# Does E-learning Policy Drive Change in Higher Education?: A case study relating models of organisational change to e-learning implementation

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# DOES E-LEARNING POLICY DRIVE CHANGE IN HIGHER EDUCATION?

## Models and Practice

By Sara de Freitas and Martin Oliver

# DOES E-LEARNING POLICY DRIVE CHANGE IN HIGHER EDUCATION?....1

## Abstract

*Due to the heightened competition introduced by the potential global market and the need for structural changes within organisations delivering e-content, e-learning policy is beginning to take on a more significant role within the context of educational policy per se. For this reason it is becoming increasingly important to establish what affect such policies have and how they are achieved. This paper addresses this question, illustrating five ways in which change is understood (Fordist, evolutionary, ecological, community of practice and discourse-oriented) and then using this range of perspectives to explore how e-learning policy drives change within a selected Higher Education institution. The implications of this case are then discussed and both methodological and pragmatic conclusions are drawn, considering the relative insights offered by the models and ways in which change around e-learning might be supported or promoted.*

## Introduction

E-learning policy and implementation is increasingly affecting how higher education institutions operate, are structured and are organised (DfES 2003a; de Freitas and Attewell 2004). This suggests that there is a relationship between e-learning policy and organisational change and development. Furthermore, e-learning strategy is increasingly being used as part of an organisations' change management strategy.

The recent governmental consultation report (DfES, 2003a) has demonstrated that the broad-based employment of e-learning within higher education institutions will be government-led. This is because the employment of e-learning may not have obvious cost savings - unless scalability can be provided. Due to its crosscutting nature, e-learning has been identified as a useful tool for change management within institutions. However, although reviews have been undertaken of policies within this area, there has been relatively little attention paid to how these have influenced practice (Conole, 2002).

These observations raise two inter-related questions:

1. Does e-learning policy drive change in higher education institutions?

2. If so, how can we track that interaction?

In order to answer these critical questions in the first section we will consider change by examining five specific models of organisational change (Fordist, evolutionary, ecological, community of practice and discourse-oriented). In the second section we will consider these models in relation to changes observed in one particular higher education institution: a large post 1992 university. The paper concludes by revisiting the two questions. It is proposed that this may form the basis for pragmatic and methodological debate about how e-learning policy relates to practice.

# Part one: Models of change

To explore how policy influences change we will outline five different models drawn from various disciplinary traditions.

## 1.1: A Fordist model of change

The presumed link between computers and efficiency is no new thing; since their inception, they have been closely associated with "the search for efficiency and rational organization of space and time […], the rational ordering and coordination of work by planning and authority […] and the formal centralization and hierarchical ordering both of the workplace itself and of its management and administration" (Rochlin, 1997: Ch 1 para 20).

Many approaches focusing upon organisations as a system and treating change as an engineering process, to be scoped, implemented and refined, can trace their roots back to procedures implemented by management at the Ford Motor Company. These, in turn, were based on Taylor's ideas about "scientific" management, a process of rationalisation and control intended to improve the efficiency of production (*ibid*: ch 4 para 15), including the detailed analysis and decomposition of complex tasks into simpler constituent parts.

Such approaches favour industrialisation, with an increasing division of labour; they also emphasise flexibility, which may involve re-training or else replacing core staff with contract staff (Ford *et al*, 1996). Specific Fordist values include:

- Increased specialisation
- Clearer division of labour
- Industrialised working practices

These approaches are rational and corrective; they involve a cycle of situational analysis and re-aligning the organisation. For example, Ford *et al* (1996) advocate that change within an institution should involve setting a direction then making changes to the structure, processes and infrastructure of the organisation. Setting the direction of change, for example, is argued to involve establishing a vision then repeatedly correcting it to bring changes back 'on course' as 'blockers' prevent progress and must be circumvented. Other features of this approach include making concepts and practices explicit, establishing direction, valuing clarity and seeking to keep the process of change under control.

## 1.2: The evolutionary model of change

All models of organizational change are predicated upon specific notions defining what an organisation is. In the context of the evolutionary model, an organisation is defined as 'goal-directed, boundary-maintaining, and socially constructed systems of human activity' (Aldrich 1979).

Following refinements of Darwinian theory, evolutionary theory has been adopted in many different disciplines. Within organizational theory, evolutionary approaches have developed from the work of theorists including Campbell (1969). Aldrich (1999), building on this work, has developed an evolutionary approach to change in organisations drawing upon four evolutionary processes: variation, selection, retention and struggle. These processes, Aldrich argues, 'subsume other processes such as mutation, recombination, random drift, learning, institutionalization, convergence, reorientation, entrepreneurship, cooperation and competition,' (Aldrich, 1999, p. 20).

1. *Variation* is 'any departure from routine or tradition' (*ibid*, p. 22) and can occur *intentionally* 'when people or organizations actively attempt to generate alternatives and seek solutions to problems' (pp. 22-3) or *blindly* 'from accidents, chance, luck, conflict, malfeasance, creative exploration, and so forth' (Brunsson, 1985 and March, 1981, quoted in Aldrich, 1999).

2. *Selection* operates according to 'forces that differentially select or selectively eliminate certain types of variations' (*ibid*, p. 26). Selection criteria may be 'set through the operation of market forces, competitive pressures, the logic of internal organizational structuring, conformity to institutionalized norms and other forces' (p. 26).

3. *Retention* 'occurs when selected variations are preserved, duplicated, or otherwise reproduced so that the selected activities are repeated on future occasions or the selected structures appear again in future generations' (p. 29).

4. *Struggle* 'occurs in organizations, as members pursue individual incentives as well as organizational goals' (p. 32).

## 1.3: The ecological model of change

A number of theorists in the field of ICT development have adopted an interest in using ecological models to evaluate change and innovation in increasingly complex contexts (Nardi and O'Day, 1999; Tatnall and Davey 2003; Truran 1997). Tatnall and Davey (2003) contend that 'most models of innovation and change in organisations are too simplistic to allow a useful view of ICT in training, and its development, as a complex system involving a multitude of both human and non-human interactions'. They posit the ecological model as better for describing complex social situations:

> In ecology, organisms are seen to operate within a competitive environment which ensures that only the most efficient of them will survive. In order to survive, they behave in ways that optimize the balance between their energy expenditure and the satisfaction they obtain from this effort. These two key principles underlie the discipline of ecology, which is concerned with the relationship of one organism to another and to their common physical environment. (Tatnall and Davey, 1999, p. 15).

Nardi and O'Day (1999) define an information ecology as 'a system of people, practice, values, and technologies in a particular environment' (Nardi and O'Day, 1999, p. 49). Furthermore, 'an information ecology is a complex system of parts and relationships. It exhibits diversity and experiences continual evolution' (Nardi and O'Day, 1999, pp. 50-1). They also elaborate how change is to be interpreted from this perspective:

> Change in an ecology is systemic. When one element is changed, effects can be felt throughout the whole system. Local changes can disappear without a trace if they are incompatible with the rest of the system (Nardi and O'Day, 1999, p. 51).

This model of change foregrounds the relationships between the individuals operating within organisations. It relies on a consideration of the relationships within the organisation rather than a notion of an organisation as separate from its social or intellectual capital.

The ecological model, as defined by Tatnall and Davey, considers change according to:

1. *Energy expenditure and satisfaction obtained.* The take up of e-learning across an organisation requires high expenditure of energy including cost, time and training. In ecological terms this expenditure must be balanced with satisfaction obtained.

2. *Competition.* Within an organisation there may be resistance to innovative technological development due to perceived competition between individual staff, for example some staff may know how to use the tools and other may not.

3. *Cooperation*. Some staff members may feel at ease with the new ICTs and feel able to cooperate with their development in the particular organisation. These people may be 'early adopters' or innovators.

4. *Filling a niche.* ICT development may fulfil a niche, for example providing extra support for distance learners.

## 1.4: A community of practice view of change

A socially-oriented model of change is provided by Wenger (1998), who uses the notion of communities of practice to describe the dynamics of organisations and to explain the actions of the people within them. By treating organisations as collections of individuals, rather than as systems or organisms, a different perspective on the adoption of e-learning emerges.

Within Wenger's analysis, *practice* is inherently local; its *meaning* is determined by mutual interpretation with other local actors. Practice may also be represented through the creation of *reifications* (artefacts, concepts, labels, *etc*) that can 'travel' beyond the boundary of the community that created them, entering into the practices of others. Within his study, for example, one reification was an insurance claim analysis sheet, developed by the finance department but passed on to the claims processing staff to use when they answer telephone enquiries. This represented financial processes in a way that could be implemented by other communities.

Importantly, such boundary-crossing artefacts are not inherently useful, beneficial or successful. Their adoption relies on them being made sense of within a new context by a new group of individuals. Whatever designers intend artefacts to be used for may bear little resemblance to how they are eventually used *in practice*, or what they *mean* to its new users. In Wenger's study, for example, the claims processors did not understand why the spreadsheet worked the way that it did. What it *meant* to them was that they were marginal within the organisation: this spreadsheet became a sign that they did not have to understand why the company operated as it did, so long as they followed certain forms of practice specified by the finance department (i.e. their practice was *aligned*). Thus Wenger describes such artefacts as operating within an *economy of meaning*, in which the meanings of some communities are more important than others.

## 1.5: A discourse-oriented view of change

Within recent theories of the change process, the influence of rational planning has been argued to be constrained primarily to intentions. By contrast, the process of change is treated as being fluid, chaotic and complex (e.g. Fullan, 1994). Rather than focusing on plans or 'before and after' comparisons, such perspectives study the day-to-day interactions and micro-politics of the change process.

Key to this, it is argued, are the conversations that people have – by negotiating practices and their meaning, forms of work are legitimated or de-legitimated and lessons are learnt. This does not mean that change is uncontrolled, however: the intervention of agents such as consultants (Shaw, 2002) or workplace educators (Farrell, 2001) play an important role in influencing how *discourses* (understood as ways of talking about something) are acquired and used. For example, Shaw describes how consultants can foster individuals' learning by creating spaces to discuss what new policies or procedures mean and how they might be interpreted. In contrast, Farrell describes how new discourses can be used to dismiss existing power structures by re-interpreting them, as when a supervisor (who has authority and respect on the basis of expertise) is re-cast as a teacher (and thus expected to share, not judge, knowledge).

Within such analysis, close attention is paid to the *naturalisation* of discourses – the way in which particular perspectives become taken-for-granted and unquestionable. The contrast between the two studies above arises from the emphasis in Shaw's study upon

questioning and re-interpreting naturalised discourses and the emphasis in Farrell's study on making new discourses seem natural (and thus safe from challenge). These naturalised discourses reflect particular values, which then determine what 'counts' as good, acceptable or illegitimate forms of practice or knowledge.

# Part two: E-learning and practice

One way of describing these organisational changes, in terms of internal institutional development, is through *top-down* or *bottom-up* development. Top-down approaches are characterised by policy and strategy development instigated by members of upper management and then propagated throughout the organisation. Alternatively bottom-up approaches are characterised by pilot and individually funded projects often instigated by innovative practitioners in a rather more uncoordinated way. Both approaches have significant flaws: the one is not consultative and inclusive enough, and the other creates pockets of excellence and areas of inactivity. These approaches also fail to describe the complexities of organisational shape and reflect a regressive hierarchical model of organisations that is increasingly challenged in practice. Instead most organisations would benefit from a combined approach to e-learning development mixing top-down and bottom-up policy, strategy and activities, interacting and informing one another. This dual perspective is illustrated in the following study and its analysis.

## 2.1 Case study

The case study is a new university with large student numbers from diverse cultural groups dispersed over several sites. Most students are full-time learners straight from school or college.

This institution made a significant commitment to e-learning both to support teaching and learning practice and to widen participation by offering greater flexibility for learners. In order to achieve institution-wide e-learning adoption, the university followed a top-down approach. A champion within upper management supported the necessary institutional changes through attendance at relevant high-level meetings and committees. Various forms of staff and learner support have been introduced, initiating a wide range of e-learning services including the broad and integrated use of an off-the-shelf learning management system, a dedicated budget, integration between support staff and academic faculties and the development of an integrated institutional strategy.

While staff were consulted during the change process, there were some who remained resistant. However, through the use of feedback in the form of questionnaires and through dedicated training sessions, many tutors began to see the advantages of the increased course development support, which was offered. Greater tutor technical as well as pedagogic support was provided in tandem. This allowed the more resistant staff to gain the tools and skills that were needed to inform e-learning course development.

Encouraged by the benefits of scalable and sustainable development within the organisation to support learners and to provide greater flexibility, this institution has made a substantial commitment to e-learning in order to support innovative teaching and learning practice and has netted benefits such as: good technical support for early adopters, flexibility for the learner, provision for staff and learners to work off-campus, integration of student records and increased central funding for e-learning initiatives.

## 2.2: Analysis: Fordist model

The explicit commitment to e-learning, to be implemented through a top-down approach, illustrates what the Fordist model of change calls direction setting. It follows the classic pattern of explication of a vision combined with corrective actions when blocks are encountered. Two examples of blocks are illustrated by this study. The first is found within the "high-level meetings and committees", suggesting that there was resistance to this new direction from the various levels of institutional management; a 'champion' was used to bring the process of change back on course. Importantly this champion was from "within upper management", providing authority with which to sway discussions and decision-making processes. This use of authority illustrates why such models are often described as "power-coercive" (e.g. Land, 2001). The second block arises from the resistance of academics. Rather than coerce these individuals, feedback and training is deployed – what Land describes as a "normative-re-educative" approach. The common principle in both cases is that the attitudes of individuals, not the vision, must adapt. Success thus arises from the re-alignment of individuals' attitudes to the dominant vision. This is clearly in line with the ideals of Fordist approaches:

> An ideal employee not only did what she was told, but stayed strictly within designated boundaries and task specifications. These in turn were set by managers using superior knowledge and rational methods of analysis. (Rochlin, 1997: Ch 4, para 16).

This system of change also illustrates several Fordist values. There is, for example, increased specialization (for example, through the creation of dedicated services and budgets), leading to clearer divisions of labour and thus industrialised working practices. This clearly echoes the decomposition of complex tasks and the specialisation of working roles (*ibid*). Similarly, there is repeated emphasis on flexibility, with staff being re-trained so as to adopt more flexible working practices.

## 2.3: Analysis: the evolutionary model

The top-down and structured commitment to e-learning has allowed for *intentional* rather than *blind variation* operating in the organisation. The development of e-learning services itself constitutes a variation to traditional teaching and learning practice and is expressed as an alternative or potential solution to a perceived problem. The alternative strategy is defined in terms of offering greater flexibility of delivery of teaching and learning

materials on one level and as providing better integration of student records and tracking on another.

There is debate within academic circles about which unit of analysis should be adopted in evolutionary approaches: activities and structures on the micro-level or bounded entities on the macro-level. However, change in this case study has been happening on both levels, as the implementation of an institution-wide strategy necessitates changes to activities and structures, including 'routines, competencies and jobs' (Aldrich, 1999, p. 21). Similarly change in the organisation also affects the 'bounded entity', that is, the 'groups, organisations, populations, and communities' that support those particular activities and structures (Aldrich 1999, p. 21). On the micro-level, learning technology and support posts have been developed with newly defined competencies and jobs. Similarly, on the macro-level, new units have been established, new communities of practice have emerged and the organisation as a whole has needed to adapt to these fundamental changes.

The benefits of *intentional* rather *blind variation* within the institution are significant, particularly in an increasingly competitive environment where small advantages may affect recruitment, retention and motivation. Conversely *blind variation* - or enforced changes from external organisations and forces - could be damaging to the evolution of an organisation, which, for example, may become over-reliant upon external forces.

In turn, this increased and intentional variation within the organisation has fostered new *selection* criteria that are determined in terms of a range of factors including market forces, competition and consistency with the institutional mission. E-learning strategy in this case study has been designed in line with organisational objectives.

*Retention* allows for duplication of successfully selected variation. In this case study, retention of successful variation would include the sharing of innovative teaching and learning practice across the institution. Notably, 'when environments change slowly, replication of selected variations is the key to continuity in organisational existence' (Aldrich 1999, p. 30). This gives emphasis to the need to share practice and provide opportunities for cross-fertilisation of good practice. Replication occurs 'via people observing one another, through training and education, learning appropriate rules of behaviour, and interacting with machines and documents' (Aldrich 1999, p. 31).

Underpinning variation and selection is competition for finite resources. *Struggle* occurs within organisations as the needs of the individual vie with the goals of the organisation. This is particularly the case in academic institutions where research time for publications and time for teaching preparation and practice are competing interests. Notably struggle is occurring consistently between higher education institutions as they vie for research funding opportunities. In this way struggle is occurring both within the organisation on a micro and macro level and with external organisations.

Clearly this case study benefits from the scalability and sustainability that is implied by an institution-wide take-up of e-learning. Notably, this advantage may not hold in all cases. Smaller or more disparately located academic organisations such as further education colleges or small universities may find the financial impediments to this top-down approach prohibitive. However e-learning does offer unique opportunities for issues that are as relevant to small as large educational institutions, for example widening participation and ICT literacy schemes may benefit from the introduction of e-learning materials which may encourage new methods of engaging previously excluded learners. Greater flexibility may also be offered for remotely located and distance learners through delivery of e-learning and online learning materials to mobile devices or across the Internet. Smaller institutions may rely more upon *blind variation* and *struggle* to achieve e-learning take-up, which may be more consistent with their economic reality, teaching workloads and lack of opportunities for scalability. The description of change in terms of the evolutionary approach may well provide a helpful description for how change is operating through an organisation, in particular there are clearly processes operating both within and outside of the organisation on micro and macro levels, and clearly these changes are connected.

## 2.4: Analysis: the ecological model

The development and implementation of e-learning across this university has necessitated a high expenditure in terms of cost of roll-out of the managed learning environment, the associated staffing costs and the additional training needed to support such a coordinated implementation of strategy. However, conversely, the satisfaction gained has netted considerable benefits, not least a raised profile, greater flexibility for learners, possible benefits in terms of widening participation to distance learners and the provision of innovative multimedia materials. In this sense the main terms of the ecological model of change have been fulfilled.

The emphasis upon the relationships operating within the organisation are also fulfilled by the implementation of the strategy, in terms of creating new structures of support for tutors including increased training, technical and pedagogical support. Additional funding has positive benefits in terms of increasing staffing levels and this in general may have a positive affect upon the existent staffing body. For the learners, increasing the different modes of access to each other and support staff means they can enjoy support on a 24/7 basis. Internal surveys have revealed that the learners are positive about the implementation of a managed learning environment due to their increased access to learning materials whilst both on and off-campus.

In terms of competition within the organisation there is necessarily some resistance to the extensive changes brought about by such an extensive top-down roll out of the e-learning strategy. Some tutors have expressed disinterest or resistance to the new systems and approaches. The organisation has approached this resistance by giving additional training

where necessary, and staff has found that in some cases tutors who initially were not interested in the new systems have, with the necessary training and support, found that their own teaching practice can be positively affected by new approaches to delivery and increased online and asynchronous support. However this may not be the case with all tutors; moreover, resistance may be more significant in institutions where no top-down approach is in use and where there is no additional support for developing e-learning. In these cases some tutors may express greater resistance, feeling antagonised or isolated in the face of such rapid change. The keys to addressing this resistance lie in good technical and pedagogical support, and the introduction of the feedback loop, career incentives and professional collaborative support sessions.

In this case, the early adopters clearly do feel at ease with the new technologies and modes of communications. These individuals can share their knowledge and experience with other staff during e-learning days held annually, allowing for informal information transferral within the organisation and providing an important focus for both the early adopters and for new enthusiasts. Cooperation therefore can be used positively within the organisation to inform future development, but crucially none of this can take place without a significant budget and input from upper management, as is consistent with top-down approaches.

The niche filled by ICT development in the university has benefited from the top-down approach; however, the vision and speed of change have also created benefits such as attracting additional funding streams, gaining a reputation for ICT development, providing a significant focus for future e-learning development across the institution and providing the potential for collaboration with other institutions for future developments.

## 2.5: Analysis: the community of practice model

The production of policies, visions and related documents by groups of senior managers can be interpreted as the production of reifications of practice. Such documents 'stand for' the thought and values arising from discussions of strategic concerns and priorities, values (moral and economic) and practices. The remainder of this case illustrates how such reifications can cross boundaries and influence (align) the practices of others.

Such documents, when received by other communities (such as departments or other committees), cannot just be 'implemented'; first they must be interpreted in relation to practice. This reflects the view that meaning is not universal, somehow transmitted through the fabric of such documents; instead, it is constructed anew as the relationship between these documents and existing practice is considered.

Clearly, such re-interpretation means that practices may diverge rather than align. To minimise this tendency, a 'champion' accompanies the document within particular committee settings. Similarly, within departments, the document does not arrive on its own but is accompanied by staff development. The individuals who take on this role are

guiding the meaning-making that the new communities undertake. The role of such boundary-crossing individuals ('brokers') is to draw on their experience within one community of practice to inform the practices of another. Where these communities are of equal status, this is likely to take the form of a reconciliation of different expectations. Where one community has power over another – as is the case here – such reconciliation may involve the less powerful groups' interpretations being constrained. This constraint leads to practices being influenced in similar ways through the integration of these documents, resulting in the cross-institutional alignment that is interpreted here as a 'successful' implementation. Where this does succeed is in creating coherence and standardisation. What it loses, however, is the creative variation that arises from the interpretations of different communities.

## 2.6: Analysis: the discourse-oriented model

The success described in the case study can be viewed as the normalisation of a new discourse. The history of this change is clear from the case study. This discourse – of flexibility through e-learning – originated with senior management; it then passed to various discursive spaces (meetings and committees) in which the original formulation might be challenged or re-interpreted. To militate against this, a representative of senior management participated in these committees in the role of discourse technician, 'fixing' the ways in which people use the discourse by shoring it up through the use of other already-naturalised discourses (the educational market, widening access, *etc*). Their role was to "support" – in contrast to the Fordist model, this perspective does not suppose that the new discourse could simply be imposed. Although a detailed transcript of such meetings would be necessary to evidence this, this role would have involved argument and persuasion that the new discourse was credible and useful so that some moderated form of it was accepted. Arguably, this suggests that the role of such an individual is what Land (2001) would classify as "normative-re-educative", even though the same action was classified as "power-coercive" under the Fordist interpretation.

The next step in the spread of this discourse involves its re-formulation in standard texts (financial plans, strategies, *etc*) that are then passed on to staff. Whilst some adopt these discourses without challenge, others resist, at which point staff developers intervene as discourse technicians. "Through dedicated training sessions, many tutors began to see the advantages", suggesting that they too have been re-educated (aligned).

Importantly, although this case results in consistency, it is arguable that it should not be described as a success from a discourse-oriented perspective. As presented, there is little evidence either of modification to the discourse or of a change in the discursive practices of senior management. From this perspective, whilst staff may have been re-educated, the senior management team seem to have learnt little.

## Part three: Discussion

Each of these approaches to considering change relating to e-learning in higher education institutions has inherent problems. For example, within the evolutionary approach there are questions about whether a focus upon the organisation lessens the importance of the human relationships that comprise the organisation, or whether there is an overemphasis upon relationships at work and a relative neglect of organisational procedures and processes. Similarly, many question the neglect of personal and political considerations in the Fordist model, and it is fair to argue that the discourse-oriented model offers little in the way of guidance to those planning change, no matter how useful it might be at analysing it. Such limitations are inevitable, given the specialised contexts and purposes for which each model was developed.

Such limitations give rise to contradictions in the interpretations offered for this case. For example, under the Fordist account the role of the champion is to use their authority to ensure a new approach is accepted; within the discourse-oriented analysis, the same role is re-cast as educative rather than coercive. The models are thus inconsistent in their explanation of the use of power within processes of change.

However, whether viewing change as evolutionary or ecological it seems the safest course for maintaining long-term survival and security is to maintain flexibility and fluidity, as ongoing change is an inherent component of survival. The same conclusion holds, with some qualifications, of the community and discourse perspectives. Arguably, both would consider openness and flexibility in relation to proposed changes as vital to individuals' meaning-making processes, through which they learn to adapt to the changes. Only the Fordist account seems to contradict this position; although it places explicit value on flexibility, it frames change as a series of discrete moments – decisions – rather than as a fluid process. From this perspective, changes should be implemented quickly so that 'normal' business may resume.

Whether or not the changes identified in the case study arise from the nature of e-learning is not conclusive; what is clear, however, is that from the majority of perspectives *collaboration* is necessary in order to produce high level e-learning materials and courses (DfES 2003; de Freitas and Attewell 2004). Within the evolutionary, ecological and community perspectives such collaboration provides the opportunity for repertoires of practice to spread. Indeed, from the discourse-oriented perspective, collaboration is all there is in the process of change. Again, only the Fordist perspective differs, placing an emphasis on clear divisions of labour rather than integration across such divisions.

## Conclusions

Answering the question of whether e-learning policy drives change clearly depends upon the way that change is being conceptualised. What this article has demonstrated, through

use of a case and from a range of theoretical perspectives, is that such policies can drive change. More importantly, however, an insight has been provided into *how* such change takes place and what its *impact* is. Specifically, the analysis suggests that there will inevitably be resistance to change whilst its impact upon practice is debated and made sense of. Moreover, opportunities for collaboration and discussion are consistently identified as being helpful within the change process.

This analysis does suggest a similarity in the way change is perceived, allowing some extrapolations to be made. If shared categories are determined in this process of analysis then the relationship between e-learning policy and implementation can be understood and therefore controlled to some extent. Based on this analysis, the following factors should be considered when developing and implementing e-learning strategy across an organisation:

- Whether a top-down, bottom-up approach or a combined approach would yield better results for implementing an e-learning strategy
- Consideration of the scale and extent of e-learning already being undertaken within the organisation
- Consideration of the amount of investment needed to achieve desired results of implementing an e-learning strategy, including a costing of additional technical and pedagogical support, additional training extra staffing costs and extra hardware/software costs
- Compare how other similar organisations have undertaken e-learning strategy implementation and with what results and pitfalls
- Conduct a consultation with experts, staff and learners within the organisation to establish objectives and needs of user groups
- Consider how partnerships and collaboration both within and outside the institution could provide cost savings and better resource access
- Consider how the e-learning strategy would affect change in the organisation according to two or more models listed above and correct the strategy accordingly

Interestingly, however, there are also discrepancies between these accounts that could be explored from a methodological perspective through the study of further cases. For example, explanations of the use of power are inconsistent; similarly, the production of clear documentation is deemed as helpful and facilitative within the Fordist, evolutionary and ecological models, but as a cause of resistance (whilst they are re-interpreted) within the community and discourse-oriented models.

Nonetheless, this analysis suggests that there is enough consistency across accounts to permit the synthesis of relevant case studies. We propose that to develop this situation, shared models of evaluating change be adopted across a range of higher education institutions in order that change processes can be mapped across the sector. Our analysis demonstrates that the evolutionary model and discursive model provide complementary perspectives on these processes, suggesting that insights from both could usefully be combined in order to provide a macro/micro level of analyses of change. There is clearly value in the possibility of developing a diagnostic tool, to be used in consultation across higher education and in concert with DfES and HEFCE strategy, so that the benefits and pitfalls of introducing e-learning across a higher education institution can be analysed and shared more effectively.

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