

EVALUATING ENTERPRISE EDUCATION IN A VIRTUAL LEARNING ENVIRONMENT: THE CASE OF E-COLLEGE WALES

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ABSTRACT

E-College Wales (ECW) in conjunction with the Welsh Enterprise Institute (WEI), both based at the University of Glamorgan, have designed an online, interactive, Web based Enterprise degree that aims to create and develop business and enterprise skills in Objective One areas of Wales. The programme is supported by the European Social Funds and a network of Welsh Further Education colleges whose primary objective is to assist individuals and communities to generate their own economic development solutions by raising entrepreneurial awareness and improving entrepreneurial capacity.

This paper examines the need for increasing entrepreneurial activity and capacity, and considers the reasons for undertaking this through the platform of Web-based learning, and the characteristics of the first cohort of students undertaking the course. Finally, conclusions are drawn and the requirements for a future research agenda are given aimed at determining the ultimate success or otherwise of ECW.

INTRODUCTION

The strategic approach taken by the University of Glamorgan and partners through the ECW project is geared towards addressing weaknesses in the SME sector, particularly business and enterprise skills, slow adoption of new technologies and the low take up of information and communications technology (ICT). Cooper et al (1988) found that people are more likely to pursue opportunities if they have developed entrepreneurship skills from previous employment. In the absence of work based learning for many individuals in the Objective One areas of Wales, ECW provides an important alternative to obtaining such information through its delivery of the BA Enterprise degree award.

The BA Enterprise Award is also aiming to ensure that support infrastructures are in place (Pickernell, et al, 2003; Jones et al, 2003; Jones et al, 2004) to provide opportunities for all members of the region to engage in new technologies, and gain access to training and support to encourage entrepreneurial activity and Community Economic Development (CED) (by providing free lap-top computers and ISDN lines to all students undertaking the course). The on-line delivery mechanism has been designed in recognition of the need to introduce more flexible methods of delivering education and training to Objective One

communities, and to exploit more effectively the potential of educational institutions to develop the skills of local populations (using local FE institutions as partners and focal points for the face-to-face contact). This requires innovative approaches to delivery, use of ICT and new technologies to support open and distance learning. The Award also addresses a number of key aims of the National Learning Strategy of Wales, including: providing better access to information and provision; developing new measures to increase and widen participation; strengthening co-operation, collaboration and partnership at the local, regional and all-Wales level.

The concept of the project is based upon forming an alliance of complementary organisations in the commercial, educational, media, communications, public and voluntary sector to deliver training and skills development. The clear focus of the BA Enterprise Award is based upon a broad partnership across these sectors, looking to:

- provide a focus in Wales for the development and promotion of excellent management, entrepreneurship and ICT skills in Welsh industry, commerce, public sector and voluntary organisations
- form the hub for future research and learning within Wales for entrepreneurship, small business management and successful practice in e-commerce
- help to create an environment for the regeneration of the Welsh economy.

As a result, the BA Enterprise Award has the aim of helping to achieve the following in Wales:

- Raising productivity and competitiveness in SMEs by updating and upgrading the knowledge, skills, competence and vocational qualifications of employees and employers, including higher level skills, ICT, basic and generic skills.
- Ensuring the development of entrepreneurship and management skills, alongside information technology capabilities.
- Encouraging a partnership approach to the modernisation of work organisation.
- Increase business start-ups through enterprise training.
- Raising the skills base and promoting entrepreneurship within existing social economy businesses.
- Promoting an understanding and appreciation of the opportunities offered by entrepreneurial activities among learners and educators alike.

The primary aim of the BA Enterprise Award is to help individuals establish, stabilise and grow their own small company. In order to achieve these objectives, technologies of e-communication, virtual classrooms, Web technology, video conferencing, broadcasting, distance learning techniques and traditional educational excellence are being used. It is envisaged that the use of these technologies in education will also stimulate their introduction into businesses large and small throughout Wales.

THE BENEFITS OF THE E-APPROACH

Given the interlinked importance of education, entrepreneurship and CED within the Objective One Programme, it would seem sensible to utilise approaches that can simultaneously help meet all of these objectives. Use of ICT potentially offers such an approach, in a number of different ways. Edwards (2001) and Anderson and Simpson (1999) provide examples from Australia where provision of access to ICT has linked communities together both internally and externally with other communities and government agencies. In the UK, Edwards (1996) also outlined a clear example with

respect to education specifically in his explanation of “community learning empowerment and resources” (CLEAR), community learning utilities which exploit ICT to create widespread affordable access to education and training resources, including for those whose previous access was disadvantaged. As he argues:

“It does not seem beyond the realms of probability that provision of community access to electronic highways at least for education and business purposes could bring a tremendous boost to a local economy. It is true that start-up costs will be very high, and the pay-off uncertain when seen from the point of view of an SME...or even a college...However, there are numerous ways in which competitive advantage and social equity can be delivered through public enablement of community access to electronic highways”
(Edwards, 1996, p.5)

It is also commonly agreed that knowledge will become increasingly important in sustaining a nation’s competitive advantage (Packham and Miller, 2000). In December 1999, the European Commission (EC) also launched the eEuropean initiative, with the aim of accelerating the uptake of digital technologies across Europe and ensuring that all Europeans have the necessary skills to use them. The application of digital technologies has become a key factor for growth and employment in this newly emerging knowledge based or e-economy, which is built around the Internet. The EU eLearning initiative addressed the need for Europe’s education and training systems to adapt to the knowledge society. A proposal has also been presented to create an action programme for encouraging ‘European content’ on the Internet. However, Taylor (2002) outlines a large number of problems and opportunities to on-line learning that institutions need to consider. Thus, the key to its ultimate success is the suitability of the methods it uses relative to the students’ needs and the materials to be delivered. Morgan (2000) argues that the challenge is to use e-learning appropriately, where it is optimum, and use other modes of instruction where they are most effective. Of course, in order to understand this and ascertain the usefulness of ECW, one needs to understand the nature of the main and potential delivery methods.

POTENTIAL DELIVERY METHODS

Potential delivery methods can be used together with e-learning to provide an appropriate and effective means of instruction (Morgan, 2000). These need to be considered to determine what can be used to train individuals. Table 1 shows the training methods used in organisations which are relevant to ECW which have been researched in this paper and are described in the sub sections below.

Table 1: Training methods used in organizations

TRAINING METHOD	Regularly (%)	Sometimes (%)	Never (%)
On-the-job training	87.3	11.4	1.4
Face-to-face	84.3	14.7	1.0
Coaching/mentoring	59.4	32.1	8.6
Formal education	49.6	46.2	4.2

Source: ‘Training and Development 2001’ Survey Report, CIPD

On-the-job training

On the job training is essentially a form of work experience, involving coaching and mentoring, and may take the form of internal secondment. The question of transferring the learning to the actual job and working environment does not therefore arise and if properly planned and carried out it can be very effective for some jobs (Reid and Barrington, 1999). Although the trainee is restricted within this environment as the trainer usually has other responsibilities, if a particular role is being focussed upon then the trainer may act as a role model. Throughout on the job training the trainee must be encouraged to learn how to learn from the experiences at work, thereby providing a relative model from which to glean knowledge and skills. Anderson et al (1998) found in their Scottish study that entrepreneurs acting as mentors were seen as very important to the success of the entrepreneurship education process. Williams and Turnbull (1996) reported that entrepreneurs felt an obligation to undertake such mentoring and teaching as they viewed it as an important method to build future markets. In the case of ECW this was influenced by the fact that students wanted to set up enterprises but many did not have equipment or businesses.

Face-to-face

Voci and Young (2001) posit that traditional classroom based learning provides the social interaction that human beings need and enjoy by affording a direct exchange of ideas. Further advantages includes that learners are comfortable with the familiar and comfortable method. In addition face-to-face allows the learner to receive immediate feedback about the appropriateness and acceptance of their responses. In the case of enterprise-orientated training and education, the learner's objectives are to transfer the acquired skills into the workplace, which is very much distinct from the classroom environment. This brings in the danger of the learner not being able to cope outside the classroom, or not being able to apply the knowledge effectively (Reid and Barrington, 1999).

Coaching/Mentoring

"Mentoring has the advantage of inducting newcomers to the organisation and assisting them with organisational problems and personal development, thereby increasing motivation and job satisfaction. The mentor can also pass on the organisational culture." (Reid and Barrington, 1999 p.241)

By comparison this method of training is inexpensive, providing an efficient method of knowledge development. Mentoring can be an extremely useful method for imparting knowledge in entrepreneurial development, and has already been used in Wales (e.g. Menter a Busnes). Cooper points out in McCarthy (2001) that entrepreneurship tends to flourish in areas already strong in entrepreneurship. However, given the need in Wales, and Objective One areas in particular, to significantly increase the relatively small base of entrepreneurs, then mentoring is not viable as a kick-start to the large scale transfer of basic knowledge. Mullen's (1997) UK wide study recommended that entrepreneurship communities able to provide guidance and advice through the entire process should be encouraged. This may become increasingly viable as the entrepreneurship base widens, and ECW may facilitate this as it builds up a database of entrepreneurs who have gone through the process and started up their own businesses.

Formal education issues with distance-learning

ECW's distance-learning Web-based model is clearly driven by practical as well as educational considerations, given the need to reach large numbers of non-traditional students. It clearly builds upon the distance model, which in the UK largely began with the Open University model, through stand-alone Computer Assisted Learning (CAL) systems (that often tried and failed) (see Brooksbank and Pickernell, 1998; Brooksbank et al, 2001) to mimic traditional teaching and learning, to the on-line style that ECW has adopted. However, there are clearly educational issues related to online learning (see Honey, 2001) that require careful consideration prior to implementation.

E-APPROACH OF ECW

The Chartered Institute of Personnel and Development (CIPD) define online learning as "learning that is delivered, enabled or mediated by electronic technology for the explicit purpose of training in organisations." (CIPD Website, 2002). We live in a digital age and the speed of technological advancement is transforming our society and therefore it should not be surprising that this technology has the, "potential to revolutionise training and learning." (Ravet and Layte, 2001:2). Online learning gives people access, through computers and the Internet, to everything they need to learn (Hammond, 2001) and the potential benefits can be summarised as follows:

- Cost savings. (Fry, 2001; Clarke and Hermans, 2001)
- Increased access to training. (Fry, 2001; Clarke and Hermans, 2001)
- Flexible and continual learning. (Clarke and Hermans, 2001)
- Knowledge on demand.(Thorne and Mackay, 2001)

The Internet can be used to simply transmit Web-based training materials to the users' computers to be used "off-line" by downloading the course materials. Alternatively the Web can be used as an online instructional medium itself. However, the introduction of online methods entails a sharp learning curve for the teacher also. When distanced from their students the teacher can often feel isolated (Benfield, 2000). In a classroom the teacher faces an initial struggle to establish an environment of free communication with every new class. Online it is necessary to establish a comfortable Computer Mediated Communication (CMC) facility.

Raelin (2001) also found that on-line learning technology could inhibit action (i.e. research-based) learning because of the absence of non-verbal and socio-emotional transmitted information. However, Hiltz et al (2000) presented evidence that while learning in isolation on-line may be less motivating than learning in a traditional classroom, working collaboratively on-line may actually lead to higher motivation than from within a traditional classroom setting. Canning (2002) also found that even where on-line facilities were established at work for on-line delivery of Web-based materials, the learners preferred to actually undertake their learning at home.

"Research suggests that collaboration in an online course can enhance learning, reduce feelings of isolation, increase satisfaction with the course, and increase motivation. Unfortunately, creating an environment within which collaboration can occur doesn't happen automatically. A review of the literature suggests that for on-line collaboration to be most effective, participants must: (1) see the value of expending the (considerable) effort required, (2) be comfortable with and trust the medium, (3) be comfortable with and trust their instructor (or facilitator) and their

fellow collaborators, and (4) feel as though they are immersed in a rich, engaging, and rewarding social experience." (Hughes, et al., 2002)

The need to generate such an environment becomes more important when one considers the types of student typically involved. Jones and Martinez (2001) found that compared to the general student population, students choosing Web-based distance learning courses tend to have learning orientations characterised by more self-directedness and discovery learning. Some individuals may be attracted to distance learning because it offers them an opportunity to learn autonomously and effectively without having to interact much with others. This may be especially true in the case of busy professionals who are drawn to distance learning because they do not have time to take traditional courses. This, of course, is one of the benefits of ECW. Indeed, Ragoonaden and Bordeleau (2000) found that some students actually resented having to communicate with others whose work habits were different from theirs.

There are also a number of practical difficulties that ECW has had to overcome. One obvious potential drawback of online learning is access, or the lack of it to the very excluded groups often the ones most in need of the education it offers (Fry, 2001). However, the opportunities provided by ECW make it possible to cross this divide using European Objective One funding to ensure access to those undertaking the course, through free laptop computers and ISDN lines.

Technical difficulties can also create frustration by obstructing communication, interaction and collaborative learning (Canning, 2002; Ragoonaden & Bordeleau, 2000). Diverse technological skill levels amongst learners, if not addressed, may also be demotivating (Ge et al, 2000). Learners need both to be comfortable with the technology and be aware of the correct responses to technical problems when they do arise (Hughes et al. 2002). This requires the use of skills audits and training prior to the learning process itself, to allow students to develop trust and breakdown their natural resistance (Wegerif, 1998). In the case of ECW both of these have been put into place for students undertaking the course.

This process also needs to be on-going once the students go on-line. This can take several forms. For example, Harisim (1999) created a social Web conference forum called the "coffee house." Clark (2000) suggested that students could post a public introduction and biography so that their peers could gain an immediate insight into their classmates' backgrounds, interests, and skills. This was meant to make it easier and more comfortable for them to subsequently collaborate. Group learning contracts have been successful in establishing trust and a sense of community among group members (Murphy et al, 2000). Instructors can also help in facilitating the process of both group interaction and individual student work (Canning 2002). This often requires a shift to learner-centred environments where instructors act as facilitators, mediators, and problem solvers, offering guidance and suggestions for group projects and addressing any difficulties that arise (Murphy et al, 2000; Rogers, 2000). They thus have a fundamentally different role from in a traditional classroom where Abell (2000) notes that the instructor traditionally disseminates information and students merely absorb it. In the on-line environment, knowledge is generated through relationships and interactions (student-to-student and student-to-instructor). When groups collaborate on projects, a great deal of co-ordination is required, because the development processes are more complex on-line than they are in person (Hughes et al, 2002). On-line collaboration can provide many opportunities for the on-line learner, but requires facilitation via: encouragement to students of its worth; creating familiarity with using the technology; establishing trust between instructors and students; and creating a social environment on-line to promote collaboration (Hughes et al, 2002).

Many of these measures have been put into place with e-college. It is also important to note that, as Hodson et al (2001) have pointed out, computer based learning has the ability to offer distinct advantages to adult learners (of which the e-college student set is predominantly made up). This is because on-line based learning is particularly well suited to delivering materials that support and promote experiential learning (Kolb, 1984). Furthermore, it is able to deliver this material flexibly to overcome the problems that adult distance learners experience in terms of social responsibilities, limited time etc. Gasse and Garnier (1994) found that entrepreneurship was best taught using multiple methods when the participants were not well defined or the objectives were multiple and broad. However, when specific groups and objectives had been identified then specifically suitable methods could be used. E-college's methods have been chosen to be suitable to its target audience and objectives. Tyler's (1994) analysis of suitable curricula for enterprise education found that finance, business planning and identifying market conditions were seen by business owners, professionals and community groups as the most important elements of formal curricula. ECW's curriculum has been designed to meet these needs, with the first year of the programme aiming to give the student the skills to start a business, the second year's curriculum being concerned with survival, and the final year being the growth phase part of the course.

A PROFILE OF ECW STUDENTS: THE STORY SO FAR

A statistical profile of the first 183 ECW students indicates the broad nature of the audience that ECW is engaging with, and indicates some optimistic trends that can be discerned for the role ECW is playing in meeting the range of objectives outlined earlier. The geographical spread of the first cohort shows that 94 (51.4%) students are located in South East Wales and The Valleys, 57 (31.1%) are located in West Wales and 32 (17.5%) are located in North Wales. There is a relatively even spread around the Objective One areas. The course is promoting female entrepreneurship, the proportions of females on the course being much greater than those in the business community at large. This is shown by the fact that there are 74 (40.4%) females and 109 (59.6%) males.

ECW is promoting formal degree level education within non-traditional age groups. Most degrees are begun whilst students are still in the 18-20 age range. Conversely, ECW is being undertaken by students with a much broader spread of ages. For the first cohort 2 (1.5%) are under 20, 47 (25.6%) are 21-30, 53 (28.9%) are 31-40, 46 (25.1%) are 41-50, 31 (16.8%) are 51-60 and 4 (2.1%) are over 60. ECW's potential role is in increasing high level educational attainment, given that it indicates that the course represents an improvement in qualification level for nearly half the students. For the rest, ECW is also promoting entrepreneurial capacity more generally through its material.

The current employment status of students shows that 37 (20.2%) are unemployed, 50 (27.3%) are self employed, 43 (23.5%) are professional, 21 (11.5%) are academic related, 29 (15.8%) are industrial/engineering and 3 (1.6%) are other/not known. For the 20% of students currently unemployed the successful use of the course (to start their own business) will represent a reduction in unemployment/inactivity. For those currently self-employed the course, if successful, should improve their entrepreneurial capacity, whilst for the rest ECW is promoting more entrepreneurial activity.

Given the current relative paucity of finance and business related activities in Wales generally and the Objective One regions specifically, the concentration of students' business ideas in sectors such as sports/leisure, computing, engineering, hotel/catering, consultancy, business development, retail and design work also offers some grounds for

optimism about the worth of ECW. A more in-depth examination of the business ideas also revealed that nearly a third were for businesses that would serve the immediate local area (e.g. crèches), local firms (accountancy and business services) or community groups. Community enterprise type examples included creation of Web sites of local entertainment, for communities, and for linking communities and schools, a consultancy for small voluntary groups, and a local skills centre for teaching agriculture, horticulture and woodwork. Firms supplying local IT training and advice, access (cybercafés) and home computer repair were also strongly represented, which is of obvious importance given that many of the communities in the Objective One areas do not have proximate access to these services.

When examining the business ideas it is also clear that over a third of the students are already in small businesses or community activities and are using the course to advance skills linked to their existing employment. The spread of these people also fits in with the patterns mentioned earlier, in that two thirds of the people already working in these activities were to be found in the West Wales parts of the Objective One area, and only a third in the relatively entrepreneurially deficient Valleys area. Included amongst these existing players were managers of local charities, youth organisations, and organisations to help community groups, all of whom hoped to improve their capacity to run their organisations. Thus, whilst the course is specifically designed to encourage entrepreneurship in the Objective One areas, it is also having the potential knock-on effect of improving the capacity of community-based organisations and increasing the goods and services available to local communities provided by members of local communities themselves.

CONCLUSIONS: DEVELOPING THE RESEARCH AGENDA FOR ECW

The initial signs for ECW are encouraging. In a number of broad interlinked areas related to increasing educational, technological, entrepreneurial and community capacity and participation, ECW can be seen as a potentially very successful delivery mechanism. This involves a blended learning approach to supplement and enhance the online learning experience due to the specific needs of the students. The challenge will be to spread this approach further afield to other areas and countries especially as the nature of the individual can be very much different from the traditional Higher Education student. ECW, however, is at an early stage and this brief examination of the issues indicates a number of areas where further research is needed. A full evaluation of ECW will be a long-term project. However, there are a number of shorter-term projects that could fit into this research agenda.

Further research into the effectiveness of the digital delivery mechanism of enterprise education and analysis of whether the systems adopted should be changed/added to in future (e.g. mentoring) would seem to be necessary. This may be analysed both specifically and also in comparison with other enterprise education initiatives. This could include a psychological profile of e-learners against the literature to determine whether the course is attracting “traditional” entrepreneur types. There is already much literature on this issue (see for example, Gaedeke 1995; Cooper et al, 1988; Miner 1996), but the degree to which successful entrepreneurialism can be predicted by psychological characteristics is still a topic of debate.

The significance of the virtual enterprise degree course to the economic and social structure of Wales also needs to be examined. This should include an examination of the ways in which overall entrepreneurial capacity has been affected by the programme. This could involve a longitudinal study of student activity to assess the effectiveness of on-line delivery of enterprise education in terms of its comparative impact on business start-up and growth. A sectoral study of the companies created (and their success or otherwise) compared with the existing structure of the Welsh economy and the sectoral make-up of business start-ups in Wales may also form part of this. An examination of the CED effects of e-college in terms of capacity building, community businesses and networking within, and between, communities would be of significant use to policy makers and funding providers. The specific effects of the course will also require analysis, particularly whether entrepreneurial skills gaps have been closed as a result of e-college.

The analysis of the ECW project will cut across the neo-classical distinctions between production, utilisation, consumption and governance, because the potential effects of ECW are wide-ranging. The effects of globalisation are making the old reliance upon inward investment a risky strategy as multinationals fragment operations in search of cost advantages. Instead, internally driven economic development will become increasingly important. Based on the proverb, "If you give someone a fish they will eat for a day, but if you teach them how to fish, they will eat for a lifetime", ECW is an important tool helping to deliver improved economic and social performance in Wales.

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