

IT'S REGIONAL ECONOMIC DEVELOPMENT JIM, BUT NOT AS WE KNOW IT: THE REASONS FOR, STRUCTURE OF AND PRELIMINARY RESULTS OF ENTERPRISE COLLEGE WALES

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ABSTRACT: Enterprise College Wales (ECW), designed by the University of Glamorgan, is an on-line, web-based degree in Enterprise, aimed at creating and improving entrepreneurial and managerial capacity in the EU Objective One Areas of Wales, where such activity has been deficient. This distance learning (with local partner Further Education colleges located throughout the Objective One areas) platform has been created with the aim of aiding individuals and communities generate their own economic development solutions, through the tools of entrepreneurship and promotion of entrepreneurial behaviour. This paper will examine the issues surrounding ECW, concentrating upon the need for increased entrepreneurial activity and capacity, the reasons for using the platform of web-based learning, and the characteristics of the first cohort of students undertaking the course. From this, conclusions are drawn and the requirements for future research into ECW are established.

1. INTRODUCTION

As has been well catalogued, during the time of the first industrial revolution there was a large influx of workers into the coal, steel and slate industries of Wales. The gradual withdrawal of these location-specific industries from the 1930s onwards risked leaving many Welsh communities without an economic *raison d'être*. However, the social and physical infrastructure remained and government policy decreed that more footloose, non location-specific industry be attracted to these areas to replace the lost jobs. This approach continued into the 1970s, 1980s and 1990s in Wales, boosted by the creation of the Welsh Development Agency in 1976, whose aim was to find employment to replace the jobs lost in the then fast collapsing coal and steel industries. The methods utilised by economic policy makers during this time in Wales increasingly revolved around the attraction of a previously largely untapped resource, namely

Foreign Direct Investment (FDI), especially in industries such as electronics and automotive components. However, many inward investors were not interested in older brownfield industrial locations. They preferred new greenfield sites in the more easily accessible North East and South East parts of Wales, ignoring large parts of the South Wales Valleys, and West of Wales, which were also declining economically.

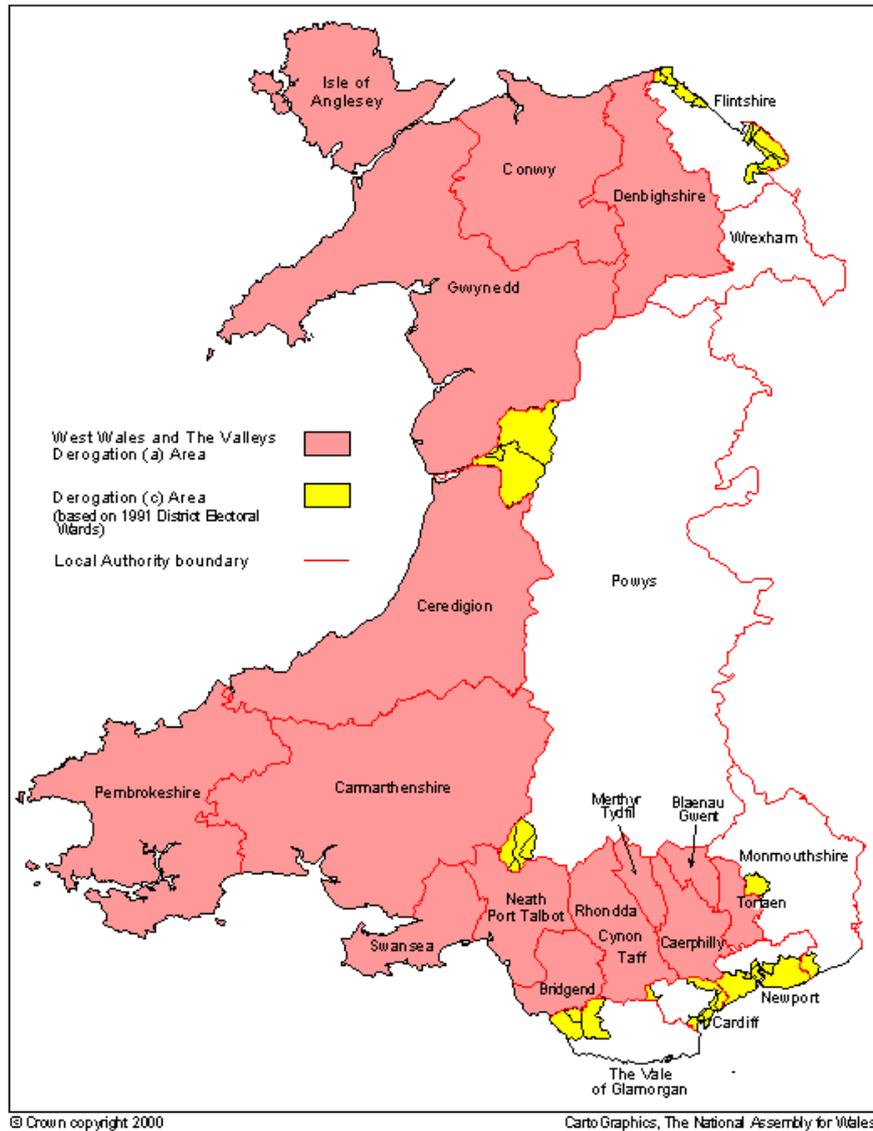
The jobs created were also often lower paid than those they replaced, had lower linkages with the local economy and required commuting. Indeed, in some ways this jobs (rather than economic prosperity) based policy followed the path of least resistance, and exacerbated the problem of falling relative Gross Domestic Product (GDP- or income) per head via the structural change it engendered (although of course this is to ignore what the counterfactual would have been).

GDP per head figures in Wales are now below 80 percent of the UK average, and have been falling over the past two decades. Approximately two-thirds of Wales (National Assembly for Wales, 2000) denoted by the title “West Wales and the Valleys” now qualify for EU Objective One status, having GDP per capita levels averaging under 75 percent of the EU average (see Figure 1). For these areas such status (up until the end of 2006) offers the opportunity of £1.3Bn in EU funds, together with matched funds from government and private sector sources, to help revitalise the economy.

However, the Objective One Single Programme Document’s (SPD) has targeted outcomes from an amount of money (excluding matched funds) which would represent on average only about 2 percent of Wales’s block grant per annum and less than 1 percent of its GDP (Hill, 2000). Nevertheless, these targets are extremely ambitious, including aiming to raise GDP per head levels from 73 percent to 78 percent of the UK average by the end of the programme, using the Objective One programme to produce two-thirds of the increase via 43,500 extra jobs and 35,400 fewer people who can be categorised as being economically inactive. This is to be achieved by spending in six priority areas (see Table 1). As can be seen from Table 1, the policy focus within the Objective One areas has been put on indigenous growth of small Welsh businesses, and entrepreneurship in general, not least because enterprise is now seen as vital to a prosperous economy and because Wales has not done well historically in this regard (Jones-Evans and Brooksbank, 2000).

Linked to this more bottom-up focus, the Objective One programme also has a specific emphasis on community economic development, with a particular need to focus on developing community capacity. However, Objective One funds seem to have been slow in actually resourcing this priority specifically. For example, of over £320m (not including matched funds) in projects approved by April 2002, on £18.1m were for projects designated under community economic regeneration (Economic Development Committee, 2002). Overall, despite the Objective One strategy designating 9.6 percent of funds to community economic regeneration, less than 5.7 percent of the total allocated has actually gone to this priority.

Assisted Areas in Wales With effect from 27 July 2000



E.C. Ceilings for assistance

Derogation (a) areas: 35% of project costs

Derogation (c) areas in Powys: 20% of project costs

Derogation (c) areas elsewhere in Wales: 15% of project costs

Figure 1. The Objective One Areas of Wales.

Table 1. SPD for Welsh Objective One Areas : Priorities, Resources, Targeting and Measures.

Priority	Title	Resources (m Euros)	Spatial Targeting	Measures (Fund) (percent of Priorities' resources)
1	Expanding and Developing the SME base	ERDF : 336.9 ESF : 124.5 Total : 461.9 % of Total 24.9	Generic priority that applies across the region	1 Financial support for SMEs (ERDF) (15-20) 2 Promoting Entrepreneurship & Birth rate of SMEs (ERDF) (15-20) 3 Developing Competitive SMEs (ERDF) (20-25) 4 Promoting adaptability and entrepreneurship (27) 5 Providing sites and premises for SMEs (ERDF) (15-20)
2	Developing innovation and the knowledge based economy	ERDF : 258.9 ESF : 37.5 Total : 296.2 % of Total 16.0	Not spatially targeted but clear criteria set for measures 1 and 3. Measure 1 to tackle peripherality of former 5b rural areas, northern and western areas of the Valleys. Measure 3 to maximise developing existing clusters and developing new R&D around FE& HE institutions	1 ICT infrastructure (ERDF) (20-25) 2 Stimulate & support demand for ICT (ERDF) (20-25) 3 Support Development of Innovation & R&D (ERDF) (35-40) 4 Skills for Innovation & Technology (ESF) (13) 5 Clean Energy Sector developments (ERDF) (10-15)
3	Community Economic Regeneration	ERDF : 156.0 ESF : 22.5 Total : 178.5 % of Total : 9.6	Utilise the National Assembly commissioned index of deprivation, 65 percent of resources to communities up to 10000, locally identified as facing multiple deprivation . At least 2/3 of population in any area will live in wards rated as amongst 40 percent most deprived in the region. 35 percent to groups of communities up to 5000 facing social / economic disadvantage reinforced by isolation. At least 2/3 in wards rated as among both 40 percent most peripheral and 50 percent most deprived. Overall no more than 30 percent of the region's population will be covered	1 Community action for social exclusion (ESF) (13) 2 Partnership and community capacity building (ERDF) (15-20) 3 Regeneration of deprived areas through community led action (ERDF) (45-50) 4 Support for creation percent development of business in social economy (ERDF) 20-25)

Table 1 (contd). SPD for Welsh Objective One Areas : Priorities, Resources, Targeting and Measures.

Priority	Title	Resources (m Euros)		Spatial Targeting	Measures (Fund) (percent of Priorities' Resources)
4	Developing People	ERDF :	66.0	Concentrated on young people and others at risk of moving into long term unemployment or inactivity. Spatial targeting of areas with high unemployment through employment zones.	1 Preventative & Active labour market measures (ESF) (30-35) 2 Social inclusion (ESF) (20-25) 3 Lifetime learning (ESF) (20-25) 4 Improving learning system (ERDF) (14) 5 Improving participation of women in the labour market (ESF) (5-10) 6 Anticipation & analysis of skills needs (ESF) (1-5)
		ESF :	402.0		
		Total :	468.0		
		% of Total :	25.3		
5	Rural Development and Sustainable Use of Natural Resources	EAGGF:	130.5	Horizontal across the parts of the region that are rural in nature	1 Processing & marketing of agricultural products (EAGGF) (20-25) 2 Training services to help farming adapt and diversify (EAGGF) (5-10) 3 Forestry (EAGGF) (5-10) 4 Promoting adaptation and development of rural areas (EAGGF) 5-10 5 Investment in agricultural holdings (5) 6 Promoting local economic development (ERDF) (20-25) 7 Sustainable countryside (EAGGF) (10-15) 8 Support for recreational operations & protection of natural environment and its management (ERDF) (10-15) 9 Support for fisheries & aquaculture (7)
		ERDF :	67.3		
		FIFG :	15.2		
		Total :	213.0		
		% of Total :	11.5		
6	Strategic Infrastructure Development	ERDF :	210.0	Concentrate on opening up peripheral areas, though some investment to complete transport links to valleys from the south coast and to complete environmental remediation work	1 Accessibility & transport (35-40) 2 Energy infrastructure (5-10) 3 Strategic employment (25-30) 4 Environmental infrastructure (25-30)
		Total :	210.0		
		% of Total :	11.3		
7	Use of Technical Assistance	ERDF :	20.9		Promoting effective programme management (6.5 m Euros split between ERDF & ESF)
		ESF :	5.2		
		Total :	26.1		
		% of Total :	1.4		

Source: National Assembly for Wales (2000).

One scheme funded by Objective One money that in many ways cuts across all the priorities mentioned in Table 1, however, is Enterprise College Wales (ECW), designed by the University of Glamorgan. This is an on-line, web-based, degree in Enterprise, aimed at creating and improving entrepreneurial and managerial capacity in the Objective One Areas where such activity has traditionally been deficient. This distance learning (with local partner Further Education colleges located throughout the Objective One areas) platform has been created with the aim of aiding individuals and communities generate their own economic development solutions, through promotion of the tools of entrepreneurship and entrepreneurial behaviour generally.

This paper will examine the issues surrounding ECW, concentrating upon the need for increased entrepreneurial activity and capacity, 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 aimed at determining the ultimate success or otherwise of ECW.

2. ECONOMIC POLICY IN WALES : WHY THE NEED FOR ENTERPRISE ?

The UK was amongst the first European countries to adopt an official regional policy as a means of reducing disparities in unemployment rates, with the 1934 Special Areas Act (Alden and Boland, 1996). Nearly 70 years on, regional policy is still in place to address issues of uneven regional incomes and growth. Wales has for many years had access to UK government schemes such as Regional Development Grants (RDGs) and Regional Selective Assistance (RSA), and more recently to significant EU funds. As a result it has received a relatively large share of the UK's regional policy budget, between 1990 and 1997 receiving £890m in Regional Preferential Assistance (RPA) to industry, a third of the UK total (ONS, 1998) and a quarter of UK RSA spending (Industrial Development Act 1982, various). Almost £800m of RSA has been offered to companies in Wales over the past decade, a large proportion of which has gone to the foreign owned sector in relatively prosperous parts of Wales. The electronic engineering and automotive components and transport equipment sectors have received the highest share of total RSA offers, and the largest amount of RSA per offer.

However, this policy emphasis has yet to show returns in terms of real improvements in economic prosperity (Brooksbank and Pickernell, 1999). The NAW (2001a) identified that Wales's GDP per head gap with the UK average was 20.6 percent points i.e. 79.4 compared with 100. Of this, 2.5 percentage points was due to a lower proportion of the population of working age, 5.3 percentage points due to fewer economically active in that working population, 0.9 points from a higher unemployment rate and 11.9 points due to lower productivity. Furthermore, this rate of productivity itself was largely caused by a combination of structural differences with the rest of the UK, the Welsh structure biased towards lower productivity industries and occupations, many of

which are linked to the inward investment that has taken place.

The role of inward investment in Welsh (and UK) development is thus increasingly being questioned (see Lovering, 1999), and there are particular issues over public funding, institutional roles and efficient land use (see Tewdwr-Jones and Phelps, 1999). In particular, there is increasing debate over the allocation of regional policy resources between attracting inward investors and encouraging indigenous enterprise. This issue was thrown into sharp relief by recent events surrounding Asian manufacturing in Wales, particularly the Korean electronics company LG (Newport), where large resource inputs have actually resulted in small job out-turns (Munday *et al.*, 1999), highlighting issues of public funding, institutional roles and efficient land use (see Tewdwr-Jones and Phelps, 1999). Examples of tranches of grant aid given to long standing investments every few years, such as Ford's Bridgend Engine plant and Sony (Brooksbank and Pickernell, 2001), also call into question grant assistance policies which result in resources being tied to large investment projects in order to keep them within a region. Objective One status for West Wales and the Valleys accelerated the re-examination of the economic policy focus, not least because of its importance to the Welsh economy, as reported in Brooksbank *et al.* (2000). Summarising their findings, West Wales and the Valleys suffer from :

- Relatively high unemployment and inactivity rates
- Concentration in low income occupations
- Lack of finance and business services
- Lack of higher (degree and higher) educational qualifications (particularly in the Valleys)
- Lack of entrepreneurial activity in the Valleys (as illustrated by the relative reliance on larger employers) and entrepreneurial capacity in West Wales (as illustrated by the lack of high growth SMEs)

There is thus a need for policies that tackle these problems and the EU Objective One SPD is seen as the vehicle for this. The current state of the Welsh economy, particularly the Objective One areas, has also seen it become an important test-bed for the change in policy emphasis and thus the need to adjust the policymaking and implementing process. In particular, there is seen to be an explicit need for policies that no longer focus on imposing solutions from outside the region, by governments and multinationals, but instead, focus on solutions that are derived from local individuals, communities and firms themselves. This has become concentrated around entrepreneurship and the need to promote the creation, survival and growth of new and existing small and medium sized firms.

In one sense, this new focus is long overdue. Back in the early 1970s the Bolton Report (1971) reported that the small business sector was very likely to be the seedbed from which the large firms of tomorrow would develop, a theme carried on in some later policies (Storey, 1994, Burns and Harrison, 1996). Evidence also suggested that the smallest firms were responsible for a preponderance of innovation and employment creation (European Commission 1998). However, research also reported that in the majority of cases small

ventures remain small (Gibb and Davies 1990; Storey 1994; Smallbone *et al.*, 1995) and that firm failure was the more common characteristic of the small business sector (Storey 1994). Moreover, the Department of Trade and Industry's White Paper on Competitiveness (1998) stated that whilst the UK had more people wanting to start a business than many other countries;

'[When] compared to the United States, too few of these businesses achieve growth...[because] they lacked a competitive edge and their founders often lack[ed] the ambition and capabilities to manage growth'
(p. 14)

At the heart of the new initiatives is the desire to promote economic development generally. The conventional model of national economic growth implies that SMEs essentially play a secondary role in the economy supporting the activities of larger more established firms (Reynolds *et al.*, 1999). However, more contemporary models have afforded entrepreneurship an active role in generating economic prosperity. These models simply combine the traditional model with those detailing the effect of the entrepreneurial process on national economic growth (see Figure 2). In this consolidated model it is maintained that social, cultural and political factors not only influence national framework conditions such as levels of research and development, infrastructure, robustness of legal and social institutions, but also levels of governmental support given to foster entrepreneurship such as education initiatives, financing and technology transfer mechanisms. Whilst the national framework conditions continue to influence the conventional model in which some small firms operate in a subordinate role to large firms, entrepreneurial framework conditions influence the ability of firms and individuals to seize and maximise the potential of existing and emerging market opportunities.

The extent to which market opportunities can be identified and exploited is determined by the degree to which firms have the necessary entrepreneurial capacity to establish, survive, and grow. The net effect of this business dynamic in which firms are created, survive and grow or decline and fail, represents the contribution made by the entrepreneurial sector to a nation's economy (Reynolds *et al.*, 1999). In other words, it is argued that in addition to the contribution made by the small business sector in the secondary economy, the existence of entrepreneurial growth firms ensures that the sector also makes a direct contribution to national economic growth.

Wales generally (and Objective One areas particularly) have had a relatively poor record when it comes to entrepreneurial activity. The Global Enterprise Monitor survey in Jones-Evans and Brooksbank (2000) indicates that only 1.4 percent of the adult Welsh population were participating in start-ups, half the level of Scotland (2.7 percent), well below the UK average (3.1 percent) and a seventh of the US figure. This follows through into new firm participation with Wales at 1.4 percent compared with 1.8 percent in Scotland, 2.2 percent in the UK and 4.7 percent in the USA. In addition to this low start-up rate, whilst Wales has a relatively high survival rate, the firms do not grow. Jones-Evans and Brooksbank (2000) therefore advocate a number of areas where support

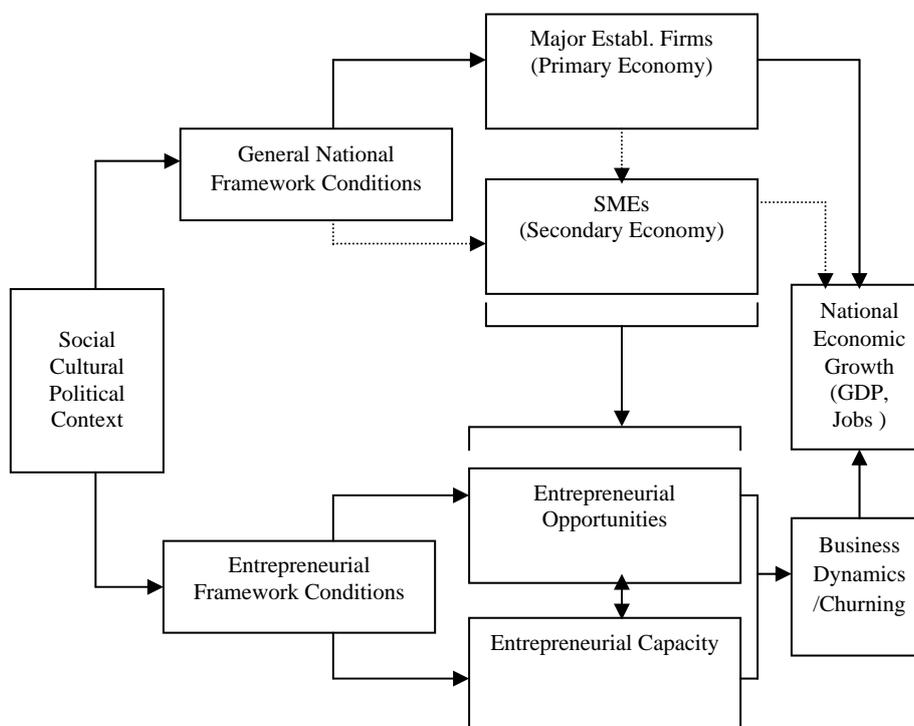


Figure 2. Contribution of Entrepreneurship to National Economic Growth.

Source: Derived from Jones-Evans and Brooksbank (2000).

needs to be given. These include financial support, research and development, infrastructure, culture, and importantly, education and training.

This interest in entrepreneurship can also be seen in the light of an increasing interest in UK and EU regional policy generally to more bottom-up approaches to development (see for example, Foley and Martin, 2000; Armstrong *et al.*, 2001), including those under the heading Community Economic Development (CED). However, Foley and Martin (2000) also noted the confusion that often existed between policy makers and the communities themselves over what form these measures should take, how they should be organised and controlled and how communities and government agencies could best interface with one another. Foley and Martin (2000) found that whilst civil servants and community representatives acknowledged each others' skills within proposed partnerships and had a common recognition of the challenges, there were also several problems. First, community partners often did not include schools, councils, health authorities or police forces. Second, there were power struggles evident, not between central government and local communities, but rather between these two groups and the local authorities sandwiched between them. Chatterton and Bradley (2000) also note the tensions inherent here, particularly when accountability structures for policies continue to rest with statutory bodies rather

than the communities themselves. As part of this they highlight the potential for conflict between sustainability, social inclusion, and economic competitiveness (Morahan, 1999).

Armstrong *et al.* (2001) see CED initiatives in regional policy as historically being more fashionable when goals switch from economic efficiency to equity in economic upswings. However, recent theoretical developments in regional policy (such as Morgan, 1997) have also emphasised the economic benefits that can be derived from local networks of firms, individuals and public institutions, based on culturally determined systems of trust and norms of behaviour. The capacity building element of CED can be seen as vital in this regard. Nevertheless, there may also be inherent dangers in policies focused on spatial targeting and attempts to increase local multipliers by community owned assets trading in the local area etc. For example, in their study Armstrong *et al.* (2001) found that 65-75 percent of CED created enterprises would have gone ahead without support (still better than traditional SME business support measures) and that displacement of local competitors was a big issue because nearly two-thirds of CED businesses' competitors were local (compared with 24 percent for traditional businesses). In addition, it was found that leakages out of the areas were strong because many of the CED created business owners and staff did not actually live in the locality. The adequacy of the resources available to tackle local deprivation have also been questioned (Hall and Nevin, 1999) both in human and financial terms.

3. ENTERPRISE COLLEGE WALES (ECW): HOW TO MEET THE NEED

In the case of the Objective One areas of Wales, the issues discussed above coalesce, and it would seem desirable, where possible, to link together bottom-up approaches. Educational initiatives and the use of ICT would seem ideal vehicles for this, as shall be illustrated later. However in addition to these general themes, there are specific issues regarding enterprise education. The European Communities' (1998) 'BEST' Report recognises that:

- (a) Meeting the modern requirement for entrepreneurial and management skills must be evident throughout the national systems for education and training;
- (b) There should be specific training for entrepreneurship, with an emphasis on practical and useful skills, supported by appropriate incentives;
- (c) Training systems should be more flexible allowing for movement between academic studies and vocational training in companies, and for changing needs over a lifetime of learning;
- (d) The application of Information Technology (IT) is important in providing training. In company training and opportunities for further training should be brought up to date and use the latest Information Computer Technology (ICT);
- (e) There is a strong need for support for Tele and long distance learning methods. These help beneficiaries to become familiar with ICT and reduces the time spent in institutions, allowing more practical experience.

There is also evidence from around the world supporting the need for enterprise education. For example, Hisrich and Cinneide (1986) argued in the case of Ireland that business training would be a useful addition to government help offered. The Phan *et al.* (1996) study in Singapore also offers support for the importance of entrepreneurship education in encouraging entrepreneurial behaviour. They found that high levels of formal education promoted a need for high salaries to compensate and thus that the individual would be more likely to seek employment than start a new venture. However, one could argue that enterprise education would negate this by being specifically designed to promote entrepreneurial activity. The specific nature of enterprise education and the fact that it promotes self-employment also negates the arguments found in Kivinen and Silvennoinen (2002). In their article they questioned the efficacy of education in raising employment, particularly in disadvantaged groups, because of the relative nature of educational attainment in generating advantage in the labour market (i.e. if all people gain an extra qualification none will gain an advantage from it). In addition, they cite the "law of last entry" (*ibid.* p. 50) that the last group of students obtaining a certain level of education benefit less from attaining that level than the first. Self-employment negates this social construct and enterprise education is thus ideally suited to help break this cycle. Further, Bailey (1986) found in an Australian study of 136 company founders that successful entrepreneurs had more systematic and scientific learning modes than low performers, who tended to be more ad hoc in their learning. It also suggests that educators in the field should encourage conceptual thinking about potential new ventures and develop opportunistic orientations to questioning (i.e. to look for new opportunities through the questioning process). This suggests both that a formal type course could be of benefit because of the systematic nature of its format and also that it should encourage specific types of learning in order to encourage entrepreneurial learning through its teaching and learning structure.

The strategic approach thus taken by the University of Glamorgan and partners through this project is geared specifically towards addressing weaknesses in the SME sector, particularly the slow adoption of new technologies, the low take up of ICT, low activity in e-commerce, and the lack of an entrepreneurial tradition in Objective One communities. Cooper *et al.* (1988) found that people are more likely to pursue opportunities if they have developed entrepreneurship skills from their previous employment, as this reduces the cost of opportunity exploitation (also see Carroll and Mosakowski, 1987). In the absence of this work based learning opportunity for many 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, together with other linked activities, is also aiming to ensure that the support infrastructures are in place to provide opportunity for all members of the region to engage in the new technologies, and gain access to training and support to encourage entrepreneurial activity and 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 community-based focal points for the face-to-face contact which is necessary). This requires innovative approaches to delivery, use of ICT and new technologies to support open and distance learning, and learning in the home (paid from Objective One funds). The Award also addresses a number of the 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 organizations;
- 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 organization;
- 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 BA Enterprise Award is focused on developing entrepreneurial skills in individuals. Its primary aim 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 hoped that the use of these technologies will also stimulate their introduction into businesses and community groups large and small throughout Wales.

4. THE USE OF ICT IN ECW : WHAT THE DELIVERY PLATFORM OFFERS

As stated previously, 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) provides an example from Tasmania, where the issues of access to information for rural and isolated communities and the need to build community capacity generated a programme called Tasmanian Communities Online (TCO), a network of linked Online Access Centres (OACs) The 60 OACs set up outside the main population centres had a minimum of 3 computers with internet access, a printer and scanner. Whilst the goal was to reduce isolation, enhance lifelong learning and promote local business development, the OACs had additional positive effects because they were community owned, had local management committees with one paid coordinator and local volunteers and were located in community institutions such as schools, libraries and community centres. 1600 micro businesses had been assisted by this and 1200 web pages had been published. The TCO also allowed communities to link together, promoting social cohesion.

Anderson and Simpson (1999) also illustrate this in their analysis of a 1996-7 project in Queensland "Enhancing Rural Women's Access to Interactive Communication Technologies". This had the effect of building community capacity (to apply for further improvements), but also to link communities together in common problems. The project used information technologies such as e-mail and the internet to create partnerships between women in rural communities, service providers in government and industry and the Queensland University of Technology research team. This also had the effect of linking communities through the flows of information, both to each other and government agencies. One outcome from the relationships created was a successful bid from the Queensland Rural Women's Network for funding from the Networking the Nation Project for a \$2m BridgIT project. This will offer personalised basic internet training to individuals and small groups in rural and remote areas of Queensland, the training delivered by locally based trainers over a 3 year period. The project is also intended to promote economic development and employment both directly through the 12 local trainers and via promotion and use of teleworking skills. Thus in a different but related way to the Edwards (2001) example, Anderson and Simpson (1999) illustrate how the project is providing employment for local people, keeping skills in the community and helping build community capacity to take advantage of future opportunities created by access to online information and services.

In the UK, Edwards (1996) also outlined a clear example with respect to education specifically in his explanation of 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 EU 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.

However, Taylor (2002) outlines a large number of potential cons as well as pros to on-line learning that institutions need to consider. Thus, the key to the ultimate success or otherwise of ECW is the suitability of the methods it uses relative to the students' needs and the materials to be delivered. This has to be seen in the light of a myriad of potential platforms, as illustrated in Table 2.

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 delivery methods.

According to Voci and Young (2001) traditional classroom based learning *“provides the social interaction that human beings need and enjoy by affording a direct exchange of ideas; it offers a familiar and comfortable method learners are used to; it creates an interactive learning environment in which learners can test their own attitudes, choices and reactions against those of their peers and authority figures - enabling them to receive immediate feedback about the appropriateness and acceptance of their responses.”* (Voci and Young, 2001, p. 157)

Table 2. Training Methods Used in Organizations.

Training Method	Regularly (Percent)	Sometimes (Percent)	Never (Percent)
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
Conferences	43.4	50.2	6.4
Non-electronic open learning	34.7	51.8	13.5
CD ROM's/DVD	28.9	47.6	23.5
Video	26.1	54.0	19.9
Intranets	23.7	34.5	41.8
Other computer-based learning	22.7	43.2	34.1
Internet	16.5	38.0	45.4
Action-learning	14.7	36.5	48.8
Audio	8.4	38.8	52.8
Extranets	7.4	23.3	69.3

Source: CIPD (2001).

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).

At the other extreme, 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, the trainer may act as a role model if a particular role is being focussed upon. 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) also found in their Scottish study that entrepreneurs acting as mentors were seen as very important to the success of entrepreneurship education process. Williams and Turnbull (1996) reported that entrepreneurs felt an obligation to undertake such mentoring and teaching of their own cases and some also viewed it as a way to build future markets.

"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 the 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.

ECW's distance-learning web-based model is thus clearly driven by practical as well as educational considerations, given the need to reach large numbers of non-traditional students. As such 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) 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 ECW has had to deal with.

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 the following:

- 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, that 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, as outlined earlier, 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 indeed individual student work (Canning, 2002). This often requires a shift to learner-centered 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 ECW. It is also important thing 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 enough 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, specifically suitable methods could be used. ECW 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.

5. 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 engaged with. It also indicates some initially optimistic trends that can be discerned for the role ECW is playing in meeting the range of objectives outlined earlier. This is shown in the tables below.

Table 3 indicates that the students are relatively evenly spread around the Objective One areas and the Communities.

Table 4 indicates that the course is also promoting female entrepreneurship, given that the proportions of females on the course being much greater than those found in the business community at large.

Table 5 clearly illustrates that 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, with a strong bias towards older age groups.

Table 3. Geographical Spread of Cohort.

Geographic Area	No. of Students	Percent
South East Wales & The Valleys	94	51.4
West Wales	57	31.1
North Wales	32	17.5
Total	183	100.0
Location of Study Centre :		
University of Glamorgan	38	20.1
Pontypridd	21	11.5
Gwent	14	7.7
Llandrillo	32	17.5
Bridgend	21	11.5
Carmarthen	23	12.6
Trinity	17	9.3
Pembroke	17	9.3
Total	183	100.0

Table 4. Gender.

	No. of Students	Percent
Male	109	59.6
Female	74	40.4
Total	183	100.0

Table 5. Age of Learners.

Age Group	No. of Students	Percent
Under 20	2	1.5
21 – 30	47	25.6
31 – 40	53	28.9
41 – 50	46	25.1
51 – 60	31	16.8
Over 60	4	2.1
Total	183	100.0

Table 6. Educational Qualifications of Students.

Qualification	No. of Students	percent
School Leaver	48	26.2
Diploma	42	23.0
Degree	56	30.6
PG Diploma	13	7.1
Masters	7	3.8
Professional	17	9.3
Total	183	100.0

Table 7. Current Employment Status of Students.

Current Status	No. of Students	percent
Unemployed	37	20.2
Self Employed	50	27.3
Professional	43	23.5
Academic Related	21	11.5
Industrial / Engineering	29	15.8
Other / Not known	3	1.6
Total	183	100.0

Table 6 further supports ECW's potential role 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, the table indicates ECW is promoting entrepreneurial capacity more generally through its material.

Table 7 shows that for the 20 percent of students currently unemployed, 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.

Table 8. Initial Business Proposition/idea of Students.

Idea	No. of Students	percent
Undecided	10	5.5
Sports / Leisure	16	8.7
Computer / Internet Based	32	17.5
Engineering / Industrial	9	4.9
Hotel / Catering	7	3.8
Consultancy	8	4.4
Business Development	48	26.2
Retail / Bookshop	6	3.3
Design Work	2	1.1
Academic Related	1	0.5
Animal Related	1	0.5
Specialist Services	43	23.5
Total	183	100.0

Given the current relativity paucity of finance and business related activities in Wales generally and the Objective One regions specifically, the concentration of students' business ideas in these sectors indicated in Table 8 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 websites 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 (cybercafes) 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, 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.

6. CONCLUSIONS: THE NEED FOR DEVELOPMENT OF A RESEARCH AGENDA AND EVALUATION FOR ECW

The initial signs for ECW are thus far 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 in promoting economic development. However, ECW is obviously at its very earliest stages and this brief examination of the issues indicates a number of areas where further research is obviously needed. A full evaluation of ECW will obviously be a long-term project. However, there are a number of shorter-term projects that could fit into this research agenda.

For example, 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 actually be predicted by psychological characteristics is still a topic of debate, which research into ECW could contribute to.

Of course, the significance of the virtual enterprise degree course to the economic and social structure of Wales also crucially needs to be examined. This should obviously include an examination of the ways in which overall entrepreneurial capacity has been affected by the programme. This could include a longitudinal study of the students’ activities to assess the effectiveness of on-line delivery of enterprise education in terms of its comparative impact on business start-up and growth and use of technologies such as the internet, as well effects on quality and quantity in all these areas. 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 ECW also needs to be undertaken as part of this, in terms of capacity building, community businesses and network building within and between communities. The specific effects of the course will also require analysis, particularly whether entrepreneurial skills gaps have been closed as a result of e-college. Where necessary this should drive the further development of relevant material and content.

Thus, 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 so wide-ranging. The effects of globalisation are making the old reliance upon inward investment an

increasingly risky strategy as multinationals fragment their operations in search of cost advantages. ECW is potentially a very important tool in helping to deliver an improved economic and social performance in Wales. However, only time, research, and evaluation will tell if this has been achieved.

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