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Building trust and shared knowledge in communities of e-learning practice: collaborative leadership in the JISC eLISA and CAMEL lifelong learning projects

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Abstract

Trust and collective learning are useful features that are enabled by effective collaborative leadership of e-learning projects across higher and further education (HE/FE) institutions promoting lifelong learning. These features contribute effectively to the development of design for learning in communities of e-learning practice. For this, reflexivity, good leadership and the capacity to engage in innovation is crucial to team performance. This paper outlines a serendipitously useful combination of innovative models of collaboration emerging from two 2005–06 UK e-learning pilots: the Joint Information

Systems Committee (JISC) e-Learning Independent Study Award (eLISA) and JISC infoNet Collaborative Approaches to the Management of e-Learning (CAMEL) projects. The JISC-funded eLISA Distributed e-Learning (DeL) project set up a collaborative partnership among teachers to try out LAMS and Moodle using study skills in e-learning. Simultaneously, the JISC infoNet CAMEL project developed a model of collaborative approaches to e-learning leadership and management across four UK HE/FE institutions. This paper proposes two new theoretical collaborative team leadership and operational models for e-learning projects, including indices of trust, reflexivity and shared procedural knowledge, recommending that these models are further developed in future communities of e-learning practice in institutions promoting lifelong learning.

Introduction

e-Learning teams thrive in collegial environments in which participants can share their knowledge. To improve practice in e-learning in collaborative lifelong learning projects, learning technologists benefit from engaging proactively in teamworking, collective learning and evolutionary developments in shared knowledge construction (van Aalst, 2006; Scardamalia & Bereiter, 2003; Scardamalia, 2002). e-Learning teams also profit from collegial participation in an atmosphere of trust when the input of every team member is valued in constructively critical ongoing analyses of team performance without fear of reprisals and without undue competition (Hoegl & Gemuenden, 2001; Hoegl & Proserpio, 2004). This requires a degree of openness and confidence engendered through the collegiality and trust (Mason & LeFrere, 2003) enabled by effective, innovatory styles of leadership and management adapted to suit e-learning projects.

Collaborative engagement in the improvement of e-learning practice gains from a conscious departure from conservative 'top-down' styles of authoritative institutional leadership (Jones & O'Shea, 2004). Project teams also benefit from the freedom to foster local cultural authenticity, in specific avoidance of the kinds of spectacular mistakes made in the UK eUniversity experience (Conole, Carusi, De Laat, Wilcox & Darby, 2006), in which under-recognition of the importance of cultural relationships between the different e-learning project stakeholders contributed to culture rifts and to ultimate failure. Innovative projects need to be freed up from potential blockages caused by the rivalry, tension and competition that has sometimes been a feature of inter-institutional working in promoting lifelong learning (Guinsburg, 1995).

Delivering e-learning innovations in collaborative teams

e-Learning innovations can be effectively delivered through collaborative team-based working, as prior literature on organizational teams suggests (Hoegl & Gemuenden, 2001; Hoegl & Parboteeah, 2006; Nonaka & Takeuchi, 1995; Sethi & Nicholson, 2001; Sicotte & Langley, 2000). Yet successful team performance enabled through e-learning project leadership and management is not automatically achieved. Educational institutions are slow to change leadership styles to accommodate the distributed, flexible and

democratic partnership requirements of e-learning projects trialling new software, tools and learning innovations (Jones & O'Shea, 2004). Furthermore, when distributed team processes are consciously evolving into the development of a wider, intentionally designed community of practice (CoP) for e-learning, this can prove to be a challenge to existing institutional hierarchies. Outward-facing professional engagement by practitioners with external networks of peers can pull against the ties of internal managerial allegiances (Hughes, 2000, pp. 6–8). Tensions between the safety of known procedures within existing institutional hierarchies and the risky benefits of new ventures are highlighted by George Pór (2004) in his writings on the ability of organizations to respond to the need for radical innovation:

> In times of accelerated and discontinuous changes, only growing capacity for radical innovation will ensure that the company can catch up with its markets that innovate faster than any company can. Yet numerous research studies have shown that "it is often difficult to get support for radical projects in large firms where internal cultures and pressures often push efforts toward more low risk, immediate reward, incremental projects." (p. 12)

The flexible structure of inter-institutional communities of practice can enable radical innovations to be encompassed more readily than in fixed internal organizational structures. New collaborative e-learning networks profit from a conscious, adept and sensitive local adoption and implementation of principles to promote CoPs (Kienle & Wessner, 2006) to ensure a greater chance of success.

Intentional communities of e-learning practice

The term 'communities of practice' proposed by Lave and Wenger (1991) encompasses the socio-situational learning that takes place amongst a group of people who share a passion for a topic, issue, or series of problems and who interact together to share their expertise and knowledge on this subject on a long-term basis. Membership can be distributed across different geographical regions, organizations and subject areas, although the area of focus of interest for the community is shared in common (Wenger, McDermott & Snyder, 2002, p. 4; Smith, 2003; Wenger, 2005). Building on Wenger's original definition, Pór (2004) notes that communities of practice are the 'fastest-growing type' of learning organization, observing that CoPs:

> and the interstices between them—when supported by the right infrastructure and unfettered by bureaucracy—are the most potent source of permanent innovation… . Communities of practice are self-organizing and self-governing groups of people who share a passion for the common domain of what they do and strive to become better practitioners. They create value for their members and stakeholders… developing and spreading new knowledge, productive capabilities, and fostering innovation. (pp. 7–8)

Spontaneously evolving CoPs can be differentiated from intentionally designed project-based CoPs (Pór, 2004), such as those emerging in the e-learning projects reported in this paper. e-Learning projects within an intentionally designed CoP encompassing different higher education (HE) and further education (FE) institutions progressing lifelong learning require specific strategies, aims, values and organizational models

designed to suit flexible networking and democratic work practices between practitioners engaged in collaborative learning, built on relationships of trust (Mason & Lefrere, 2003). The CoPs discussed in this paper should be distinguished from the online 'quasi-communities' identified by Hung and Nichani (2002). The models defined here are based on teams of people meeting face-to-face with supplementary additional online activities and communication to build a longer-term community of practice. Both face-to-face and online CoP communications had elements of formal professional and informal social interaction. Since these communities were building towards a 'thick' rather than 'thin' flow of knowledge in Hung and Nichani's terms (2002, p. 26) they could be characterised as 'nascent' intentional CoPs, which, over time, with continued regular interactions, would mature into full CoPs. Both professional and informal social elements involved were facilitated to enable slower elements of community identity formation and centre-periphery participation to emerge gradually.

Team performance in innovative e-learning projects is crucially affected by the degree to which the team involved has high levels of social and project management skills and also fosters reflexivity amongst team members (Hoegl & Parboteeah, 2006). These skills can be facilitated and enhanced through collaborative leadership and a willingness to engage in critical reflection to improve practice. For example, in response to the question, *'What are the most important qualities needed, now, to develop good leadership?'* in a leadership survey on the lifelong learning sector carried out as part of this work, one respondent answered:

> Vision and a willingness to be innovative even if this leads to short term 'pain'. This then needs to be coupled with an ability to persuade others of the validity of this vision by allowing—and listening to—open debate and constructive challenge to such innovations from those expected to implement change. Courage to follow through on 'painful' decisions. (Respondent 41, leadership survey, Jameson, 2006)

Traditional leader-centric vs. flexible collaborative distributed-coordinated models of leadership

Fixed top-down institutional hierarchical models of leadership and management tend to be challenged by the flexible approaches and collaborative ethos appropriate to intra-institutional e-learning project teams (Jones & O'Shea, 2004). Traditional concepts of educational leadership for institutional e-learning often envisage e-learning leadership as situated solely within top layers of hierarchical management structures. The transactional leadership model, eg, is based on the conventional idea that senior leader-managers exercise top-down power over subordinate followers, controlling their actions more or less coercively or benevolently on the basis of 'transactions'. These contractual exchanges comprise benefits given by employers (salary, promotion, etc) for services carried out by employees (tasks done, outputs accomplished, etc). In this instrumentalist but nevertheless sometimes effective normative model, leadership is almost invariably regarded as the property of hierarchical 'managers', while followers comprise the relatively property-less 'managed' at the opposite end of the equation of power. Most traditional leader/manager–follower/managed relationships are based on this customary duality.

More progressive concepts of educational leadership have embraced a number of new leadership models, including that of transformational leadership. Early transformational leadership theorists (Bass, 1985; Burns, 1978) tended to conceptualise transformational leadership as coexistent with transactional elements of employer–employee contractual task-focused management exchanges. Later leadership theorists, building on this framework, increasingly queried leader-centric approaches, highlighting the limitations of viewing leadership as residing solely at the top of hierarchical leader–follower relationships, notably in education (Lumby, Harris, Morrison, Muijs & Sood, 2004; Mehra, Smith, Dixon & Robertson, 2006). Hence, it is possible to separate out 'leadership' from 'management' and envisage distributed-coordinated leadership roles within a collaborative e-learning team being variously conjoined, or not, with positional authority, in order to promote the structural flexibility that radical e-learning innovatory project-based CoPs require (Lisewski, 2004; Pór, 2004). As Hung and Nichani (2002) observe, CoPs are well-served by different types of informal leaders who 'make communities work', such as connectors, mavens and salespeople (p. 27), as identified by Gladwell (2000, p. 14).

The e-learning projects reported in this paper consciously adopted values-based distributed and collaborative forms of team leadership in FE/HE to develop trust to enable genuine dialogue between practitioners for the benefit of knowledge exchange between partners, of the kind that takes place in a CoP. Recent research indicates that leadership of a distributed-coordinated kind is more effective for higher team performance than either traditional leader-centred or fully distributed leadership models (Mehra *et al*, 2006, p. 10). This paper builds on prior research to propose a new model for distributed-coordinated collaborative team leadership linked with communities of e-learning practice.

Methodology

For this theoretical study, a literature review of e-learning practice in relation to lifelong learning, collaborative leadership, team-working, communities of practice and the operations of trust and innovation in project teams was carried out. In recognition of the importance of emergent models of collaborative leadership for the successful achievement of outcomes in e-learning projects, theoretical models of collaboration deriving from extensive team discussions held during the meetings of two 2005–06 e-learning projects were investigated. Formal project and evaluation reports, scholarly papers and quantitative and qualitative data for both projects were studied (Ferrell & Kelly, 2006; Inspire, 2005; Masterman, Jameson, Walker & Ryan, 2006). Tentative new theoretical models for collaborative working were discussed and drawn up. These were considered in relation to quantitative and qualitative data on leadership in the lifelong learning sector collected from 79 participants in an online survey on leadership using *surveymonkey* in 2006, and with results of face-to-face interviews carried out with 10 leaders operating at the 'outstanding' and 'good' end of Ofsted accreditation in 2004–05, analysed using Tropes Zoom semantic search software v.6.2. Two new models for collaborative leadership and reflexive operational teamworking in e-learning for lifelong

learning projects were drawn up, analysed comparatively against prior models of leader-centred, distributed and coordinated team leadership and reported in this paper, with recommendations for future research and implementation. We trace briefly the collaborative working practices developed in the above-mentioned projects, proposing two new theoretical models in relation to communities of e-learning practice. Detailed findings from the e-Learning Independent Study Award (eLISA) and Collaborative Approaches to the Management of e-Learning (CAMEL) projects underpin and extend this paper and are reported elsewhere (Ferrell & Kelly, 2006; Masterman *et al*, 2006). The in-depth results of the online leadership survey and analysis from interviews with leaders carried out in the lifelong learning sector are reported in Jameson (2006) and Jameson and McNay (in press). This paper concentrates on the theoretical models of distributed-coordinated collaborative leadership and teamworking for communities of e-learning practice outlined below.

The JISC eLISA project

The JISC Distributed e-Learning (DeL) eLISA 2005–06 pilot project was based on a partnership developed in 2002–04 between the University of Greenwich and Greenwich Local Education Authority to develop e-learning study skills for schools, informed by prior Department for Education and Skills (DfES) research indicating a significant proven relationship between the benefits of effectively managing study support in schools and colleges and achievement by learners (MacBeath, Kirwan, Myers, McCall, Smith, McKay *et al*, 2001). From initial Independent Study Skills Award (ISA) print-based resources, the eLISA team developed materials in e-learning for 14–19+ learners, adult students and teacher-practitioners. In January 2005, the UK Joint Information Systems Committee (JISC) Distributed e-Learning Programme (JISC, 2005) funded the eLISA project to migrate study skills content into e-learning format, testing and repurposing resources for trialling in practitioner and learner workshops. Evaluation results from the Learning Activity Management Systems (LAMS) and Moodle learning sequences developed for and trialled with participants from the London Borough of Greenwich are reported in detail elsewhere (Masterman *et al*, 2006), complementing work done in the evaluation of LAMS itself in the final report on practitioner trials (Masterman & Lee, 2005).

Using study skills in e-learning format can be helpful to encourage students with different learning needs. The potential of e-learning to satisfy different learning styles and greater cognitive development may be significant if materials are well-designed. Prior work on student multimedia authoring indicates that beneficial results can be obtained from enabling students to be designers and producers rather than merely consumers of knowledge (Jameson, 1999a; Mayes & de Freitas, 2004; Saloman, Perkins & Globerson, 1991). Student multimedia production enables incorporation of students' own content, providing fruitful opportunities for involvement, motivation, raising aspirations for progression, facilitating engagement and student support. The eLISA team envisaged that providing multi-accessible pathways in study skills might enable learners with different ability levels to access materials effectively in a supported student learning environment (Jameson & Squires, 2000; Jameson, 1999a, 1999b), also enabling collaborative learn-

ing between peer groups (Irish & Trigg, 1989). An online CoP in Moodle was set up between the partners from schools, colleges and HE to take forward the project and to support the development of effective practice in e-learning in collaborative ways amongst the professional teachers, managers and technical staff involved. This was underpinned by a shared 'aims and values' document outlining the importance of democratic collaborative styles of working for the project.

The JISC infoNet CAMEL Project

The JISC infoNet (2006) CAMEL pilot project developed a model for collaborative approaches to e-learning management across four UK institutions in 2005–06. CAMEL explored the development of a CoP amongst practitioners working on e-learning, information systems and learning technologies relating to lifelong learning. Led by JISC infoNet in partnership with JISC, the Association for Learning Technology (ALT) and the Higher Education Academy, the project set out to include participants from both FE and HE in support of the UK government's targets for widening participation. Following an open call, four institutions were selected to pilot CAMEL: Leeds College of Technology, Loughborough College, the University of Greenwich and Staffordshire University—two institutions from FE and two from HE. Bringing together FE and HE to share good practice benefited both sectors: considerable cross-over between the sectors exists already and will increase in coming years. JISC infoNet (2005) and the CAMEL partners jointly aimed to build on JISC infoNet's experience of bringing sectors together by demonstrating examples of cross-sectoral HE/FE e-learning activities.

The CAMEL pilot proposed to develop networks of continuing good practice, stimulating communication between group members and coordinating cross-functional discussions on key issues. The project was based around a series of structured study visits supported by facilitated online interaction in a JISC mail list and a LAMS activity sequence. Differing approaches to the establishment of good practice in e-learning in HE/FE were 'showcased' and discussed at each study visit. CAMEL's final output is a publication and guide for the development of cross-sectoral, team-based e-learning CoPs. The ethos of CAMEL was summarised by Ferrell and Kelly (2006) as:

> an open and candid commitment to share and work together, with trust being an important factor. CAMEL provides useful research for the future work of JISC and others in knowing what people most want to get out of e-learning case studies and showing how sensitive issues can be handled in an appropriate manner.

e-Learning and the collaborative partnership culture

Interest in collaborative and distributed leadership models for education has grown with increasing recognition that, particularly as applied to education, 'organizational teams, like human groups more generally, seldom have just one leader' (Mehra *et al*, 2006, p. 2). The recognition of the importance of human networking, social capital and social network analysis has also grown apace with increased global interest in CoPs, knowledge management and terrorist networking activities (Kleiner, 2003). Collaborative working practices have also been overtly encouraged in a UK public sector now

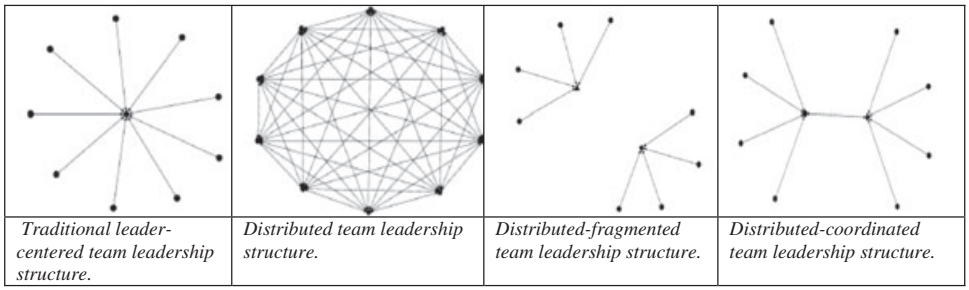
ostensibly more attuned to partnership than competition in education, because this was ushered in by the New Labour government in 1997. This period has marked a renewed culture of provider collaboration across sectors engaged in lifelong learning, including schools, FE, HE, work-based learning and adult and community learning, bringing together many existing local partnership arrangements for post-16/FE/HE learning (Thomas, 2002), though Doyle (2004) is amongst those who have critiqued the relative paucity of the theoretical literature on such collaborations. e-Learning partnerships between HE and FE institutions introduced during the past decade have for the most part demonstrated strong potential for, and value in, partnership approaches. For example, the Regional Interoperability Project on Progression for Lifelong Learning or RIPPLL lifelong learning JISC project has reported on:

> the great potential for collaboration that exists between technical ICT staff in HEIs and their opposite numbers in colleges in the same region, focused by the issue of interoperability for student progression. (Smallwood, 2006, p. 1).

Design for learning activities, pedagogic planning and 'disruptive technologies'

In tandem with the renewal of the partnership culture (albeit within overall stringently audit-based expectations in both HE and FE), something of a revolution in understanding has been taking place during the past decade about the way practitioner teachers can best support learners through flexible delivery of e-learning. This change has come about in recognition of the potential for using 'design for learning' (DfL) sequences in a pedagogically focused planned approach based on learning activities more than content. Potentially adaptable and reusable design for learning sequences have been created and trialled using such environments as LAMS. Although, idealistically, design for learning heralds a much-needed potential for an 'effective match between e-learning pedagogies, the affordances of technologies and the motivation of learners as they achieve effective e-learning outcomes' (Hedberg, 2006, p. 172), there is a need for caution about what 'design for learning' and the potential for 'reuse' by practitioners actually means in practice.

A recent JISC briefing paper on design for learning produced as part of the JISC Pedagogy Strand (JISC, 2006) differentiates carefully between technical standards required by the IMS Learning Design specification in support of the use of a wide range of pedagogies in online learning ('Learning Design'), and wider pedagogic developments to design, plan and orchestrate learning activities ('design for learning'). The JISC paper emphasises a central interest in 'learning activities rather than learning resources, or the general management of courses and programmes... Initial and continuing professional training for teachers emphasises the need for active, participative and autonomous learners, especially in the post-16 sector. The focus of educational practice has moved decisively away from content delivery' (ibid.). The promotion of design for learning activity-focused pedagogical approaches to e-learning is inherently challenging to HE and FE institutions still wedded largely to information dissemination and content management e-learning approaches (Hedberg, 2006, p. 171). Design for learning



Traditional leader-centered team leadership structure.	*Distributed team leadership structure.*	*Distributed-fragmented team leadership structure.*	*Distributed-coordinated team leadership structure.*

Figure 1: Four team leadership structures proposed by Mehra et al (2006)

approaches promise to provide potentially 'disruptive technologies' of the kind that unexpectedly enable beneficial new ways of working and new paradigms for learning (Christensen, 1997 and Hedberg, 2006).

Distributed, networked and collaborative leadership styles are also more suited to the implementation of 'disruptive' innovations via the flexible networked structure of e-learning projects than traditional leader-centred approaches. Team leadership styles are based on elements of democratic working that challenge the assumption that power and authority should reside only in one individual at the top of a pyramidical hierarchy. However, such models do recognise both formal and informal leadership and authority, as demonstrated by Mehra *et al* (2006) who found that the most successful team leadership had a 'distributed-coordinated' structure (see Figure 1), in which there was a mutual coordinated recognition of leadership authority and attributes by the formal and emergent leader(s) in teams. This is a more controlled form of leadership than fully distributed team leadership, in which everyone shares some kind of leadership role. In a time-limited e-learning project with specific important outputs to achieve, it is necessary to have clear lines of accountability and authority, particularly for the timely achievement of project outputs.

To illustrate this, in Figure 1, the small diamond-shaped nodes in the figures reported from Mehra *et al* (2006) represent those who are official team leaders, while the triangular node(s) represents emergent leader(s). Circular nodes represent other team members and lines from one node to another indicate that, in the research by Mehra *et al* (2006), the leader represented by the first node regarded the second as a leader, and vice versa. The most coordinated and beneficial structure for team leadership, in their view, was *neither* wholly leader-centric (too reliant on one person), *nor* totally distributed (too reliant on leadership spread across the whole team), *nor* distributed-fragmented (teams can suffer breakdown from fragmented leadership when there is a power struggle) but was, rather, distributed-coordinated team leadership (demonstrated clearly to be the most successful model for higher team performance).

New eLISA CAMEL model for communities of e-learning practice

With the aforementioned background in mind, reflections on the working of the CAMEL and eLISA projects during 2005–06 led to a proposed new theoretical model for

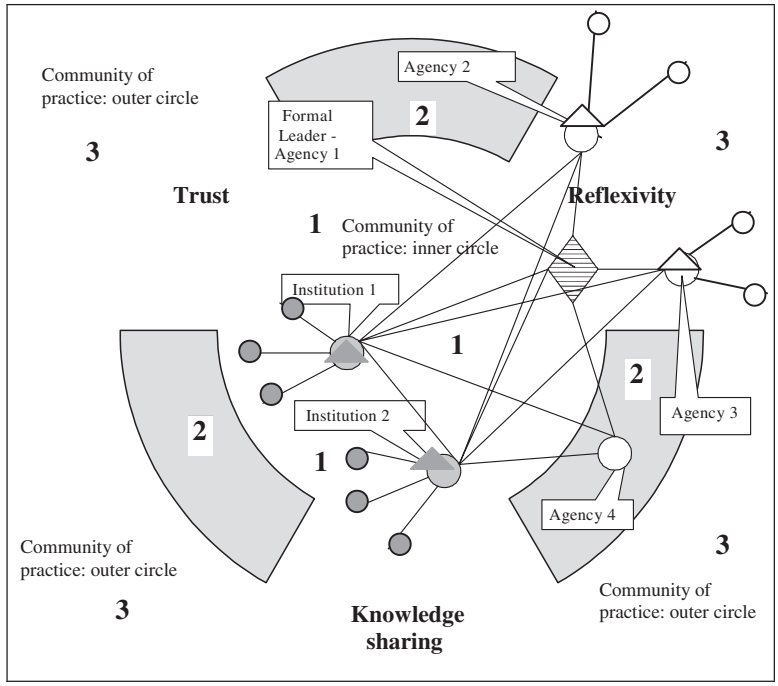


Figure 2: The eLISA CAMEL distributed-coordinated team leadership project level model for communities of e-learning practice, building on models proposed by Mehra et al (2006).
Note: The diamond (right) represents the formal project leader (Agency 1). Triangles on circles represent team leaders in institutions and agencies. White circles (right) represent other external agencies/ institutions. Lines and smaller circles represent links to team members: lines from a node to other nodes indicate that the person in the first node perceives the 2nd/ 3rd as leader(s).

distributed-coodinated team leadership in intentional nascent communities of e-learning practice. The model proposed (see Figure 2) is based on and develops further the work of Mehra *et al* (2006). This new model is proposed specifically as a result of observations of the operations, processes and formative evaluation informing the eLISA and CAMEL projects during 2005–06 and the values-based conscious adoption of collaborative methods of working in both initiatives.

Desire to share knowledge openly in an atmosphere of trust

In formative evaluation, CAMEL team members expressed a desire to ensure that the project enabled the beginnings of a CoP in terms of the following: 'Openness—sharing of real issues frankly and honestly within the safety of a non-judgmental group but also the opportunity to challenge practices without criticism.' Team members also stated that they would like to derive the following from CAMEL: 'Higher levels of procedural knowledge internally and externally regarding e-learning current developments; and "knowledge in use" regarding knowledge of FE/HE current good practice i.e. knowledge transfer, sharing and management regarding e-learning in FE/HE' (Inspire Research,

2005). The project has achieved good outcomes, as reported by Ferrell and Kelly (2006):

> The model used by the CAMEL project has been proven to work in practice and has developed to meet the needs of a new CoP that has evolved from CAMEL. One of the main strengths of the model has been the good community spirit that developed early in the project and that enabled a high level of interaction between the participants and a genuine interest in the different approaches taken by the institutions. (Ferrell & Kelly, 2006, p. 5)

To reflect these findings from evaluations of the CAMEL project, key indices of 'knowledge-sharing', 'trust' and 'reflexivity' were placed at the boundary points of the proposed theoretical model in Figure 2. The model is a visualisation of the organizational processes undertaken by the CAMEL and eLISA e-learning project teams in 2005–06. The theoretical model is strongly informed by the CoP emerging during four CAMEL face-to-face inter-institutional study visits, and, to an extent, by the eLISA face-to-face, email exchanges and Moodle online nascent mini-CoP with teachers. These CoPs are depicted in three main layers: (1) *the inner circle of practitioners* working within institutions with their students; (2) *the open boundary area* comprising external agencies or other institutions positioned more distantly to support and facilitate the project; and (3) *the wider outer circle* of the CoP, with its many networks of professional, educational, e-learning and research contacts.

In this project-level model in Figure 2, the formal leader (diamond shape), positioned in Agency 1, is located midway between (1) the inner circle of the CoP and (2) the boundary area occupied by other agencies supporting the project. The formal leader is recognised by all parties, as indicated by the lines drawn to or from this person. Institutions in the inner CoP (represented in Figure 2 by Institutions 1 and 2) are led by a person who is simultaneously a team player in the wider group (circle) and a sub-leader (triangle) in charge of their institutional team. These people are also emergent leaders for the wider group, and are recognised by the project leader as such. Agency sub-leaders are indicated by triangles superimposed on circles in the outer ring of the community and are also respected as leaders in their own right.

The CAMEL model depicted in Figure 2 demonstrates a healthy relationship between the project leader and emergent/sub-team leaders, as all recognise each other as leaders in some way: there is no overt conflict of a distributed-fragmented kind. The team players (circles) are either in the inner CoP (grey-toned circle) or in the outer ring in which sit the external agency or institution team players (white circle). Following the logic proposed by Mehra *et al* (2006), and in recognition of the actual findings of both these projects (Inspire, 2005; JISC infoNet 2006; Jameson & McNay, in press), the distributed-coordinated leadership dynamic combines a flexible balance between (a) the authority of positional project leaders to drive overall project vision, strategy and transactional project management tasks and (b) the ethos and devolved responsibility of democratic team-based collaborative leadership. We argue that, based on prior research, this kind of flexible adaptable team leadership structure is likely to be the most appropriate for fast-moving inter-institutional team-based e-learning projects encom-

passing radical innovations within a short timescale. Because such teams tend to have within them also many different kinds of specialist and expert practitioners with strong views on particular aspects of the project, an enabling, distributed-coordinated collaborative model of leadership is arguably the most appropriate model for effective teamworking in these circumstances. In addition, the voluntaristic aspects encompassed by CoPs (eg, informal social events) can create a bond between team players and enable a greater degree of social learning, shared knowledge, trust and reflexivity to be achieved by the team. This is linked to the gradual processes of team knowledge recognition, sharing and management in terms of real, deeply felt but often tacit, and thereby relatively unknown, concerns and interests of practitioners regarding 'knowledge in use' at every level.

e-Team model for reflexivity, trust and knowledge-sharing in an e-learning CoP

In the CAMEL project, inter-institutional evaluation findings indicated that the four institutional sub-teams operated more or less in ways that cohered with the aforementioned theoretical distributed-coordinated model of leadership, inspired by a conscious adoption of team values to promote collaboration (Ferrell and Kelly, 2006; Inspire, 2005; JISC infoNet, 2006). This was not only in terms of initial and ongoing willingness to engage in this inter-institutional CoP, but also in relation to observations of and actual findings emerging from the 2005–06 visits to institutions (JISC infoNet, 2006). However, it is far from routinely the case that e-learning project teams always operate in anything like hypothetically ideal terms: it needs to be recognised that the institutions involved in CAMEL were selected from a competitive bidding process designed to choose those with a 'readiness' to engage in an inter-institutional e-learning CoP based on trust and reflective knowledge-sharing.

One notable factor impeding beneficial engagement in a project-related e-learning CoP of this kind is an inability to deal with inter-institutional conflicts proactively. Examples of this would be when project leaders or teams refuse to cooperate over concessions required by other institutions, like the granting of rights to use equipment, the achievement of necessary compromises on budget allocations or the facilitation of rights required by lead project institutions. Many such clashes in the relationships between project partners have been identified in project management literature (Vaaland, 2004): these can lead to the cessation or failure of projects.

Brown (2001) is amongst those who have analysed the generally high failure rate of UK IT public sector development projects resulting from a range of factors, including this kind of inability to deal with conflicts of interest proactively:

> [T]he task of consistently realising ITs potential benefits is proving difficult and the litany of failed and failing public sector IT projects makes for depressing reading. The failure rate of public sector IT development projects is not known but estimates for general failure rates in IT development range from 80% (Clegg, 1997) to 60% (Collins,1998). (Brown, 2001)

Although these reported failure rates are for the wider public sector, not education, such public sector IT project findings make salutary reading for the consideration of improved risk management strategies and research on factors affecting the overall success of e-learning projects. There is a need to consider more widely the role of organizations, including leadership, management, professionalism, academic roles and team performance, in the achievement of e-learning project outcomes.

In the e-learning literature, there has, so far, been relatively little emphasis on organizational culture, leadership and management in the analysis of challenges facing e-learning project teams, although there is a substantial and growing literature on knowledge-building in online communities (van Aalst, 2006). Lisewski (2004) records this relative lack of advanced research on the role of organizational cultures in learning technologies usage and observes that complex internal institutional narratives affect the dialogue between 'top-down' e-learning strategies and 'bottom-up' initiatives relating to e-learning projects. Lisewski notes that a contextualized recognition of the sensitivity, ambiguity and complexity of situated organizational cultures is a necessary prerequisite for their accurate characterization (p. 174).

Vaaland (2004) recognises that collaboration, good communication, trust and creativity in the team ethos established by effective project management can constructively transform project team conflicts into a learning process in which inter-institutional teams cooperate more effectively and achieve improvements from gaining insight into and making accommodation for each other's differences (Vaaland, 2004, p. 448). However, to understand how this can work in inter-institutional project teams, it is necessary, as advised by Lisewski (2004), to consider also the role of internal teams and the 'narratives' of the organizational cultures affecting approaches to e-learning adopted within them. This is a complex area, requiring situated in-depth local research contextualized appropriately for accurate analysis. Nevertheless, a theoretical model providing an outline typology of characteristic archetypal institutional e-learning teams is valuable in providing an initial framework for analysis. From extensive discussions within the CAMEL and eLISA projects, notably during and linked to project meetings in 2005–06, the team of authors prepared a range of different theoretical models to describe what was occurring in these projects.

At the institutional team level, we prepared a number of different detailed theoretical models, based on the idealised processes of reflexivity, trust and knowledge-sharing that e-learning practitioners in both these projects reported they would benefit from. Related models are reported elsewhere (Ferrell & Kelly, 2006; JISC infoNet, 2006). The selected model for this paper (see Figure 3) was also informed by prior work researching post-compulsory education (Hillier & Jameson, 2003; Jameson & Hillier, 2003), in which we proposed that the development of reflexive characteristics is conducive to higher organizational performance in the management of change and in reaction to government policy.

In this model (Figure 3), three stylised archetypal institutional teams are depicted. These are based on familiar organizational patterns observed both in reality and in the

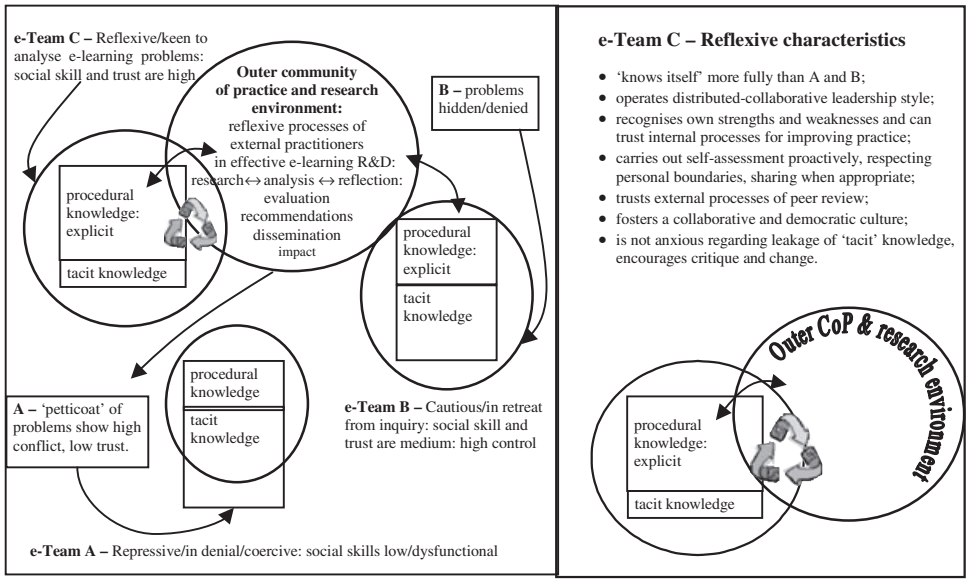


Figure 3: The eLISA CAMEL institutional team-level model for e-learning CoPs, building on prior work on research in PCET by Jameson (2006), Jameson and Hillier (2003) and Hillier and Jameson (2003).

literature on leadership and management in lifelong learning institutions, notably in post-compulsory education and training 'new managerial' literature (Lumby *et al*, 2004; Jameson, 2006; Jameson & McNay, in press). These examples are intended to portray a typology of e-learning project team characteristics, based on prior observations and literature from the field: the archetypal patterns of responses are deliberately stylised theoretical models to provide an analytical framework for reflecting on project teamworking as enabled by effective collaborative leadership. The literature on leadership in lifelong learning has particularly informed the models in relation to dysfunctional organizational patterns extensively reported in PCET management literature. The institutional teams in Figure 3 are characterized by the following archetypal patterns:

1. e-Team A has a relative lack of shared propositional knowledge about itself, and a great deal of untapped 'tacit' knowledge that lies buried beneath the surface. Team A is not linked into wider CoPs and research environments (the arrow of communication from these passes it by). It is characterised overall as repressive, in denial and coercive, with low social skills, operating in a more or less dysfunctional and hostile environment, in which practitioners, aware of the 'petticoat of problems' leaking from the institution's many unexamined faults, are more or less in revolt against leadership and management.
2. e-Team B, by contrast, has a greater level of propositional knowledge and knows more about itself than e-Team A. It has some links with wider CoPs and research at the level of procedural knowledge, and even allows a two-way flow of communication and information to these external communities. However, it has a large amount

of untapped tacit knowledge and is relatively cautious and in retreat from too much unwelcome inquiry. The team may have a medium level of social skills and is not overtly 'at war' with anyone, but it nevertheless operates cautiously and conservatively, giving highly controlled responses and running away from greater degrees of reflexivity and openness.

3. By contrast, e-Team C is the hypothetically ideal team, operating keenly to analyse e-learning projects in a reflexive environment in which social skills, levels of proactive collegiality and analytical team critique are high. The team has a good level of procedural knowledge and also investigates some areas of unknown tacit knowledge regularly, within appropriate boundaries. While there is a recognition that some areas of tacit knowledge will always be unknowable, important factors affecting the team and its performance are investigated for greater understanding. Such a team might, e.g., consider employing external advisers or applying the techniques of social network analysis to position itself strategically for improved performance. The team hence knows much more about itself than either of the other teams. It is relatively well linked into wider CoPs and research environments, promoting inquiry, analysis and reflection, openly sharing procedural and tacit knowledge as far as possible in a continuous cycle of organizational learning, development and refinement. It is, nevertheless, respectful of the boundaries of knowledge in terms of personal team member issues, treating all of its members with respect and consideration. Its 'ideal' characteristics can be envisaged in Figure 3.

We note that teams A and B are deliberately characterized in relatively dysfunctional and problematic ways, while the hypothesised 'ideal' team C operates with a higher degree of reflexive awareness, trust and openness to engage in shared knowledge construction, informed by a values-based institutional culture. In reality, institutional e-learning teams are also, of course, individually shaped by a range of other detailed contextualised features, operating across a spectrum of myriad dynamic organizational behaviour patterns uniquely situated in their own particular time and place. Hence, this typology is, of necessity, a simplified stylised framework of archetypical responses designed to highlight some key features relating to effective collaborative e-learning leadership.

Our hypothesis is that higher e-learning team performance, in addition to higher levels of staff satisfaction and achievement, can result from the kinds of reflexive characteristics developed by the notional 'ideal' example provided by team C. The link between distributed-coordinated leadership and both better team performance and greater levels of staff satisfaction is indicated already by prior research (Mehra *et al*, 2006), but our proposal is that further research to test these models in relation to communities of e-learning practice should be conducted in lifelong learning institutions. Ideally, this should be linked with explicit values promoting collaboration, trust and shared knowledge building to achieve an optimal state of CoP functioning for creative and vital contributions to be stimulated (Bond, 2004). There would be considerable benefit in applying the techniques of social networking analysis to such research on e-learning CoPs.

Conclusion

Following a literature review and summary of the attributes of collaborative team leadership and communities of e-learning practice deriving from the working practices of the eLISA and CAMEL 2005–06 e-learning projects and informed by research on e-learning and leadership, this paper proposes two new theoretical models for collaborative leadership and reflexive team operation within intentional communities of e-learning practice. We argue that, to improve practice in e-learning in team-based lifelong learning projects, proactive teamworking, collective learning and shared knowledge developed in a distributed-coordinated collaborative leadership model is more effective than traditional leader-centric, authority-based approaches. We also argue that e-learning teams profit from collegial participation in an atmosphere of trust in which all team members are valued and respected in constructively critical ongoing analyses of team performance, linked with the voluntaristic social elements of communities of practice. A high degree of reflexivity, social skills and knowledge sharing can be engendered through collegiality and trust enabled by effective, flexible styles of leadership and management adapted to suit radically innovative, fast-moving e-learning projects.

Distributed, networked and collaborative leadership styles can be flexibly adapted to the implementation of 'disruptive' innovations via the flexible networked structure of e-learning projects. Such team leadership styles are based on elements of democratic working that challenge assumptions that power and authority should be vested only in fixed leader-centric hierarchical institutional and team structures. Recognition of both formal and informal leadership, a high level of social skills and of the importance of project management skills is also crucial to achieve effective outputs. We build on the research of Mehra *et al* (2006) to propose that successful e-learning team leadership is best facilitated within a 'distributed-coordinated' collaborative leadership approach. Our models propose that this encompasses mutual coordinated recognition of leadership authority within an atmosphere of trust and respect, linked to an intentional community of e-learning practice. We recommend that this controlled form of collaborative distributed-coordinated leadership within team-based e-learning projects in a CoP should be the subject of further research and investigations to test for potential longer-term efficacy.

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