

Organizational Management of e-Learning in Universities – significant issues

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Abstract.

Educational technology in higher education has not managed to match the ubiquity of technology in everyday life. Is this because higher education institutions are inherently resistant to change? The organization, structure, culture and climate of higher education institutions reflect the wider agendas of current and predominant practice. They may particularly influence the success or failure of initiatives to establish technology enhanced learning (TEL). This paper reports on analysis of a long term study of change in a UK university, and sets those findings in the context of wider experience across the sector and identifies significant issues which may enable or inhibit success

Keywords: e-learning, higher education, organizational change, technology enhanced learning.

1 Introduction

This paper analyzes the drivers and barriers to institutional change which emerge during the process of establishing campus-wide e-learning. The research initially considered evidence drawn from a series of surveys in one UK university designed to explore staff attitudes to the use of computers in teaching. Further research was conducted which was used to set the initial analysis in a broad context. Data was gathered which explored experiences and perceptions of e-learning related change at six other UK institutions. Initially quantitative and qualitative data were gathered in three attitudinal surveys over seven years tracking changes during and immediately after a wide scale institutional e-learning project – the Scholar Project [8]. The attitudinal surveys predominantly elicited the views of academics reflecting on the actual and potential use of technology in their teaching. Interim analysis of the data has already been published [1] and other parts of the combined survey have been discussed elsewhere [10]. This paper presents further analysis and additional work integrating new data gathered from the six additional institutions. The original surveys provided evidence of a steady growth in the use of technology for teaching during the lifetime of the project and a subsequent broadening of the distribution of the use of technology. Initially there were higher levels of use amongst science, technology and

medical disciplines, in the later surveys use in the arts and humanities had increased. The project activities were not universally self sustaining. Funding sets of mini projects had been the main change mechanism. The mini-projects had been intended to establish and embed good practice and provide evidence of good practice for dissemination. It was apparent that a few years after funding had ceased only a rump of activity remained. It was not clear if new activities were due to the project or wider technological change in everyday life. Where resources continued to be used they were typically modified for the Web or the University's Virtual Learning Environment. It proved difficult to generate the impetus to sustain new e-learning activities beyond the original mini project participants.

2 Comparing theory with experience

Geoghegan's theoretic perspective on change developed previous work by Moore contrasting the needs of early adopters with that of the mainstream in the context of academia rather than industry [3, 4, 6]. This perspective seemed relevant to the activities of the Scholar Project [9]. Geoghegan's mainstream encompasses those whose participation is needed if change is to be adopted. The survey data, collected in 1993, 1996 and 2000, was used to map Geoghegan's generic observations against experience and thus identify instances of differences between the preferences of early adopters and mainstream.

Radical/Gradual change: The Scholar Project planned an approach of gradual change (mainstream). But it was designed to be radical. It was working with seeded projects relying upon known dissemination devices such as cascading good practice. Projects were typically with new staff and different classroom approaches.

Visionary/Pragmatic: The very nature of project funding in academia, which is judged competitively and seeks high levels of kudos, necessarily attracts the *visionary*, and the Scholar Project activities sought radical change running against the needs of the mainstream.

Project/Process: The Scholar Project was a hierarchy of projects. The meta project was working to make change happen in the institution. It was using mini projects as a device to enable that change. Although the project had the requisite institutional support, it was not being directly driven by institutional process or needs.

Risk takers/Risk avoiders In the survey, staff who considered themselves "against using technology in teaching" were asked to voice their reasons; among them were the following: *"would prefer to improve my computer experience in research first"*, *"contractual relationship is for hours teaching in traditional manner. Changes would have to be in own, unpaid, time"*. *"Time! Why reinvent the wheel when I have perfectly adequate material already"*; In a research-intensive institution investing time in technology for teaching is a risky process; the possible benefits to academics were unclear. Involvement is unlikely to significantly enhance an individual's chance of promotion. The Scholar Project employed new staff and was outside the mainstream. It was managed between two departments, one academic and one service department. It was a risky business outside the mainstream.

Experimenters/Need proven uses: The Scholar Project set out to disseminate its activities but it was clearly did not always manage to demonstrate or communicate proven use to academics. *“Law is not appropriate for this type of remote access student learning”* and *“use of computers to teach theoretical physics is dangerous as students may think they don’t have to learn how to solve problems, but just how to use computer packages to solve them”*. Others did not see a change in teaching methods appropriate: *“remain unconvinced that it is appropriate and will assist understanding at part III and IV level”*.

Self-reliant/Need support: The classic method to provide support is via staff training, and dissemination for awareness. The Scholar Project provided this type of support. The Southampton survey looked specifically as perceived training needs; it found that, amongst colleagues questioned in 2000 of those who were most opposed to technology, more than half cited lack of information training and need for further technical support as their most significant barriers to change. The paradox is that the academic norm of self motivated and self managed learning establishes a culture where training is alien and commonly rejected.

Relate Horizontally/Vertically: The method of working with seeded projects and building a network between project developers, cultivated horizontal links (associated with the early adopter culture). The externally funded project process necessarily cultivates horizontal rather than vertical allegiances. At the end of the Scholar Project it seemed that the whole project and many of its component activities did not relate vertically into the processes of the University as a whole.

In addition to considering the individual areas above various inter-relationship were noted e.g. experimenters tend to relate horizontally; there is an inherent problem in bringing about change via competitive projects; winners are expected to be radical, visionary, experimental, and self reliant - not risk averse. Funded projects are not part of everyday process, they cannot relate solely to local agendas (vertical). Furthermore, those who are motivated to pursue the speculative process of bidding competitively to win funds are unlikely to be risk averse. If they are successful, their project should be innovative and ground breaking. The Scholar Project planned an approach of gradual change (mainstream). But it was necessarily also designed to be radical.

3 Beyond the single institution

Subsequently qualitative data from six different UK universities was gathered. The experience of individuals fulfilling a range of key roles associated with managing and using e-learning on campus was analyzed [11]. Interviewees were identified using a chain sampling method representing roles associated with implementing e-learning. A grounded theory approach was used to identify both drivers and barriers to implementing and embedding e-learning by bringing together the observations of those who had been interviewed. The six universities were all of approximately the same size as Southampton in terms of total student numbers. Typical roles of those interviewed included Pro-vice chancellor teaching; head of information/computing service; e-learning support; and academic leader. Semi structured interviews of approximately 45 minutes were conducted and data was initially marked up and

clustered to identify common themes which emerged. Relevant policy and strategy documents for each institution were also consulted. The aim was to identify how individuals and their institutions experienced the “drivers and barriers to change” in the specific context of the introduction, use and uptake of learning technologies.

The semi structured interviews were based around eight question areas been drawn from Damanpour’s work on the Structure of Innovation [2] The questions were designed to probe the relationship between the organizational structure of the university and the uptake and use of e-learning. Interviewees all identified their type of institution during the course of the interview, labels which most commonly occurred were included *Russell Group*, *research-led*, *teaching intensive* and *student-centred*. Respondents also referred to the profile of the institution such as *leading edge*, *research intensive*, *distinctive*. When talking about their experiences respondents referred to *institutional culture*, *resistance*, *externality* and *beliefs*. Managers variously categorized their approaches as *pragmatic*, *using stealth*, and *employing benevolent management*. There were frequent displays of institutional and personal pride associated with the achievements of introducing e-learning. Key contexts and managerial approaches which emerged during the interview process are summarized below in figure 1 below. The information is presented as a Venn diagram to indicate that there are of course overlaps in approaches and key differences.



Figure 1 Perceptions of values and approaches in different institutions types

Having initially clustered the data, the emerging themes suggested that the simple distinction between research intensive and teaching intensive might not provide sufficient insight to be useful for longer term planning. Another means of differentiation has been suggested by McNay [5] who uses policy definition and the control of implementation as the identifying factors. He specifies four core types of institution bureaucratic, collegiate, corporate and entrepreneurial. The categories arise from differing levels of policy definition and control of implementation. He acknowledges that any University is unlikely to be purely of a single type, but suggests that the categorization can be useful in understanding the direction and nature of change experienced in the institution. He also contended that universities were moving from collegial academies to corporate enterprises. The experience of the uptake of e-learning and staff attitudes to e-learning at Southampton suggested behavior which belonged in the collegial academy. Understanding may be derived from the simple differentiation between research intensive and teaching intensive; but examination of the organizational processes and culture of the whole institution may be more useful.

4 Comparator Experiences

Issues which had been faced included funding, costs, time, structural barriers and a multiplicity of platforms. Motivations included students' needs, funding and external initiatives. When the data was further analyzed, a picture of each institution was built up using the five components; university type, organizational type, strategies and policies, implemented technologies, and organizational structure. Across the range of responsibilities individuals recognized that progress might be slow, and that use of technology varied across discipline areas. Where institutions responded that they had made significant progress with e-learning implementation was typically tied in with core teaching and quality enhancement activities (vertically aligned). From the analysis of the data collected it was possible to identify factors which managers and key decision makers perceived as influencing progress in their institutions. The most striking observation is the way in which academic practice found in all institutions (and thus academic culture) supports behaviours which are typical of the early adopters whilst corporate behaviour, which is found more in the teaching intensive institutions, supports behaviours which are typical of the early majority. One area of teaching which might be found in both research intensive and teaching intensive institutions is that of focused teaching, which may be brought about by ambitions of significant income generation from teaching, or through large student numbers (as in the case of popular or necessarily large teaching areas such as medicine and nursing). In these instances, academics involved in learning technologies could experience tightly controlled policy definition and tightly controlled implementation conditions, and therefore are more likely to fall into the area of the early majority.

5. Conclusions

Gaining insight into key factors which influence effective uptake of e-learning is of interest to developers and institutional managers alike. Many UK universities are currently being funded to benchmark their e-learning activities [7]. This will generate data (using a range of methodologies) and provide snapshots of current practice. The challenge will be to look beyond the data to identify causes for any possible differences. This paper contributes to understanding how to identify such causes. The original survey data were specific to Southampton, but the observations are generic. It seems that the widely-favored project-based approach to building change may not be a successful strategy. Projects are inherently designed to appeal to early adopters rather than address the needs of the mainstream. Meeting the support needs of the mainstream is more difficult than it first appears. Change strategies need to be aligned with institutional culture if they are to succeed. We need to understand the ways in which we can surmount the structural barriers to change which appear to impede progress towards effective and widespread use of e-learning in Higher Education. This paper points to the source of some of the structural barriers. It also suggests a means of identifying approaches to introducing e-learning which will be suited to the style of a particular institution. Such understandings have the potential to transform

the ways in which we try to bring about widespread institutional change and finally succeed in making e-learning an integral positive component of university business.

7. References

- [1] Barnett, L., Maier, P., Hothi, J., Reviewing IT Use for Teaching and Other Purposes at the University of Southampton. Internal Report. University of Southampton (1998)
- [2] Damanpour, F., Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators. *The Academy of Management Journal* **34**:3 (1991) 555-590
- [3] Geoghegan, W.H., Whatever Happened to Instructional Technology? In: Bapna, S., Emdad, A., Zaveri, J. (eds.): 22nd Annual Conference of the International Business Schools Computing Association (IBSCA). IBM, Baltimore, Maryland (1994) 438-447
- [4] Geoghegan, W.H., Instructional Technology and the Mainstream: The Risks of Success. In: Oblinger, D.G., Rush, S.C. (eds.): *The Future Compatible Campus: Planning Designing and Implementing Information Technology in the Academy*. Anker, Bolton, Mass (1998) 131-150
- [5] McNay, I., From Collegial Academy to the Corporate Enterprise: The Changing Cultures of Universities. In: Schuller, T. (ed.): *The Changing University? Open University/SRHE*, Buckingham (1995)
- [6] Moore, G., *Crossing the Chasm: Marketing and Selling Technology Products to Mainstream Customers*. Harper Business, New York (1991)
- [7] Morrison, D., Mayes, T., Gulc, E., Benchmarking E-Learning in UK Higher Education. In: Markauskaite, L., Goodyear, P., Reimann, P. (eds.): *The 23rd Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education: Who's learning? Whose technology?* Sydney University Press, Sydney (2006) 583-587
- [8] White, S., Scholar - a Campus Wide Structure for Multimedia Learning. In: Hoey, R. (ed.): *AETT Annual Conference: Designing for Learning*. Kogan Page, Jordanhill Campus, University of Strathclyde, Glasgow (1993) 194-196
- [9] White, S., Maier, P., Building Models Which Enable Change: An Examination of the Teaching and Learning Technology Support Network. In: University of Maastricht (ed.): *Bringing Information Technology to Education (BITE)*. University of Maastricht, Maastricht (1998) 117-123
- [10] White, S.A., Critical Success Factors for Institutional Change: Some Organizational Perspectives. In: Davis, H.C., Eales, S. (eds.): *Critical Success Factors for Institutional Change, a workshop of the European conference of Digital Libraries, (ECDL'06)*. University of Southampton, Alicante (2006) 75-89
- [11] White, S.A., Higher Education and Learning Technologies: An Organisational Perspective. *Electronics and Computer Science*, Vol. PhD. University of Southampton, Southampton, UK (2006)