Online Learning Technology in an SME Work-Based Setting

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ABSTRACT

Over the last 20 years there has been increasing interest in work-based learning in the UK business sector as a means to improve and increase the skills of the UK workforce. The motivation is to assist the development of a highly competitive national economy within the global marketplace. Allied to this is the increasing belief that Information Communication Technologies (ICTs) can deliver effective learning to the workplace via Web-based courses and the Internet. The aim of this investigation was to provide a case study of a work-based online learning experience in a medium-sized enterprise in the engineering sector of the Scottish economy. The firm had sponsored approximately 50 employees to study the Finance Module of the Certificate in SME Management (CSMEM) that was provided in online format by the University of Stirling, Scotland. The findings highlight key issues in regards to how, what, where and when the employees of the organisation wanted to learn at work. The investigation also identified a range of issues, such as time/workload pressures, the operational culture of the company, learning preferences of participants and technology concerns that impacted upon their workplace learning experience.

Keywords
Information Communication Technology (ICT), Small and Medium-sized Enterprises (SMEs), Work-based learning

Introduction

According to a UK Government study (DfEE, 1998), learning assists organisations in three ways. Firstly, it increases the skills base of the workforce. Secondly, through the process of learning itself, it enables the organisation to manage and respond to change. Thirdly, it increases the knowledge base of the organisation, which is seen as the key to discovery and innovation. Set against this context, developments in work-based learning are seen as particularly appropriate to increasing the development of workplace skills and knowledge, whilst at the same time widening access to learning (Seagraves et al., 1996).

At the same time the UK Government applies much emphasis to the role of Information Communication Technologies (ICTs) in contributing to competitive gains by small and medium-sized firms (Southern & Tilles, 2000). Indeed, The Scottish Office policy document Opportunity Scotland: A Paper on Lifelong Learning (1998) clearly states that the exploitation of ICT will be key to the activities of the recently established Scottish University for Industry (SUfI) in seeking to boost competitiveness and individual employability. However, compared to the United States of America, online learning using ICTs is present only within a small minority of United Kingdom and European companies (Pye, 2000).

A previous study by Seagraves et al. (1996) has demonstrated that the main difficulty impacting work-based learning within SMEs is that of balancing the daily operational demands of the organisation with finding time to enable learning to take place. Other commentators have similarly reported that structured learning in SMEs is problematic because of workload pressures (Bridge et al., 1998; Gibb, 1993; Ram, 2000). Indeed, as Lange et al. (2000) maintain, it is not the issue of learning itself that is problematic for SMEs, but rather the luxury of allowing staff already at stretched capacity to take part in formal training. Consequently, much of the learning that is done in SMEs is more likely to be unplanned and informal, and tailored more to daily operational demands (Gibb, 1999; Gray, 1999; Westhead & Storey, 1999).

However, studies by Seagraves & Osborne (1995), Seagraves et al. (1996) and Loots, Osborne & Seagraves (1998) also highlight how the issue of learner motivation and commitment to learning in work-based learning...
must be considered in the design of learning that addresses the needs of learners. Indeed, extensive studies by Boshier have linked learner motivations to study with drop out rates (Loots, Osborne and Seagraves, 1998).

In terms of web-based learning issues, Oberski et al. (2000) also concluded that the continued pressure of workload and the juggling of priorities made learner participation difficult to maintain. At the same time lack of familiarity with the use of computers and the Internet were issues for some participants. It is worth remembering that there are also technological issues and barriers faced by online learners (Berge, 1998). For example, problems include: connectivity difficulty, slow Internet response rates, inadequate software and hardware for the downloading files, and inadequate technical support.

The research literature on learning in SME is relatively small and limited (Chaston, Badger & Sadler-Smith, 1999). Not surprisingly, this is also reflected in the limited, but growing research on the application of ICTs in the workplace and within SMEs in particular (Gray, 1999; Southern & Tilles, 2000; Teague, 1999).

With this in mind, a research project was designed and implemented to provide a case study of a work-based learning experience, using ICT Web-based online learning access, within a medium-sized enterprise in the engineering sector of the Scottish economy. The main production processes of the company include Machining, Presswork, Sheetmetalwork, Metal Finishing and Electro-mechanical Assembly. The company has two sites, and from both, supplies most of its products to major computer hardware manufacturers around the world. The company has the nationally recognised Investors In People (IIP) award and intends to maintain a competitive advantage through a policy of training and developing a highly skilled and flexible workforce.

In this investigation, 51 employees out of a total of 226 staff had been encouraged to participate on an online learning module on finance that is part of the post-graduate Certificate in Small and Medium Enterprise Management (CSMEM), offered by the University of Stirling. The aims of the company were to:
- Enable employees to develop understanding of the company’s financial performance.
- Encourage employees to develop good financial management of their personal finances.
- Enable employees to develop basic Internet/Web skills.
- Encourage individuals to engage in lifelong learning.

The learning experience of the employees was studied from October 2000 through February 2001.

Objectives

The objectives for this particular investigation were:
- To investigate if employees within the company can learn to develop a quality questioning approach, as an indicator of learning, in order to understand and interpret financial information presented to them by the company, through participating in an online learning course on Finance.
- To evaluate the work-based learning experience of staff using a web-based learning format.
- To gain further knowledge and understanding of the issues that surround the application of learning within a medium sized enterprise.

Methodology

The case study was qualitative in design and involved two questionnaires and two phases. Questionnaire 1 was administered prior to the start of the CSMEM online Finance course. The participant ‘hits’ within the website and their progress online was monitored throughout. The levels of participation indicated that most employees were not active over the six-week period that the module was studied. Indeed, at its best the participation rate represented only 29% of the total sample, with 79% not having logged-on at all. Questionnaire 2 was administered after the agreed period of learning had ended. At the same time, semi-structured interviews were conducted with two separate focus groups. One group represented participants (the Active Focus Group) who had made some progress in the course, whilst the other group (the Non-Active Focus Group) represented employees who had not actively participated in the course. It was hoped that Questionnaire 2 and the interviews would highlight issues concerning the experience of two groups, and identify issues that influenced lack of participation. At the same time, the investigation explore the relationship between learning finance and the quality of questions employees subsequently asked. Finally, a semi-structured interview was conducted with the Human Resource Manager in order to identify the company’s perspective on this particular learning experience.
Phase 1 – Findings

Questionnaire 1 was distributed was to 51 people, representing the total number of employees who were registered as participants for the WebCT CS MEM Finance course. The sample represented 23% of the company's total workforce of 226. However, only 27 completed questionnaires were returned; providing a response rate of 53%. The breakdown of gender in the sample was 70% male and 30% female, which is representative of the gender distribution in this company and is representative of the engineering sector that has traditionally had a higher male to female ratio.

Ninety 6% of the sample had experience of using a computer and were comfortable with the prospect of learning in this mode. Indeed, questionnaire 1 indicated that all respondents recognised that computers and the Internet could help with learning. Significantly, 63% of the sample had their own personal computers at home.

In relation to the Finance course helping the employees to understand the company's financial performance, 30% of the sample anticipated that it would do this. However, when asked why it was important for them to learn what the monthly finance and performance figures meant, the largest response (63% of the sample) linked the need to understand in order to determine if the company was profitable, and that they could see evidence of job security in the figures. It appears that management perceptions of the questions that employees would be expected to ask, such as those associated with remuneration and opportunities for more overtime, were not evident at the time of sampling. It is interesting to note that at this time, Autumn 2000, the company was starting to experience a downturn in demand for its products from major computer manufacturers in the USA. The workforce obviously saw the impact of this on the production line and this might explain their pre-occupation with job security at the time of sampling.

Phase 2 - Findings

The Questionnaire 2 was distributed was to 38 people, representing the total number of employees who remained registered as participants for the WebCT CS MEM Finance course. The sample size represented 18% of the company's total workforce, which had now been reduced to 210. This was partly due to some participants leaving to take up new employment and several others leaving due to a redundancy programme ushered in by the downturn in the information technology sector reducing demand for the metal casings made by the company. However, the total number of completed questionnaires returned provided a final sample size of 25, providing a response rate of 65%. The breakdown of gender in the sample size was 64% male and 36% female, a slight narrowing the ratio of male to female respondents.

Relevance of the learning subject

The relevance of the subject for learning (Finance) was a key concern for the majority of respondents. The subject of Finance motivated only 20% of sample. It was not viewed as job-related and simply not a motivator to learn. It would not help them in how they performed in their jobs, nor likely to help them in managing their personal finances. More choice of relevant subjects would have motivated interest in learning at work. Indeed, work-based learning was viewed as worthwhile given the right subject, the time and the encouragement.

Learning about finance was viewed by the employees as something that the company wanted them to do. It was seen more as an imposition rather than an opportunity to learn. The second questionnaire and the follow-up Active and Non-Active Focus Group interviews clearly indicate that the majority of employees do not accept it is their responsibility to learn how to understand the figures. It is their expectation that the company should explain how and why they come by the figures in clear terms that are understandable to everyone. Their view is that it is the company's responsibility to inform the employees, and not the responsibility of the employees to interpret what is in the figures. Contrary to management expectations, very few employees saw explanation of the figures as giving them ammunition to ask for increased pay, overtime or more bonuses. From an employee perspective an understanding of finance gave them evidence of company profitability related to job security.

It was impossible to determine if a link existed between the type of questions that employees asked before and after the course of Finance. This was principally due to the fact that the number of employees actively participating on the course of Finance was very small, and could not reasonably provide a representative sample for such an assessment to be made. The Active Focus Group members reported that their perceptions of the
company's figures had not altered in any way as a consequence of participating on the Finance course, which by itself does not prove that such a link does not exist.

Relevance of information technology

The subjects that were repeatedly mentioned as relevant and of most interest for learning were Information Technology related as: how to use computers, programming languages, and production machinery programming. Keeping abreast of technology developments for improving their productivity and for ensuring the company maintains a competitive edge in the marketplace were central to their thinking. Studies by Seagraves et al. (1996) and MacLaren & Marshall (1998) reinforce the view that motivation to study by work-based learners should be linked to courses of learning that are related to their work and that can be applied in the working environment practically.

Online learning stimulated interest in learning technologies and learning by the Internet. Online learning was considered an appropriate method of learning by 48% of the sample. Learning technologies were seen as a useful way in which to access learning and knowledge that would assist the staff in keeping abreast of work-related technology developments. It is clear that online learning has created an interest in learning by this method. Indeed, one technical supervisor enthusiastically indicated it brought the learning to him. As he does not have a driving licence, it was not easy for him to attend courses of learning off-site or in his own time after work. In his case online learning created accessibility of opportunities for learning. The company have now granted him a loan to purchase a PC for his home in order to pursue learning. The Human Resource Manager views this as an example of one way of facilitating an interest in learning. The company is shortly to introduce grants to encourage staff to take up whatever courses of learning they consider appropriate. This might be learning to drive, skiing, or work-related learning; anything that develops an interest in learning and pursuing learning in the future.

Some employees complained about the slowness of the Internet from time to time. If most of them allowed time was taken up by completing online questionnaires and waiting for documents to print off, this tended to have a negative effect and could de-motivate them.

Other factors

Preferred learning method issues were evident. Although ICT learning was useful, many preferred peer learning support, rather than the isolation of learning on their own in front of a PC. Learning about finance in isolation was de-motivating. The opportunity to learn with others in the same room, whilst using the Internet, would have helped them share problems and identify suitable solutions; such as when they experienced difficulties understanding aspects of the finance course or when they encountered problems with the online technology. This may link to a need for a workplace champion to promote, encourage and nurture staff to learn.

Not surprisingly, as found by Seagraves et al. (1996) and Oberski et al. (2000) time and workload pressures had the greatest impact on participation. Some 40% of the sample saw the practicality of learning at work as limited by these issues. When asked for the reasons why they had not participated in the course, or that their participation had been restricted, 60% ascribed time and workload pressures as the main reason. This was further confirmed in both focus group interviews. The workplace culture actively worked against most of the staff taking dedicated time off to learn. Although the company had offered an hour each week for an hour of the employee's own time, work pressures and demands always came first. If learning at work is to be encouraged, operational pressures will need to be addressed before embarking on learning. The questionnaire responses and interviews suggest there is real interest in lifelong learning if the right conditions prevail to foster it.

Both employees and the Human Resource Manager agreed that a staged introduction with different groups of employees might have been more effective rather than everyone starting at the one time. An initial pilot group might have identified areas of difficulty that could be ironed out for subsequent groups of employees who would participate later on. There were perhaps too many people to support effectively throughout the duration that the course was due to run. Timing of the course was an issue raised by members of the focus group who had not actively participated. The company had requested that employees would complete the course in six weeks during the period October to December 2000. With Christmas coming, some were reluctant to give an hour of their own time after work to pursue their studies. Clearly, some more thought needs to go into how and when people would wish to learn.
Conclusion

It is recognised at the outset that the results from the case study could not be considered as generalisable to all SME experiences of online learning in a work-based setting. However, the study did shed some light on the specific experience of a company and its employees with regards to learning at work using information communication technologies. It is hoped that the findings can add to some further knowledge in the areas of work-based learning and online learning in the workplace. Whilst the investigation did not determine any link with the questions that employees asked after a course of Finance, it may be that if all employees eventually complete the Finance course, a longitudinal study of their attitudes to the monthly figures may shed some light on this particular question.

As has already been stated, great store has been put on both work-based learning and online learning to help boost individual learning and company performance. The findings from this investigation reflect common problems associated with learning in small to medium enterprises, particularly with regard to time and workload pressures. At the same time, when designing courses of learning for employees, the investigation has shown the importance of providing learning that is relevant to how people can do their jobs more effectively. Whilst it is laudable to encourage other forms of learning in the workplace that are conducive to fostering an interest in learning, the working environment nevertheless shapes the motivation and interests of the employees as to what they see as learning that is relevant. In this particular situation web delivery was seen by those who participated in the online course of Finance as a good way to learn subjects related to how they could do their jobs. It may be that policymakers and educationalists may have to rely on learning that is vocationally relevant as being the spark that encourages some people to move into the process of lifelong learning.

References


