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Virtual Classrooms in the Workplace: An Implementation Study

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Abstract

The use of e-learning by corporate organisations as a means to deliver training to employees has grown significantly in recent years. Improvements in technology have meant that corporate Learning and Development (L&D) departments now have more options available to them and the use of web 2.0 technologies is increasingly being explored as a method of delivering training to employees both asynchronously and synchronously. Research into e-learning in workplaces is limited and tends to consist of anecdotal accounts from organisations with a US focus (Newton & Ellis, 2005). This case study explores the implementation of web conferencing software as a means to deliver training both synchronously and asynchronously within an Irish insurance company. The case study was undertaken during an eight month period prior to the planned launch of the technology and it provides a perspective on the challenges encountered during implementation and how issues affecting the production of high quality e-learning content were overcome. The research was undertaken using an exploratory case study approach. Data was collected through direct observation, participant observation and interviews with trainers and managers who were directly or indirectly involved with the implementation of previous and current e-learning strategies. The research finds that the presence of the championing factors: leadership, learning culture, technology infrastructure and financial support, contributed towards the successful implementation of learning technology within the organisation. In addition the study illustrates that emphasises within the organisation has shifted from producing as much e-learning content as possible to producing high quality e-learning content. Further research is warranted to evaluate the transfer of knowledge and behavioural change achieved as a result of the content generated during the study. The study has relevance for corporate L&D departments considering the implementation of virtual classroom technology to deliver corporate training. It contributes to the knowledge base on the introduction of new learning technology within the workplace environment and the factors which should be considered when creating and designing content using new technology.

Keywords: Blended learning, e-Learning, Quality, Virtual classroom, Workplace learning

Introduction

As organisations look to more efficient ways of updating employees' knowledge and skill the role of e-learning as a method of training delivery has become increasingly more important (Wargnier, 2010). Authors such as Rosenberg (2006) recognise e-learning as an important structure that supports both formal and informal workplace learning. Research into e-learning in workplaces is limited however and tends to consist of anecdotal accounts from organisations with a US focus (Newton & Ellis, 2005). There is a need for more exploratory research into the processes involved in adopting e-learning in different learning contexts and as Newton & Ellis (2005) suggest it is important for research to identify the distinct traits of work place learning and the aspects which may influence effective e-learning implementation.

This case study explores the implementation of web conferencing software as a means to deliver training both synchronously and asynchronously within an Irish insurance company. It provides a perspective on the challenges encountered during implementation and how issues affecting the production of high quality e-learning content were overcome. The insurance company was set up in Ireland 40 years ago and has grown to become one of the largest insurance companies in the Republic of Ireland, providing insurance for over 500,000 customers. Currently the company employs approximately 1,000 people; two-thirds of the workforce is based in Dublin with the remaining employees located in 32 sales offices around the country. Prior to implementation of the technology, training in the organisation has been delivered using asynchronous e-learning modules and by departmental trainers who teach in classrooms or provide one-to-one coaching. The case study was undertaken during an eight month period prior to the planned launch of the technology by the researcher who was a member of the Learning and Development (L&D) function and part of the project team assigned to implement the technology.

Research Methodology, Data Collection and Data Analysis

The research was undertaken using an exploratory case study approach. This approach was adopted as it allows the researcher to study a contemporary phenomenon in depth in its natural context, (Yin, 2009). The ability to study the phenomenon in its natural surrounding means the researcher does not remove the participants from their normal life situation thus allowing the researcher to focus on social interactions and the meanings that are developed by participants (Swanborn, 2010). Critics of the case study point to its lack of objectivity and generalizability. However case study researchers do not seek to be objective as the interaction between the researcher and the object of investigation leads to the discovery of deeper meaning (Simons, 2009). The following research questions guided data collection for this study.

1. What are the steps taken to ensure successful implementation of new learning technology in the organisation?
2. When creating content using new learning technology, what are the factors that affect quality?

Data was collected using multiple tools compatible with qualitative studies using a case study methodology. Historical data was obtained using organisation reports, course feedback sheets and interviews with managers. All trainers and the L&D team were interviewed individually before the technology was fully available and after the final recordings were made. Group interviews were carried out with various managers and employees prior to

implementation. Whilst time pressure meant it was not possible to gather information from a wide number of employees, every effort was made to ensure that both genders and a range of age groups were represented. The L&D manager who was central to the initial implementation of e-learning within the organisation and was project sponsor for the virtual classroom project was interviewed before, during and after the implementation while the researcher's observations of the test phase and various project meetings were recorded in a blog.

Data was analysed using the following themes and sub themes

1. Leadership: How did managers react to earlier e-learning implementations and the current implementation? What was the influence of senior management on the virtual classroom project? What actions took place prior to implementation to ensure management support for the virtual classroom?
2. Learning Culture: What steps were taken to ensure early adoption of e-learning with employees? What was the reaction of employees to the virtual classroom? How was the virtual classroom used to change the learning culture?
3. Technology: What technology issues were encountered? How were issues overcome?
4. Finance: What was the availability of appropriate budgets during earlier e-learning implementations and the current virtual classroom implementations?
5. Trainers: What was the previous experience of trainers with virtual classroom technology? What did they think about the introduction of the technology? What were their experiences when using the technology?
6. Training Content: What issues arose when developing training content? How were the issues overcome? What criteria were used to ensure content was of the appropriate standard?

Why Organisations Implement e-Learning

The reasons for implementing e-learning within corporate organisations tend to centre around its cost effectiveness, consistency, flexibility and convenience to users (Gunasekaran et al., 2002). However the main reasons for implementation in organisations can be discussed under two main themes which are cost reduction and flexibility (Macpherson *et al.*, 2005).

Within the area of cost reduction organisations can experience savings through learning compression (Kineo, 2012) which is a reduction in the actual time taken to deliver training. For example, Toshiba American Business solutions (TABS) transformed a seven-hour, instructor-led session on Six Sigma8 for management into three, 45-minute, self-paced online training modules (Mallon, 2009). For companies with geographically dispersed employees there can be huge costs saved in travel expenses and time away from the workplace, Xerox cut travel expenses in Europe by as much as 10% (Hopp, 2012), while the implementation of a virtual instructor led training programme saved Emerson Network Power Liebert Services over \$100,000 in travel costs (Weinstein, 2011). Other areas where cost savings may be experienced are in the reduction of the number of trainers required (Macpherson *et al.*, 2005; Mallon, 2009), a reduction in the organisations carbon footprint through presenting learning content online or providing alternatives to paper based forms of communication (Kineo, 2012) and the ability of e-learning to deliver training to large numbers of employees (Arth, 2011). While corporations may implement e-learning to reduce costs, this is not always the outcome. At the end of the 90s the enthusiasm for e-learning coincided with the internet bubble bursting, leaving managers to review their e-learning investment and wonder what value had been achieved (Rosenberg, 2006). Challenges affecting return on investment are

long implementation cycles and investment in systems which do not integrate with the existing infrastructure (Pack, 2002) or investment of time and money with a vendor who is subsequently unable to meet the requirements of the organisation (London & Hall, 2011a).

The discussion on flexibility tends to focus on two aspects; flexibility in delivery and flexibility in the pace and dissemination of learning (Macpherson *et al.*, 2005). The traditional definition of the workplace as being a single location with normal daily hours is being replaced by global organisations and communication networks that change the notion of standard work hours and incorporate multiple geographical locations (Jones & McCann, 2005). They contend that technology provides the answer to providing the flexible learning environment that employees now require. Rosenberg (2006) supports this argument contending e-learning “conquers” (p.5) time and location and facilitates immediate content updates and interconnectivity. As a medium e-learning has the flexibility to deliver across all areas of work based learning such as induction, new product information, career development training and updating work knowledge and skills (Wargnier, 2010). From an employee perspective, employees often have different needs for information and want to learn at a time and pace that suits their own ability and lifestyle. E-learning provides organizations with a medium that can be adapted to different trainees without modifying the actual training content (Long & Smith, 2004).

Barriers to the Effective Implementation of e-Learning

While the use of appropriate pedagogical design is imperative for effective training through any medium, literature highlights other factors that may impede or increase the effectiveness of e-learning within the corporate context. Waight & Stewart (2005) propose the success of corporate e-learning is reliant on “championing factors” (p.338). These factors are defined as leadership, learning culture, technology infrastructure and financial support and are explored here in further detail.

Research has indicated a higher level of resistance to e-learning from more senior levels in organisations (Macpherson *et al.*, 2005). There is a need for senior management to lead the way and embrace new ways of learning, as if they fail to do this there is no encouragement for the rest of the workforce (Hopp, 2012). Employees judge the importance of a training initiative by their managers’ reaction to it, this reaction will either promote or discourage their participation (Weinstein, 2011). The study completed by Cheng *et al.* (2012) supports this view with their findings indicating that supervisor and manager reinforcement acts as a motivator for employees expectations of gaining a beneficial outcome from using e-learning. Learning culture can be defined as “a collective set of values, processes and practices that influence and encourage self-sustaining and continuous learning in the organization” (Arth, 2011, p.26). Tynjälä & Häkkinen (2005) propose e-learning is not a “miracle remedy”(p.325) to workplace learning and contend the success of e-learning is reliant on the learning culture. Roy (2010) agrees and argues that the development of an e-learning culture is a requirement to ensure an effective transition to e-learning. Responsibility for creating a learning culture lies within the role of the manager. Managers need to raise awareness with employees of the role of e-learning in their own individual development and in organisational development (Roy, 2010). The difficulty that exists for organisations is that different units within the same organisation may have a different learning culture which adds to the complexity of implementing an e-learning strategy (Hodkinson & Rainbird, 2006).

While technology enables e-learning it can also be a barrier within organisations to the achievement of its possibilities (Macpherson *et al.*, 2005). Medárová *et al.* (2012) highlight barriers such as poor connectivity, inadequate software and a lack of technical support. Sun *et al.* (2008) argue that as e-learning needs the internet, the learning environment is more complex and slow response times or regular technical difficulties deter learners from taking online courses. There is a need to upgrade employees skills in technology, ensure technical support is available and increase bandwidth where needed to overcome the barriers identified (Roy, 2010). Sun *et al.* (2008) remind us that flexibility is an important factor in e-learning satisfaction and system administrators need to ensure all system functionalities are always available to accommodate learner needs.

As financial resources support the learning culture and the technology infrastructure, they are a key component in creating relevant and authentic learning experiences (Waight & Stewart, 2005). The case study completed by Newton & Ellis (2005) emphasises the need for policies supporting on-going infrastructure funding. They contend where e-learning projects were not centrally funded development was “erratic and often inadequate” (p.388) and suggest strategic support resulted in e-learning acceptance and a coordinated approach to course development, training methods and infrastructure requirements.

The Evolution of e-Learning within Organisations

Rosenberg (2006) refers to the thoughts of a colleague who suggests that organisations go through three stages with e-learning. The first stage is “we need to get into e-learning” (p.2) the focus during this stage is on producing as much content as possible as quickly as possible. For L&D departments new to the concept of e-learning the use of learning technology to deliver training can prove difficult. Learning professionals are interested in using new tools and technology but do not have an understanding of how to do so and struggle to create innovative content (Bozarth, 2012; Holcombe, 2005). Littlejohn *et al.* (2008) suggest understanding how technology may be used is evolving and they contend teachers are in the position of learners as they explore how technology may be used effectively to deliver training. There is a tendency to use a technology oriented approach to training rather than the use of technology in tandem with other strategies to deliver training (Holcombe, 2005). This focus on technology has led to a perception that e-learning content is poorly designed and lacking in quality (Wang *et al.*, 2010).

It could be argued that it is this realisation that technology itself will not deliver effective training that leads organisations to move to the second stage that Rosenberg (2006) describes as “we need to get better at e-learning” (p.2). For many organisations pedagogy is not viewed as a relevant issue as there is an expectation that effective learning will automatically occur once the technological infrastructure is in place, (Welle-Strand & Thune, 2003). They propose there is a need for a corporate learning strategy that combines technological and pedagogical considerations for the use of e-learning. By ensuring the appropriate pedagogical approach is taken organisations are laying the foundation for effective e-learning which is more likely to achieve its full potential (Mitchell & Honore, 2007; MacPherson *et al.*, 2005). Anderson & Dron (2012) illustrate the inter relationship between technology and pedagogy through the metaphor of dance, comparing technology to music and pedagogy to choreography. They argue technology and pedagogy “reveal and develop our human creativity and responsiveness and allow us to learn effectively and enjoyably” (p.2).

The third and final stage discussed by Rosenberg (2006) is “we need to support workplace learning and performance across the organisation” (p.2). During this stage the aim is to move from formal learning to both informal and formal learning and organisations design e-learning solutions that encourage knowledge sharing, collaboration and performance improvement within the context of work itself. For L&D departments the shift towards informal learning and social learning within the workplace means their traditional role of content creation and delivery is changing. There is a need to acquire new skill sets to cultivate social learning and manage the level of content creation within the organisation (Mallon, 2009). During this stage web 2.0 technologies can be used to promote an employee controlled learning environment, company customised sites similar to Facebook, Twitter and Youtube help employees understand and simplify information and resolve problems (London & Hall, 2011b). Arth (2011) describes the influence of web 2.0 on e-learning design as “next generation e-learning” (p.12), and suggests it is a trend towards smaller chunks of content often designed by the employee which is framed in the context of work and is available at any time. The result is a continuous learning process rather than a one off event.

The topic of quality within e-learning was contentious during earlier generations of learning technology and is even more contentious when web 2.0 technology is used in learning (Ehlers, 2009). He contends with more traditional e-learning methods the need is to check and control quality whereas with e-learning 2.0 scenarios quality development is becoming the “role of enabler” (p.303) of learning advancement with procedures such as feedback, reflection and recommendation becoming increasingly important.

Exploring the Challenges and Opportunities

The case study begins by reflecting back on previous e-learning experiences before exploring the current implementation of learning technology to support synchronous and asynchronous online learning. It uses the championing factors for successful e-learning implementation defined by Waight & Stewart (2005) as a lens to explore the elements which were present or absent during early implementations and the current implementation.

Previous e-learning experiences in the organisation

The first attempt to introduce e-learning into the organisation was in the early 2000s (Figure 1). At that time it was seen as a means to deliver training cost effectively to the network of geographically dispersed sales employees. This attempt failed - an examination of Waight & Stewart’s (2005) championing factors illustrates none were present. There was a lack of support for the solution from senior management. Data from a report completed at the time indicates management were not fully aware of the affordances and benefits of the solution. The team proposing the implementation reflect that this may have been because they were unable to align the e-learning solution to the organisation’s needs, a member of the team described it as a “good idea but we just couldn’t illustrate how it would work and what it would deliver for the company”.

During this period the training culture within the organisation tended to avoid training solutions delivered by external consultants. As a newly appointed member of the training team at that time the researcher experienced a “we know our business, so we know what’s best for our business” approach to training, and it was deemed that the level of expertise within the organisation was sufficient to meet training requirements. This view extended not only to external e-learning solutions but also to the provision of face-to-face soft skills or

technical training interventions by external providers. The existing technology infrastructure within the organisation was insufficient to support e-learning requirements and broadband was not widely available. The organisation had just heavily invested in installing a computer system in each of its regional sales offices and feedback from IT managers suggests there was no appetite to invest further in technology at that time as the priority for technology was to support business development rather than training.

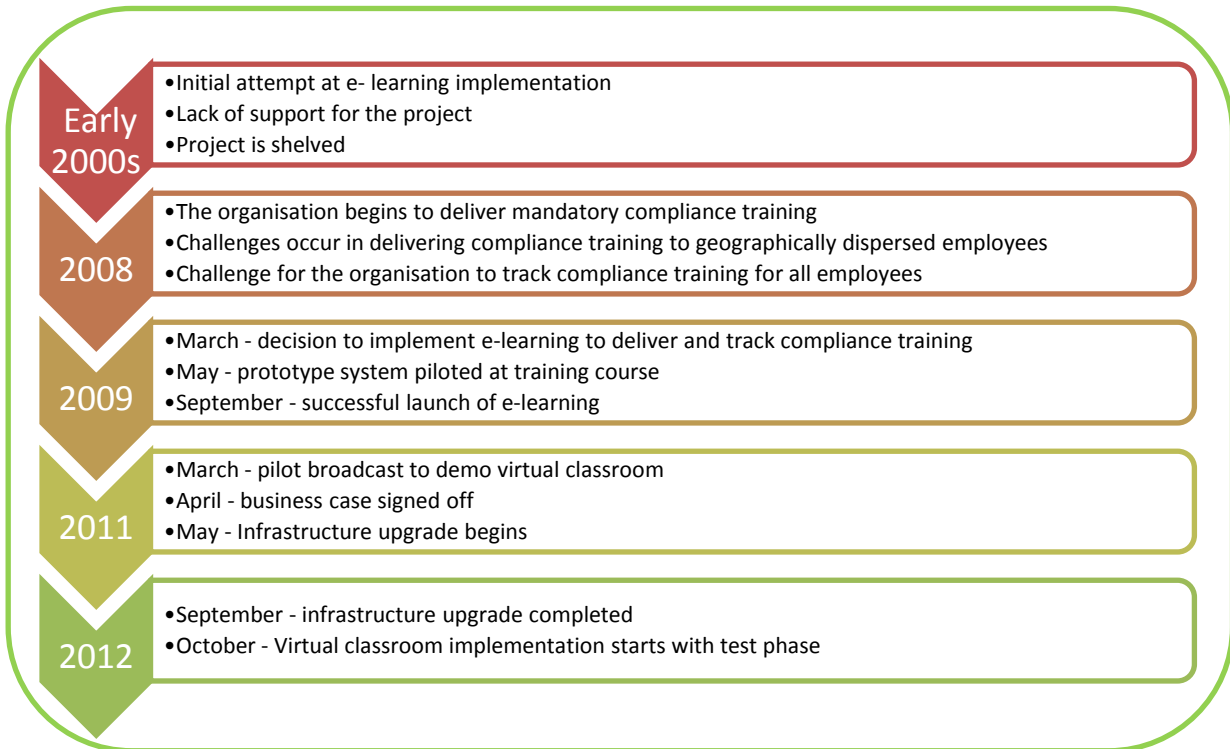


Figure 1 Timescale of previous and current e-learning implementations

With the launch of the Irish Financial Services Regulatory Authority (IFSRA) in 2003 the increasing regulation of the Irish financial sector led to the implementation of Minimum Competency Requirements (MCR) in 2007. These requirements became mandatory on the 1st January 2008 (Figure 1). Although the organisation began to deliver the required training, challenges arose in the area of tracking and recording the completed training and in delivering the required training to geographically dispersed employees. In March 2009, e-learning was identified as a possible solution to deliver and track compliance training. The decision was taken to implement a customised version of the open source Learning Management System (LMS) Moodle as a platform to deliver and track asynchronous compliance modules. An analysis of Waight & Stewart's (2005) championing factors indicates that this time all were present. There were significant changes in the leadership of the company which opened the door to investigating new possibilities. Newly appointed heads of Information Technology (IT) and L&D brought innovation and knowledge of open source e-learning tools into the organisation. Schein (1999) contends it can be difficult for insiders to recognise their own cultural strengths and limitations and suggests projects for cultural change work best with a combination of "outsiders and insiders working together" (p.342). The L&D manager commented that once the solution was identified, the skills were present in the organisation to implement it. In terms of the learning culture, Shapiro (1999) discusses the concept of "Infectious Commitment" (p.344) suggesting if employees can catch

the infection of advocating change it has the potential to become an epidemic within an organisation. In April 2009, a prototype system was built and piloted at a two day training course attended by over 200 employees. The use of the system during the training course proved to be an unprecedented success with feedback sheets from the course indicating all employees felt the system was intuitive and easy to use and that they would be happy to use it for future training. These early advocates engaged other employees with their experiences of e-learning and contributed towards a successful launch and uptake of the new system in September 2009. The technology infrastructure in 2008/2009 was inadequate to support e-learning, the L&D manager's approach was to "get the system in and then build on it" so medium term infrastructural issues rather than long term infrastructural issues were prioritised to ensure delivery of the technology requirements within the project timescale. Finally in the area of finance, it was recognised that there was a need to improve the existing technology infrastructure to support e-learning implementation. A budget was made available to support the upgrade in hardware that was necessary.

It can be seen that the presence of all championing factors ensured appropriate leadership support was present, employees were prepared for a new form of learning, the infrastructural changes deemed necessary were completed and finance was available to ensure successful completion of the project.

New Challenges

Within a year of its launch e-learning became an accepted medium for training delivery within the organisation. Feedback from employees indicated they liked the ability to learn at their own pace and at a time that suited their busy schedules. Managers too, were quick to realise the benefits of the medium which delivered training without the need to take employees out of the workplace. By 2010 approximately 20 online courses were available for completion on topics ranging from compliance and product information to technical and process updates, with over 8000 hours of mandatory compliance training completed by 500 employees before the year end.

With an ever increasing demand for e-learning from within the organisation and external economic factors leading to constant change in employees' roles and thus a constant requirement for immediate training, a review was undertaken of current training methods by the L&D manager. The result of the review was that there was a need to facilitate faster content development and take a more blended approach to training delivery. On this basis it was decided to implement virtual classroom technology which would facilitate synchronous and asynchronous online training. It was anticipated the technology would facilitate quicker content development through the use of pre-recorded modules and enable the blended approach to training delivery that was desired.

A web casting system supplied by an Irish company was identified as a viable solution. The system enabled live web casts which could be recorded for future reference and featured text chat which facilitated interaction between the trainer and the learners. In March 2011, to influence leadership support for this new form of training, it was decided to prepare a short broadcast for all senior managers and executives to demonstrate how the technology worked. In a feedback session after the broadcast, Managers who attended the demonstration agreed the technology was "innovative" and would facilitate "a consistency which was lacking presently in the delivery of training and communications". Evaluation of the championing factors indicates that although leadership and financial support were present, the existing

technology infrastructure was unable to support the increased demands of the new technology. The required upgrade to the infrastructure was a significant project which was estimated to take between a year and 18 months to complete. It commenced in May 2011 and was completed in September 2012, during that time it was not possible to continue with the virtual classroom project. On completion of the infrastructure upgrade, a project team consisting of an IT Project Manager, two members of the L&D team - one of which was the researcher - and other employees as required, began to work on implementing the original solution identified, to deliver synchronous and asynchronous online learning.

The Implementation Stage: Ensuring the Championing Factors are in place

The decision was taken to implement the system first used for the pilot broadcast (Figure 2).

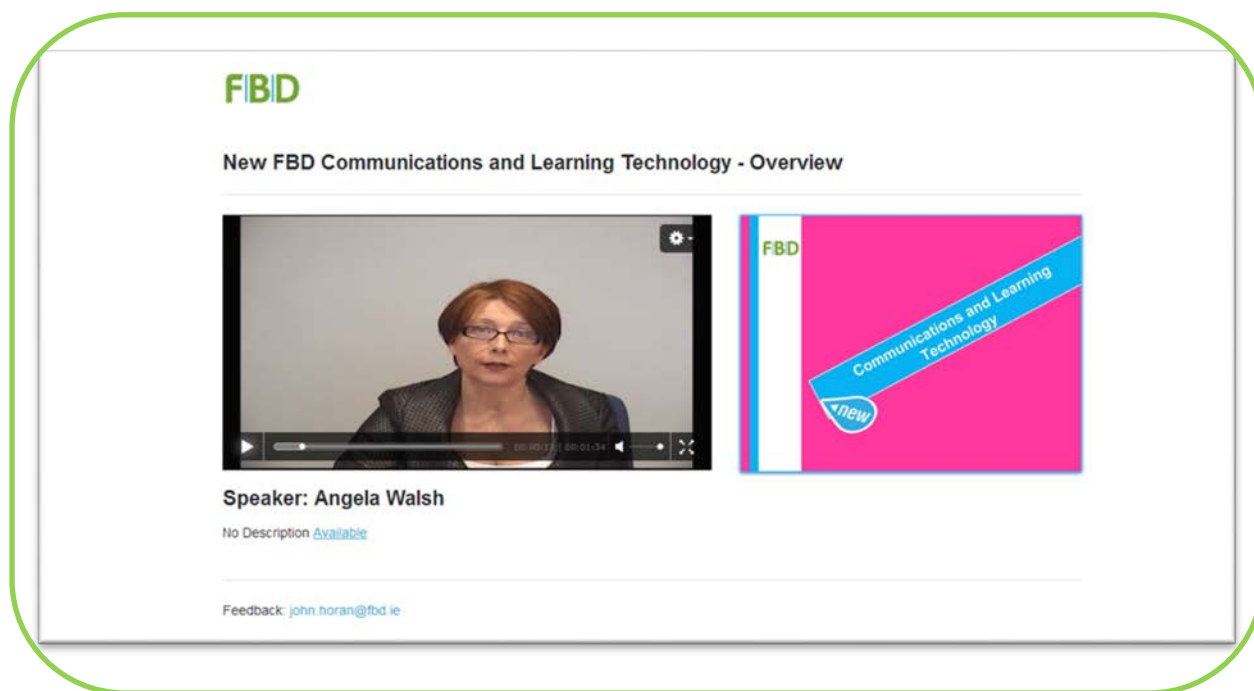


Figure 2 Example of user interface for virtual classroom

This technology is currently used by several third level institutions to deliver lectures through live webinars and includes a text chat facility to allow students pose questions. Live broadcasts are recorded and may be accessed through the institution's LMS. Although this solution does not include several features of other applications such as white boards, polling or breakout rooms it was decided the ability to broadcast live with text chat and pre-record training sessions met the immediate requirements of the project and the system would be reviewed after a year to discuss if it continued to meet the needs of the organisation. Several layers of testing were required: firstly proof of concept testing to ensure a high level of audio and video quality and secondly load testing to ensure any training or communications delivered using the technology would not impact on the business critical applications required for day to day business. The level of testing required proved to be significant as the vendor had never implemented the system in a corporate setting using a citrix network. The view of the IT project manager was that considering the high level of investment which had already been made any compromise on quality standards would negatively impact the continued use and acceptance of the system leading to a system which would "become redundant very

quickly”. It was agreed that testing should continue until the desired quality levels were achieved. The impact of the extensive test phase was a delay in the launch of the technology; however parameters for the number of users accessing the technology and for the quality required for audio and video have been identified. These parameters will reduce test schedules for any similar type technology in the future.

At all stages during the test period and before launch, opportunities were taken to involve senior management in discussions about how the technology could be used in their business area. Short recordings were made using the technology to enable managers visualise what could be achieved. The senior sales manager proposed monthly communications to sales offices could be delivered using the medium, broker managers reviewed how the technology could be used to deliver updates and training to external brokers and felt that in so doing the technology would help them to “build and strengthen business partnerships” and underwriting managers planned to use the technology as a means to record compliance modules they had developed, so that they could be “delivered to a wider audience”. One senior manager who had some experience with the medium in a previous role with another company suggested that in order for the technology to be effective a “higher level” of presentation skills than was currently present in the organisation would be required. As a result it was agreed to engage a media expert to provide coaching for presenters.

Opportunities were also taken to involve employees with the technology before it was officially launched with a view to creating a link with early adopters and engaging them as proactive advocates of the technology. For example a short recorded link was shown at an employee communications forum and a short live broadcast was demonstrated during the annual sales conference. In both cases feedback was positive; at the forum employees commented on the quality of the link, while at the sales conference the attendees interviewed after the broadcast felt it was a positive development in the area of training and they also favoured the ability to interact with a trainer online without the need to travel.

The L&D team consists of the L&D manager and a core team of three people – one of whom is the researcher. This core team work on e-learning projects and provide e-learning support to five departmental trainers who deliver classroom style training and one to one coaching. Initial interviews with the core L&D team and departmental trainers indicated all with the exception of the L&D manager, the researcher and one other trainer had no experience with synchronous online training either as a student or a facilitator. Reaction to delivering online whether recorded or live was generally positive with trainers realising it was a natural progression from what had already been achieved online. One trainer did suggest it was “not for me” and that there may be a need for trainers to design content with the aim of it being delivered by a “broadcaster”. This sentiment was echoed by the L&D manager who although she was the project sponsor felt she would not be part of the team in front of the camera, preferring to act in the role of “producer or director” behind the camera. The provision of media training for trainers was viewed as a positive addition by everyone, with trainers regarding the workshops as a safe environment where they could practise and receive feedback from a media expert. They also felt the workshops would allow them to interact and become familiar with the technology which would increase their levels of confidence when using it in the future.

The early sign off on the business case for the technology indicates the level of financial support for the implementation. During implementation additional costs arose in the area of the purchase of additional hardware and the provision of media training. Whilst there was no open ended budget, the feedback from senior management was that there was a preference

that the project be launched with high quality content, their thoughts were that the significant investment would be lost if the content was not high quality and employees have a negative experience during initial usage.

Creating Content and Using the Technology

In March 2013, a 14 month Management Development Programme (MDP) for 220 managers from all business areas was launched with 6 two day workshops. This programme was the organisation's first attempt at a blended learning solution. The rationale for this approach was the result of a discussion with the CEO who felt that a programme should be designed which embedded the learning achieved during the workshops and allowed managers to reflect on how they were applying their skills. Therefore after the first two day workshops, managers were required to complete monthly activities online. Each month's activities concentrated on a specific topic covered during the workshop and it was decided to use the virtual classroom technology to create short pre-recorded modules using the trainer who delivered the original workshop content. In addition it was hoped the monthly activities would eventually include live online webinars with SMEs from industry.

With short lead in times before the recordings were required, it was decided to take an agile development approach and engage an external media expert to provide advice to presenters during the recording sessions. For the first online module 12 short recordings were required. Eight of the recordings were to be completed by the trainer who delivered the MDP content during the workshops. The CEO, L&D manager, Human Resources manager and an internal trainer completed the remaining recordings. During this phase the team encountered several challenges which led to three iterations of content development before the desired level of quality was achieved.

At the first recording session constraints were found with the virtual classroom technology. Although the technology was selected for its ability to facilitate a synchronous online classroom and as a method to pre-record asynchronous training modules, its strengths lie in the area of live broadcasts or in creating pre-recorded modules where the trainer is seated close to a webcam and microphone. Acting on feedback from the media expert it was decided that the trainers and presenters should stand throughout their delivery, as it was more engaging and inclusive than being recorded seated behind a desk. As a result the system was unable to record high quality audio. Other challenges which arose during the session were in the area of scripting and presentation skills. The scripts developed for the presentations were written to be read rather than spoken. The media expert provided feedback on how the scripts could be changed, however this led to a significant amount of the recording time being taken up with rewriting scripts. Presenters needed additional rehearsal time not only because of the new scripts but also to allow them to incorporate the feedback from the media presenter on their delivery style and presentation. All of the presenters commented that their delivery needed to be "more animated" than if they were delivering the same presentation in front of an audience and it took some time to get this right. When the first set of recordings was reviewed it was felt that the presenters were engaging and the scripts were appropriate but the quality of the audio and video was poor. This led to the decision that the best usage of the web casting system was for live broadcasts and it would be necessary to use other methods for pre-recorded modules.

During the second day of recording different equipment was used which led to new challenges. When the recordings were reviewed it was felt that presenters were not as

engaging as they had been in the first set of recordings. Presenters said they felt “constrained” and “restricted” because they were unable to move even slightly while delivering their presentations. This was as a result of the type of microphone used. In addition to the issue with the microphone, no autocue was used. The main presenter felt that he had “too many things to concentrate on”. The presenter had to remember the script using power point slides which were projected onto the wall in front of him. He felt reading the script and trying to look at the camera at the same time detracted from his delivery. Although the audio and video quality of the second set of recordings was much improved on the first set, this time it was felt that the presenters’ delivery impacted on the overall quality of the recording.

The deadline for online content continued to impose a level of urgency. Discussions with senior management led to the decision to withhold the launch of the online modules until the desired level of quality was achieved. Management felt that a substantial investment was made in the MDP programme to bring about change in the management culture of the organisation. The first workshops were highly successful with managers energised and enthusiastic to implement new ideas. It was felt that high quality training content in the monthly online modules was vital to embed and build on the learning achieved during the workshops. To ensure that the third recording session was successful it was decided that the following was required:

- The media expert was to be present to provide feedback on personal appearance and delivery style
- Autocue to be used
- Clip microphones to be used
- Playback facility to be made available to view the recordings on the day

The completed recordings reflected the benefit of the presence of the media expert the additional equipment and the learning achieved from the previous two recording sessions. The recordings were deemed to be the desired level of quality and were used for the first month’s online activities of the MDP programme.

Discussion and Findings

The implementation of e-learning within the organisation in 2009 correlates with the first of three stages discussed by Rosenberg (2006) “we need to get into e-learning” (p.2). When the decision was taken to implement virtual classroom technology, it could be argued that the organisation was still at that first stage, as part of the rationale to introduce the technology was based on the need to produce more e-learning content faster. However it also indicates the start of the organisation’s move to Rosenberg’s (2006) stage 2 and a realisation similar to that which has occurred in current academic practice that “we need to get better at e-learning” (p.2).

We live in an age of “supercomplexity” (Barnett, 1999 p.29) and the growth in global competition coupled with the ubiquitous growth in information and communication technology has led to increased pressure on organisations to build a flexible and skilled workforce in order to remain competitive Taran (2006). Employees are in roles that are changing constantly and have to cope with work and learning without the usual boundaries that exist between them. They move between the role of employee and learner Boud (2001) and cope with completing work related projects simultaneously with class assignments Taran (2006). In order to meet the demands of the organisation and the learning needs of the

employee, the research shows the L&D function like faculty recognise it is no longer possible to continue to teach in classrooms only and ignore the possibilities of online learning. Again as with current academic practice this research illustrates acknowledgement that it is also not possible to ignore classroom based training in favour of on-line delivery only. So as the organisation moves into stage 2 there is experimentation with new ways of design and delivery of training. The implementation of virtual classroom technology was seen as a means to support and embed the learning initiated at the organisation's management development workshops. It illustrates the organisation's first approach to blended learning. While it has been agreed that there is a requirement to deliver live broadcasts in the long term, constraints with the technology have led to a decision to pre-record the modules required for the management development programme. This demonstrates the innovation that Rosenberg (2006) refers to as an indicator of success during this second stage, as the organisation finds ways around the constraints to deliver the required pre-recorded modules. Rosenberg (2006) contends the focus during stage 2 is on quality and impact. The research indicates that both quality and impact have been primary objectives at all times and in all areas in the project from system testing through to content design and delivery. Academic practise suggests a sound pedagogical approach should be taken when designing course content. When considering the content for the online modules of the management development programme the team adopted the pedagogical approach of designing smaller independent objects which were less linear than previous online modules and which would promote experiential learning. Having decided on the content of the topics it was necessary to ensure that technology and the ability of trainers to use it would not detract from the quality of the content. Whilst every effort was made to ensure high audio and video quality there was also significant work carried out with the media expert and the presenters to ensure their delivery was engaging. The external trainer, who had the most modules to record, had previously seen recordings of himself. He acknowledged the media expert improved his delivery style and script and felt the final recordings were "the best I've ever achieved". The other presenters had no experience in delivering training in a video format. They also acknowledged the input of the media expert as being "invaluable" during the process as they felt they were literally "learning on the job". The L&D manager, who had previously said she would prefer the role of "director" behind the camera, felt she was confident she had gained the skills required to feel comfortable in front of the camera and deliver in an engaging manner. All presenters commented that the use of autocue in the final set of recordings helped them to improve their delivery style, they felt it reduced the number of elements that they needed to concentrate on during their delivery.

Whilst the consequences of adhering to the standards of quality and impact have led to significant delays both for the implementation of the technology and the development of training material the experience has resulted in some key learning for the organisation. Firstly, the strength in the webcasting system selected is in its ability to support live webcasts which may be recorded for future reference. For high quality pre-recorded modules it is more efficient and effective to use other methods. Secondly, when recording modules it is necessary to ensure the appropriate equipment is present; this includes suitable microphones and autocue. The suitability of the microphone lies in whether it facilitates or restricts the movements of the presenter while the use of autocue enabled presenters to address the camera improving their delivery. Thirdly when preparing scripts for presentations it is important that they are written in less formal language with appropriate pausing inserted to ensure a more natural and engaging delivery. Fourthly there is a need to ensure that all trainers and presenters have suitable training before recording sessions. This training should be delivered by a media expert. Lastly and most importantly there has been a realisation that it is not

sufficient to have content which has solely high quality audio and video, it is also necessary for the presenter to engage and be engaging throughout the delivery using appropriate scripts. Final recordings have shown the desired level of quality has been achieved, and will set the benchmark for future recordings. As previously mentioned the quest for quality and impact have led to unanticipated delays in producing the training material required. It is expected that as time progresses these delays will reduce and pre-recorded content will be produced faster as the lessons learnt are implemented.

Conclusion

Critics of the case study as a method of research, point to its lack of objectivity and generalizability. However this study has provided what Creswell (2013) describes as “general lessons” (p.99) which may be used when implementing new learning technology within work based learning.

Waight & Stewart’s (2005) championing factors of leadership, learning culture, technology infrastructure and financial support have proved a useful lens to explore the elements that were absent or present during e-learning implementations within this organisation. The initial implementation failed as none of the factors were present, with no leadership support there was no budget to fund an upgrade to the technology infrastructure and the learning culture was closed to new ways of training delivery. When it came to the successful implementation in 2009 each factor was in place however it could be argued that there were two factors that needed more focus than the others to ensure a successful implementation. They were leadership support and learning culture. Significant work was required to ensure that managers were aware of what the technology could deliver and that learners were excited about and advocates of this new way of delivering training. It is interesting to note that when the decision was made in 2011 to implement the virtual classroom technology, e-learning was thriving and accepted within the organisation. The culture was open to online learning, there was leadership support and a budget was available but this time the technology infrastructure was the factor that needed additional attention. When it came to the implementation in 2012 it was still necessary to ensure that all factors were in place to safeguard a successful deployment. Although there was support from management and the budget was made available, the team continued to garner support by demonstrating how the technology could be used and stimulating managers to think about how they specifically would use the technology within their own area. It could have been easy to ignore the learning culture factor assuming that as employees were used to online learning they would automatically engage with the new learning technology. However the project team demonstrated the technology to employees to gain feedback and generate the same sense of advocacy that was present in previous deployments. The research indicates all factors are required to facilitate successful e-learning implementations; however it also suggests that subsequent deployments of learning technology require a review of each factor to determine that they are still present what if any additional support is needed for each factor.

Whilst Waight & Stewart’s championing factors (2006) have aided in identifying the factors which should be present during successful e-learning implementation, it can be argued that there is also a need to consider the role of motivators, be they external or internal to the organisation that provide the context or rationale for introducing new learning technology. These motivators can aid in aligning the technology to the organisation’s learning strategy which supports the organisation’s wider business needs and goals. Successful e-learning depends on increasing awareness of how learning takes place and how it is related to the organisation’s strategy (Slotte & Herbert, 2006). In the case of this organisation, the

motivator during the initial implementation was compliance and the need to deliver and track compliance training. In the implementation of the virtual classroom there were two motivators, firstly external economic factors which led to constant change in employees' roles and thus a constant requirement to deliver more content faster and secondly there was recognition that a more blended approach to training delivery was required.

Finally Rosenberg (2006) suggests that when an organisation is at stage 3 with e-learning there is a shift in emphasises from training performance to business performance "we need to support workplace learning and performance across the organisation" (p.2). The research indicates the organisation has arrived at stage 2 but is preparing for stage 3. It has been decided that as many people as possible should be trained to use the technology. By training and supporting employees to use new learning technology there is a recognition that the role of L&D is changing within the organisation. London & Hall (2011) describe it as moving from "designer and controller to facilitator and guide" (p.757). While stage 2 may take some time to embed in the organisation, the foundation to move to stage 3 is already being laid.

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