A Critical Evaluation of Virtual Training in SMEs: a Case Study

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Abstract

With fuel prices escalating at unprecedented rates, virtual training seems ideal for cash-strapped, time-poor SMEs with geographically-dispersed employees, especially as electronic communication methods proliferate, whilst associated costs decrease. However, little research exists about its effects on business, particularly in an SME context. Consequently this project examines the scant available research, together with relevant material about general virtual communication, before carrying out investigations in the researcher’s own SME using case-study, questionnaire and interviews, within both that company and other SMEs.

The findings turn the supposed costs and benefits on their head; e-learning seems most effective when trainers and students meet face-to-face first and it is run over several weeks in hour-long sessions. However, the research reveals steps to minimise these shortcomings, making e-learning a useful and cost-effective supplement to face-to-face training. Furthermore, further research is suggested into the effects of the anonymity bestowed by virtual media, variation of individual’s susceptibility to e-learning and the effectiveness of measures to overcome e-learning’s shortcomings.

The recommendations apply to all SMEs, making virtual training a more effective and commercially viable training method for them and thus addressing many HRD issues.

1.1 Introduction

This paper examines HRD issues in an SME context and is specifically concerned with virtual training. In the UK, SMEs account for 99.9% of employing organisations but most HRD literature is influenced by the experience and priorities of large organisations (Roffe, 2007; Higgins, 2009). Small businesses can be particularly hard hit by rising costs, as they are less likely to have a financial buffer to protect them from external influences so SMEs must maintain a stringent control of their costs, but be mindful that, in doing so, they do not damage their prospects for growth or indeed survival (Haslett, 2012).

Organizations of all sizes that have workers spread over a wide geographic area have particularly difficult decisions to make concerning whether the expenses associated with face-to-face contact are justified as fuel costs rise. This debate becomes increasingly complex as the availability of electronic communication methods proliferate, especially as the costs of these decrease. As technology has enabled virtual communications so interest has grown in forms of virtual learning and this paper addresses the opportunities, as well as the disadvantages, this presents.
Based on research towards an MBA dissertation, the paper examines the issues in a network marketing business. This paper results from a scholarly-practitioner process. I am both an SME owner/manager and researcher. My interest was grounded in the many challenges facing contemporary SMEs. UK Fuel Prices are increasing at an unprecedented rate, partly due to increases in fuel duty and VAT (ONS, 2011a and 2012 and UK Department of Energy and Climate Change, 2011), with all time-time high prices regularly reported in the press (Sayid, 2012). The UK Office for National Statistics (ONS) attributes decreases in business and commuting trips (ONS, 2011) to this and the general economic downturn. Additionally 2E2’s survey of 1,948 office workers shows that commuting problems cost employers £1.21 billion in lost productivity in 2011, with bad journeys creating tired, stressed workers, resulting in total annual UK transport-related productivity losses exceeding £2.24 billion (HR Editorial, 2011).

Therefore, as face-to-face communication in geographically-spread organizations becomes more expensive, both the necessity for it and alternatives to it must be examined. As owner-manager of a geographically-spread SME I wanted to ascertain whether face-to-face training’s escalating costs are justified, whilst maximising the efficacy of any virtual training employed. Such scrutiny is particularly pertinent in respect of training as electronic education availability increases (ONS, 2011c; Loos, Mante-Meijer and Haddon, 2008; Turel and Serenko, 2010a; Kostner, 2001), necessitating companies ensuring the cost-effectiveness and commercial viability of their communication and training strategies.

However, little empirical evidence of virtual training’s efficacy exists, much less examples of long-term consequences of its usage. Whilst there is research regarding how and when different media are used (Watson-Manheim and Belanger, 2007) and social factors (Trevino, Webster and Stein, 2000), Koo, Wati and Jung (2011) suggest that more needs to be done to match media to task. Therefore this research critically evaluates virtual training in SMEs, particularly exploring issues of social interaction, trust, the significance of meeting prior to virtual communication and the importance of visual and vocal cues. Whilst many forms of virtual communication exist, some are unsuitable for training whilst others are expensive and/or not widely available, so this research examines one specific medium, Skype, which seems suitable for training and is inexpensive and widely available.

Grounded in the case-study research design reported here, the objectives of the paper are:

1. To discuss the advantages and disadvantages of virtual training in an SME context;

2. To examine the consequences of virtual training on social interaction within the learning and development process and
3. To explore opportunities associated with combinations of face-to-face and virtual training and the implications for training strategy in an SME context.

2.1 Literature Review: Virtual Training and SMEs

With virtual training gaining popularity, it is surprising that, although much has been written about issues associated with general communication using both virtual and face-to-face media, there has been scant attention to the issues of training and learning (Loos et al, 2008). This section of the paper discusses issues that do arise from the literature and focuses specifically on those associated with: time, money and productivity; social interaction; trainee satisfaction and trust.

2.2 Time, Money and Productivity

Lange, Ottens and Taylor (2000) and Birchall and Giambona (2007) posit that training in SMEs is dependent on an evident link between its costs and benefits, with Birchall and Giambona (2007) stressing the importance of time savings as most SMEs operate under time constraints, which Roffe (2007) affirms. However, little research quotes definite savings figures, except Wainhouse Research (2007), suggesting further research is needed. Although Bersin and Associates (2009), Mitchell (2010) and Citrix (Citrix Online website, 2012) claim e-learning saves time and reduces travel costs, the former refers to large companies whilst the latter, as a training provider, could be seen as biased. Conversely Purdy and Nye (2002) contend that, contrary to their initial hypothesis, virtual training is less time-efficient than face-to-face and Wainfan and Davis (2005) comment that video-conferencing takes longer, primarily because students need more preparation before the training to maximise its effectiveness. Stewart and Alexander (2006) advise that group virtual training reduces time, but warn that student numbers should not exceed eight. Harrison, Mohammed, McGrath, Florey and Vanderstoep (2003) contend that e-learning results in lower productivity than face-to-face, although HR Editorial (2011) attributes annual £2.24 billion productivity losses to transport-related problems.

2.3 Social interaction

Although many definitions of interaction exist, they share two important features, namely information exchange and participation (Ha & James, 1998 and Steuer, 1992). Stephens (2002) contends that virtual training concentrates on information exchange to the detriment of participation, which supports Stork and Sproull’s assertion (1995) that technology is more appropriate for task goals than relational ones. Furthermore, Daft and Lengel’s research (1986) finds that virtual communication discourages social interaction, but is more successful in task-oriented contexts, according with Krauss and Bricker (1967).

However, Stewart and Alexander (2006) advise that social interaction encourages worker participation in work-based and problem-based learning,
while Higgins (2009) suggests SMEs are based on such interaction and so particularly need it in their training, which Birchall and Giambona (2007) agree. Stephens and Mottet (2008) comment that, although favouring information exchange over participation, technology offers trainer-controlled tools which give opportunities for interaction. Contrastingly Adams and Smith (2008) contend that prolonged internet communication can result in social groups forming, while Castells (2001) concludes that electronic media allow tailoring of online environments according to individual tastes and needs, leading to “me-centred networks” (p128). Adams and Smith (2008), Fairhurst and Miller (2011) and Stephens and Mottet (2008) contend that productivity can be improved through increased social interaction and trust by encouraging students undergoing regular virtual training as a group to email each other, thus forming a virtual team. Woolgar’s (2002) research demonstrates electronic communications making contact between individuals easier and faster and allowing establishment of relationships, although some face-to-face contact is needed to progress the relationship. He contends this is especially valuable in projects’ initiation phases as some respondents are reluctant to undertake any business virtually with people they have not already met.

2.4 Trainee Satisfaction

Both Gignac (2004) and Paulsson and Smith (2000) cite virtual communication as decreasing work satisfaction, with the latter also attributing it to increased stress. Similarly Loos et al (2008) espouse face-to-face communication as being significant in improving job performance and work motivation, with lack of it increasing ambiguities and misunderstandings according to Turel and Serenko (2010b). However, Akkerman and Harris (2005) find virtual workers have higher satisfaction than those in traditional workplaces, probably due to positive support actions being taken to reduce employee alienation in virtual environments. These include cultural as well as technical training, restructuring work to make it appropriate for a virtual environment and providing additional social support arrangements to minimise feelings of alienation. Furthermore Stephens and Mottet (2008) contend that interaction increases student satisfaction, citing Arbaugh, (2000) and Stocks and Freddolina (2000).

Stephens and Mottet’s 2008 case-study shows that students neither necessarily learn more nor are more satisfied when training is interactive, although students perceive increased credibility in trainers who make training interactive, echoing Myers and Martin (2006) and McCroskey, Richmond and McCroskey (2006). Stephens and Mottet (2008) further contend that online training’s nature allows little time or opportunity to develop relationships between trainer and students, although both Frymier and House (2000) and Faylor (2006) espouse such relationships as significantly enhancing students’ learning and motivation, with Knowles (1990) showing that adult learners favour trainee-centred learning. The National Survey of Student Engagement (USA) (2006) indicates that an interactive environment, whether face-to-face or virtual, leads to improved student-learning results, including higher grades.
2.5 Trust

Zand (quoted by Hugli, 2000, p11) defines trust as “a willingness to increase your vulnerability to another person whose behaviour you cannot control, in a situation in which your potential benefit is much less than your potential loss if the other person abuses your vulnerability,” which is echoed by Mayer, Davis, and Schoorman (1995). Handy (1995, p44) affirms that “virtuality requires trust to make it work: technology on its own is not enough”, which needs a big change in organizational thinking and aligns with Kostner (2001).

Gignac (2004) reiterates the importance of building trust, seeing it as the “virtual challenge” (p61) and believing that solely focusing on technology will not bring success. She warns that lack of trust affects results, emphasising the difficulty of formation and growth of such trust in virtual teams. Her reasons include the organization’s culture and leadership style together with extent and nature of employee training and development. She recommends “Ecollaboration” (p187), a self-contained secure virtual environment allowing explicit and implicit information sharing, which is successful in many organizations including Shell and GlaxoSmithKline. However, she counsels this is a cultural change, thus needing gradual implementation. Birchall and Giambona (2007) suggest actions to enable trust development including careful selection of participants and early virtual dialogue.

Evans (2005) recognises the need to build “networks of trust and support” (p175), whilst McCroskey and Teven (1999) contend that competence, evidence of caring and trust are all necessary for an instructor to be perceived as credible. Loos et al (2008) assert that lack of face-to-face contact reduces trust, aligning with NHS-initiated research (Miller, Fairhurst and Chubb, 2010) which shows that successful establishment of online communities and participants feeling able to participate fully and openly are both reliant on trust between participants.

Although originally virtual training’s major challenges were seen as technical or financial, it soon became clear that they are cultural, echoing Castells (2001). Postmes, Spears, and Lea (2002) summarize several researchers’ findings by stating that the perception that communication by electronic means is less personal or individual than that which is face-to-face is based on the premise that interaction with people who are invisible, or at least visible in a different way, requires more effort and preparation.

3.1 Methodology

This project adopted a case-study research design (Cottrell, 2008; Gummesson, 2003) which was developed in an interactive way. First, making use of secondary data from the case-study organisation, a comparison was made between financial and social results and costs, including time, of face-to-face training, virtual training and no training. Second, participants within the...
organisation were interviewed, specifically to expand understanding of the social implications of virtual learning. Third, interviews with practitioners in other SMEs, all of whom have both experienced and taught virtual, as well as face-to-face, training were undertaken to ensure a wider consideration of some of the issues. Fourth, as this process indicated that input from more people would add value, a questionnaire was undertaken targeting everyone with whom the researcher regularly communicated within the case-study organisation.

Kervin (1999) emphasises that a case-study's usefulness is dependent upon having good insight into the organization. The process outlined here enabled an assessment of training processes undertaken in 2011 incorporating the insights of 95 Traders attending face-to-face training in June and contrasting them with 20 undertaking virtual training during September and 46 who received no training, other than written, during 2011. Ten interviewees were from the researcher's company and were chosen from the 20 who had undertaken e-learning, with six having also experienced face-to-face training. The three other interviewees were chosen because they have experienced face-to-face and virtual training, as both students and trainers.

The questionnaire took the form of a carefully constructed online survey which was designed to provide both quantitative and qualitative information, the latter being enabled by allowing some detailed free-form answers. Questions ascertaining satisfaction with training types use a five-point Likert-style scale. The survey was sent to 408 Traders, 104 of who completed the survey (25.49%).

Observations were analysed and evaluated, resulting in recommendations regarding changes to training strategy and throwing new light on how the strategy works in practice. Although a case-study allows the greatest depth of any research methodology, it must be truly representative of the research subject. This research acknowledges that it examines only one case-study in one business at a specific point in time which may not be representative of what happens in either that company or SMEs generally. This could be overcome by conducting several studies in many companies, but would incur great expense and much time.

4.1 Findings

The research was undertaken in the researcher's own SME which is a network marketing greetings cards and stationery business, whose traders are self-employed and earn income from mark-up and commission on goods they sell, plus commission from sponsoring people who they support. The researcher's team consists of nearly 700 Traders spread across the UK, France, Australia, New Zealand and the USA, around 500 of who are UK-based. Customer sales generated in 2010 were approximately £1million. The Traders need training in sales, recruiting, team-leading, business development and record-keeping, accounts and taxation which the researcher provides via face-to-face meetings, emails and telephone calls, with virtual training via Skype being added from September 2011.
Analysis of this research’s quantitative and qualitative data highlights new issues in the debate about technology-enabled training in SMEs. Several issues emerge from analysis of the case-study, interviews and survey which largely echo literature findings. Therefore this section of the paper follows a similar format to the literature review by concentrating on issues associated with: time, money and productivity; social interaction; trainee satisfaction and trust.

4.2 Time, Money and Productivity

This research finds virtual training’s time and money saving benefits significantly less than originally envisaged. The case-study shows that training using a free version of Skype sustains no costs, other than salary, unlike face-to-face training which incurs ever-increasing transport costs plus associated accommodation and subsistence expenses. However, monetary savings appear diametrically opposed to time savings. Both the case-study and interviews strongly indicate that hour-long virtual training sessions are the maximum to be effective, with optimal gap between sessions being between two and fourteen days. Therefore e-learning’s elapsed time is likely to be significantly longer than face-to-face’s and so, contrary to initial impressions, it is unlikely to be suitable for urgently needed training. Case-study analysis shows virtual training required more of the researcher’s time, although it should be noted that this included time taken to adapt face-to-face training material for the virtual environment, which is a one-off activity. Additionally, the case-study’s virtual training was one-to-one, although 85.9% of survey respondents do not prefer solo training. Group virtual training would reduce the time, although external interviewees warn against large virtual classes, with eight students being optimal, echoing Stewart and Alexander (2006). If this case-study had eight students per Skype session, time per student would reduce significantly, although incurring costs, as a paid version of Skype would be needed.

Costs and time used in the case-study relate solely to the trainer; those incurred by students are not included primarily because they are self-employed and so their costs and time are both unknown and largely irrelevant to the SME. If they were employees, their time and costs would need to be included in the analysis, thus giving very different results, which reinforces the need to extend this research to more SMEs who have employees. Additionally the researcher’s time is given in hours, but no monetary amount is attached to these.

Productivity is calculated by comparing the stock purchased by the relevant Traders over four months from October 2011 to January 2012 with that bought during the same period 2010-2011 and dividing the total by the number of Traders involved. Productivity analysis considered wholesale price changes between the two periods, which did not result in the expected increased productivity, and increases in both unemployment and inflation (Burn-Callander, 2012) which lead to an anticipated fall in productivity.
The case-study’s face-to-face training resulted in 5% higher productivity than virtual. It is relevant that October, November and December are Christmas trading months when productivity is always greater and the most productive Traders buy Christmas Special Offer Packs which are only available in August. 82% of face-to-face trainees bought these, although only 60% of Skypers did, the offer being available prior to their training and consequently less of them could benefit from it. Additionally Traders undertaking training are likely to be keener than others and therefore could be expected to be more productive, but September is a Christmas trading month when Traders are busy selling, so the most productive would not have had time for any training, even virtual. It is also possible that Traders who have undertaken training may be more productive because of the Hawthorne effect (Mayo, 1933). Similarly Traders who have undertaken training may appear to be more productive due to participant observation.

Sixteen Traders had both face-to-face and Skype training and so could be expected to have higher productivity than other Traders which was the case for fourteen of them. Interviews and the questionnaire indicate that lower social interaction and trust reduce productivity, which external interviewees contend can be improved by encouraging students undergoing regular virtual training as a group to email each other and/or “form a virtual team” using social media or company intranets, endorsing the Literature Review’s findings.

4.3 Social interaction

Lack of social interaction during virtual communication was expressed as a strong disadvantage by all external interviewees, 66.6% of whom gave examples. 90% of Traders also had strong doubts regarding the probability of such interaction during e-learning, although they wanted it, expressing this in various ways, for example “joining (the training) to make friends” which was further echoed by comments in the survey. Many Traders said they undertook face-to-face training as they enjoyed “feeling part of the team” and “meeting other Traders” or similar, with 89.6% of survey respondents feeling more part of the team after undertaking such training, with one respondent noting it “engenders a feeling of working in a team” and another stating “I am not interested in using Skype because it tends to drop out in the middle of conversations”.

All primary research indicates transmission quality concerns, particularly regarding difficulties seeing visual aids and missing visual and vocal cues, with the latter particularly affecting social interaction. 12.5% of the Skype sessions experienced significant transmission problems, including loss of connection and distracting background noise, which further diminished such interaction.

4.4 Trainee Satisfaction

In the survey, 100% of Traders who had had virtual training found it “very useful” or “quite useful”, compared to 98.5% for face-to-face training, 95.5% for written and 86.5% for telephone training. However, only 20 respondents
had had virtual training, compared with 64 for face-to-face, 67 for written and 37 by telephone, so the numbers may be too low to be conclusive. Furthermore, 43.5% of respondent’s state face-to-face is their preferred training medium with only 1.1% preferring virtual, 29.3% preferring written, 12% preferring telephone training and 14.1% having no preference. Interestingly 66.7% would recommend face-to-face training to others with 3.7% recommending virtual, 18.5% written and 8.6% telephone with 2.5% recommending none. This discrepancy may be due to careless completion of the survey which is evidenced in other responses.55% of e-learners emailed thanks to the trainer after the session which is significantly higher than the usual 20% from face-to-face sessions. Although this may reflect higher satisfaction, this could be due to the training’s one-to-one nature rather than the medium employed.

4.5 Trust

Physically meeting trainers and fellow-students appears important in establishing trust and good working relationships and is recommended prior to e-learning. All interviewees “felt more comfortable” (or similar) going to training with trainers or fellow-students they had previously met, preferably both. 77.6% of survey respondents who had trained face-to-face were keener to undertake more training, although only 35.2% were keener to do so using Skype. 80% of Traders in the case-study would consider Skype training, having met the trainer face-to-face. External interviewees said that, as trainers, having met their virtual trainees previously in-person tended to save time and “minimise awkward silences”, whilst as students they could “relate more” to pre-met trainers. During Skype sessions more time was spent with the two Traders who had not already met the trainer to put them at ease, with their participation more reserved, particularly in the first session. However throughout the research, suggestions arose that such ‘meeting’ can be virtual (email or telephone), aligning with Walther, Slovacek and Tidwell (2001) and Harrison et al (2003), so more research in this area could benefit many SMEs.

Although little prior research exists concerning anonymity afforded by virtual environments, 87% of interviewees state it makes them more open, demonstrated by two survey respondents revealing unknown business problems as they could do so anonymously. This aligns with Wainfan and Davis’ (2005) and Vroman and Kovacich’s (2002) findings, suggesting anonymity, through allowing increased candour, could compensate for the lack of trust invoked by e-learning’s low social interaction, as highlighted by Loos et al (2008).

5.1 Conclusions

The research described here set out to: examine the advantages and disadvantages of virtual training in an SME context; to assess the implications for social interaction and to consider the extent to which a ‘blend’ of learning approaches might be advantageous.

The main findings of the research are:
A – advantages and disadvantages
These appear very different to those originally envisaged, with time and money savings being less evident than expected. Other shortcomings include reduced trust and lower social interaction. However, virtual training can reach people who could not otherwise benefit from it and satisfaction with it can be very high. As virtual training’s major challenges are cultural, rather than technical or financial, implementation of it should be gradual if it is to be effective and this, together with positive support measures, can lessen its disadvantages.

B – social interaction issues
Research indicates significant concerns about virtual training’s detrimental effect on social interaction, although evidence suggests social interaction being significant in establishing trust and openness during training and thereby contributing to productivity. Perception of e-learning’s lack of opportunities for social interaction appear to lead to reluctance to try it, even if no alternatives exist, although this research has discovered measures which can be taken to increase such interaction.

C – blending virtual and other forms of learning
Research shows SMEs’ most effective and commercially viable strategy is for virtual training to supplement, rather than replace, face-to-face education, although there are strong recommendations that personal skills training is not undertaken electronically. There are also indications that students who have already met face-to-face will benefit most from e-learning.

Taken as a whole, the research shows that virtual training should supplement, not replace, face-to-face education, although further research is needed to ascertain whether aversion to virtual training in the researcher’s SME is Skype-specific or general to the medium. The case-study and interviews indicate that some reluctance to use Skype is due to concerns about its ease-of-use and lack of awareness of its advantages, so, regardless of which vehicle is used for e-learning, a training module for its use is needed, together with communication of its advantages. Suitable information is likely to be available on the medium’s website which could be easily tailored.

In addition the chosen virtual training vehicle must be capable of delivering training to small groups. Due to financial constraints, the case-study used Skype’s free version which necessitated one-to-one training. However, the survey shows Traders prefer training in small groups and research recommends up to eight virtual students per session. Additionally small groups would allow social interaction between both virtual students and the trainer and the students themselves which research indicates should lead to increased productivity through its positive effects regarding trust and intellectual capital generation and collection. Although this has a financial cost, there is potential productivity growth and time savings. Analysis should
be undertaken to ensure that productivity growth and time savings outweigh financial costs.

The research also illuminates the issues from the trainers’ perspectives, showing that, once an appropriate learning vehicle has been identified, time will need to be invested in developing virtual modules from existing face-to-face training material, adapting it for the virtual environment, noting that, in line with interview findings, each session should last approximately one hour.

The research also highlights the cultural, as well as technical, issues associated with virtual training, and the need for additional social support arrangements to minimise feelings of alienation amongst trainees. A relatively easy and inexpensive action is for trainers to encourage students to email each other prior to group virtual learning or to provide an area in social media or the company intranet for them to ‘meet’.

The case study research design has enabled an interrelated analysis of issues associated with learning and training in a specific SME context although a number of limitations are acknowledged, the greatest of which may be that the case-study was for a specific period of time within one company which necessarily limits the research’s depth. Conducting further case-studies within not only within the researcher’s company, but also other SMEs, could address this.

Although only thirteen interviews were undertaken, they were semi-structured to maximise their worth. The ten interviewees from the researcher’s SME were a cross-section of Traders with wide-ranging views. Similarly although there were only three external interviewees, all have experience of face-to-face and virtual training as both students and trainers, and thus contribute as much as twelve interviewees; additionally they all work for SMEs.

A high survey response rate was sought as Bryman and Bell (2007) suggest that response rates are proportional to data quality. 25.49% response is reasonable, being obtained through actions including reminder emails. However, some surveys were completed very quickly with several questions skipped which lessened the responses’ quality. Another limitation is that Skype’s free version only allowed one-to-one training and group training might give different results.

As the company being investigated is the researcher’s own, objectivity may be questionable, not only in Traders’ responses but more particularly concerning the researcher through participant observation. However, the researcher, as owner-manager, has unprecedented insight into, and knowledge of, the organisation. Furthermore addition of interviews with people from other SMEs increased the objectivity.

Although the research was primarily undertaken for the researcher’s own company, it is a useful addition to research in this area which should be applicable to other SMEs. Virtual training is likely to increase if fuel prices continue to escalate so it is hoped that this research will provide a platform for
more effective e-learning in SMEs which can be expanded and improved upon as experience grows and more research is undertaken.

5.2 Reflections on the scholarly-practitioner research process

The process of undertaking this research has shown the importance of keeping an open mind and remaining neutral during research. Similarly, it has highlighted the value of bringing together both qualitative and quantitative data.

This was the first survey designed by the researcher and the analysis process highlighted how several questions should have been worded more precisely and, in some cases, replaced altogether. Similarly the full functionality, and more importantly the limitations, of SurveyMonkey and Excel, which were used for data analysis, was not completely appreciated until such analysis was undertaken. These are learning points for future scholarly-practice projects.

None-the-less the questionnaire remains an important source of data informing the findings and conclusions relating to this project. For example, it highlighted two problems which were only revealed due to respondents' anonymity. Also it has increased demand for training in the researcher’s SME which may lead to long-term productivity increases. In addition it has highlighted further actions which are needed to drive virtual training forward within the SME.

The biggest advantage may be the identification of actions which can be taken to overcome e-learning’s shortcomings which should be useful in other SMEs, too. This project suggests other research which is needed and by highlighting this may lead to more being done to promote virtual training in SMEs.

6.1 Future research opportunities

This project has addressed an area that is under-researched in the literature: the application of virtual learning techniques in an SME context. It highlights a number of issues where further research would be beneficial.

First, little is known about the practical consequences of anonymity which e-learning confers. This project suggests that anonymity has advantages, such as encouraging involvement and creativity in some students, whilst disadvantages include isolating participants from their fellow-workers, and both aspects warrant investigation.

Second, the data indicates that susceptibility to e-learning varies between individuals. Further investigation into this could be useful so that virtual training environments can be adapted to individual’s preferences, as mentioned in previous research, thus resulting in increased productivity.
Third, although both primary and secondary research advocate positive support measures to overcome e-learning’s shortcomings more research into these would be valuable, particularly ascertaining which are most beneficial as time and budget constraints may limit the extent to which SMEs could implement these.

Fourth, an inadvertent finding of this research is how often intellectual capital is not captured; something which would be valuable for future exploration. All external interviewees stated that capturing intellectual capital required “conscious effort” during and after virtual training, also admitting that in all circumstances this required extra work and so “could be overlooked”. They were unanimous that the greater the degree of social interaction, the more intellectual capital is generated, but this has not yet been explored in a systematic way.

This project demonstrates how a systematic research process can provide business benefits: it has already benefitted the researcher’s SME with more gains likely. In addition, many of its recommendations are also applicable to other companies. Despite limitations, it has added to the scarce research on virtual training, and discovered two specific areas which, it suggests, warrant further investigation, namely significance of physically meeting prior to e-learning and the effects of anonymity. HRD in SMEs is an under-researched area. Most SMEs do not have the resources to gather dispersed staff together for face-to-face training on a regular basis. The research shows the potential value of virtual training, but finds that it is not a ‘quick fix’. Virtual learning requires more not less thought and planning and the research highlights the importance of ‘mixing it’ with other forms of learning to ensure that the advantages can be achieved.
References

Adams, T.L. (Editor) and Smith, S. A. (Editor) (2008) Electronic Tribes: The Virtual Worlds of Geeks, Gamers, Shamans, and Scammers, Austin, USA: University of Texas Press


Citrix Online website -www.citrixonline.com/collaboration/online_collaboration accessed 4/3/2012


Evans, K. (2005) Maintaining Community in the Information Age : The Importance of Trust, Place and Situated Knowledge Gordonsville, Virginia, USA: Palgrave Macmillan


Loos, E.E. (Editor); Mante-Meijer, E. (Editor) and Haddon, L. (Editor) (2008) *Social Dynamics of Information and Communication Technology*, Abingdon, Oxfordshire, Ashgate Publishing Group


Richmond and J. C. McCroskey (Eds.), *Handbook of instructional communication: Rhetorical and relational perspectives* (p 67-88). Boston, Allyn and Bacon


Paper presented at the National Communication Association meeting, New Orleans, Louisiana


