

**Online or mixed mode?
A study examining learning preferences for business development
training in dispersed landbased businesses in rural Scotland**

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2008**



Acknowledgement

Becta research grants 2007/08

Becta awarded 15 research grants to a wide range of organisations and across sectors. The grant programme aims to:

- build knowledge and understanding against key research questions relating to the DfES Harnessing Technology strategy
- support the technology for learning research field by promoting the development of models, methods, tools and modes of thought
- develop research capacity by supporting the work of those new to the field.

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Contents

| | | |
|-----|---|----|
| 1. | Executive Summary | 4 |
| 2. | Introduction | 5 |
| 3. | Background and rationale | 6 |
| 4. | Methodology | 11 |
| 4.1 | Planning and organisation of work schedule | 11 |
| 4.2 | Consultation with key stakeholders | 11 |
| 4.3 | Desk research | 12 |
| 4.4 | Promotion and awareness-raising | 12 |
| 4.5 | Identification of study participants | 13 |
| 4.6 | Development and launch of Online Survey | 13 |
| 4.7 | Initial collation and analysis of results | 13 |
| 4.8 | Development and launch of feedback survey | 13 |
| 5. | Data Analysis | 14 |
| 5.1 | Familiarity with ICT and web-based applications | 14 |
| 5.2 | Factors limiting training & CPD uptake | 15 |
| 5.3 | Online learning tools – employer feedback | 16 |
| 5.4 | Mode of learning delivery – conventional / online / blended | 18 |
| 5.5 | Feedback from secondary survey | 19 |
| 6. | Case Studies | 21 |
| 6.1 | West Lothian Golf Club, Bo'ness, West Lothian | 21 |
| 6.2 | West Moss-side Farm, Thornhill, Stirling | 22 |
| 7. | Conclusions | 23 |
| 7.1 | Fundamentals of e-learning in landbased SMEs | 23 |
| 7.2 | The views of employers – improving access to learning | 25 |
| 7.3 | Blended learning – an evolving scenario | 26 |
| 8. | Recommendations | 28 |
| 8.1 | Key policy recommendations | 28 |
| 8.2 | General recommendations | 28 |
| 9. | References | 29 |

1. Executive Summary ---

This study was commissioned by British Educational Communications and Technology Agency (BECTA) through a Small Research Grant related to the UK Government's e-strategy "Harnessing Technology".

The study outlines some of the critical issues in relation to e-access and e-learning uptake patterns within land-based businesses in rural Scotland; through dialogue with employers and learners, the study examined the learning preferences of small to medium sized enterprises in relation to e-media platforms and their potential for delivery of e-learning.

The conclusions made are that e-learning has a role to play in the development of landbased education and training in the future; the report documents factors that have reduced the uptake of learning by the sector, identifies factors that training providers need to address to provide the vital impetus and development of high quality e-learning content specifically related to the landbased sector and appeals for policy action to champion the development and use of technology to support highly differentiated and self-paced mixed mode learning in rural landbased SMEs.

2. Introduction ---

Ensuring that lifelong learning, Continuous Professional Development (CPD) and business development training are an integral part of business operations is a challenge for many small employers and sole traders. This is particularly true of SMEs operating in the landbased sectors, often due to their rural location and the highly practical, outdoor nature of the work. For these micro-enterprises, accessing relevant learning and training can be extremely difficult due to lack of local provision and difficulty sparing time 'off-business'.

In order to address the clear need for continuous development and knowledge transfer in the rural workforce, Oatridge College submitted a proposal to BECTA in spring 2007 which focussed on investigation of the learning preferences of landbased employers, and how best to address their training and development needs. BECTA subsequently commissioned Oatridge College to conduct a study looking at mode of learning delivery and employer views on the format which best suits their requirements. The study was undertaken during June 2007 – March 2008 and involved identification of a representative cross-section of landbased SMEs and their participation in the research via online surveys.

3. Background and rationale ---

Over the past twenty years there has been a radical shift in approach to the delivery of vocational education and training brought about by the harnessing of new technologies. If we could step back in time we would find writers on e-learning predicting a future with 24/7 access to learning on-line; scenarios of hundreds or thousands of students enrolling in a well-developed, essentially instructor-free online course; where learners would be logging on to e-learning sites, day or night, accessing individualised learning through weird and wonderful e-enabled environments; crofters on the Isles would have access to all forms of learning without leaving the islands, and learners would be actively studying whilst in the internet café, at work, on their mobile telephones or at play.

Back in 1999 the University of Illinois (1999) stated that this vision of the instructor-less scenario did not appear realistic, and they suggested that efforts to do so would result in wasted time, effort, and expense. Perhaps that is an over-cynical view, because in today's Colleges e-Learning has been developed to allow information to be delivered in a more user-centric, user-convenient format than traditional education and training especially for those people living in geographically remote areas. E-learning solutions do allow learners to get the information they need in any location, at any time, and there are a mass of delivery possibilities including courses delivered through multimedia, using collaborative tools, providing performance support, and webinars have developed to deliver traditional lectures live or with delay over the web. Broadband technologies offer the potential to overcome many unique challenges and traditional limitations that characterise the rural economy, particularly those associated with distance and access.

The whole concept of lifelong learning is now well-embedded in our society, and as such can involve learning through formal educational institutions, remote learning, learning from others in non-formal and informal settings, or blended learning provided through a mix of traditional deliveries and the harnessed technologies. The notion of 'finishing one's education' at the age of 16 or 21 years is now a thing of the past. (Selwyn & Facer 2007)

However the issue remains as to whether this harnessed technology has been configured to meet the demands of rurally remote learners and whether it is the preferred mode of learning for learners in traditional landbased businesses (e.g. agriculture, land management, landscaping, horticulture, greenkeeping and so on).

Public and private institutions have responded in a variety of ways to the need for services in many rural areas, but under-served rural populations still exist for reasons that institutions have not been able to surmount: limited, sporadic, dispersed demand, limited resources, and geographical distance.

It is generally accepted that a large proportion of learners who study at a distance, or remotely, tend to experience social isolation, technical problems which lead to reduced motivation, and a lack of focus or impetus if left with no direct or regular contact with their tutors and peer group (Rovai, 2002). Motivation is perhaps the one factor that separates the traditional, classroom-based learner from the online-learner. What is motivational in a classroom may not be motivational when a learner undertakes an e-learning course in an isolated farmhouse.

The existence of a digital divide is well-recorded. Liangzhi Yu (2006) outlines the breadth of the divide through a comprehensive review of research reports on the topic. This analysis confirmed the following emerging factors associated with the non-use of ICTs within countries:

- **Income/socio-economic status:** Lower levels of income are consistently shown to be associated with digital divides concerning access to and use of a range of ICTs. The developing literature on rural entrepreneurship has suggested that there are a number of distinctive characteristics of rural entrepreneurship compared to entrepreneurship in more urban environments (Smallbone, et al. 2002). These include the relative slowness to take-up innovation and technology, including ICT. If economically challenged, as many in rural landbased businesses currently are, (farm incomes remain well below the 1990s peak, and wages in landbased industries in Scotland are below the Scottish average for all industries) digital exclusion will increase since digital provision incurs additional and continuing expenditure (e.g. broadband availability/ subscription).
- **Education:** Lower levels of education are also shown to be associated with digital divides concerning access to and use of a range of ICTs.
- **Age:** Increased age is associated with decreased levels of access, limited modes of use and patterns of connecting with new technologies. Age differences are especially pronounced in those individuals aged 60 years and over. Rural Scotland currently has a lower proportion of young adults and greater numbers of older people than the rest of Scotland (SAC Rural Policy Centre 2007). Current statistics show that the population involved in landbased businesses is ageing with few young recruits to farming and the landbased sectors (Futureskills Scotland 2006). Age is recognised as an obstacle to digital inclusion, regardless of whether or not the person in question is also socially excluded because of his or her age.
- **Geographical/rural-urban location:** Levels of ICT use are generally less in rural areas, although often differences are not evident once other socio-economic variables are taken into account. A further perspective suggests that the forces that generate digital exclusion are the same ones that generate other forms of social exclusion. If we accept that geographical isolation is strongly linked to social exclusion, then when it comes to take up of and perseverance at lifelong learning opportunities, digital exclusion will predominate in rural and remote regions. In the rural areas and, above all, in the agricultural field, the use of ICT technologies is particularly low; besides, these areas are characterised by a scarce availability of learning services. Equally, small and dispersed populations preclude the traditional campus-based approach to training and educational provision.
- **Cultural/social participation:** Communities and individuals with higher levels of social contact tend to make more use of ICT. Digital exclusion further strengthens social exclusion: a self-reinforcing circle of exclusion. The concept of social presence was identified by Short, Williams and Christie (1976) who defined it as “the perception that one is communicating with people rather than with inanimate objects despite being located in different places”. It has been argued ((Mullenberg & Berge, 2005) that the most effective technology-supported distance learning environments are those where social interaction is a predominant feature of the successful online learning experience.

These factors are also evident within the landbased industries, where income levels in certain sectors have plummeted, education attainment is not essential for career progression, where there is an aging population engaged in landbased industries, and where rural remoteness is a matter of being.

Remoteness usually leads to a lack of access to education, training and professional updating but the citizens of rural and remote areas have similar needs to those of urban

areas, but are often disadvantaged in a number of ways and therefore their perceptions in relation to the use of ICT and e-enabled learning may not correspond with those of urban and non-landbased learners.

It has been stated (Mayes and De Freitas 2004) that there are really no models of e-learning *per se* only e-enhancements of models of learning that already exist. It is recognised that technology can be harnessed to deliver a more cost-efficient way of bringing the learning environment to the learners. The outcome of the relationship between technology and learning depends on the ways technology is used and how learners are expected to engage with technology. Technology itself will not transform learning – rather it is the way in which teachers and learners harness the transformative power of technology that will make the difference (Fotheringham 2006).

Added value for learners can be gained, for example, where e-learning allows remote learners to interact with each other and with subject matter, in a form that could not be achieved for those learners without the technology. Often the role of technology is primarily to get remote learners to learn as though they were campus-based, rather than offering a new teaching method. In such a case the rationale for the development is pragmatic rather than pedagogic, achieving cost effective access to learning. (Mayes and De Freitas 2004).

Further, Woolgar (2002) states that we should be wary of seeing these developments as heralding a total transformation of learning. Many of these 'online' developments replicate rather than replace existing 'offline' practices and activities. Other factors are important to consider and these will have influence on learner usage of e-learning provision. For example, the uptake and use of the technologies depends crucially on local social context. Individuals are expected to learn different skills and knowledge in different ways as their situation dictates. Regardless of their age or stage of prior education, individuals are expected to cast themselves as lifelong learners, willing and able to engage with learning as and when appropriate throughout the life-course, but the fears and risks associated with new technologies are unevenly socially distributed.

The social context of learning is of great importance and will influence the uptake of learning in remote and rural areas. Apart from issues of user confidence, the individual's perception and understanding of the opportunities for the use of e-learning are likely to be influenced by attitudes to ICT within the workplace or home circumstances. If, in the wider cultural context, the use of ICT technology does not fit well, then using the systems for e-learning will not easily follow. The use of the technology is not just based on the individual being able to 'understand' the potential benefits of the use of technology, but how well ICT-based activity 'fits' with the wider contexts in which individuals operate.(Cushman and Klecun 2006).

A lack of uptake of learning opportunities is occurring in the landbased sector at a time when the need for increased learning and digital inclusion is being demanded by both the Scottish Government and market forces. A Forward Strategy for Scottish Agriculture: Next Steps (Scottish Executive 2006) suggests that future national land use policy in Scotland will focus on efficiency improvements, business diversification and improved links between producers/suppliers, the food and drink industry, leisure and tourism and end consumers.

It is acknowledged that landbased business is a key contributor to the wider rural economy in Scotland, to the environment and to the sustainable development and growth of rural communities and their local economies. To develop the skills of the landbased population, is therefore of paramount importance in the sustainable development of rural regions. It is apparent that learning-to-e-learn is becoming a very necessary development for landbased businesses, if the upskilling of the workforce involved in the sector is to continue. Moving

away from totally centre-based education, which has rarely been appropriate for rurally remote populations due to the geographic distribution of delivery centres, is now possible but the development of the e-learning potential is limited by the sectors ability to utilise technologies for learning. The ability to find and analyse information and to identify relevant and reliable material amongst large amounts of data on the internet requires steerage through the maze of information available.

Lifelong learners will inevitably be fitting their learning in and around many other demands on their time. A few course providers (usually from the commercial sector) are beginning to offer learning opportunities that are quickly adaptable to different markets, that can be re-sized, and customised or updated, and that can be produced or perhaps assembled in response to changing demands. Most e-learning programmes emphasise a student-centered pedagogy, in keeping with the passing of responsibility for the general 'health' of one's learning onto the learner or employee. So, for example, online activities develop skills in communication, working in teams, finding and evaluating information resources, storing, accessing and handling large amounts of data, working with new technologies, updating and refining existing skills and knowledge. Finally, the field of professional updating is less about acquiring qualifications and more about learning opportunities. In some employment areas, the beginnings of a convergence between working and learning are evident (Levis, 2002). This has profound implications for educational institutions, and e-learning providers need to lead the way in working through the implications of all these changes in their design and presentation of learning. (Mason & Rennie, 2004)

One issue largely not addressed through the e-learning provision is the acquisition of practical vocational skills. Whereas it is common to find e-learning opportunities in the fields of theoretical knowledge, it would seem that providers have yet to conquer the use of technology to address the very practical needs of landbased businesses. Where learning about time management, human resource policies and the such like can be commonly found, e-learning materials in relation to the development of practical skills such as timber decking techniques or drystone walling have yet to materialise. This, it is recognised, is partly due to the demand for such practical provision being low, and partly because technology is not yet capable of providing the real hands-on learning experiences. We have to recognise that some subjects pose problems of a very practical nature for online delivery and support. Therefore in the landbased sectors we foresee a need to create learning experiences that fuse on-line learning experiences, whether formal, informal, structured or non-structured, with opportunities for learners to practice hands-on skills, essential to their business and to the wider sector.

Blended learning combines the engaging benefits of traditional instructor led training with the advantages brought by a variety of technologies to create an optimum learning environment. We recognise that it is not feasible for all landbased learners, or employees in the micro enterprises or SMEs that predominate the sector, to study *completely* online. Goolnik (2002) and Stokes (2001) hold the view that "generally speaking a desire for social contact, a certain apprehension about studying in isolation entirely by means of technology and the need to accommodate a wide range of preferred learning styles are amongst the factors suggesting a range of avenues should be made available." Thus a "blended" approach to workforce development may well provide a cost-effective answer – one that provides periodic face-to-face meetings at local learning venues, technically supported access to online learning materials, combined with an effective e-mentoring provision, and opportunity to develop a social presence/community of learners. As businesses move towards e-learning programmes to complement and perhaps eventually replace traditional training, the move to blended learning will need to provide the most effective learning media (instructor-led, web-based courseware, simulations, job aids, webinars and documents) assimilated into total learning packages.

As Ihalainen (1999) commented “Flexibility is...the key word in training. Traditional training programmes based on class-room teaching are no longer enough. Companies look for more flexible solutions and want the special needs of the company taken into account. [with] flexibility in time and place [and] a possibility to combine learning and doing business.”

First-generation e-learning provision should be recognised as a starting point in the development of technology-assisted learning. These early on-line provisions were often solely comprised of long sequences of text-based content interspersed with minimal activity quizzes. Today the media mix is becoming very dependent on the problem and audience being addressed – i.e. it is becoming more market responsive and sensitive. There is no “general” blended learning strategy that fits all target groups. Just as traditional delivery was not bound to a single mode of instructional delivery, so on-line learning must move to provide sufficient choices, engagement, social contact, relevance, and context needed to facilitate successful learning and performance. Different groups of learners will require different blends of learning media. Organisations must become market-aware to provide the right product (format and content) in the right place (on-line and actual) to the right people at the right price and time (promotion). By combining delivery through a range of media that are designed to complement each other and promote learning, environments can be created that will enable learners to maximise the use of traditional instructor-led training and online training, developing their self-paced study regimes supported by the social learning network and the presence of an on-line and real-life mentor.

There are as many models of blended learning as there are providers, as each aims to meet the needs of their specific target audiences through a combination of on-line (intranet or internet) and off-line learning (traditional learning scenarios). It is also recognised that the true power of e-learning, especially in the rural sector, lies in its ability to create collaborative learning communities that communicate and augment the core learning process with their own collective and individual experiences (SAC 2008). An example of this type of blending may include a learning program that provides study materials and research resources over the Web, while providing a social platform for group interaction and instructor-led, practical training sessions.

It is recognised that learners require varying levels of support to begin to gain benefits from blended learning. Learners may lack confidence in the e-learning aspects of blended provision especially when learners are undertaking their first online experience or when there has been a long time lapse since any formal learning has been undertaken. In either case, the learner needs to feel comfortable with both the online and centre-based environments. Learning does not take place in isolation and support from the tutor or mentor is essential to help develop learning and to maintain learner motivation. The requirements for support mechanisms in learning are not to be underestimated and this holds true across all learning platforms.

While learning technologies and delivery media continue to evolve and progress, it would appear that individuals and their organisations in the landbased sector, are beginning to favour blended learning models over single delivery mode programs. Quality, however, is not usually cheap: blended learning is likely to cost more than traditional instruction and uptake may be cost-influenced. Some learners may be willing to pay more for flexibility and high quality online courses particularly at higher education levels (SCQF levels 7,8,9). However, blended learning is part of an on-going development and we will need to be capable of providing education and training through a range of delivery methodologies as they continue to develop and become more refined, and so there will be a place for the e-based learner, the blended learner and, no doubt, the need for ‘traditional’ learning will continue demanding the attentive lecturer and the on-campus social experience.

4. Methodology

Activity undertaken by the study centred around the following key areas:-

1. Planning and organisation of work schedule
2. Consultation with key stakeholders *
3. Desk research *
4. Promotion and awareness-raising
5. Identification of study participants
6. Development and launch of Online Survey
7. Initial collation and analysis of results
8. Development and launch of Feedback Survey

* Stakeholder consultation and background desk research activities have been on-going throughout the study.

4.1 Planning and organisation of work schedule

Detailed discussions took place between the study manager (Chris Wond, Landbased Industries Support Service) and the study proposer (Adrian Kitchen, Head of Land Use Dept) during summer 2007 to set project objectives, targets and delivery mechanisms. This liaison brought together different areas of expertise ranging from experience of managing and delivering vocational training to engaging with employers and identifying business support needs. Through such liaison the original project template submitted to BECTA as part of the grant application was fine-tuned and developed into a work programme covering the period July 07 – March 08.

4.2 Consultation with key stakeholders

Organisations with a remit in the development of rural communities and the rural economy, or with an interest in supporting accessible learning for businesses and online delivery, were consulted during the early planning stages of the study. Information exchange continued between Oatridge College and these stakeholders throughout the duration of the development and delivery phases of the work. This aimed to share existing data on the subject and exploit best practice. The following organisations were engaged during the course of the study:-

- Lantra (Sector Skills Council for the environmental and landbased sector)
- Scottish Qualifications Authority (SQA)
- Learndirect Scotland for Business
- Scottish Agricultural Organisations Society (SAOS)
- Scottish Countryside Colleges (Elmwood College and Barony College)

A variety of other organisations across Scotland, particular those focussing on learning delivery for rural client groups, have also been approached. The principle stakeholders in this exercise are landbased employers and rural SMEs; however their views have been sought primarily in relation to the delivery phase of the study (the Online Survey and Feedback Survey). Further input from the organisations listed above, and a cross-section of study participants (employers), was explored in early 2008 through their proposed involvement in focus group meetings to discuss the study findings and suggest the best way forward for business learning in remote and rural SMEs. Two focus group meetings were proposed (one in Stirling and another at Oatridge College).

4.3 Desk research

Research has been undertaken throughout the course of the study, focussing on identifying previous studies and reports on the subject of e-learning for businesses, examples of online surveys of business training needs, and collation of participants' views of online training programmes delivered by other providers. This research sought to minimise any duplication and build upon existing good practice and research already undertaken in the sector. A more extensive review of existing literature is given in Section 3, and referenced in Section 8. Research to date has therefore concentrated on i) most effective methodologies for gathering employer feedback concerning online and blended learning, and ii) collating examples of surveys, studies and reports looking at the relative merits of online versus blended learning.

However outwith the confines of further and higher education, where online learning is widely used within the context of student curricula, examples of studies engaging employers and SMEs are scarce. This lack of precedent and previously-collated data is even more pronounced when focussing on the rural and/or landbased industry sectors. The work undertaken by this study will therefore be unique in terms of focus and scope.

4.4 Promotion and awareness-raising

As mentioned earlier, the Landbased Industries Support Service (LISS) was identified at the outset as the key delivery vehicle for the study. This reflected the LISS initiative's role as a platform for engaging with landbased employers in order to identify their business development needs, and in turn addressing these needs via the support available through the College and its networks. In order to encourage employer participation in the BECTA study, a dedicated mailing was distributed to all employers on the LISS database (approximately 800) plus a further 1,000 contacts based within sector bodies, trade associations, public agencies and other interested parties. The mailing was split into two separate mailshots which were distributed via a fulfilment house during July 2007.

In addition to direct mailing of landbased clients and contacts, employer participation in the study was encouraged via:-

- publicity on the Oatridge College and LISS website, as well as references to the study on the websites of partner organisations and stakeholders
- a dedicated e-mail notification to all employers and organisations on the LISS e-database, as well as awareness-raising via the monthly LISS Online e-bulletin (600+ recipients in both cases).

4.5 Identification of study participants

During the course of September – October 2007, reply slips were returned by employers interested in taking part in the study, specifically regarding their participation in an Online Survey. Although an original target of 200 participants was set, eventually 107 employers gave consent for the College to use their e-mail address for contact purposes relating to the study. These employers encompassed a broad cross section of landbased sectors, business types and geographical areas.

4.6 Development and launch of Online Survey

Using “KeySurvey” (www.keysurvey.org.uk), a web-based software application specialising in the design of online surveys, an e-questionnaire was devised in order to gauge the learning preferences and attitudes of employers. In particular this sought to identify the potential role and applicability of online delivery of business training and learning within the context of the landbased industries. In addition to a range of questions identifying ICT competence, barriers to training and familiarity with web-based applications, the survey focussed upon four examples of “online learning tools”, with a view to gaining employers’ views on ease of use, applicability and relevance to their business, and relative merits as a vehicle for learning.

The Online Survey was launched in late September 2007. Participants were invited to use the following web link in order to access a Survey questionnaire consisting of 31 mostly ‘tick box’ questions, as follows: - www.keysurvey.co.uk/survey/168817/190d/

4.7 Initial collation and analysis of results

Using the report function of KeySurvey, the raw data obtained from the Online Survey was tabulated in a spreadsheet and also presented in graphical format. Key results and analysis of the data are detailed in Section 5, supported by the findings of two case studies (see Section 6). Of the original 107 employers who agreed to take part, 37 completed surveys were submitted electronically representing a response rate of just under 35%.

4.8 Development and launch of feedback survey

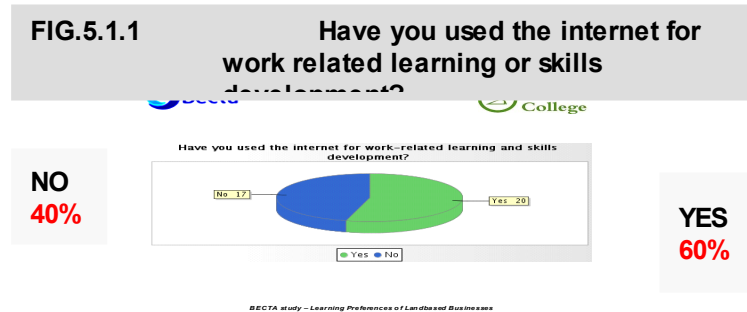
Due to the reduced number of study participants who returned completed surveys, it was decided to seek brief feedback from those who submitted surveys but more importantly from those who did not, or who failed to complete it.

The Feedback Survey includes a maximum of 10 questions, which can be viewed at www.keysurvey.co.uk/survey/178461/27de/.

5. Data Analysis

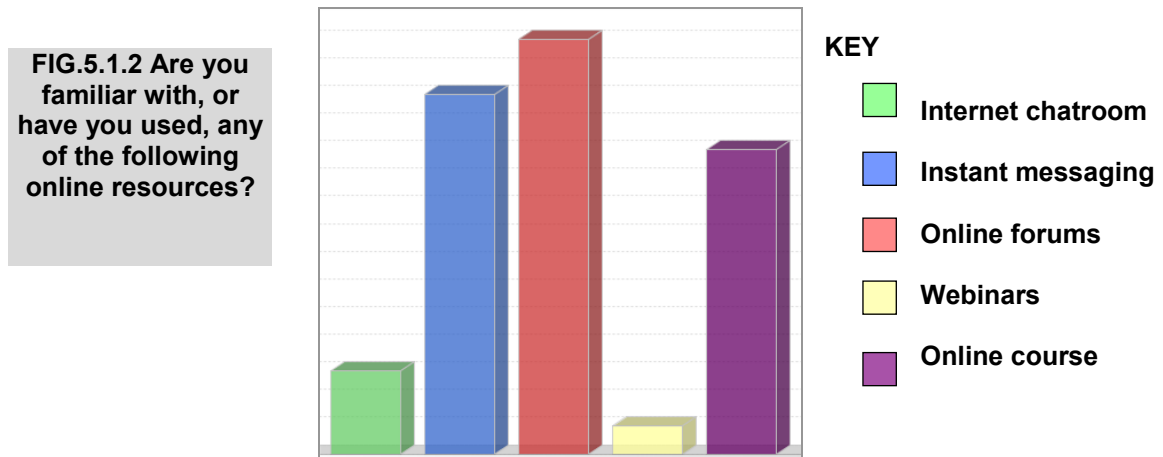
5.1 Familiarity with ICT and web-based applications

Figure 5.1.1 indicates that the majority of employers felt comfortable working with ICT technology, however technical barriers occasionally hindered some learners from working effectively with web-based tools such as online seminars ('webinars') and similar interactive applications. These can rely on the host computer possessing the necessary software and technical specification to operate as intended. Security-oriented software on PC's and laptops may also hinder the launch of certain online media, or cause these to run poorly. Although relatively minor issues are easily resolved, initial experiences when attempting to use online materials can deter the participant from considering e-learning in future.



Familiarity with online resources such as instant messaging, online forums/bulletin boards and online training resources was relatively high amongst the survey participants (Fig.5.2), in contrast to somewhat lower awareness of internet chatrooms and webinars. Experience suggests that in the wider landbased industry, the level of awareness and uptake of such tools varies considerably depending on a range of demographic, cultural and geographical factors. In sectors which feature long working hours in an outdoor, highly practical vocation, the scope (and in some cases the need) for ICT and internet use is often greatly reduced.

Furthermore, the rural and/or remote location of many businesses, often on the periphery of the communications network, can pose challenges for internet access (and particularly broadband connection). The level of 'ICT competence' also differs between the age groups, with younger employers and entrepreneurs generally embracing the technology and practice more readily than the older generation of business proprietors.



5.2 Factors limiting training & CPD uptake

In terms of currently available training courses, cost, timing, location, time required away from the business, and the lack of flexible delivery options were cited as significant deterrents to participation in learning. See Figs 5.2.1 – 5.2.5.

These results support feedback received on an ad-hoc basis by landbased training providers including Oatridge College. They reflect the rurality of many SMEs and the high proportion of sole traders and microbusinesses, many of whom experience difficulties taking time ‘away from the business’.

Viewed in isolation these results suggest that online methods of delivery may present a viable route to learning and CPD for some employers. However there remain mitigating factors (described in section 5.1), which may limit the scope and extent of online delivery when compared to conventional centre-based learning.

Question: *How significant have the following factors been in deterring you from undertaking training in the past?*

FIG.5.2.1 Cost of participating in a course

KEY: Figs 5.2.1 – 5.2.3

- Significant
- Quite a bit
- Hardly at all
- Not at all

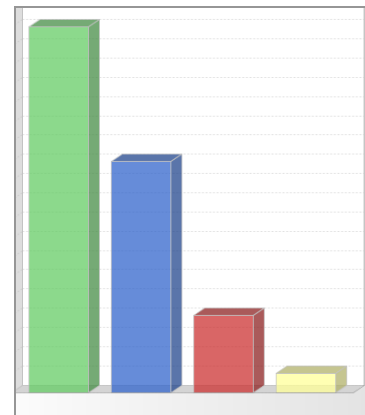


FIG.5.2.2 Lack of flexibility – no online option

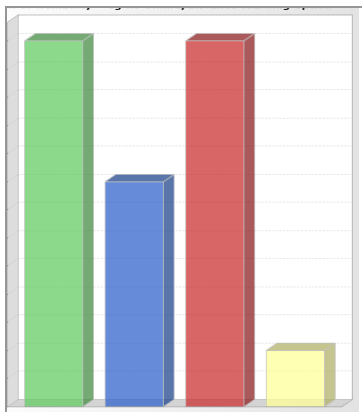


FIG.5.2.3 Location of suitable training courses

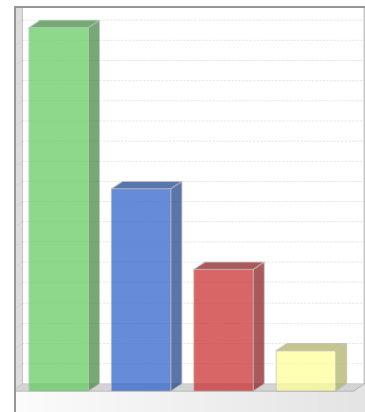
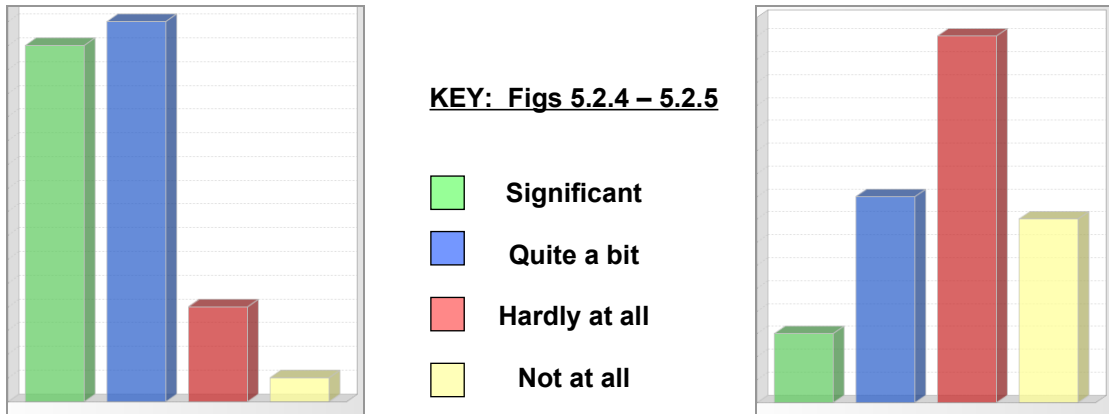


FIG.5.2.4 Difficulty finding the training I require

FIG.5.2.5 Lack of confidence in training providers

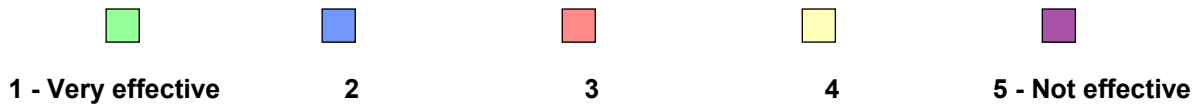


5.3 Online learning tools – employer feedback

Central to the study was an appraisal of employer’s views on the usefulness, applicability and ‘user-friendliness’ of four different online media – i) **webinar**, ii) **online training course**, iii) **online forum** and iv) **online course workbook**. Survey participants registered a small but significant preference for the “online training course” and “online workbook” tools. Interestingly the potentially more interactive and engaging aspects of webinars and bulletin boards failed to compensate for their limitations in terms of communicating skills and transferring knowledge. Despite the greater level of audio-visual engagement, participants were less convinced of the benefit of using these media compared to what are perceived to be more ‘substantial’ online courses and workbooks.

Question: *As a training tool, how effective do you think this example of online learning would be in addressing the following criteria on a scale of 1 to 5? (1 = Very effective, 5 = Not effective at all)*

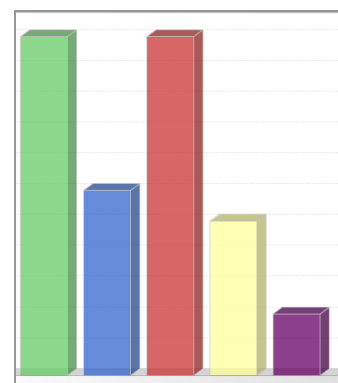
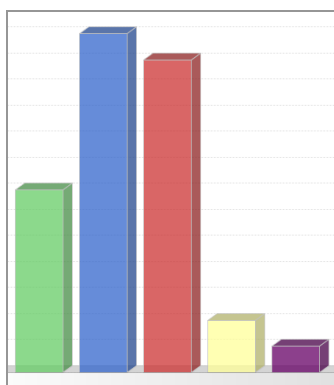
KEY: Figs 5.3.1 – 5.3.2



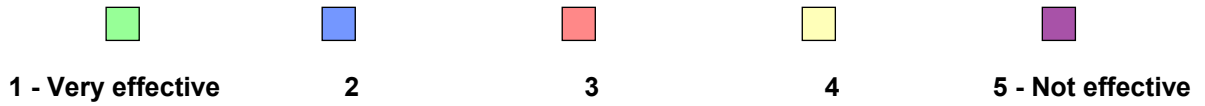
i) WEBINAR

FIG.5.3.1 Helping you learn new skills & techniques

FIG.5.3.2 Engaging you as a learner



KEY: Figs 5.3.3 – 5.3.8



ii) ONLINE TRAINING COURSE

FIG.5.3.3 Helping you learn new skills & techniques

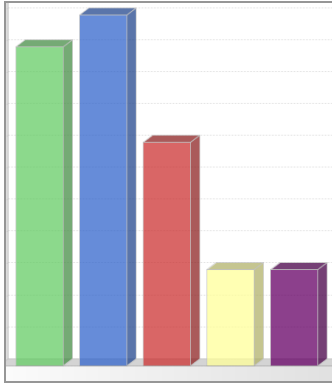
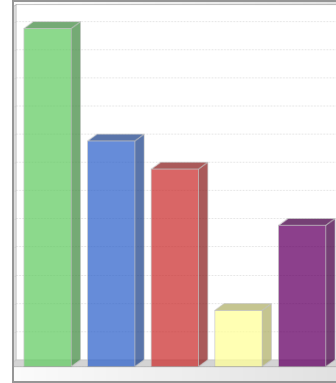


FIG.5.3.4 Engaging you as a learner



iii) ONLINE FORUM / BULLETIN BOARD

FIG.5.3.5 Helping you learn new skills & techniques

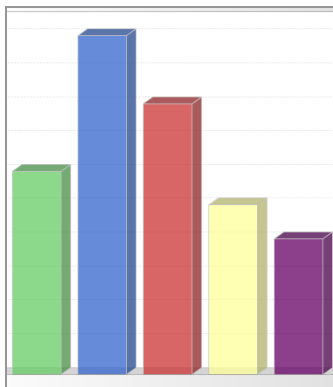
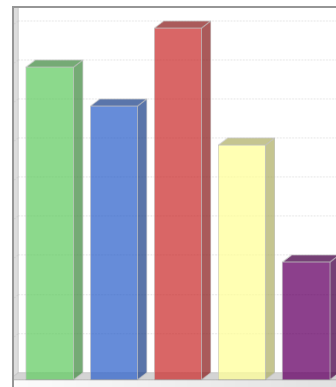


FIG.5.3.6 Engaging you as a learner



iv) ONLINE COURSE WORKBOOK

FIG.5.3.7 Helping you learn new skills & techniques

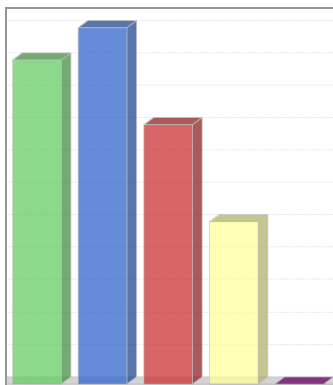
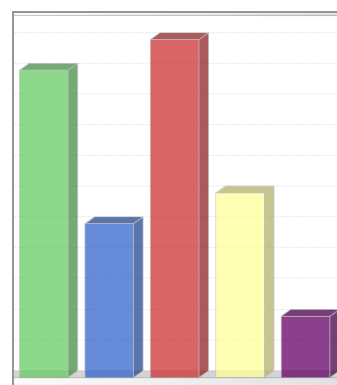
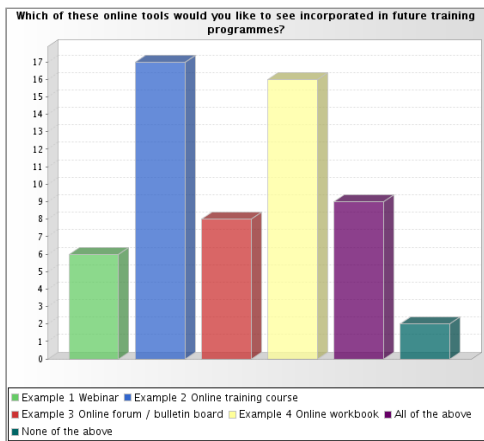


FIG.5.3.8 Engaging you as a learner



The marginal differences expressed in Figs 5.3.1 – 5.3.8 are however consolidated in Fig. 5.3.9, where the delivery mode preferences become more apparent. These responses indicate a clear preference for the online training course and online workbook examples. However Figs 5.3.1 – 5.3.2 and 5.3.5 – 5.3.6, do not indicate an entirely negative attitude towards webinars and online forums, reflecting a consensus that although these media were generally less appropriate for communicating the core skills and learning required by rural, landbased SMEs, they may have a role to play as supplementary learning aids supporting an e-learning package based around an online course / workbook framework.

FIG.5.3.9 Which of the following would you like to see incorporated in future training programmes?



KEY: Fig. 5.3.9

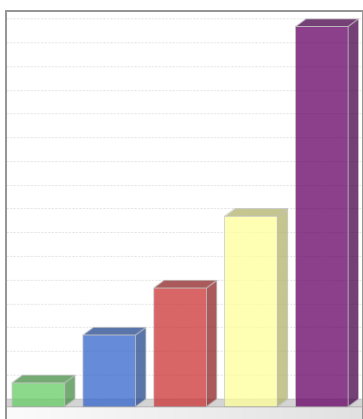
- Webinar
- Online training course
- Online forum
- Online workbook
- All
- None

5.4 Mode of learning delivery – conventional / online / blended

One plausible conclusion of the findings in section 5.3 is that a blended approach, based on intensive online training courses and/or workbooks but also incorporating timetabled face-to-face sessions with tutors and fellow trainees, may offer the most appropriate platform for landbased employers to engage in learning. This contention is reinforced when employer responses are considered in relation to the following question:-

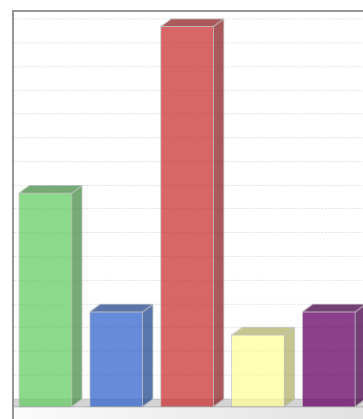
Question: *How essential would the following be for you as a learner?*

FIG.5.4.1 Face-to-face communication via webcam with tutor and fellow learners



TOTALLY ESSENTIAL NOT ESSENTIAL

FIG.5.4.2 Purely online learning materials progressing at my own pace



TOTALLY ESSENTIAL NOT ESSENTIAL

FIG.5.4.3 Conventional centre-based learning as part of a group

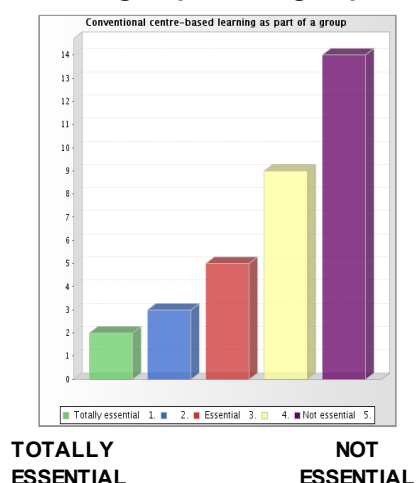
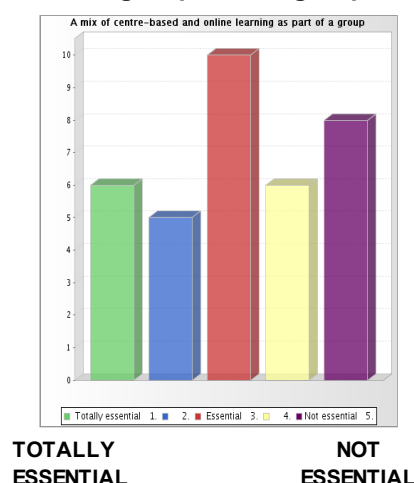


FIG.5.4.4 A mix of centre-based and online learning as part of a group



Employers do not consider conventional centre-based learning to be an essential requirement (Fig. 5.4.3). Equally however there is no explicit demand for exclusively online training and neither is ICT-supported communication with tutors and peers regarded as important.

The findings suggest that landbased employers, and indeed the agencies which would be expected to meet any demand for online training, are still formulating their views and requirements. This is due largely to a lack of precedent – there are very few examples of truly online or even blended learning in vocational areas which landbased employers can relate to. Therefore there has so far been no ‘trial and error’ process or learning curve through which landbased SMEs can determine which training format suits their needs best.

The case studies which follow (Section 6), and the mixed findings of the survey, therefore display a trend which suggests that the sector is not yet ready for purely online delivery, and that a mix of online elements supported by occasional contact and support at local training centres, may present the best way forward in the short-medium term.

5.5 Feedback from secondary survey

A second online survey was devised in order to gauge the effectiveness and ‘fitness for purpose’ of the main online survey undertaken by employers. This involved collating the views of respondents who either i) fully completed the main survey, ii) partially completed the main survey, or iii) failed to start the main survey. This sought to identify any factors which hindered completion of the survey by employers, or deterred them from taking part, for example in terms of the ‘user-friendliness’ of the survey (and specifically the examples of online media demonstrated), ease of navigation, time required for completion and so on. Key findings of the follow up survey are summarised below:-

- Respondents who indicated that they had not started the main survey cited lack of time and a busy work environment as the main factors preventing their participation. This may suggest a lack of priority currently being attached to the whole concept of online CPD.
- The majority of respondents (81%) felt that the main survey was “reasonably easy” to undertake, although no respondents expressed their experience as “very

easy”. Certain questions did prove difficult for some respondents to answer, mainly due to the phrasing of the question.

- The level of knowledge of ICT and the internet was sufficient to enable most respondents to answer the questions satisfactorily. However those employers who ultimately participated were typically drawn from a pool of more ‘progressive’ and ICT-literate individuals who agreed to take part in the study in the first place
- Feedback suggested that the length of time required to complete the survey was excessive, due largely to the time needed to work through the demonstrations of the online tools (68% of respondents expressed this view). However the consensus was that the main survey had covered a range of up-to-date online learning examples.
- The majority of respondents (76%) expressed the view that the main survey was “fairly effective” in illustrating the concept of online learning to employers. Crucially, 73% agreed that based on the main survey they thought that there was a potential role for online learning for some types of business development training

6. Case Studies

From the initial planning stages through to completion, the study has relied heavily on the input and feedback from a cross-section of landbased SMEs, organisations and training providers. It was originally proposed to hold two focus group meetings involving these key stakeholders, to extract more detailed views on online and distance learning and the potential role of these formats in the landbased sectors.

Two Case Studies were subsequently identified as representative employers who could comment on the relative merits and limitations of e-learning as set out by Oatridge College within the context of the study. These Case Studies have engaged with business training and learning previously, and have a grasp of the issues and familiarity with ICT which was considered 'average' and broadly representative of their sector and the wider industry. The main points arising from these discussions are set out below.

6.1 West Lothian Golf Club, Bo'ness, West Lothian

West Lothian Golf Club has enjoyed an active working relationship with Oatridge College dating back many years but particularly since the introduction of the Modern Apprenticeship scheme in 1994. During this time, apprentices have undertaken academic learning and 'on the job training' in partnership with the College to ensure that their underpinning knowledge and practical skills are sufficient to undertake the challenges presented by management of a modern sports-turf surface.

Against this background, a discussion on the merits of lifelong learning and online learning in particular was held with the club's head greenkeeper, Mr Alan Gibson. West Lothian Golf Club also has close links with nearby Linlithgow Golf Club, and so in order to give an even more rounded perspective on learning and training the head greenkeeper at Linlithgow – Mr Richard McCluckie - was also invited to participate in the discussion. A meeting was held at West Lothian Golf Club on 10 March 2008, during which some key points emerged as follows :-

- the concept of using an "online workbook" to deliver CPD training, combined with online assessment, was suggested as a positive step forward. Witness testimony can be provided electronically together with additional signed evidence
- if this mode of delivery was adopted, it would require trainee access to an online support resource 24 hours a day, 7 days a week. E-mail and telephone support would be essential
- interestingly, it was thought that demand for such training would be largely from older workers rather than young recruits (16-17 year olds). This reflects engagement in training generally within the greenkeeping and sports-turf management sector and not only online delivery methods
- it was suggested that golf course managers should perhaps seek assessor qualifications, enabling their employees to spend less time off-site (attending college). This would allow practical training to be carried out in the workplace, with the theory provided through college-based sessions or via online delivery methods
- however there is a lack of ICT ability within the sector and particularly amongst younger greenkeepers. Training in the use of ICT hardware and software would be required if online methods were to be developed
- it was felt that there is demand throughout the Scottish industry for an online qualification equivalent to HNC/HND level. Demand exists irrespective of how long it may take to achieve the qualification online. Specific 'bite-size' training packages aimed at greenkeepers are also available

- to engage more sector employers in the debate club secretaries should be targeted rather than course managers/greenkeeping staff directly
- there was a perceived lack of ‘management-type training’ available. However ‘short duration’ courses (e.g. 1 day) are not useful. The training must be more substantial and contribute more to HNC/HND training (SCQF Level 7 & 8)
- the suggested model features an online workbook with online support. An annual telephone advice package could be integrated with such online training

6.2 West Moss-side Farm, Thornhill, Stirling

The farming and non-farming enterprises at West Moss-side, near Thornhill, Stirling, are an excellent example of flexibility and responsiveness to change in the landbased sectors. West Moss-side is managed by Kate Sankey, who over the years has diversified a mostly traditional farm business into organic production, specialist livestock breeds and a modern, fully-equipped, broadband-enabled IT centre capable of hosting small-scale workshops, events and business meetings. Kate has a background in adult education and mixed mode e-learning at the University of Stirling.

A meeting was held at West Moss-side on 19 March 2008, during which the following points were raised:-

- Importance of ensuring that trainees on a particular course come together as a group, for example to undertake short sessions in the basics of how to use IT hardware and software applications
- Need for training in ICT use to endow trainees with a basic level of ICT competency and to ensure they feel confident using the technology. Start from the level the participants are at – and build on their current use of the internet
- At present the majority of ICT use by employers is linked to day-to-day management and operation of the business rather than learning and Continuous Professional Development
- Essential that “online media” are applied in a context relevant to the needs of the landbased sectors. Not all landbased vocations are suited to extensive application of online delivery. However almost all will have used some elements – for example Google is likely to have been used to search for technical manuals etc. Business planning, business management, website development, customer management and so on – these apply to all SMEs
- The ‘learning environment’ has to be user-friendly and appropriate to the learner. Hence the development at West Moss-side, where the centre is based in a converted steading and hayloft on a farm – a familiar rural environment providing an accessible and comfortable learning environment
- Examples of the different online tools must be relevant to the sector to allow employers to gauge applicability and context, thus requiring tutors and facilitators who are familiar with the transferability of these tools to the landbased industries
- Expansion of online learning could be used as an opportunity to encourage more young people (for whom computers and ICT are very familiar in a social context) into the industry and help address workforce/skills shortages in the longer term
- By encouraging the uptake of online & distance learning, this will help achieve rural development aims and objectives (e.g. lifelong learning and skills, rural SME growth and competitiveness)
- Blended learning should become the norm as the education and training sector seek to reduce its carbon footprint. Online learning (where appropriate) and face to face work (where appropriate) will suit a world where travel is becoming less possible and desirable

7. Conclusions

From an analysis and interpretation of the findings derived from the Online Surveys (Section 5), Case Studies (Section 6) and background desk research we have made the following conclusions:

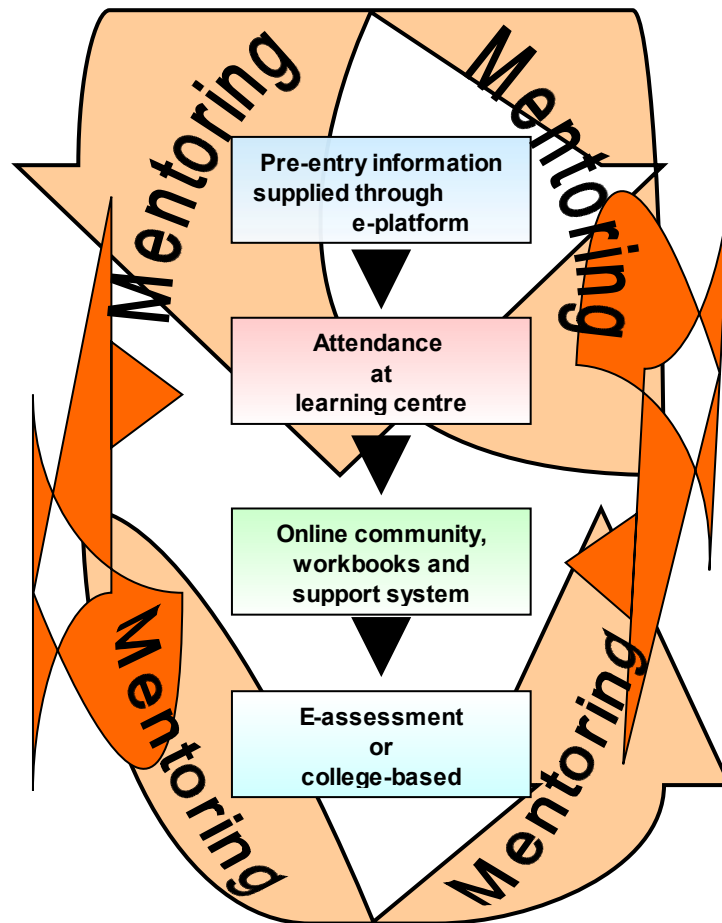
7.1 Fundamentals of e-learning delivery in landbased SMEs

- Various models of e-learning exist and the methodology is developing continually. As the technology advances, the factors already limiting uptake (see Section 7.2) increasingly divorce learners from the e-learning environment and ICT technology. Consequently the uptake of e-learning models is impaired.
- No standard e-learning model exists which can be applied to all learners. The determining factors are not necessarily the technology so much as the training providers' ability to use and apply the technology and the learners' attitudes and learning preferences.
- "Learning to e-learn" is core to the process – learners demonstrate a requirement to be informed and coached in how to utilise the technologies, online web-based media and associated software applications. This is supported by a key finding of the online survey, namely that employers would prefer online training courses and online workbooks, which amount to the electronic equivalent of training course notes and workbooks. Employers found it more difficult to perceive how somewhat more 'radical' media such as webinars, online forums, and instant messaging could be applied to their learning environment (see Figs. 5.4.1, 5.4.2).
- Online learning tools such as webinars and viral videos have a role to play as a supplementary learning aid in certain vocations, supporting upskilling in specific practical tasks
- The strengths of e-learning appear to lie in providing theoretical learning at the current time, and in the acquisition of underpinning knowledge and understanding. Exemplars of where e-learning has been used to develop practical skills (such as those required in landbased industries) or action-based entrepreneurial skills needed for business diversification and development (resulting in very practical on-the-ground business developments and change) are sparse. Bearing in mind the that the Forward Strategy for Agriculture (SEERAD, 2001) focuses on business diversification and efficiency improvements, e-learning may need to be supported by a range of additional tools and support mechanisms to enable businesses to implement business change.
- In the landbased sectors there is a clear need to create learning experiences that fuse on-line learning environments, whether formal, informal, structured or non-structured, with opportunities for learners to practice hands-on skills, essential to their business and to the wider sector. Central to this process is the role of the business learning mentor, as illustrated in Fig. 7.1.
- We conclude that in the landbased industries blended learning offers an incremental approach which businesses require. Assuming that e-learning is a panacea for all learners does not wash within this sector. Younger employers and employees may make the transition to e-learning more readily than older generations however the

fundamental issues of transferring practical skills or development of bespoke business development strategies are not, as far as our current research has identified, being addressed by current systems.

- In order to create developments that will engage landbased industry personnel we perceive that a model of blended and supported learning would create a transitional staged development. The blend of a mentoring/tutor service with mixed mode delivery systems would create opportunity to both develop the attitudes of learners and systems development.

FIG.7.1 Blended learning model for SMEs in the landbased industries



7.2 The views of employers – improving access to learning

- The main factors which influence the use of ICT by employers and SMEs in the landbased sectors were identified as income/socio-economic status; level of education; age; geographical location; cultural and social participation.
- Key factors limiting training uptake in general included cost, lack of flexible delivery, distance from training centres, and difficulty obtaining customised training matched to specific business needs. Significantly, respondents did express confidence in the ability of training providers to deliver the training and professional development they require.
- The majority of respondents felt comfortable working with ICT technology. Technical barriers occasionally hindered some learners from working effectively, and although relatively minor issues were easily resolved initial experiences when attempting to use online materials can deter the participant from considering e-learning especially if participants are new to the e-learning environment.
- Bearing in mind the nature of work environments in the landbased industries, the resultant benefits arising from e-learning must be significant, practicable and profitable in order to incentivise learning. An example of this ‘benefit-driven’ approach includes participation in the e-learning programme which allows farm shops to meet legislative requirements for storing and handling fresh meat through online study towards a Certificate of Quality and Merit from the Royal Institute of Public Health (RIPH).
- Respondents perceive current provision as having a rigid structure based on :-
 - ‘one-price per course’ regardless of desired study period
 - a geographic focal point for delivery (a training centre)
 - a prescribed inflexible delivery (prescribed course timetable)
 - a “one-size fits all” approach to content, with little attempt to personalise learning to the learners personality, location, business, and specific learning needs.

In contrast a fusion of ICT and mentored learning can create a more fluid approach to delivery and business knowledge acquisition, providing bite-sized chunks of learning in the learner’s own environment, with self-paced learning, within the learner’s financial constraints, and tailored to the specific learning needs of the business and its future requirements.

- Respondents indicated that they could envisage situations where all four examples of e-learning tools demonstrated via the online survey could be used for the acquisition of new skills and techniques. However a preference for the “online training course” and “online workbook” tools was identified from the feedback received. Although presenting a more interactive and engaging format, webinars and online forums failed to compensate for their limitations in terms of effectiveness at communicating skills and transferring knowledge. Respondents were less convinced of the benefits of these media compared to what were perceived as more ‘substantial’ online courses and workbooks.

- Despite the consensus that webinars and online forums were generally less appropriate for communicating the core skills and learning, it is equally apparent that they may have a role to play as supplementary learning aids, supporting an e-learning package based around an online course / workbook framework.

7.3 Blended learning – an evolving scenario

- It is evident that it is not feasible for all landbased learners in the micro/SMEs which comprise much of the sector, to study *completely* online. The desire to exchange information and ideas, and interact with others in the learning environment, suggests that a range of delivery modes should be incorporated in learning programmes.
- A blended approach to workforce development may provide the most cost-effective and flexible answer, both for the beneficiary and also for the training provider. This would incorporate periodic face-to-face meetings at local learning venues, technically supported access to online learning materials, effective e-mentoring provision, and an opportunity to develop a social community of learners. As businesses move towards e-learning programmes to complement conventional approaches to staff training, the move to blended learning will need to provide effective learning media (which might include instructor-led, web-based courseware, simulations, job aids, webinars and documents) assimilated into total learning packages.
- On-line learning must move to provide
 - A sufficient range of choices and options
 - engagement opportunities
 - opportunities for social contact
 - business and personal relevance
 - a fluid approach to delivery
- Different groups of learners will require different blends of learning media. Delivery organisations must become market-aware (as opposed to delivering to their own capacity) to provide the right product (format and content) in the right place (on-line and actual) to the right people at the right price and time.
- By combining delivery through a range of media that are designed to complement each other and promote learning, environments can be created that will enable learners to maximise the use of traditional instructor-led training and online learning, developing their self-paced study regimes supported by the social learning network and the presence of an on-line and real-life mentor.
- The findings confirm that landbased employers, and indeed the agencies which would be expected to meet any demand for online training, are still formulating their views and requirements. This is due largely to a lack of precedent, as there are few examples of online or blended learning in vocational areas which landbased employers can relate to.
- Most examples of the application of e-learning are observed within colleges and universities in relation to theoretical or knowledge based education, as opposed to practical skill development. The demand for turnover and high level usage has essentially tuned e-learning solely towards the mass market subjects. Therefore we find little evidence of provision for the landbased industries. Partly because the topics are not wholly transferable and require tailoring to the individual needs (e.g. a

greenkeeper has a different approach to nutrient management than an environmentalist), and partly because of the fractured nature of the landbased industries there has so far been little development of e-learning for the landbased sector. Equally then, there has been little 'trial and error' experimentation or learning curve through which landbased SMEs can determine which training format suits their needs best. They don't know what they don't know, and can't know what they can't know about.

- No one extreme delivery methodology would seem to satisfy the demands of the landbased industries – the traditional methodologies have to change to meet the demands of the sector, and e-learning (in the landbased sector) is not yet so advanced to meet all the needs of the diverse audience the landbased sector provides.
- The key factor is flexibility in delivery to suit the needs of employers and their employees working in the landbased industry sector - avoiding the disadvantages inherent in either purely online learning or the wholly centre-based approach. We conclude that the provision of a mentored blended learning approach would better meet the needs of the sector during this time of change in the sector and the evolution of e-enabled learning methodologies.

8. Recommendations

8.1 Key policy recommendations

- Strategic developments in the landbased sectors, particularly in relation to the implementation of the Scottish Rural Development Programme 2007-13, place considerable emphasis on skills development as a route to business improvement, for example via the Skills Development Scheme. This may therefore be an opportune time to consider ways in which blended learning models can be adapted to meet the CPD needs of land managers in the 21st century
- Under the Harnessing Technology Strategy it is imperative that BECTA and related policy advisers encourage and support the development and use of technology to support highly differentiated and self-paced mixed mode learning in rural landbased SMEs

8.2 General recommendations

- There is a basic need to enable employers to e-learn by coaching participants in the fundamentals of ICT-enhanced learning and assessment
- Demonstration models of the different online tools must be relevant to the sector to allow employers to gauge applicability within the context of their business. It is essential that “online media” are applied in a context relevant to the needs of the landbased sectors
- The lack of e-learning and blended learning services, and the low awareness of its potential for business and personal development, severely limits participation by employers. The lack of existing systems of delivery specifically targeting employers makes it difficult for potential users to see the value of these systems. Provision must therefore be enhanced in order to address this deficiency both in supporting the development of blended learning and support mechanisms in the landbased sector if policy targets are to be met
- Investment in the development of sophisticated blended learning systems is required as a priority, in tandem with further research into how entrepreneurial and practical skills can be developed through a blended learning approach
- Development of the mentoring capacity to support e-learning is essential in order to ensure a joined up approach between learning delivery, ICT methodologies employed, the mentoring service and the application of learning within rurally remote businesses. Effective delivery will require tutors and facilitators to transfer and apply these tools for learning for the landbased industries
- In terms of awareness-raising and encouraging participation, the merits and ‘employer-friendliness’ of blended learning must be promoted and publicised to demonstrate the practical benefits to businesses, and to the providers and promoters of learning.

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