Changing Belief Systems: The Effect of Staff Attitudes on Innovation and Sustainability

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ABSTRACT

Previous studies of UK Further and Higher education have highlighted the growing importance of networked learning (JISC, 2002). However, little research has been carried out into the management of large-scale networked learning. This paper looks at the relationship between the formal strategies put in place to enable the implementation and sustainability of large-scale Networked Learning and the attitudes of staff. It identifies different organisational design issues and the impact they have had on practice. The organisational foci which inform this study include: the importance of how strategy is developed (Gibbs, 1999); staff development and support (Hart, Ryan and Bagdon, 2000); commitment at the institutional level (McCartan, Lewins, and Hodgson, 2000); and personal issues such as motivation (e.g. Banks and Powell, 2002; Bothams and Fordyce, 2002).

Since research has suggested that differences between institutions leads to characteristically different strategies (Gibbs, 1999) this study uses a multiple case study approach, each case is an educational organization, and the cases are selected to represent different types of educational institutions; the types being established by prior hypothesizing (Yin, 2003). Each case study uses data from three main sources: questionnaires, institutional documents, and semi-structured interviews. This data is used to illustrate and discuss relationships between staff attitudes and the types of organisational climate and support structures within institutions. The findings are used to identify important issues and draw out key themes to support sustainable innovation. An in-depth qualitative investigation has been used to develop a full understanding of complex underlying issues involved in the responses of people to institutional change towards large-scale networked learning.

Keywords
Strategy, support, attitude, motivation, management and administration of large-scale networked learning

INTRODUCTION

Previous work carried out within higher and further education (HE and FE) has highlighted the importance of networked learning as a growing part of education provision within the UK (JISC, 2002). However, little research has been carried out into the management of large-scale networked learning. This study is part of the JISC funded INLEI project (INLEI, 2003) which seeks to understand and evaluate the impact of large-scale networked learning on management and administrative systems within FE and HE institutions. The focus of this study lies in change at an organisational level, and the social and cultural responses of the communities involved to these changes. In order to understand its impact we seek to understand the structures, systems and procedures, and also the interaction of people with those systems through an examination of certain key variables as agents of change.

Bates (1999) identifies a number of strategies for change which include: a vision for teaching and learning, funding reallocation, technology infrastructure, and people infrastructure. What strategies are used and their impact on management and administration form an important part of the present investigation, but Gibbs (1999) suggests that it is not so much *what* strategy but *how* this strategy is developed that is important, and so this forms another strand of the present study. Personal issues such as staff development and motivation have been indicated as important in the successful implementation of networked learning. (e.g. Banks and Powell, 2002; Bothams and Fordyce, 2002). However, these issues may mask underlying factors of greater importance, as suggested by Bothams and Fordyce (2002):

> … Many of the cultural issues identified centred around ownership of, and involvement in, the decision making process, and therefore any attempts to reinvigorate the on-line learning would have to be seen to be inclusive. (Op. Cit., 2002)

Finally, differences between institutions may lead to characteristically different strategies related to the particular mission of the University (Gibbs, 1999), and therefore it is important that a range of institutions should be studied. Since complex, underlying issues may be operating at a variety of levels, an in-depth qualitative investigation is required to develop a full understanding of the responses of people to institutional change.

This paper will examine the interplay of factors that influence the extent to which institutions are engaging in networked learning and the extent to which such innovation is sustainable. It will focus on the effect of the implementation of policy on staff attitudes, and the impact of these attitudes on policy.

METHODOLOGY

The main aim of this project is to explore the impact of networked learning on HE and FE institutions based on the experiences and perceptions of key members of staff involved in the development of networked learning. A case study methodology is used since it allows the study of contemporary events where the relevant behaviours cannot be manipulated (Yin, 2003). Since research has suggested that differences between institutions leads to characteristically different strategies (Gibbs, 1999) this research uses a multiple case study approach, each case is an educational organization, and the cases are selected to represent different types of educational institutions; the types being established by prior hypothesizing. Each individual case study is used to build theory, and may also modify theory (see, for example, Yin, p.50). The case study institutions were selected (10 from HE and 10 from FE) to provide an indicative sample.

In this paper, six of the twenty case studies are examined. The institutional policies and strategies are compared and the relationships between these and the perceptions and experiences of the staff are discussed. Each case study uses data collected from three main sources: questionnaires, semi-structured interviews and institutional documents.

Individuals from cross-sections of case study institutions were asked to complete questionnaires and to take part in a semi-structured interview. The main categories of staff involved were: Senior management with responsibility for networked learning, Technical staff with responsibility for infrastructure support for networked learning, Registry staff, Quality assurance / quality enhancement staff, Academic staff implementing networked learning, and Support staff providing a range of services for academic staff and students engaged in networked learning. By interviewing this range of individuals the study aims to identify both different organisational design issues and the impact they have had on practice and, conversely, the impact of practice on the mechanisms organisations put in place to support networked learning. A study of pertinent documents is used to identify institutional policies and strategies within each case study organization.

Each of the case studies provides a mainly descriptive account of the perceptions and experiences of staff holding different roles within the institution. In this paper the approaches adopted by different institutions (institutional policies and strategies) and the outcomes (in terms of the perceptions and experiences of the staff interviewed) emerging from each case are identified.

RESULTS

An overview of the number and type of institutions and staff who were involved in the data collection for this paper is given in Table 1 below.

Table 1: Descriptive data from Institutions

Institution	FTE student Numbers	Reported time scale of involvement in NL	No of interviews
F1 An FE College in South West Scotland.	3500	4 years	4
F2 An FE College in North East England	8500	3 years	6
F3 An FE/HE institution in South East England.	4100	4 years + 10 years of small scale activity.	9
H1 A pre-1992 University in South East England	19000	2 years + earlier involvement with LT	9
H2 A post-1992 University in North West England	20000	2/3 years	8
H3 A post-1992 University in Scotland.	12000	4 years	8

Strategies and their development

Some distinct differences, which have emerged between the FE and HE institutions, are summarised in Table 2. For example, all the FE colleges have a formal networked learning strategy in place, whereas none of the HE institutions have a separate networked learning strategy. The provision of funding linked to the development of an Information and Learning Technology (ILT)[1] strategy by FE institutions is explicitly identified from interviews as an important reason for this difference:

> Yes, there was some money that came into the college and this was really why BECTa did the ILT strategy because without the ILT strategy you didn't get your money and the money was very clearly dedicated for virtual learning environments. (F3)

However, university interviews suggested other reasons for the absence of such a strategy; in particular, that the devolved nature of the institution makes such decisions the responsibility of individual faculties or schools.

The extent to which institutions translate these strategies into specific networked learning goals for the development of teaching and learning and for staff support and training varies but does tend to reflect the clarity of the statements about networked learning in their strategic documents. For example, all three FE colleges have explicitly stated goals for networked learning, which are supported by complementary goals for learning and teaching and for staff development.

However, among the HE institutions only H3, has explicitly stated networked learning goals for the entire institution which include explicit goals for learning and teaching, and staff development. Institution H2, has a more limited set of goals: where individual faculties have been set specific targets for networked learning rollout, and at least one course per HE faculty is required to trial computer based assessment. Institution H1 *encourages* networked learning, but the goals/aims are not strongly and explicitly spelled out. There are stated objectives to *raise awareness* of networked learning potential and to gain more detailed understanding of the resource implications of networked learning. Academic units are *invited* to set priorities. The current Strategic Plan for Institution H3 includes the following institutional aims: to extend and develop the University's chosen Virtual Learning Environment (VLE) in one Faculty to cover all level 3 modules and postgraduate programmes, and to develop it beyond a pilot level of usage in two further Faculties. The need to ensure all staff receive IT training to enable effective and efficient interaction with electronically provided learning, administration and research systems is also explicitly stated.

Table 2: A summary of the main strategic features of the institutions

	F1	**F2**	**F3**	**H1**	**H2**	**H3**
Separate Networked learning strategy	Yes	Yes	Yes	No	No	No
Specific networked learning goals in strategic plans	Yes	Yes	Yes	No	Yes	Yes
Specific goals for staff development and support in strategic plans	Yes	Yes	Yes	No	Yes	Yes
Pay or time incentives for staff to develop or use networked learning	No	Yes	No	No	No	No
Introduction	Top down	Bottom up	Bottom up	Bottom up	Top down	Bottom up
Continuation	Top down	+ Central support	+ Central support	Bottom up	Top down	+ Central support
Main Drivers	Central drive & markets	Students & external funding	Central drive, external funding, and forces	Market & students	Students and central drive	Business school and central drive

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1 UK and FE use different terminology to denote networked learning. ILT is used extensively in UK FE

In institutions F2, F3 and H3 the approach was initially bottom-up, and central support was added later:

> if you go back 3 years…. Each faculty did a different thing so they used a different approach, had a different technology, so on and so forth. So where we'd gone from is having lots of people doing their own thing and some people achieving things, but nothing ever really bringing concrete results. It's a situation where we have much more university agreement about how we should be doing this, and a sort of a much more unified approach to it really. (H3)

> It's just been varied, but back to '99 was the first changes I noticed and that goes over the two things, it was the ILT strategy and pulling lots of things together cross college, so pulling the sort of pools of development and things that people have been playing about with, talking about, that was the first cross college application in saying right we are going to pull this together and this is where we are going (F3)

In F1 and H2 it was initiated and continues as a top-down approach:

> Well [the principal] was really the driving force behind it. It has been led from the top from day one. I think that's key to the success that he was able to drive the cultural change as well as make the resources available from day one. (F1)

While in H1 it began and continues to be regarded as bottom-up:

> … I think the vast majority of networked learning development at [H1] has occurred as a result of the individual academics saying I'd quite like to experiment with this…. Different Faculties doing things in different ways and even within those Faculties, different Departments or Schools are doing things differently. You would be hard pressed to find some sort of central dictate that says we are going to do this. (H1)

Another aspect of strategy, which may be important, is the provision of pay incentives or other reward schemes; at institution F2 a pay incentive has been provided, and at institution H3 a Teacher Fellowship scheme is being introduced to provide additional motivation. At two of the institutions, F1 and H2, a respondent suggested that staff had an incentive to develop and use networked learning – the improvement it would bring to their teaching. This could be seen as rather a naive view. Where academic staff regard teaching as their main focus they might be expected to be motivated by new developments that could help them to improve their teaching and students' learning. However, in HE institutions academic staff may feel that research and not teaching is their main focus; and overall staff may lack an appreciation of how networked learning could improve teaching and learning.

Motivations

Turning to the drivers referred to within each institution we can see from Table 3 that a large majority of those interviewed have not mentioned enhancement in teaching and learning as a driver; instead they focus on expanding student numbers and their expectations, funding and market issues, and the driving forces provided by groups of enthusiasts or by the most senior staff within the institution.

Table 3: Driving forces mentioned in interviews.

Institution	Increasing number of students	Expectation of students	Particular groups of staff	Central	External forces	Funding available	Market	Enhanced teaching & learning
F1	1	1	0	3	0	1	3	0
F2	2	4	5	2	0	3	1	2
F3	2	3	4	7	5	5	1	1
H1	1	5	3	1	1	0	3	0
H2	1	3	2	5	0	1	2	0
H3	3	0	7	6	0	1	1	0

Numbers refer to the number of respondents interviewed who referred to this 'driving force'

Training appears to be mainly voluntary in all institutions (Table 4), but support for further development is variable; in the FE institutions F1 did not mention support in developing pedagogy, F2 is beginning to consider

this aspect and F3 appears to have already begun to offer this support. In the HE institutions a similar breadth of support was indicated; in H1 it seems likely that all support is under-resourced, in H2 there is some development of pedagogical support and in H3 pedagogical support is seen as essential.

Table 4: Staff development and support

Inst	Staff training	Staff support
F1	Basic technical training on a voluntary basis.	e-learning coordinator and a team of programmers to support material development.
F2	Frequent technical training.	Support for development of pedagogy is beginning. A trainer and a dedicated training area and also an e-learning team to develop pedagogy.
F3	High levels of technical training.	A very wide range of technical support available, a dedicated trainer, and support for pedagogy.
H1	Frequent, voluntary technical training	Mixed views: sufficient support (2 people), insufficient support (2 people).
H2	Initial investment in training for VLE. Voluntary technical and pedagogical training plus additional funded training provided for champions.	A very wide range of technical support available, but there appears to be limited pedagogical support.
H3	Technical and pedagogical training available for all. Some compulsory training in business school.	Now focussing on pedagogical aspects of NL, on the relevance of networked learning to pedagogy.

Attitudes

Where the respondents spoke about the attitudes of staff to the use of networked learning they spoke about positive and negative attitudes, they gave commentary on the methods and ease or difficulty of converting staff to networked learning, and they spoke about the cultural changes that had occurred or were taking place within the institution. The number of respondents speaking about each of these attitudinal aspects is shown in Table 5.

Table 5: Number of respondents referring to particular attitudinal aspects

Institution	Positive	Negative	Conversion	Changing culture
F1	2	3	2	1
F2	5	4	4	5
F3	6	3	8	8
H1	1	5	4	1
H2	2	4	4	3
H3	5	5	4	2

It can be seen that at F3 more was said about a changing culture and conversion than about attitudes being positive or negative.

> I suppose the knowledge that most staff now have a genuine feel for that way of delivering and that way of working, and that is a major change. I think that they really see it as, that's how the world is and we need to build on it, and I really think that a few years ago, not that long ago, that would have been a sort of bolt-on, it's not any more, it's life, I think that's terrific really. (F3)

At F2 positive attitudes were often mentioned, as was the changing culture.

> I think it was partly the enthusiasm from the teaching staff. It was absolutely unbelievable. I mean I've worked in the FE college for 3 years and I have a rather cynical perception, if you try to sell something new to academic staff more often than not it would go down like a lead brick, I don't want to do that, it will mean extra work and stuff like that. The learning environment wasn't like that, there was a 'cor,

we like that, that's good we want to use it'. There was this enthusiasm from the shop floor and I think that's what took the Exec by surprise and they thought, here's something that the teaching staff really like. (F2)

H3 had much to say about positive attitudes and negative ones and also focuses on conversion, but said less about a changing culture.

So it's trying to be encouraging and trying to provide the support essentially and the development and the materials to make it an easy process and also to take the fear out of it and the apprehension. (H3)

More respondents at F1, H1 and H2 spoke about negative attitudes than about positive ones, and fewer spoke about culture change.

No doubt there will be staff who will be dragged kicking and screaming into doing it. But by the time we get to that point I think it will be clear that they have no choice but to do it because you will have the majority of staff working in one way (F1)

A lot are saying they need more technical support, I don't feel there is any great understanding of the issues or a wholehearted embracing of it (H1)

We've probably got about 40% who probably feel they have been dragged kicking and screaming and we've got 20% who say over my dead body by and large. (H2)

On the basis of these data it would appear that attitudes in Institution F1 attitudes are less favourable than those in F2 and F3, and similarly, attitudes in H1 and H2 are less favourable than those in H3. At the same time the least number of respondents in Institutions F1 and H1 suggest cultural changes have occurred or are occurring.

Another important aspect was the response of those interviewed to the attitudes they perceived in other members of staff. After all, the respondents were those with responsibilities for networked learning, and, to some extent, for its acceptance by others. How do they respond to the less than positive views they describe in other staff?

In institutions F2, F3, H3 the way people spoke suggested a supportive atmosphere in which the difficulties for staff were appreciated and taken into consideration, as in these extracts:

…the idea from my point of view is to set fairly short term realistic goals that could be achieved as a way of basically supporting staff in making, for what to many of them is a very big cultural shift in terms of the way that they approach their teaching (F2)

My job role is now the cultural, very, very aware of the misconceptions, the mystery, the fear of job losses etc etc are paramount so before I do any training at all I actually give a half hour presentation about what all this as far as learning and teaching is and they normally come out of there, or they have so far, with the understanding that it is just another tool for them to use if they wish or not, well hopefully they will do (F3)

In institutions F1 and H2 the tone was more authoritarian and there did not seem to be a consideration of the problems faced by staff in changing their mode of working, as these extracts indicate:

it's been a combination of some sort of champions taking it forward just in their department, …, to some maybe having to think differently, because the traditional courses that they are offering …, they were just not getting the learners through, so they are enforced if you like into thinking, well if nobody is interested in this, they have either got to offer something else or our own jobs are at risk. (Quality Assurance, F1)

Now we are at a level where there is enough, what's the word I'm looking for, almost backwash I suppose from those staff who've not yet got on the boat right who are saying the reason we can't get on the boat is because we haven't got the time to develop, we haven't got the skills or whatever and therefore what you should do is create a big central unit to build all these things for us. Now we've resisted that almost exclusively, what we are saying is when you first went into PowerPoint we didn't make your PowerPoint slides for you, when you first, it's another tool, which you as a professional tutor have to learn to use. (Senior Manager, H2)

Finally, in institution H1 neither of these positions was evident.

DISCUSSION

The data presented above suggest that some of these institutions have staff, at various levels and in different roles, with quite positive attitudes, whereas others take a more negative position. These attitudes appear to be linked with particular aspects of strategy, support and staff motivation.

Only the FE colleges have separate networked learning strategies, but two of the HE institutions (H2 and H3) have explicit networked learning objectives within their teaching and learning strategies. If this alone was the determining factor then there should be a difference between staff attitudes in H1 and the rest. Although H1 does appear to have staff with less positive attitudes it is not alone in this; F1 and H2 also appear to have quite negative staff attitudes. Strategy and *how* strategy is developed may be important, as suggested by Gibbs (1999), but is not the only significant factor.

Although the visible and energetic support of senior management is believed to be critical to any strategic initiative involving cultural change (Hart, Ryan and Bagdon, 2000), the top-down approach and strong central drive provided by F1 and H2 does not appear to have been entirely effective, since staff attitudes do not seem to be particularly positive. Some researchers regard a bottom-up approach, as found in H1, as essential to empower staff who may have the necessary knowledge that senior management may lack (Richardson, 1995; Kock et al, 1996; Teare & Dealtry, 1998). However, according to Brown (2000), both a top-down and a bottom-up approach are needed for successful implementation; this approach was evident in institutions F2, F3 and H3, where attitudes appear to be most positive. Thus, the results from these case studies support the view of Brown (Op. Cit.); a combination of bottom-up and top-down approaches seems to be most successful.

Where there is well resourced and readily available support, staff attitudes appear to be more positive, and this staff development and support is more apparent in those institutions which have a definite strategy and explicit goals, as suggested by McCartan et al (2000). In the present study, differences in the amount and availability of pedagogical support appeared to be important. The data indicate that pedagogical support was most evident in F3 and in H3, and was not referred to at all in F1.

Personal issues such as motivation have been indicated as particularly important in the successful implementation of networked learning (e.g. Banks and Powell, 2002; Bothams and Fordyce, 2002), and strategy could be viewed as one element of motivation. At another level motivation may be provided through pay incentives or other reward schemes; at institution F2 a pay incentive has been provided, and at institution H3 a Teacher Fellowship scheme is being introduced to provide additional motivation.

Motivation is perhaps the crucial issue; the changes in working practices required in order to move to networked learning are not easy (Conole, 2002) and so there is a real need for staff to feel motivated. An explicit networked learning strategy and goals can, in themselves, have a motivating effect, in that staff are aware of what is required of them by the institution. The respondents in these case studies have mentioned other motivating factors, including: pay incentives, time release, recognition, and personal satisfaction.

There are two other motivational elements that arise from these case studies: the motivation to enhance the quality of teaching and learning, and the way in which managers responded to their staff's attitudes to networked learning. Only three respondents referred to enhancing teaching and learning as a reason for engaging in networked learning, these were in F2 and F3. If those in senior positions, with responsibility for networked learning fail to mention such an important aspect it seems unlikely that others will recognise it without help. Thus, one of the strongest motivators, for teachers, appears to be absent from most of the institutions. Respondents who referred in sympathetic terms to the difficulties faced by staff in moving towards networked learning were found in institutions F2, F3, and H3.

Reported attitudes among staff are most positive in FE institutions F2 and F3 with the biggest cultural changes reported in F3. It is noted that F3 has been involved in networked learning for a longer period than the others. F2 and F3 had explicit networked learning strategies and goals, were beginning to provide pedagogical support and had sympathetic and supportive management. F1, although having explicit networked learning strategies and goals, was not providing pedagogical support and did not appear to have particularly sympathetic management. In HE institutions attitudes were not particularly positive but the largest number of positive aspects were reported for H3, where there is support for the development of pedagogy and there is supportive and sympathetic management. None of the HE institutions had a separate networked learning strategy; although H2 and H3 did have explicit networked learning goals.

CONCLUSION

A combination of factors appears to have positive effect on staff attitudes, and therefore sustainability, of networked learning in these institutions: explicitly stated strategies and goals, high levels of staff training and support, particularly pedagogical support, extrinsic motivators for staff, such as pay increments or time allowances, and improved relationships with students, intrinsic motivators such as the desire to improve teaching and learning, and supportive, sympathetic management.

The findings of present study do not allow us to comment on many of the complex social and cultural influences that affect attitudes, but it does illuminate our understanding of some of those organisational factors that may be at least as important in influencing attitudes. Furthermore, to take a pragmatic view, it might be quite difficult for management to influence the personal factors whereas changes to the organisational influences indicated by the present data may be more effective.

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