Corporate *e*Learning:

- A comparative analysis between indigenous and foreign direct investment companies in Ireland.

Liam Brown[1], Eamonn Murphy[1], Eavan Martin[1], Agnes O'Donovan[1], Vincent Wade[2]

[1]*Enterprise Research Centre, University of Limerick, Ireland*
Tel: +353 61 213355, Fax: + 353 61 330316
email: liam.brown@ul.ie, eamonn.murphy@ul.ie,
eavan.martin@ul.ie, agnes.odonovan@ul.ie

[2]*Knowledge and Data Engineering Group, Trinity College Dublin, Ireland*
Tel: +353-1- 6082091, Fax: +353-1-6772204, email: vincent.wade@cs.tcd.ie

Abstract:

This paper compares and contrasts the current attitudes, the awareness of and the take-up of eLearning in Irish High-Technology large and small organisations. An in-depth study was conducted with individuals responsible for training in the Irish sites of a number of high technology multinational companies in the electronics, aerospace, pharmaceutical and medical device sectors. The study focused on awareness, perceptions, technology support infrastructure, current and planned involvement, most frequent and most preferred methods of delivery, benefits, barriers, the motivational factors and overall attitudes to eLearning. A similar study has been conducted with a number of Small and Medium sized Enterprises (SMEs) across 5 European countries. The comparison outlines a number of notable differences between the large and the small organisations but also describes a number of similarities and highlights a number of differences both within the large organisation sector and within the SME sector.

1. Introduction - Lifelong Learning and *e*Learning

As Human Resource Development (HRD) practices shift away from training and towards learning, the notions of lifelong learning and electronic learning (e-Learning) are emerging in the HRD literature. Lifelong learning is defined by Brandsma [1] as a continuous process of personal development for everyone, whether in work or not, encompassing formal and informal activities, and making demands upon the social structures in which learning takes place. However, the OECD [2] suggests lifelong learning has broader objectives, including strengthening democratic values, cultivating community life, maintaining social cohesion, and promoting innovation, productivity and economic growth, and these are reiterated in recent EU publications [3].

Many European governments are encouraging lifelong learning; for example the UK in particular [4] highlight the changing nature of work, the need for re-skilling as traditional industries decline and new technologies emerge, and the need for everyone to engage in ongoing learning. According to Sambrook and Stewart [4] one of the key reasons cited for aspiring to become learning organisations is the need to cope with technological change, to compete. A key government initiative in the UK was the launch of the University for Industry (UFI) now renamed "learndirect". This takes the form of establishing learndirect

centres – located in public places such as libraries, local colleges and hospitals – and commissioning computer-based learning materials to be used in these centres. By providing such centres in local communities, existing and potential employees would be able to access personal and work-related learning, to enhance both their attitudes to learning and their personal knowledge and skills. At the European level, researchers are now critically evaluating the European policy for e-learning [5] (Attwell, 2002).

Electronic learning, often abbreviated to e-Learning, can be defined as any learning activity supported by information and communication technologies (ICT). There are debates concerning the labels, for example whether ICT-based learning is the same as computer-based learning, or is the same as e-Learning [6] (Figueira, 2003). It must be remembered that learning is inherently complex [7] (Stevens, 2002). One of the principal criticisms of many learning technologies, especially e-learning applications, is that they seem to be predicated on assumptions of learning that are overly simplistic. We can refer for example to many problematic attempts at using the Web or other forms of ICT to supplant or substitute face-to-face interaction between students and peers and tutors [8] (Brown et al 2003).

2. *e*Learning in large organisations (foreign direct investment companies)

There has been much published on eLearning in the corporate sector [9, 10, 11, 12] Bonk's 2002 survey [9] received over 200 corporate respondents and was focused on web-based training practices, experiences, tool preferences, instructional approaches, assessment methods, obstacles, and support structures. Some of the key findings included:

- Respondents were primarily interested in Web-based learning as it increased access to learning (86%). Two-thirds of respondents noted that growth in employee skills, ability to track learner progress through a learning management system, and increased job performance were key reasons for their interest.
- Most organisations were using Web-based learning as an alternative to instructor-led courses (66%) or as a supplement to traditional instructor-led training courses (53%). About one quarter used it as a follow-up to live instruction. One in five used the Web as the sole source for learning.
- Commercial courseware was deemed highly useful by 66% of respondents and was actually used by 57% of their organisations.
- The primary cultural or organisational obstacle to Web-based learning, according to the respondents, was the perception of high cost (44%). Other serious cultural/organisational inhibitors to Web-based teaching and learning included instructor time to prepare courses (36%), resistance to technology (33%), the lack of organisational support (32%), difficulty measuring ROI (27%), and a lack of training on how to use the Web (25%).
- Both lack of time (46%) and lack of incentives (29%) were key reasons cited as to why learners dropped online courses. While poorly designed courses were mentioned by 17% of respondents, only 2% indicated that costs inhibited course completion.

Our particular study involved an in-depth analysis of eLearning in selected Irish based high-technology large companies that spanned a range of sectors including: electronics, aerospace, pharmaceutical and medical devices. 16 individuals responsible for training in 11 organisations were interviewed. It was initially established what each organisation's current involvement in eLearning was and how long they had been using eLearning for. Figure 1 shows that 67% of organisations have been using eLearning for some time (greater than 5 years).
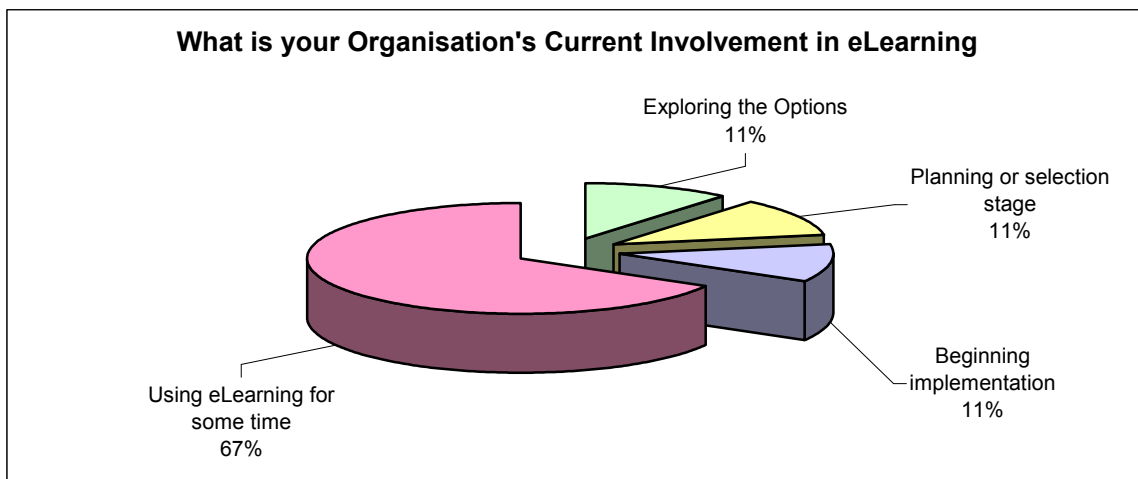
Figure 1. Organisations current involvement in eLearning

It was then established what their investment plans for eLearning for the next 2 years as outlined in figure 2.
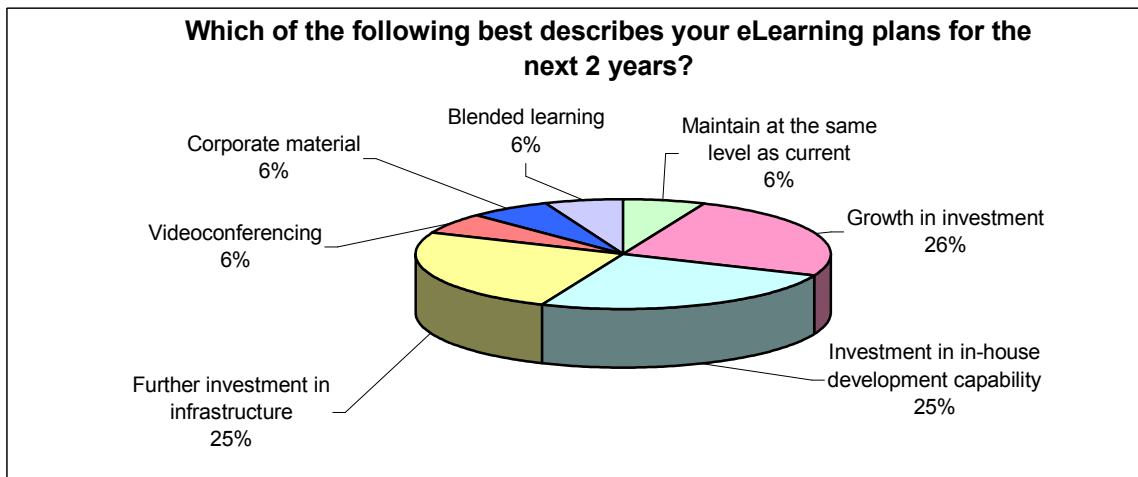

Figure 2. eLearning investment over the next 2 years

In excess of 90% indicated that there would be further investment in eLearning. 25% indicated that there would be an investment in in-house development capability and 25% indicated that there would be further investments in infrastructure with 40% of that infrastructural investment in some form of Learning Management System.

It was then established what were the departmental responsibilities for eLearning. In more than 80% of cases the training and development departments were responsible for the original embedding and the fostering of eLearning within organisations. Again in the majority of cases eLearning was both a corporate and a local initiative. In most organisations Training and Development were responsible for the administrative and data management aspects of eLearning. The Information Technology departments or outside contractors were responsible for technical and technology report – often corporate Information Technology where the infrastructure was their responsibility. It was a mix of the business units/departments and Human Resources that typically determined what eLearning content was available. eLearning content was typically paid for by those business units that required it either directly or by some form of central headcount allocation to Training and Development who then paid for the eLearning content. Most organisations indicated that approximately 20% of training was carried out using eLearning (up to 40% in technical skills and as low as 5% in soft skills) and most felt that there would be up to a 25% increase in the amount of training that was planned to be undertaken using eLearning over the next 2 years.

Personal Perceptions on benefits and barriers as per a Skillsoft survey (2004) [10] were then established as outlined in figures 3 and 4. The primary benefits included flexibility (24/7 Access), effective consistent delivery of information and the fact that content is up to date. The primary barrier was the delivery environment; 28% felt that due to motivational issues and interruptions that courses delivered to the desktop were not as effective as those that were undertaken at a dedicated learning centre. Another very interesting finding here was that cost reduction figured as a very important benefit to only 8% of large organisations.
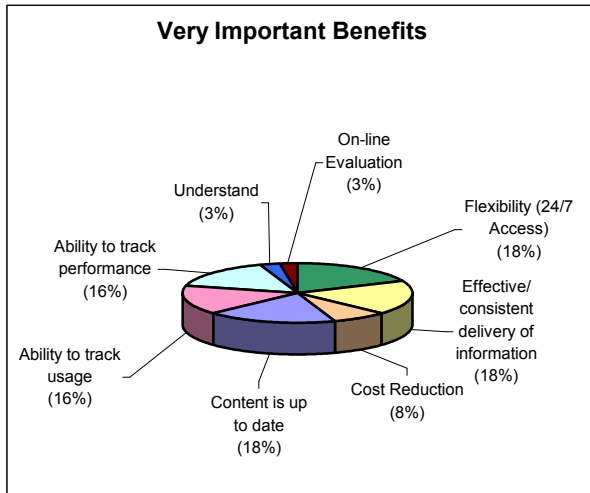

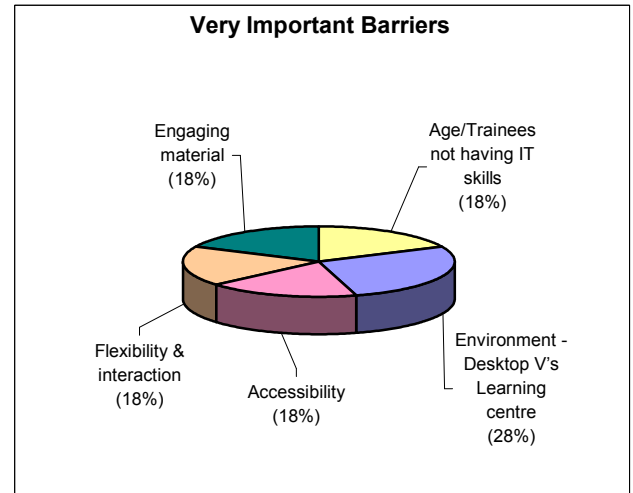**Figure 3. Benefits to eLearning**

Figure 4. Barriers to eLearning

Motivational factors as suggested by Masie (2001) [11] and promotional activities that are more likely to lead employees to undertake e-learning courses were then uncovered. These are outlined in figures 5 and 6.
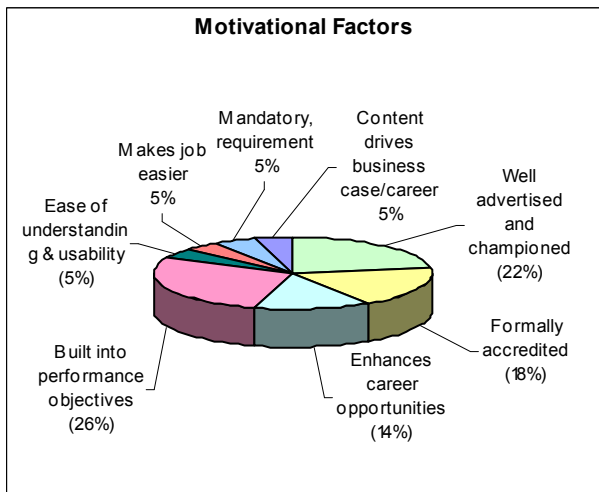

Figure 5. Most important motivational factors
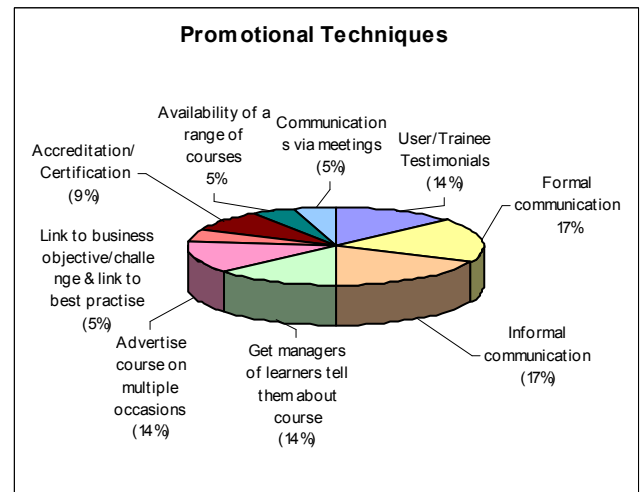

Figure 6. Most preferred and most frequently used promotional techniques

As a follow up to the study by Garavan and O'Donnell (2003) [12] a series of subjective perceptions of eLearning were assessed by asking the interviewees to agree/disagree with the following statements:

	Agree	Somewhat Agree	Somewhat Disagree	Disagree Totally
1. eLearning demands a new attitude to learning on the parts of learners	50%	37%	13%	
2. eLearning is appropriate for training in continuous improvement skills (Lean, 6 Sigma etc.)	57%	29%	14%	
3. eLearning demands an entirely new skill set for people involved in training and development	74%	13%	13%	
4. eLearning is more effective when combined with traditional forms of learning	100%			
5. The current generation of eLearning products does not demonstrate what the future will look like	62%		25%	13%
6. eLearning is over-hyped by vendors	50%	13%	13%	24%
7. eLearning will only have a marginal effect on class-room training	13%	37%	37%	13%
8. eLearning provides the possibility of wasting a lot of money	50%	13%	37%	
9. A Lot of eLearning is low on content	13%	37%	37%	13%
10. eLearning is a threat to traditional training providers		13%	25%	62%
11. eLearning is the most important development in training in our lifetime		42%	29%	29%

There was only consensus on agreement on one point. 100% agreed that eLearning is more effective when combined with traditional forms of learning i.e. that a "blended learning" solution is preferred. The survey then established that if eLearning is to be an integral part of the future of training what are the key factors why. The main finding here was that cost reduction/benefit was identified as the single most important factor – which is significantly different from the 8% that currently identified cost as a most important benefit. Figure 7 outlines the findings:
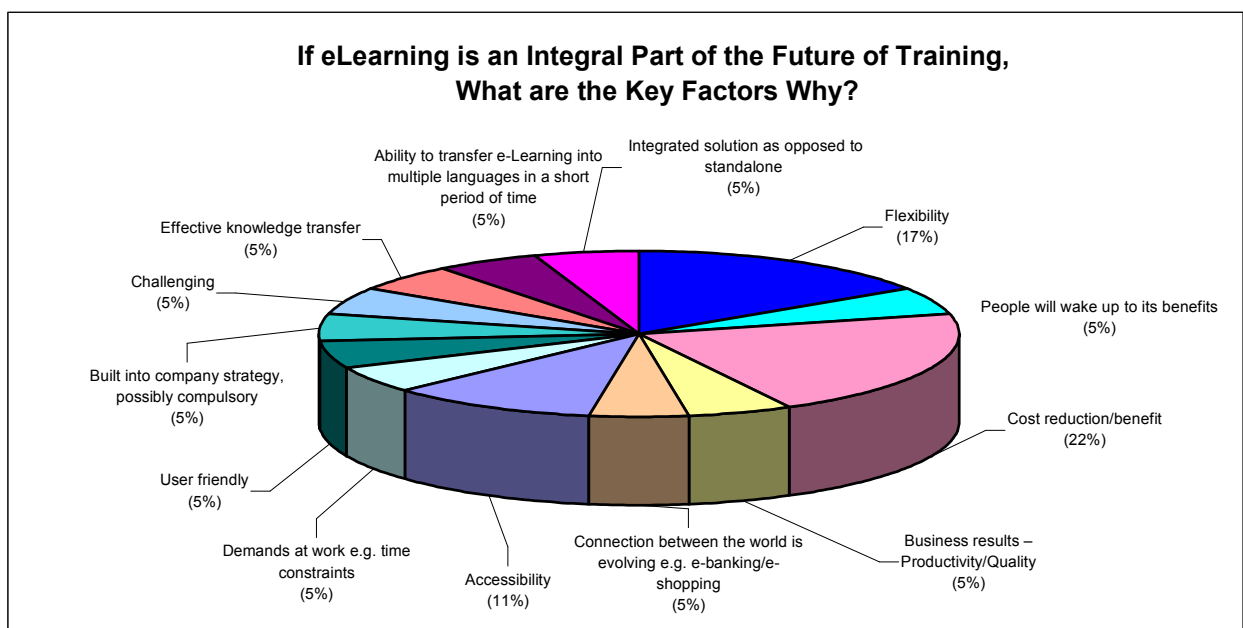

Figure 7. Key factors why eLearning will be an integral part of the future of training

Finally, the survey established as to whether the organisation and the interviewee were supporters of eLearning. There was a 100% positive response i.e. in all cases both the interviewee and the organisation were supporters of eLearning.

3. *e*Learning in Small and Medium Enterprises

Attitudes, awareness and take-up of eLearning in SMEs has been highlighted by Brown et al. (2004) [13]. Research on accessibility of training for SMEs in Ireland [14] identified the following barriers to access: Affordability (42%); lack of local availability (25%); too disruptive to release personnel (74%). Brock (2000) [15] notes that small firms use ICT more as tools to support organisational tasks like administration and accounting, rather than for formal, internal communications as in larger organisations. However, the size of the firm does not necessarily determine levels of ICT awareness, as very small firms can be highly IT sophisticated (Gray and Lawless, 2000) [16]. More recently there is evidence in Irish SMEs of increasing proficiency in e-commerce in general, with owner-managers the driving force (Barry and Milner, 2002) [17]. This may also be increasing in terms of e-Learning. It should also be noted in a European study, researchers found that online courses for managers in SMEs are only effective if there are collaborative links between educational providers and enterprises (Oberski et al., 2000) [18].

For the SME survey, 100 SMEs in 5 countries across Europe were surveyed, namely Ireland, UK, Sweden, Spain and Poland. The focus was on 3 selected sectors: component manufacturers (particularly polymers), the food sector and engineering products/sub-supply companies. These particular sectors are faced with growing and relentless competitiveness challenges from both low cost regions and from over-emphasis on low value-adding activities. Again, the focus of the SME survey was on the optimum ICT technologies to use in the delivery of training, bearing in mind the technical, financial and cultural restrictions within the general SME environment. This included pedagogical considerations, communication technologies, exercises, network support services and on-the-job facilitation. The results below pertain only to the companies in Ireland.

Figures 1 and 2 show that only 20% of respondents have previously participated in internet based learning courses but of those 50% found them good and 25% found them very good.
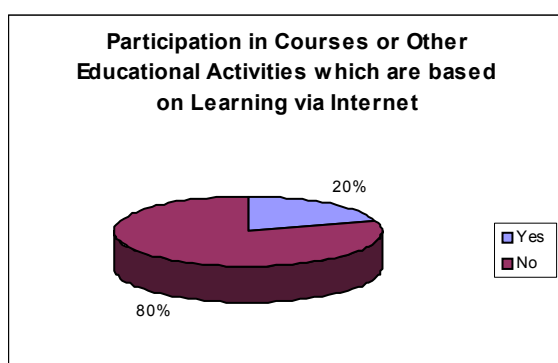

Figure 1. Participation in Courses which are based on Learning via Internet
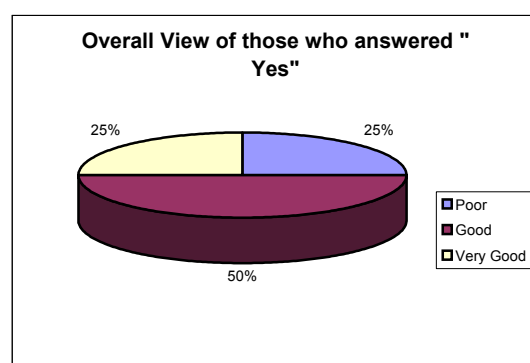
Figure 2. Overall View of those who answered "Yes"

As outlined in figure 5, the main concerns that were highlighted with e-Learning courseware were:

1. Lack of immediate response to questions and trainer interactions
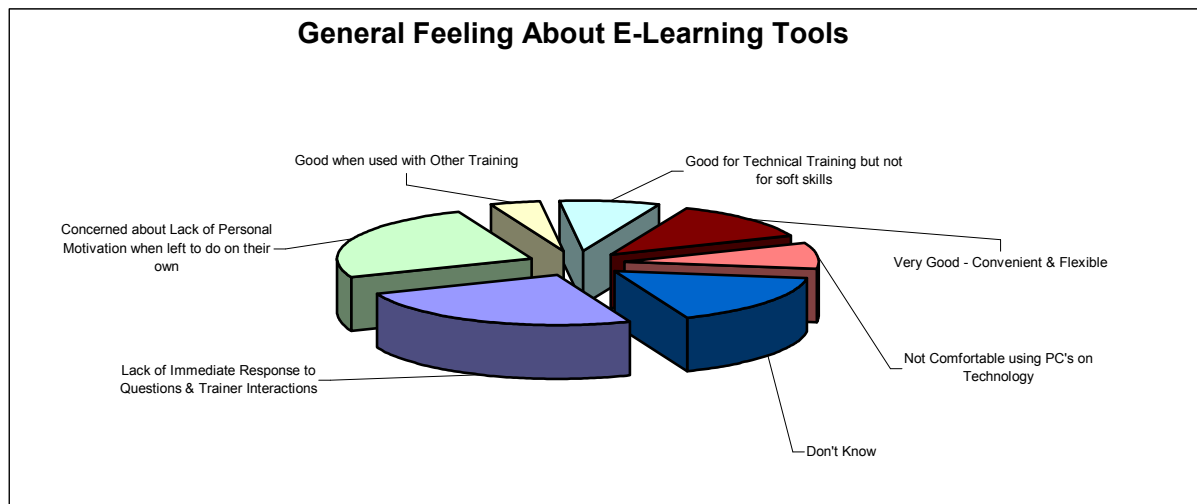2. Concern about lack of personal motivation when left to do on their own

General Feeling About E-Learning Tools

Good when used with Other Training

Good for Technical Training but not for soft skills

Concerned about Lack of Personal Motivation when left to do on their own

Very Good - Convenient & Flexible

Lack of Immediate Response to Questions & Trainer Interactions

Not Comfortable using PC's on Technology

Don't Know

Figure 5. General Feeling About E-Learning Tools

4. Comparative Analysis

In terms of involvement in and experience of eLearning it is quite clear that the large organisations are significantly ahead of the small and medium enterprises. All large organisation respondents had some involvement in eLearning and 67% have been using eLearning for some time (greater than 5 years). This compares to only 20% of the SMEs that have had any involvement in eLearning. Both the large organisations and the SMEs indicated that there were a number of benefits and pitfalls to eLearning being effective learning. Both groups still considered face to face training as being more preferred in terms of effectiveness than eLearning but all agreed that eLearning would be an integral part of the future of training. The primary barrier from the large organisation perspective was the delivery environment with 28% concerned that due to motivational issues and interruptions, courses delivered to the desktop were not as effective as those that were undertaken at a dedicated learning centre. The primary barriers from the SME perspective was again the concern about lack of personal motivation when left to complete courses on their own but even more so was the lack of immediate response to questions and trainer interactions. Within the large organisations, there were significant differences to the response that Learning is the most important development in training in our lifetime with 42% somewhat agreeing, 29% somewhat disagreeing and 29% disagreeing totally.

5. Conclusions and Recommendations

Experience and usage of eLearning technologies and content is significantly higher in the large organisations (Usage = 67% > 5Years) than the SMEs (Usage = 20% total). Both groups agree that eLearning courses are more effective when undertaken in a dedicated learning centre as opposed to being delivered to the desktop primarily due to a lack of motivation when left to undertake the course on their own. Cost is always an issue for the SME; Cost is currently not the most important concern for the large organisation but will be vital in the future.

The consensus among both the large organisations and the SMEs is that eLearning is more effective when combined with traditional forms of learning and that the future lay in some form of "blended learning" solution.

Further research is necessary in order to fully understand eLearning issues in the large organisation sector and to compare and contrast with the SME sector. The authors are currently engaged in a project that is developing and deploying blended eLearning courseware in conjunction with a number of large high technology organisations. The material and methodology will then be transferred to small and medium enterprises and an in-depth study will be conducted. To give the courseware context and relevance, the domain of continuous improvement tools through Lean and Six Sigma have been selected. It is expected that the results of this project will be available by mid 2006.

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