Virtually Safe

Preparing School Staff for the Implementation of a School-Wide Online Safety Initiative Through the Effective Use of a School's Existing Virtual Learning Environment

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Overview of the E-Learning Initiative

The initiative set out in this chapter shows the first stage of a process of developing existing e-learning practices within a secondary school. The school, working with the author, designed an e-safety programme with a blended approach to learning which involves 'the thoughtful integration of classroom face-to-face learning practices with e-learning experiences.' (Griffin, D., Mitchell, D. and Thompson, 2009, p8)) The online safety programme had two objectives: 1) To raise awareness of e-safety amongst staff and pupils and (2) to seek to increase the use of the school's VLE. Staff needed to be trained up on this new approach and so the initiative discussed in this chapter focused on the training of staff in the use of a VLE before the programme's roll out to enable them to deliver an online safety programme for pupils via the school's Virtual Learning Environment (VLE).

Author's context: The author is employed by Central Birmingham City Learning Centre (CBCLC) and is also registered as an ICT Mark assessor (accredited by National Association of Advisors for Computers in Education (NAACE) and British Educational Communications and Technology Agency (BECTA)). CBCLC is tasked with researching and developing innovative teaching and learning strategies using technology and has been involved in the adoption of online learning across schools in Birmingham. CBCLC regularly works with over twenty schools, providing support for both teaching staff and senior management. For this initiative, CBCLC provided support for the change management process and also in the implementation and creation of resources.

School's context: The school involved in this initiative was an 11-16 mixed comprehensive school with a pupil count of just over 900. It has 40 staff who were involved, to varying degrees, with the initiative. The level of e-maturity was described by senior management as "mostly low" and this was confirmed with a benchmarking exercise. The school was hoping to raise staff use of the VLE and to use this intiative to provide evidence for how the school met criteria for the Self Review Framework (SRF) for the effective use of ICT and e-learning to qualify for the BECTA/NAACE ICT Mark.

Issues Surrounding the Management and Implementation of Developing Existing E-Learning Practices

It was decided that the focus of the initiative would be online safety as this is relevant to the wider social context. The Byron report stated that it was necessary to provide 'children and their parents with the proper tools, clear standards and signposts and somewhere to go when things go wrong' (Byron, 2008, p 205) and the area is receiving a lot of focus in the press (for example: Kiss, 2010 and Ward, 2010). Also, schools and Ofsted are paying close attention to the area. A recent report by Ofsted encouraged schools to develop 'a curriculum for e-safety which builds on what pupils have learnt before and which reflects their age and stage of development; providing training which enables all staff, not just teachers, to support pupils; and helping families to keep their children safe' (Ofsted, 2010, p.5).

The objectives of the programme were threefold: to train staff in using a VLE effectively; to create a series of lessons with a mix of online and offline activities (a blended model) to teach pupils about the importance of internet safety and, finally, to deliver the lessons to three Year groups (Year 7,8 and 9) over the course of four weeks. This chapter focuses on the first of these objectives.

The use of VLEs within schools is increasingly important (Conole, 2004) but not, as yet, embedded. In 2004, research suggested 'that just over one tenth of institutions in England (around 11%) have managed to embed e-learning successfully' (Armstrong, Atkins, Kane, Mackenzie, McBurney and McMullan, 2004, p. 82). In response, to this and similar findings, the Harnessing Technology document of 2005 set out a vision of revolutionising teaching and learning through VLEs: 'We need a new understanding of the pedagogies appropriate for a 21st century education system.' (Dfes, 2005 p.26) However, a recent report by Ofsted on the use of VLEs within schools found 'that the exploitation of VLEs at curriculum level resembled more of a cottage industry than a national technological revolution.' (Oftsed, 2009 p.4)

Managing change within an existing setting requires an understanding of 'the various technological, economic, social and political pressures on organisations' (Carnall, 2007 p.27) drivers at play. In terms of technology it was necessary to complete an audit of hardware and software to make sure the resources were in place for the initiative. This followed BECTA guidelines (BECTA, 2006) and resulted in a comprehensive audit of the ICT capability of the school. The school felt that their technological capabilities were good, with all staff having a laptop and the VLE had been in place for over two years. The school also had a good range of software which could be used to generate teaching and learning objects to populate the online courses.

In terms of both economic and political pressure, e-learning has been pushed by the previous UK government which set out a target for all schools to be making full use of a VLE by 2010 although, by that date, only 42% of Primary schools even had one for their school to use (Mort, 2010). Schools were also expected to 'have real-time reporting systems up and running by 2012' for parents. (Mort, 2010) It is unclear whether the current UK government will maintain this target and schools will need to respond to changes.

The actual cost of software and hardware is often restrictive. A report conducted for the DCSF in 2007 stated that 'the biggest problem is its going to be broadband pricing and logging because at the moment it is still overpriced.' (Schoolzone, 2007) The initiative outlined in this chapter used freeware and open source options as much as possible to offset these connection costs.

Culturally within a school, there is often a reluctance for change. Even with organisational support, the use of technology within the classroom is often a personal decision by a teacher and past research suggested that 'teacher factors far outweighed the institutional or school factors.' (Mumtaz, 2000, p.337) Teachers often see technology as an unnecessary bolt-on to their workload and 'there is likely to be organizational resistance towards introducing yet another round of technological innovation.' (Bates, A. 2005) Becher and Trowler (2001, p.97) discuss that 'among the paradoxes that abound in academia, one of the most curious is the apparent coexistence of radical chic with entrenched conservatism' (Becher and Trowler, 2001, p.97) and although this statement is made about Higher Education educators, the same is often found in Secondary School. Teachers who are often dynamic and exciting within

their own classroom are resilient to wider organisational change. However, 'impermanence and transience are increasingly becoming important features of modern life because of a major expansion in the scale and scope of change and the accelerating pace of change' (Hayes, 2002 p. 4) and teachers need to adapt to these changes to engage their students. Used correctly, VLEs have also been shown to reduce workload time (Warhame, 2005) but any change can initially result in 'internal chaos' (Cameron and Green, 2004, p.34) and needs to be planned carefully.

In trying to develop practices within an existing setting it was essential that the Senior Management and the author shared a common approach. After looking closely at past projects it was seen that most of them were implemented in a “top down” fashion in the classical paradigm sense (Sharma, 2007). The author and the school decided that, due to the perceived lack of staff ICT skills, a top-down approach would still be used but that this initiative should be more participative (M Beer, N Nohria, 2000). A similar approach can be seen in the initiative outlined in Chapter 1 of this dossier.

The effective use of VLEs requires a fundamental shift in pedagogical attitude that needs the full engagement of teachers with the aim that “the online tutor must manage a course, guide students throughout the learning experience, motivate them, interact with them, assess them and deal with any conflicts or difficulties' (Cornelius, 2001). Staff were therefore engaged firstly through a whole staff meeting - where the initiative was outlined and questions answers - and then via departmental meetings where Senior Management discussed with departments and individuals their roles and responsibilities. Initial meetings were hard to set up with all the key members of staff and the author. Trying to coordinate diaries and meeting places with very busy professionals was extremely difficult but this was eased when the Senior Management prioritised the project and assigned specific times and places to the planning meetings. Such prioritisation by management is essential to a project’s success (Rosenberg, 2001). Also crucial to the success of the initiative were the technicians of the school and these were kept informed at all times to make sure that enough computers were available and that they were up to date with the software needed for the initiative. They were also involved in the overall training that the teachers undertook as research suggests that effective technical support requires understanding of the wider initiative (Pelgrum, 2001).

As the use of the school’s VLE was low, the author suggested that the school should take the opportunity to present an overall pedagogical direction for staff in relation to online learning. This overall direction involved the creation and sharing of reusable learning objects (Barritt, C., Alderman Jr., F. L., 2004) across the entire school. To create these resources, staff were shown basic software skills but the main focus was on the pedagogical approach to the resources. The aim was to create a set of learning objects that would work together and could also be used separately (Caplan, 2004) and that would have a life beyond that of the initiative (an example was a reusable learning object describing the use of podcast software that could then be moved directly, without changes, into a number of other courses.) It was important also that the resources were useable by all pupils as it is 'essential to the design and development of reusable educational software or learning objects is ensuring they are accessible to all' (Treviranus and Brewer, 2003, p.119). It should be an ethical consideration of all course creators to take into account of 'issues such as equal opportunity, cultural diversity, and nationality' (Singh, 2003) and so different staff were assigned the task of recreating the same resource in different ways. This meant that a resource was available in different languages and for different abilities and needs.

Developing a Change Strategy Appropriate to the Context

Managing change within an educational context is complex with a large number of variables such as staff skills, resources, wider targets and political pressures. Having a change management strategy in place and sharing it with staff it is an essential part of an initiative's success: 'Organisations and their managers must recognise that change, in itself, is not necessarily a problem. The problem more often than not is a less than competent management of the change situation' (Paton and McCalman, 2008 p.39).

Teachers are often not trained in management skills as they are '…recruited as teachers, promoted as teachers, and then suddenly were confronted with quite different managerial tasks.' (Dennison and Shenton, 1989 p.175) Therefore, a Change Management model is of particular help in introducing new initiatives. There are plenty to choose from: 'Philosophies, theories, models and techniques abound; all aim, with various degrees of credibility and success, to deliver sustainable organizational change' (Paton and McCalman, 2008 p.3). The school involved in this initiative had already gone some way to meet the criteria of the Self Review Framework and part of this review was to have a change management process in place for ICT developments. NAACE and BECTA (the two bodies that manage the ICT Mark process) advocate the use of Ambrose's Managing Change model (Ambrose, 1987) and this was the process the school chose to follow. Ambrose's model is in six stages: Vision, Skills, Incentive, Resources, Action Plan, and Conclusion. Ambrose's model also highlights the problems that might arise if one of these stages is missed or glossed over (see diagram). Being aware of these potential problems is important, as is the need to respond to unexpected problems as they arise, 'Organisations undergoing change will find it difficult, if not impossible to define and resolve all eventualities' (Woodward and Hendry, 2004, p.157).

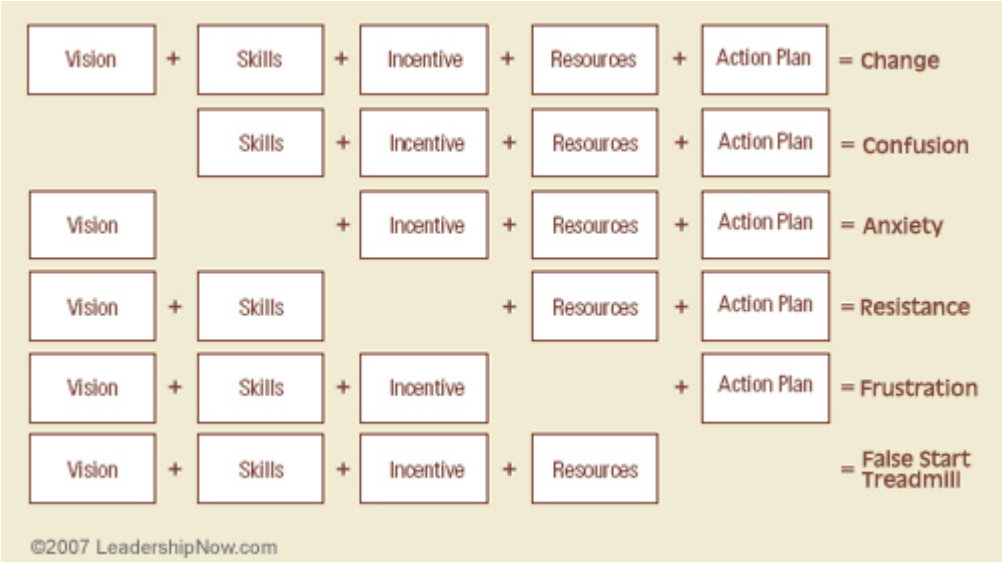


Diagram showing the impact on the change management process if some sections of the Ambrose Model are absent.

Ambrose's model allows for flexibility which is important as 'much change is neither bottom up nor top down; it is driven by a range of near-invisible, and sometimes unacknowledged, external pressures – new technology, performance indictators, curricular fashions, student consumer whim, institutional competition and other governmental fads' (Price, 1994 p.30). Ambrose's model provided a structure for the initiative to follow but it was essential that

progress was reviewed continually and that the management team did not feel constrained by the model and were able to make decisions based on their context and professional judgement. 'Because of differences in organizational form, management style or the content of the individual decisions, no single paradigm can hold for all strategic decisions.' (Quinn, 1993, p.66)

It was necessary for the school to complete a skills audit of staff to establish training needs and to create a realistic vision. As well as taking on board the overall vision of the school, many teachers exhibited highly effective teacher behaviour as they modelled 'to their students that education and learning are valuable by taking classes and participating in professional development… Additionally, they discuss their participation in these activities with students in a positive manner.' (Stronge, 2002, p.29) In the post-initiative feedback, it was found that staff who shared their own online learning experience with their pupils found that their own learning advanced more quickly and that, later, when they were teaching their pupils using online techniques, the process was much easier and more effective.

Facilitating Change in E-Learning Settings

In a review of available literature, Newton found that a common failing in the establishment in of e-learning was a lack of a vision and a lack of incentive for staff to engage (Newton, 2003). The initial stage of Ambrose's model is to establish a vision. This vision does not need to be formalised although, in the case of this school, a vision statement for the project was devised: 'For all staff to use the school VLE in some capacity to deliver a project on e-safety'. On the whole the staff bought into the vision of the initiative and were supportive (a pre-initiative survey found that over 85% of respondents were "excited" about the use of online resources in their teaching). This engagement was helped by the importance and relevance of the issue of online which gave the initiative the necessary purpose: 'To encourage engagement, a purpose or use needs to be made prominent.' (TDA, 2009 p.5)

Before the initiative, the school reviewed its use of their VLE and found that they made little use of it. A small number of staff were using it as a repository for resources but it was mostly an inactive space and there was no use of any of the interactive features of a VLE (forums, chatrooms, wikis etc). Within education, VLEs are often not being used to their full potential and this is discussed in Chapter 5 where the VLE in a Further Education setting is a place where 'tutors upload teaching and learning content and learners passively view.' (Chapter 5). It is clear that is not just using a VLE that is important but that that use needs to be pedagogically effective.

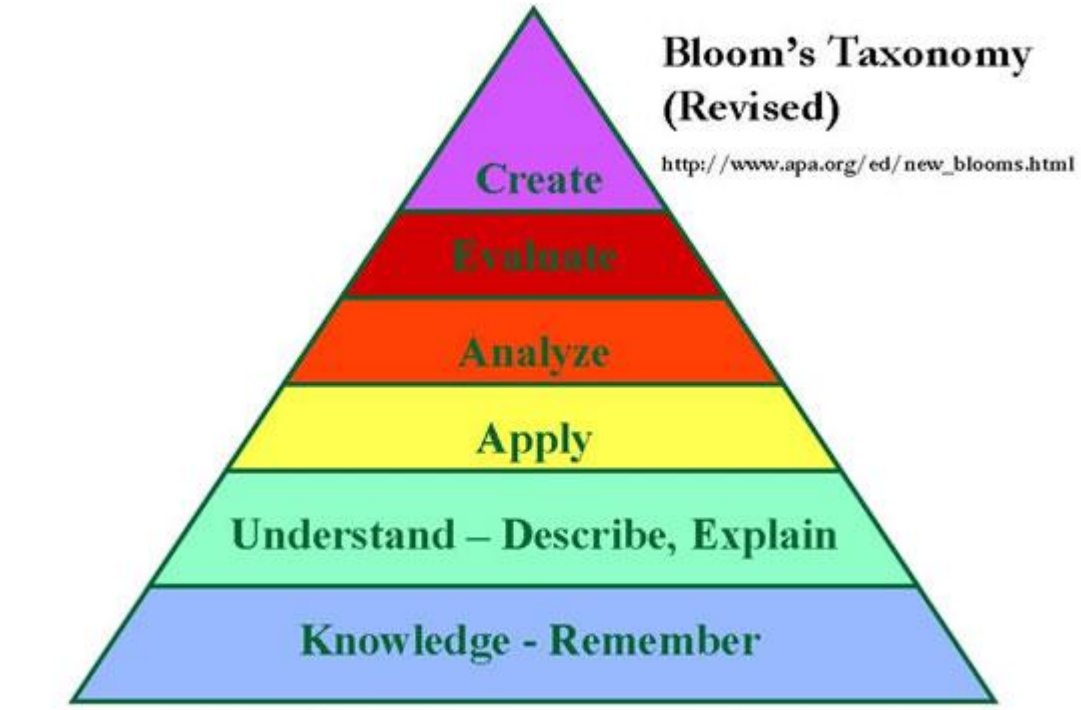
This initiative sought to engage staff in the use of some of the communication tools within the VLE such as forums and chats. Initially, staff were uncertain about the use of the VLE and, for many, about the use of technology within education in general. It was essential that staff became more certain as 'there exists more than ample evidence that, in fact, it is the "soft stuff" – the human issues – that are really the most difficult. After all, technology itself has no emotions to respond to or feelings to be hurt.' (Dublin, 2003 p.7) Badge, Cann and Scott found a similar situation at their institution and found that staff were unwilling to engage in formal training but that 'experience of being a student in an online course increases the awareness of online tutors to the needs of their students.' (Badge, Cann and Scott, 2005) This is a useful strategy as part of the management of the change process and one that the author was keen to encourage. As a result, it was decided that all staff would complete an online course on e-safety.

Staff were given a short training session on logging into the VLE, navigating the site and posting to forums. The training was kept deliberately brief so that staff would experience most of the functions of the VLE through their own experience. Staff were then given three weeks to complete an online course (the EPICT module for e-safety) and were also able to attend a twice weekly drop-in session to discuss issues. At the end of the course, teachers would have an accredited qualification and experience in online teaching and learning. Feedback from staff was positive, with all staff reporting an increase in their own confidence. Using the same techniques with staff that they would be using with pupils was an effective way of overcoming anxiety and reluctance as 'one of the most common ways to overcome resistance to change is to educate people about it beforehand.' (Kotter and Schlesinger, 1979, p.110)

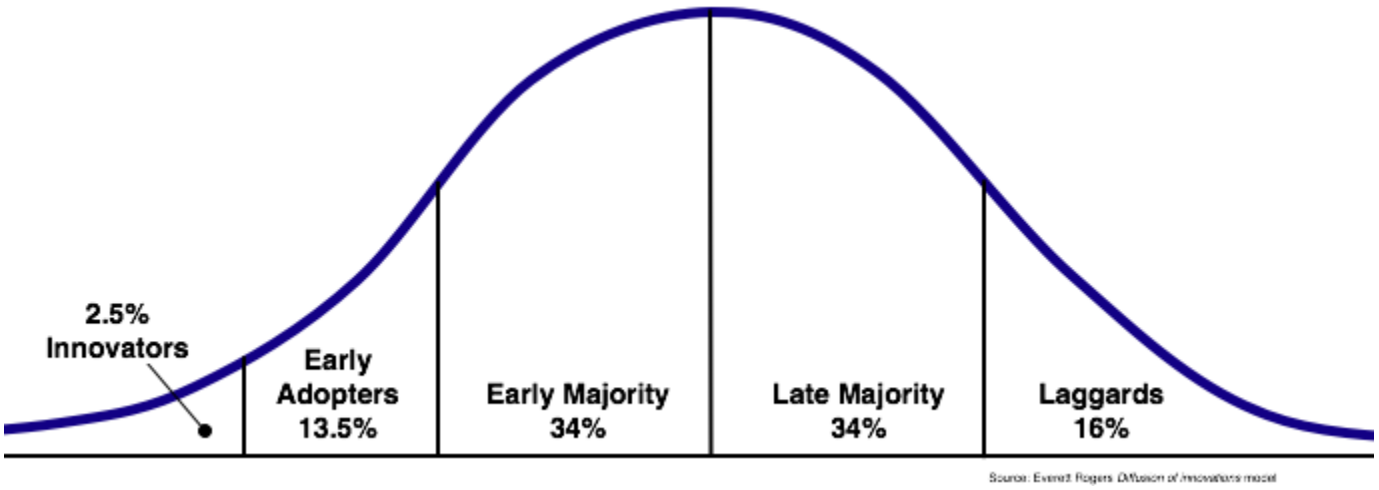
At the outset of the training, 'roles and responsibilities for Elearning activities: management, technical, research, dissemination, evaluation, training' (Conole, 2004) were clearly laid out and roles were assigned to staff including an overall "e-learning" leader and "change champions" in each subject department.

Online learning is time-consuming and especially so for new-adopters. 'E-learning course creation is complex and time-consuming because instructors must reevaluate their courses and choose the most appropriate technical and pedagogical tools for e-learning applications' (Pirani, 2004 p.3). The author advised the school that staff should be given time within the working day to complete their online "introductory" course. The weekly staff INSET time (1 hour) and one meeting slot (1 hour) were given over, meaning that staff were able to have 6 hours over the course of the three weeks to complete the course. This gave the initiative a perceived value and encouraged staff to take it seriously. This is important as 'e-learning requires a higher degree of self-motivation, self-directed learning, and greater persistence and commitment from the learner.' (Martinez, 2003 p.26) An added incentive was that the course followed the EPICT e-safety module which is accredited and, following successful completion, provides a professional qualification; such incentives are important in raising staff efficiency (Burgess and Ratto, 2003).

There were three members of the teaching staff at the school who were using the VLE to achieve some higher order pedagogical results, with pupils collaborating to create and evaluate (see diagram below). These teachers were acting independently and driven by a personal passion. One teacher, for example, was using the VLE almost as a social networking site, with chatrooms and forums that spread across year groups and with topics that did not adhere tightly to the curriculum (the issue of social networking within education is discussed in Chapter 6). Whilst this was not what the Senior Management expected, it is often the case that "teachers and students interested in inhabiting and nurturing smooth online pedagogical spaces will not bother to engage with the constraints offered by such systems" (Bayne, 2004, p 314) and such users need to be exploited by institutions that wish to take e-learning forward.



Early adopters and innovators (Rogers, 1962) are very keen to embrace the technology further(see diagram) and for this initiative such practitioners were used as "Change Champions" similar to a University case study where 'A number of younger staff were actually quite keen to change, so we directly dealt with these individuals by appointing a number of people, whom we called change agents, in every department, across the university.' (JISC, 2009). Staff were assigned a Change Champion to "buddy up" with for support. This proved to be a positive experience, with older, established teachers often learning new skills from younger colleagues.



Feedback after the initiative reported that "buddying up" with a Change Champions particularly helped older members of staff who stated that the fear of the pupils knowing

more than themselves would deter them from using technology in the classroom. This fear has some grounding as the children that Marc Prensky calls the “digital natives” 'represent the first generations to grow up with this new technology. They have spent their entire lives surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age.' (Prensky, 2001) Putting in place the necessary skills and support helps to overcome this fear and drives forward change within e-learning settings.

Conclusion

There were many challenges involved in the preparation and training of the school’s staff necessary for the implementation of a school-wide online safety initiative programme. The most prominent of these challenges were: staff motivation and engagement and time and resource implications.

Staff motivation and engagement was tackled in a variety of ways although the decision to share the senior management’s vision of online learning (both organisational and pedagogical) with the staff at the outset was the foundation of a shared process. Feedback after the initiative suggested that staff felt they had opportunities to air any concerns and to ask for support throughout. The support that was offered them was both structured (the three week online EPICT course) and unstructured (drop-in sessions and buddying up with a Change Champion). Staff engagement was further increased by the added incentive of an accredited qualification and also the importance and prominence of the course’s subject matter (e-safety).

Staff time and resources were assessed at the beginning of the initiative. The senior management of the school were advised by the author that the initiative would be time-intensive. The school therefore allocated a set amount of time for staff to develop their skills and to begin to create online resources. This allocation of time also gave the initiative a greater perceived value by staff. More practical resources such as hardware and software were maintained by technical staff and a representative of the group joined in all meetings so that they were aware of the wider implications of the initiative and the pedagogical uses of the resources.

The initiative was judged by the school to be a success. The school staff reported that they felt more confident in using the VLE within lessons and all of them completed the three week EPICT course to gain their accreditation. The school is looking to implement the school-wide e-safety programme with a blended model of delivery in September 2010 with a staff that is competent in the basic skills of online teaching and learning. As a final stage of Ambrose’s model, the school put in place an Action Plan to move the change forwards and develop e-learning practice further. This plan helps to make the changes long-term and sustainable. The school’s action plan involved the permanent establishment of Change Champions with allocated financial incentives, the regular re-audit of staff ICT skills and creation of a school-wide resource repository to share reusable learning objects.

By using a change management framework, engaging all staff members and managing resources and time effectively, the senior management of the school achieved their vision of all staff using the VLE effectively and put in place an action plan for sustainable change.

Amado, G. and Ambrose, A (2001) The transitional approach to change, H. Kamac, Eastborne, UK

Ambrose, D. (1987). Managing complex change. Pittsburgh, PA: The Enterprise Group, Ltd.

Armstrong, D. , Atkins, J., Kane, M., Mackenzie, A., McBurney M. and McMullan T. (2004) Moving Towards e-Learning in Schools and FE Colleges: Models of Resource Planning at the Institution Level : Research Report 601. Dfes, London. http://www.dfes.gov.uk/research/data/uploadfiles/RR601.pdf

Badge, J ., Cann, A and Scott, J. (2005) e-Learning versus e-Teaching: Seeing the Pedagogic Wood for the Technological Trees School of Biological Sciences, University of Leicester, Leicester http://www.bioscience.heacademy.ac.uk/journal/vol5/beej-5-6.aspx

Barritt, C., Alderman Jr., F. L. (2004). Creating a Reusable Learning Objects Strategy: Leveraging Information and Learning in a Knowledge Economy. San Francisco, CA: Wiley Books.

Bates, A. (2005) Technology, e-learning and distance education, London: Routledge

Bayne, S, (2004) Smoothness and Striation in Digital Learning Spaces, University of Edinburgh, United Kingdom, pp 302–316

Becher, T. and Trowler, P. (2001) Academic Tribes and Territories: intellectual enquiry and the cultures of disciplines (2nd edition). Buckingham: Open University Press/SRHE.

BECTA (2006) How to conduct a School ICT Audit. http://schools.becta.org.uk/index.php?section=re&catcode=ss_res_eva_02&rid=434

Beer, M and Nohria, N (2000) Cracking the code of change. Harvard Business Review, May-June: 133–141

Burgess, S and Ratto, M (2003) The Role of Incentives in the Public Sector: Issues and Evidence. Oxf Rev Econ Policy 19: 285-300

Byron,T (2008) Safer Children in a Digital World. The Report of the Byron Review, DCSF, UK

Byron,T (2010) Do we have safer children in a digital world? A review of progress since the 2008 Byron Review, DCSF, UK

Campbell, L. (2003) Engaging with the Learning Object Economy, Chapter 4 of: Reusing Online Resources: A Sustainable Approach to eLearning, (Ed.) Allison Littlejohn. Kogan Page, London.

Cameron, E. and Green, M. (2004) Making Sense of Change Management. Kogan Page.

Caplan, D, 2004. The development of online courses. In: Anderson, T and Elloumi, F, ed. Theory and practice of online learning. Athabasca: Athabasca University.

Carnall, C. (2007) Managing change in organizations. (5th edition) Harlow: FT Prentice Hall

Conole, G. (2004). E-Learning: The Hype and the Reality. Journal of Interactive Media in Education (Designing and Developing for the Disciplines Special Issue), 2004 (12). ISSN:1365-893X www-jime.open.ac.uk/2004/12?

Conole, G., Oliver, M., Falconer, I., Littlejohn, A. & Hervey J., (2006) Designing for learning in G. Conole and M. Oliver (eds) (2006) Contemporary perspectives in e-learning research: themes, methods and impact on practice. The Open and Flexible Learning Series. Routledge, London, Chapter 7, pp 101-120

Conole, G., White S. and Oliver, M. (2006) The impact of e-learning on organisational roles and structures in G. Conole and M. Oliver (eds) (2006) Contemporary perspectives in e-learning research: themes, methods and impact on practice. The Open and Flexible Learning Series. Routledge, London, Chapter 5, pp 69-81

Dfes (2005) Harnessing technology – transforming learning and children's services, DfES, London www.dcsf.gov.uk/publications/e-strategy.

Dennison, W. F. & Shenton, K. (1989). Improving the Management Skills of Teachers. British Journal of In-Service Education, 15(3), 170-176

Dublin, L. (2003). If You Only Look Under the Street Lamps… or Nine e-Learning Myths. The eLearning Developers Journal, 1-7. June 16, 2005

Griffin, D., Mitchell, D. and Thompson, S. (2009) Podcasting by synchronising PowerPoint and voice: What are the pedagogical benefits? Computers and Education, March 2009.

Hayes, J. (2002) The theory and practice of change management, Houndmills, Palgrave.

JISC (2009) Changing Teaching and Learning styles Case Study retrieved July 2, 2010 from http://www.jiscinfonet.ac.uk/infokits/change-management/resistance-to-change

Kiss, (2010) Facebook announces new safety measures but no panic button The Guardian, April 13, 2010, retrieved July 1, 2010 http://www.guardian.co.uk/technology/2010/apr/13/facebook-safety

Kotter, John P.; Schlesinger, Leonard A. (1979) Choosing strategies for change, Harvard Business Review, Vol. 57, No. 2, pp. 106–114

Martinez, M. (2003). High attrition rate in e-learning: Challenges, predictors, and solutions. The eLearning Developers Journal, 1-7. July 14, 2003

Mort, L (2010) 21st century learning, in Headteacher Update published online, retrieved June 13, 2010 http://www.headteacher-update.com/cgi-bin/go.pl/article/article.html?uid=47021;type_uid=79;section=Features 10/3/2010

Mumtaz, S. (2000) Factors affecting teachers' use of information and communications technology: a review of the literature, Journal of Information Technology for Teacher Education, 9 (3),pp. 319–341.

Newton, R. (2003. Staff attitudes to the development and delivery of e-learning. New Library World, 104(10), 412-425, MCB University Press.

Ofsted, (2009) Virtual learning environments: an evaluation of their development in a sample of educational settings (ref no: 070251) London

Ofsted (2010) The safe use of new technologies, (ref no: 090231) London

Paton, R. & McCalman, J. (2008) Change management : a guide to effective implementation. SAGE, Los Angeles

Pelgrum, W.J. (2001) Obstacles to the integration of ICT in education: results from a worldwide educational assessment, Computers & Education, Volume 37, Issue 2, September 2001, Pages 163-178

Pirani, J. (2004). Supporting E-learning in Higher Education, retrieved July 6, 2010. retrieved June 16, 2010 from http://net.educause.edu/ir/library/pdf/ERS0303/ecm0303.pdf

Price, C, (1994) Piloting higher education change: a view from the helm, in: S. WEIL (Ed.) Introducing Change 'From the Top' in Universities and Colleges, Kogan Page, London

Quinn, J.B. (1993) Managing strategic change, in Mabey, C., Mayon-White, B. (Eds), Managing Change, 2nd ed., Paul Chapman Publishing Limited, UK

Rogers, Everett M. (1962). Diffusion of Innovations. The Free Press. New York

Rosenberg, M (2001) E-Learning: Strategies for Delivering Knowledge in the Digital Age, The McGraw Hill Companies, Columbus, USA

Schoolzone (2007) The impact of Virtual Learning Environments and Learning Platforms in UK Schools: A review of strategies from a range of stakeholders, Schoolzone, UK

Sharma, R. (2007) Change Management, concepts and applications, Tata McGraw-Hill Publishing Company Limted, New Delhi

Singh, H. (2003) Building effective blended learning programs. Educational Technology, 43(6), 51-54.

Stronge, J.H. (2002). Qualities of effective teachers. Alexandria, VA: Association for Supervision and Curriculum Development

TDA (2009) Using a VLE: improving reflective practice and self-assessment of progress against the QTS standards and supporting practice Training and Development Agency for Schools, London

Treviranus, J. and Brewer, J. (2003) Developing and Reusing Accessible Content and Applications, Chapter 10 of: Reusing Online Resources: A Sustainable Approach to eLearning, (Ed.) Allison Littlejohn. Kogan Page, London.

Ward, M (2010) When the tech becomes unfriendly BBC News website, Feb 9 2010,(retrieved June 18, 2010 http://news.bbc.co.uk/1/hi/technology/8504520.stm

Wareham, Y (2005) Studying the effects of a Virtual Learning Enivronment (VLE) on the Workload of group tutors in the college, Bournemouth and Poole College, Bournemouth

Woodward S, Hendry, C. (2004) Leading and Coping with Change, Journal of Change Management, 4(2), p.155-183