and means of evaluating the engagement. These engagements will be extended systematically to higher levels of modules.*
>
> *A framework will be provided to Schools in order to facilitate their articulation of their strategy*.

In developing their Strategies, the Schools were forced to consider issues of resourcing, staffing, supporting and managing their TSL Strategy. Each School was obliged to nominate an academic member of staff as TSL Coordinator but the seniority, significance, interpretation and resourcing of the rôle clearly differed even from the outset. The core of the rôle was seen as training, support and awareness raising but even this was open to considerable variety of interpretation in the course of project's first few months. Most Schools were keen to adopt a TSL Strategy that was "cost-neutral" and if possible to exploit ongoing or externally funded projects rather that initiate substantial *ab initio* WOLF projects.

The work of the current begins at roughly this point: the University had defined its TSL Strategy in the broadest terms and Schools had elaborated it for their own environments.

The Theoretical Context

On looking for a theoretical context and background to work on technological changes within English higher education, it becomes apparent that there is no body of work of direct and immediate relevance. There are however perhaps two separate areas that are of interest. The first is the area of innovation diffusion, of which Everett Rogers work [Rogers, 1962] is still the archetype. This is a mature and highly focussed paradigm. The second area is more diffuse. It draws on sociology and looks at the culture and management of higher education. It is exemplified by the work of Paul Trowler [Trowler, 1998] who investigated the reactions of academics in an ex-polytechnic to an enforced a change of institutional policy (in fact, the move to CATS).

There is also a substantial literature of learning technology but this has historically been characterised by practitioners' accounts of their own problems, technologies and solutions. Only recently has a theoretical literature struggled to grow out of this, as demonstrated by the formation of a "theory" SIG attached to ALT and a "theory" issue of JiME in 2001.

The diffusion of innovation

Rogers provides a key source for investigating how novel technical ideas travel through social systems. He published a major review of diffusion theory in 1962 [Rogers, 1962] and continues to research and publish. The main points are [Rogers *et al*, 1997]:

> *An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption. The characteristics of an innovation, as perceived by the members of a social system, determine its rate of adoption…… ……. Why do certain innovations spread more quickly than others? The characteristics which determine an innovation's rate of adoption are:*
>
> *(1) relative advantage, (2) compatibility, (3) complexity, (4) trialability, and (5) observability*.

Innovations travel through social systems such as societies, organisations and groups:

> *The second main element in the diffusion of new ideas is the communication channel. Communication is the process by which participants create and share information with one another in order to reach a mutual understanding. A communication channel is the means by which messages get from one individual to another..*

The most widely known part of Rogers' work relates to his characterisation of the members of the social system:

> *Innovativeness is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a social system. There are five adopter categories, or classifications of the members of a social system on the basis on their innovativeness: (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards.*

He looks at the social system itself:

> *A social system is defined as a set of interrelated units that are engaged in joint problem-solving to accomplish a common goal. The members or units of a social system may be individuals, informal groups, organizations, and/or subsystems……A second area of research involved how norms affect diffusion. Norms are the established behavior patterns for the members of a social system. A third area of research has had to do with opinion leadership, the degree to which an individual is able to influence informally other individuals' attitudes or overt behavior in a desired way with relative frequency. A change agent is an individual who attempts to influence clients' innovation-decisions in a direction that is deemed desirable by a change agency.*

And finally introduces the concept of "critical mass":

> *A final crucial concept in understanding the nature of the diffusion process is the critical mass, which occurs at the point at which enough individuals have adopted an innovation that the innovation's further rate of adoption becomes self-sustaining.*

This outline gives only the barest definition of the major concepts of innovation theory but even so, it is possible to see its relevance to the spread of VLEs. In the past five decades, Rogers and others have refined and extended diffusion theory considerably, and have tested it against an enormous variety of innovations. Some workers have explored the types of decision-making processes, both organisational and personal, other workers have looked at the "chasm" between awareness and adoption; some workers have modeled diffusion mathematically whilst others have devised prescriptions for effective diffusion.

One of the current project's objectives is to study the take up of VLEs across some of the Schools of the University and relate the different diffusion rates from School to School with the diffusion theory factors at work.

Culture, management, leadership and change in Higher Education

A different perspective on the introduction of technologies to organisations is given by looking from the organisation's point of view rather than the technology's. This is a sociological point of view and deals with issues of culture, leadership, management and organisation. The literature is less coherent or unified than the literature of diffusion theory.

Many authors attempt to redefine common organisational categories within an educational context, sometimes a higher educational context, and often talk of the current overlap and confusion between collegial models and managerial models of university culture. Trowler took this work further and interestingly in the current context, he investigated the response of academics within one institution to policy change. He developed a crude typology of academics (or rather their behaviours) as they struggled with institution-wide changes. This typology is interesting to the current study because it provides a model for the nature of the conclusions it is possible to reach with his investigative methodology. The changes that Trowler explores differs from those changes underway at Wolverhampton, in the sense that the introduction of technology supported learning is not currently universal, pervasive and compulsory in the way that the introduction of CATS was. Trowler divides the academics in his study into those involved in "swimming", "sinking", "policy reconstruction" and in "using coping strategies". Any of these might possibly apply at Wolverhampton and one of the aims of the current project is to explore the relevance of this form of analysis.

VLEs in Higher Education

Finally, there are a number of accounts of the implementation and use of institutional VLEs in English higher education. Some of these have an analytic or critical dimension and come from a variety of theoretical perspectives. These will be used to create a context for results from the current project.

project Work

The project naturally splits into two phases. The first phase was the gathering of indirect evidence in which others reported their perceptions of the reasons for lecturers' take up or the lack of it. The second phase will be the gathering of direct evidence where

lecturers themselves will explain their reasons for the nature and extent of their engagement with the VLE.

The two phases were separated by an exercise to determine which Schools would form part of the second phase. This was based on

statistical data about the composition of the different schools (profiles by age, length of service, gender *etc*),

card-sorts with a handful of university staff with cross-school responsibilities (IT training, staff recruitment, student academic misconduct, staff development and quality assurance) and

analysing factors identified by the respective schools' ICT champions.

This exercise gave a context for subsequent investigation and also identified Schools that could be reserved to validate any findings.

The first phase used interviews with the TSL coordinators, the School-based local VLE champions, supplemented by an examination of the considerable volume of documentary evidence generated as minutes and briefings by the TSL Project.

The second phase will use a variety of PCT techniques with individual lecturers from three Schools. This will be supplemented by informal surveys on reactions to using from WOLF. There is also transcript data from other researchers and taped interviews with some lecturers in SCIT about their working practices.

First phase

The Coordinators and Other Intermediaries

The University has ten Schools and a number of central departments. Each of these Schools has a TSL Coordinator. Within their Schools, these Coordinators are responsible for advising their School management on the formulation of a School TSL Strategy that is consistent with the University's TSL Strategy and with the School's priorities and resources. The School TSL Coordinators also represent their School at meetings of the University's TSL Project Management Group. The Coordinators may also provide or organise TSL administration, training and support to lecturers within their School. Because of their role, the TSL Coordinators have an ongoing familiarity with many of the issues affecting VLE take-up by individual lecturers and the majority was interviewed early in the project. These interviews were intended to elucidate:

The *rationale* behind their School TSL Strategy, and the perceived success of this Strategy

The details of the School infrastructure, organisation and environment

The reasons for individual lecturers VLE take-up, as perceived by the Coordinator

The role and success of the TSL Coordinator, as they perceived it

At the same time, several other key individuals were interviewed to supplement the interviews of the School TSL Coordinators.:

The University TSL Coordinator

The ITS Network Learning Development Officer

The WBS CDU Manager

Supporting evidence

The project also had access to the documentary evidence, in the form of minutes, statements, reports and other documents, produced by the University in the course of its TSL Project. This was supplemented by access to the work of other researchers who had attempted to investigate lecturers' attitudes to WOLF, BroadNet and TSL. All this evidence will be the subject of causal cognitive mapping in the expectation that some of the issues identified will overlap issues identified in a similar analysis of the TSL Coordinators and the other intermediaries.

In conclusion, this phase was intended to provide a clear picture of the environment within their Schools in which individual lecturers made decisions about the nature and extent of their engagement with the VLE. Throughout the project, there has been the spectre of inaccurate reporting either by the TSL Coordinators of their colleagues' attitudes, abilities or motives or subsequently by lecturers themselves.

Second phase

Lecturers

As a pilot for the second phase, one School was selected for a trial using card-sorts with some 10 lecturers. The topics for the cards had been generated in the first phase of the project and related to reasons offered as obstacles to VLE take-up. This School was chosen because, owing to relocation, reorganisation and possible redundancies, involvement with the project later would be problematic. As discussed elsewhere, card-sorts were used an alternative to interviews or questionnaires. They were robust, extremely manageable and gave data that was amenable to a variety of analytic techniques. This data is currently being analysed.

The main part of the second phase will work with lecturers from three Schools and will use card-sorts and laddering. The basic objective is to explore four related issues:

How lecturers use their time and which professional activities they prefer.

Which types of teaching activities lecturers prefer.

Which VLE functions lecturer use or prefer.

Which values and goals underpin these three types of preference?

At the same time, it is intended to explore lecturers' conceptions of teaching using a questionnaire based on Trigwell's Conceptions of Teaching. Some of this work has already been done and is currently being analysed.

Surveys

As part of this second phase, there have already been informal email surveys of:

Lecturers in SCIT

New Lecturers (on the University's MA in Teaching and Learning in Higher Education programme)

CSDP Trainees (who had attended any of the central WOLF training)

All three groups were asked to respond to similar questions about their expectations and experiences of trying to use WOLF. The numbers of respondents were respectively 12, 8 and 9, and any apparently interesting responses received follow up questions.

A Review of Methodological Concerns

Interviews

Originally, it was intended to pursue the entire investigation, both first and second phases, through the medium of semi-structured interviews. It was intended to fully transcribe all the interviews using dictation software and then subject them to qualitative analysis using software such as NUDIST or ATLAS,ti. In the event, this proved impractical owing to the time involved in transcription. The alternative to full transcription had always been a selective or partial transcription but this was felt to be insufficiently transparent and potentially a source of bias. Eventually a rigorous alternative was developed based on causal cognitive mapping or mind mapping. (Axelrod, 1976)

The interviews themselves were semi-structured and based on a protocol that covered topics raised in a preliminary survey of the literature as potential factors involved in individual take-up of a VLE. This covered groups of open-ended questions supplemented by probes and supplementaries. After each interview, the interview was written up, then a feedback sheet was used to review the effectiveness of the interview, and the protocol was revised accordingly.

A questioning methodology

The need to find out from VLE users and potential users from across the University about the nature and extent of their engagement with the VLE involved questions. In the first phase interviews were used but these had severe practical and methodological limitations. For a more structured approach to questioning, the ACRE methodology [Rugg, 1999] was used as a way to find alternative approaches. This attempts to put the various aspects of questioning on a more systematic footing:

A central problem in many disciplines is the elicitation of a complete, correct, valid and reliable set of

information from human beings – finding out what people want, think, know or believe. Examples include social science research, market and product research, opinion polls and client briefs. Although numerous elicitation techniques exist, there has traditionally been little theoretically driven guidance available on choice, sequencing and integration of techniques.

Examples of the types of issue tackled by ACRE and relevant to the current project include:

Taken-For-Granted (TFG) knowledge

Front-stage *vs* Back-stage versions of knowledge

Not-Worth-Mentioning (NWM) knowledge

Preverbal construing

ACRE suggests that in the current project, card-sorts followed by laddering may be the best way of accessing the goals and values at work when lecturers decide on the nature and extent of their engagement with the VLE.

Conclusion: Some Emerging Themes

In the course of a preliminary analysis of the data from the first phase of the project, several themes began to emerge in spite of some methodological reservations as to their validity.

¨ Highly Specific Departmental Cultures

· *Influence of professions, professional bodies, funding bodies*

· *Collegial vs managerial cultures*

- *Responsiveness to University priorities*
- *School Infrastructure*
  - *dispersed sites, staff machines, bandwidth*

¨ Role of Exemplar Modules

· *High-tech vs low-tech; few vs many*

· *Effort and sustainability*

· *Immediate, recognisable, relevant*

¨ Student Pressure and Student Demands

· **On-campus vs off-campus tension**

7/24 access; use of dial-up

Perceived professional requirements

Student pressure and expectations not developed

¨ Local Technical and Clerical Support

· *The CDU model – consistency vs ownership; maintenance*

· **The TSL Coordinator - trainer and consultant**

¨ Marketing/Recruitment/Business Opportunity

¨ Histories of Involvement

· *Predating/conflicting with university policy*

· *With WOLF, with some other technology*

· *Legacy*

¨ Staffing Stability

· **Inflexibility, Redundancy, Promotion and Turnover**

¨ Quality and QAA

· *Enforcing standards and consistency*

▪ *across sites / amongst franchises / across module teams*

· *QAA - in multi-subject schools*

· *Internal QA: review and revalidation*

¨ University Policy and Expectations

· *Promoter or inhibitor?*

· *How the university exerts pressure*

· *Level 0 & 1 target inhibited by large module teams*

¨ Enthusiasm and Accessibility of Champion

· *Visibility, seniority, personality, conception of rôle, technical know-how*

¨ Training and Staff Development

· *Variable staff IT skills*

· *Anywhere/anytime,*

· *Just-In-Time*

· *Must be mixed with support and consultancy*

ACKNOWLEDGMENTS

I thank Marian Petre of the Open University and Gordon Rugg of University College Northampton for their continued methodological advice.

REFERENCES

Axelrod, R. ed, (1976), Structure of Decisions. Princeton University Press, Princeton, NJ
Jenkins, M. (2001). Management and implementation of virtual learning environments within Universities and Colleges: UCISA Teaching and Learning Information Group.

Rogers, E.R. (1962). Diffusion of Innovations, New York: Free Press.

Rogers, E.R. & Scott, K.L. (1997). The Diffusion of Innovations Model and Outreach from the National Network of Libraries of Medicine to Native American Communities.

Rugg, G. & McGeorge, P. (1999). Questioning methodology: University College Northampton Faculty of Management and Business.

Trowler, P.R. (1998). Academics Responding to Change ed. H. Eggins: Society for Research into Higher Education / Open University Press.