Entrepreneurship education in the third-level sector in Ireland

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Foreword

Entrepreneurship education is now a key part of the tertiary-level education landscape in many countries around the globe. Institutions are creating the types of learning environments that are conducive to encouraging and supporting student enterprise and graduate entrepreneurship. Going beyond notions of employability, entrepreneurship capacities enable graduates to create their own futures, exploit the opportunities that emerge in their complex and unpredictable worlds, and better contribute to economic development and social well-being.

The Report ‘Entrepreneurship Education in the Third-Level Sector in Ireland’ demonstrates that Ireland is no exception. The evidence presented illustrates that there is no shortage of entrepreneurial activity across the island. Institutions are spreading provision outside of business schools and across the campus. Government support is stimulating interest and growth amongst students in science, engineering, technology and the arts.

The formation of the Irish Network of Teachers and Researchers of Entrepreneurship (INTRE) has been instrumental in shaping the culture and practices of entrepreneurship educators across the island. This is central to capacity building in all institutions. The National Council for Graduate Entrepreneurship supports the work of INTRE and has engaged Irish educators in its International Entrepreneurship Educators Programme with financial assistance from Enterprise Ireland.

Clearly there are many challenges ahead for entrepreneurship education which include:

- The need for greater connectivity for entrepreneurship education provision across the whole education system;
- Levelling the playing field for students to ensure all have access to enterprise and entrepreneurship learning and support opportunities no matter what subject they study, or which institution they attend;
• The use of innovative approaches to entrepreneurial learning that complement the inter-disciplinary, experiential, action-oriented and emotional context of entrepreneurship;
• Increasing the reach into the student populations that will significantly scale up engagement and impact of the delivery of the types of entrepreneurial outcomes that we seek.

This study was commissioned by the National Council for Graduate Entrepreneurship in the UK as an international research project to examine good practice in entrepreneurship education across many different countries. Each third-level institution on the island of Ireland is now appraised against NCGE’s analytical framework. The findings presented in this Report form part of NCGE’s growing international series of studies that have sought good practice. Its contents illuminate the Irish experience and current state of play. The case examples also provide clear demonstrations of how the recommendations of the EU Expert Group Report on Entrepreneurship Education are applied in practice.

We all have much to learn and our entrepreneurial journeys continue. I welcome this study as a valuable addition to our understanding of how far the journey has already taken us.

Professor Paul Hannon
Director of Research & Education
National Council for Graduate Entrepreneurship
Executive Summary

As recently as 2002, the Goodbody Report noted that the education system in Ireland was not conducive to engendering an entrepreneurial spirit within students. While Ireland’s efforts to create a well educated population that was attractive to foreign employers was highly successful, its attempts to create indigenous entrepreneurs have been less profitable until more recent years. The GEM Report (2005) identified that more education was required at all levels on the benefits of entrepreneurship and that there was a need also to educate teachers and trainers on the topic to enable them to effectively teach enterprise skills. Furthermore, the report of the Small Business Forum (2006) stressed the need to reinforce entrepreneurship within the education system across all levels if indigenous enterprise is to flourish in future years.

However, times are changing and young people are increasingly being encouraged to explore entrepreneurship and enterprise development through a range of different programmes. At third-level there are now approximately 400 modules/courses relating to entrepreneurship being provided across 26 educational institutions, supported by 22 Centres for Enterprise and/or Innovation. Undergraduates and postgraduates can now avail of a vast array of courses and programmes, while the number of departments and academic chairs dealing with entrepreneurship has also increased in recent times. Generally, entrepreneurship education is offered in faculties of business, but the concept and potential benefits of offering entrepreneurship education outside of the business faculty have recently become more widely recognised. More and more third-level institutions are now offering entrepreneurship or enterprise based modules in non-business related courses, and the interest and demand in these modules is growing amongst science, engineering, and arts faculties.

It is important to note that the goal of entrepreneurial education is not necessarily that all participants should launch businesses immediately upon completion of their studies. In fact, given the inherent risks and difficulties of the venture creation process, it is often
unwise to push students too hard or to take an evangelical approach. Students are young, easily influenced, and often looking for models. Additionally not all educational institutions offer the same political, social, and cultural environments. An institutional environment that accepts and values entrepreneurial behaviour and employment in small and medium sized enterprises is likely to have a greater impact on the entrepreneurial intentions of students. Through its policies, incentives, and behaviours, an institution can encourage its students to take initiative and engage in venture creation, while also conveying a positive image of entrepreneurship as a career choice.

Anecdotal evidence during this study and research from the UK has indicated that funding is the most critical challenge to scaling-up the level of activity in this area. Many ‘host’ departments are not willing to pay the full-funding costs of enterprise teaching to ‘service providers’ and top-up funding has to be ‘donated’ by the ‘service provider’ department. Additionally, good quality participative, experiential problem solving enterprise education is more expensive than traditional ‘talk and chalk’ style lectures, and such resource requirements are not adequately recognised in funding allocation mechanisms. Another issue challenging the expansion of entrepreneurship education is the supply of suitable lecturing staff. The move towards a more experiential style of learning requires personnel with some experience of business. Many academic staff do not possess such experience and businesspeople looking to contribute to such courses do not have teacher training experience. A further challenge facing institutions is the teaching – research conflict. Many institutions now pinpoint research and publications amongst the highest priorities for their staff, and career reward systems are increasingly built around one’s publication record. The importance placed on research and publications effectively means that less time can be afforded by individuals to teaching, particularly to programmes that are intensive in terms of their commitment outside of the classroom (e.g. experiential entrepreneurship education). It is possibly unsurprising therefore that in the UK, Botham and Mason (2007) found that some of the best entrepreneurship education is found in the less research orientated higher education institutions. These challenges together ensure that even though an evangelical desire for
the expansion of entrepreneurship education might exist, the realities of educational institutions means that any progress will be slow.

1. Introduction

The importance of entrepreneurship to the economy has been the subject of increased attention over recent years. In the relevant literature, many writers view entrepreneurship as the ‘engine’ driving the economy of nations, creating new industries, employment, and wealth (Henry et al, 2003). The importance of engendering entrepreneurship so that economies can grow and prosper has therefore become of increasing consequence to governments across the globe in modern times. Indeed many government departments responsible for enterprise now believe that new business creation holds the key to economic regeneration, as it is through the process of entrepreneurship that industrial bases are renewed and economic structures enhanced.

There would appear to be an increasing consensus within the EU that small and medium sized enterprises are the key sector for generating employment opportunities and growth throughout Europe. Indeed the role SMEs in terms of growth, competitiveness, innovation, and employment is now embedded in the activity of the European Commission with the publication in June 2008 of the ‘Small Business Act for Europe’. The concept of an entrepreneurial Europe, which promotes the creation and development of innovative businesses, has led each of the EU Member States to strengthen their SME policies since academics, politicians, and policy makers increasingly acknowledge the definite contribution that entrepreneurship can make to an economy (Bruyat & Julien, 2003). They also recognise the very positive impact that new venture creation can have on employment levels, as well as the competitive advantages that small firms can bring to the marketplace (Scase, 2000). However, because the relationship between entrepreneurship and economic growth is quite complex, many different approaches to encouraging entrepreneurship have been applied by a wide variety of agencies, with enterprise policies varying from country to country. Moreover, while entrepreneurship provides benefits in terms of social and economic growth, it also provides benefits in terms of individual fulfilment, with entrepreneurship now breaking through the barriers
of class, age, gender, sexual orientation, and race. It is within this realm of personal development that entrepreneurship education can offer significant benefit. It is arguable that across all educational and career stages there is potentially a need for people to possess greater levels of entrepreneurial skills and abilities. Such skills can offer additional methods to deal with life’s current challenges and uncertain futures relative to employment and the economy. Individuals, regardless of career choice or personal situations, should benefit from learning an innovative approach to problem solving, adapting more readily to change, becoming more self-reliant, and developing their creativity through the study of entrepreneurship. Such learning would also have far reaching benefits for society. Entrepreneurship education programmes also play a very important role in raising awareness about self-employment as a viable career option. Even purely academic modules can have a significant impact on students’ attitudes to setting up their own business and helping them to develop important new skills (Henry et al, 2003). Furthermore, entrepreneurship training can complement the early stage awareness-raising function of entrepreneurship education as it provides the more practical skills that entrepreneurs require when they are ready to set up their own business. Additionally, in many countries, entrepreneurship is seen as the answer to economic recession and rising unemployment rates, as well as a recipe for economic prosperity (Garavan and Ó’Cinnéide, 1994). There is therefore an obvious need to increase the supply of entrepreneurial talent to create and grow new businesses that will generate employment and create wealth for the local economy. Developing entrepreneurship education and training initiatives is one way of helping to achieve this goal.

The following report is a mapping of entrepreneurship education in Ireland’s third-level sector. The report additionally identifies the modules and courses in entrepreneurship that are offered by universities and institutes of technology throughout the island of Ireland. Indeed, the many entrepreneurship initiatives and programmes now presented at third-level to encourage students to consider entrepreneurship as a serious career choice provides a clear indication of how much this area of business studies has grown in Ireland in recent years.
2. **Entrepreneurship in Ireland**

When considering entrepreneurship in Ireland, the growing rate of interest and activity in this area of business activity has had a significant effect on the economy over the past two decades. De Faoite et al (2003) made the point that Ireland was once viewed as one of the poorest countries in the European Union with high inflation, high emigration levels, slow growth rates, and alarming unemployment rates. Historically, there was no enterprise tradition or culture (Garavan et al, 1997), and there appeared to be limited economic opportunities for the creation of indigenous entrepreneurship overall (GEM, 2000). Ireland’s economic policies had deliberately focused on inward foreign direct investment, typically in the high technology sectors. It was not until the 1980s that the interest in indigenous start-ups and small firms noticeably increased in Ireland, and that the government finally realised the importance of promoting entrepreneurship to advance the economy.

During the 1990’s, Ireland’s economy witnessed unprecedented growth, with increased inward investment and exceptional employment opportunities contributing to the so-called ‘Celtic Tiger’ phenomenon. The National Development Plan 2000-2006 (NDP, 2000) identified the maintenance of economic and employment growth and the consolidation of Ireland’s economic competitiveness as key objectives for economic growth. The development of a strong and highly skilled entrepreneurial class was central to this process, reflected in the policy measures taken by Ireland in recent years. The government’s enterprise strategy (Forfás, 2000) focused on the need to create more high skilled/high knowledge-based jobs, and placed a great deal of emphasis on the small firms sector, recommending that support be provided through the encouragement of high-tech start-ups, early stage investment, and the development of a partnership approach between the development agencies, the financial institutions, and SMEs. While Ireland continues to give policy priority to easing tax and regulatory burdens faced by the enterprise sector, the slowdown in growth at global level, the downturn in the technology
sector, and the competitiveness challenges faced by Irish firms in the globalised economy have now combined to create a challenging business and trading environment for many in the Irish SME sector. The enterprise sector in Ireland now faces a vastly changed landscape compared to that experienced by business 10 years ago.

**Growth of Entrepreneurship in Ireland**

There are numerous reasons for contemporary interest in entrepreneurship and the creation of entrepreneurs. It is generally recognised that entrepreneurship and entrepreneurship education play a crucial role in the socio-economic development of many countries, ranging from developed economies to those less developed (Maas et al, 2003). Within the Irish economy, the development of a strong and competitive enterprise sector is considered to be vital for the achievement of many of the key objectives of economic and social policy, including the development of employment opportunities and improved standard of living (Forfás, 2000). Much success has been achieved with the drive to increase entrepreneurial activity as highlighted in the recent Irish GEM 2007 (GEM, 2007) finding that ‘Ireland is to the fore of Europe and the OECD in terms of the numbers among its adult population that are engaged in entrepreneurial activity’. The GEM 2007 report illustrated that the numbers starting and planning new businesses in Ireland increased to 8.2% in 2007, up from 7.4% in 2006. This increase in early stage entrepreneurial activity reversed the decline of the previous year and provided evidence of over 200,000 individuals being engaged in such action. The need to educate Ireland’s potential entrepreneurs and the continued development of entrepreneurial education is imperative if these statistics are to continue to illustrate positive activity among entrepreneurs in Ireland.

Across the countries of the OECD, a high level of early stage entrepreneurial activity is much sought after by policy makers generally, as it is recognised that from this pool of new businesses greater competitiveness, innovation, and growth should flow. Accordingly, Ireland’s improved level of early stage entrepreneurial activity is to be welcomed. It is additionally envisaged that further improvements will take place in order
to close the gap between Ireland and the most entrepreneurial of the OECD countries. For such a result to occur, a previous GEM report (GEM, 2005) had recommended that the following initiatives be taken to achieve the strategic imperative of creating a fully dynamic entrepreneurial environment:

1. A national strategy and coordinated policy for entrepreneurship should be developed, which is focused on maintaining a high level of early stage entrepreneurial activity and on maximizing the number of innovative new enterprises that are created which are capable of high growth;

2. Specific focus should be given to increasing the number of women involved in early stage entrepreneurial activity;

3. The education sector should be harnessed in a systematic way across all levels and across all disciplines to increase entrepreneurial mindsets and to enhance the capacity of those who decide to become entrepreneurs;

4. A greater coordination of capability building for entrepreneurs relevant to their needs and stage of development is needed and any gaps in the training available should be bridged;

5. Measures should be taken to improve access and availability of finance for early stage entrepreneurs, particularly for those who require larger amounts of start up capital, by focusing on means of encouraging more informal/angel investment;

6. Given the limitations of the Irish market, a wide range of early stage entrepreneurs should be assisted in the identification of customers overseas and in accessing export markets;

7. New initiatives should be taken, where necessary, to further assist in the commercialisation of research out of the third level colleges.

With regard to entrepreneurship education, it is particularly interesting to note Recommendations 4 and 7 with regard to entrepreneurship education in the third-level sector.

But it is not just the GEM Reports that are advocating the promotion of entrepreneurship education. The report of the Small Business Forum (2006) recommended that the Irish government should formally adopt a National Entrepreneurship Policy focused on
optimising the number of start-up businesses, and in particular on maximizing the number of start-ups aspiring to and achieving high growth. This policy should build upon three specific platforms:

1. Stimulating latent entrepreneurial potential, particularly among women and the immigrant community;
2. Reinforcing entrepreneurship in the education system;
3. Enhancing the culture for entrepreneurship.

The report suggested that the range of existing initiatives aimed at stimulating entrepreneurship should be incorporated into this policy, to ensure a cohesive, coordinated approach. The report further recommended that responsibility for these initiatives should lie with the Department of Enterprise, Trade & Employment and with the Department of Education & Science. Again, it is interesting to note the emphasis that is placed by the Forum on entrepreneurship education.

The GEM Reports and The Small Business Forum Report (2006) each captured the need for a more focused and strategic approach to encouraging and promoting entrepreneurship in Ireland. A combination of government involvement and commitment through initiatives and policies, and a strong dedication to entrepreneurship education will all contribute to the growth of a strong entrepreneurial culture in Ireland.

**Entrepreneurship Culture in Ireland – Development and Growth**

As the Irish economy becomes increasingly knowledge-based, and as low value-added activities migrate to lower cost economies, a greater proportion of the country’s wealth will have to be generated by indigenous companies. Whereas in the past, Irish indigenous companies have tended to start small and remain small, a new generation of indigenous companies with the potential to grow (and in some cases grow rapidly) is already beginning to emerge. The small business sector is the incubating ground for these companies. Some of them will be technology-based companies, who will exploit the State’s substantial investment in R&D and will help to assert Ireland’s position as a knowledge creator and innovator. A greater proportion will be in services (reflecting the
global growth of the services sector). These businesses will use highly innovative business models to grow and deliver internationally, services that were previously the preserve of small companies trading locally. The majority, however, will continue to deliver local services and to play an important role in the supply chain of larger companies. Small business owner/managers with the ambition, ability, and potential to grow their companies into strong internationally trading entities must be empowered to reach this potential. Those that continue to trade locally largely determine the cost base for both consumers and other businesses, and these must be encouraged to innovate in other ways, in order to maximise their efficiency, quality of product and service, and productivity.

In many ways, the health of the small business sector is both an indicator of the condition of the whole economy and a determinant of that condition. Small businesses are important for a number of reasons as they:

- Provide regionally distributed employment around the country,
- Deliver a huge range of local services,
- Contribute to the economic, social, and cultural life of the entire population.

In total, SMEs account for over 70% of gross value added (GVA) in Construction (around €7.2 billion), over 40% of GVA in Services (€15 billion – excluding financial services), and 34% of GVA in indigenous Manufacturing (€2.1 billion). They pay 50% of VAT on services (over €4 billion), 11% of corporation taxes (around €530 million), and 37% of income taxes (almost €4 billion) (GEM Report, 2005). While the State operates many initiatives aimed at inspiring entrepreneurship and supporting SMEs, these supports and initiatives are generally uncoordinated and do not amount to a coherent policy. As Ireland continues to develop as a knowledge-based society, and indigenous businesses assume a more significant role in the overall economy, it is imperative that entrepreneurship be nurtured, so as to maximise the number of new business start-ups and to ensure that they realise their full potential for growth and development.

Ireland has not always been an encouraging place for new businesses. Traditionally, start-ups were viewed with suspicion and the support infrastructure was minimal. Prior to the
early 1990s, government policy was primarily focused on attracting Foreign Direct Investment (FDI) as a means of encouraging new business development. Those interested in starting a business frequently found that they had to leave Ireland to get the assistance that they needed. In 1994 a major report on the small business sector was issued by the Small Business Task Force. At that time, the business environment was characterised by low disposable incomes, high taxation, and high interest rates. As a result of this report, the government established the Small Business Division in the Department of Enterprise, Trade and Employment to put the report’s requirements in place. Significantly, the report found that the SME sector had been a net creator of new jobs while large business was a net shedder of existing jobs. In the intervening period, the business environment has been radically transformed because:

- The Irish market has grown substantially (the population – and particularly the number of people in work – has increased, and so there are more people with more money to spend);
- The taxation regime has been relaxed – for the vast majority of companies, corporation tax has been reduced to 12.5%, the top income tax rate has been reduced to 42%, and the capital gains tax rate has been halved to 20%;
- Short-term interest rates are considerably lower compared with the mid-1990s.

In this positive environment during the years since 1995, the small business sector has flourished; the number of small businesses in Ireland has grown by more than 50%, and employment in small businesses has grown by approximately 79%. However, such economic growth also created a number of difficulties for businesses in Ireland because:

- With the liberalisation of international trade and globalisation of markets, small companies were facing greatly increased competition from companies with lower cost bases;
- High inflation contributed to a sharp rises in business costs;
- The labour market was considerably tighter (unemployment is now around 4%); as a result many businesses had difficulty finding and retaining suitably skilled staff, and wage rates were increasing.

Nevertheless, agencies such as Enterprise Ireland have played a very positive role in supporting early stage companies to compete with these challenges. Enterprise Ireland is
now actively engaged in supporting the establishment of the necessary physical infrastructure to facilitate new and emerging innovative businesses. At present they are working with the Irish third-level Institutes of Technology to develop on-campus incubation centres to facilitate the generation of new high-growth companies. Specifically a new initiative has been put in place providing funding for the amount of €30 million to Institutes of Technology for the establishment of incubation centres.

Changes in enterprise support have also taken place at local levels. The responsibility for the provision of training and counselling for new enterprises and micro-enterprises is located, in the first instance, in the network of 35 city and county enterprise boards (CEBs). These boards play a pivotal role in assisting start-up business and in the development of micro-enterprises in Ireland. Under the National Development Plan, the CEBs are engaged in fostering an enterprise culture – both through the existing educational structures and in existing enterprises. The Boards are free to design and deliver the specific needs of their communities in four broad areas:

- Preparation / review of local enterprise plans / promoting an enterprise culture,
- Business information/advice, counselling and mentoring support,
- Financial assistance,
- Management development.

State support for entrepreneurship, in this respect, is focused on the ongoing creation of new entrepreneur-led business entities with a solid base in innovation, intellectual capital, and a capability to become internationally competitive within a short period of time. While up to two years ago the IT and software sectors would have dominated the start-up profile, emerging businesses in new sectors such as biotechnology, photonics, medical devices, and functional foods are now becoming more commonplace. These are seen as new areas of opportunity where Ireland has a strong research base.

FÁS is the Irish national Training and Employment authority, and its functions include the operation of training and employment programmes, the provision of an employment recruitment service, an advisory service for companies, and support for co-operative and community based enterprises. Through its Services to Businesses units, FAS provides an
extensive range of training and company development programmes for enterprises in Ireland. Programmes are available to all sectors of industry and commerce, and to all sizes and types of firms. The training Networks programme addresses the SME needs through the adoption of an enterprise-led training model. The programme encourages inter-company networking and clustering as important tools to foster and disseminate small business innovation potential.

The traditional third-level education philosophy was to train business students to work in medium to large-sized companies with subjects such as Business Policy particularly reflecting this educational perspective. However, with the growth in entrepreneurship and small-to-medium sized enterprises during recent years, there has been a need to adapt the educational system to contend with these changes. This is particularly notable where graduates are deciding what career choice to make as starting one’s own business has become a viable life choice. Changes in the educational system mean that curricula must now focus on new venture creation and SME development to a greater extent than ever before.
3. **Entrepreneurship Education in Ireland**

‘Young minds are not vessels to be filled, but fires to be ignited’ (Alexander Pope).

It would not cause too much debate to suggest that Ireland in the late 1950s was a depressing country. It had suffered greatly from decades of poor economic performance and the constant haemorrhaging of its population through emigration. Overcrowded classrooms and poor physical school structures meant that only 10,000 students took their Leaving Certificate in 1957 (Ferriter, 2004). Meanwhile, third-level education remained the preserve of the elite and a total of just 8,653 students were present in all of Ireland’s third-level institutions by the end of the 1950s (Ferriter, 2004). The most popular solution to the ills of the time was for thousands of poorly educated people to sail to England, America, and other destinations in the hope of earning some kind of living.

But the 1960s brought significant change through a reforming Minister for Education (Patrick Hillary, 1959-65). He improved the provision of education and broadened its access. He also initiated a modified scholarship scheme for third-level education and appointed a Commission on Higher Education (Ferriter, 2004). However, arguably the most dramatic change to education policy in Ireland occurred in 1966 when the new Minister for Education (Donogh O’Malley) announced the introduction of free secondary education. Further change happened in the late 1960s with the introduction of third-level student grants which created some shift in the composition of universities with the introduction of young people from the urban middle-classes. The scheme was greatly extended in the mid-1990s with the introduction of free third-level education for all full-time students. In later years, the Enterprise Strategy Group Report (2004) highlighted the contribution that the implementation of these policies offered to Ireland’s recent economic growth when it stated that:

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1 The early part of this chapter appeared as a Research Note in the journal Education and Training. The full reference is Cooney, T.M. (2008), *Celtic Tiger Found in Education Jungle*, Education and Training, Vol. 50, No. 1, pp 64-66
“The fact that the labour supply was, in general, well educated made it particularly attractive to foreign direct investment. In effect, the consistent education policies of the preceding decades were bearing fruit: there was growing demand for educated human capital in all developed countries, and its ready availability in Ireland helped to attract foreign direct investment, and to promote the development of indigenous companies”

As has been evidenced, education policy has been a significant factor in the birth and maturation of Ireland’s recent economic success, otherwise known as the ‘Celtic Tiger’.

While Ireland’s efforts to create a well educated population that was attractive to foreign employers was highly successful, its attempts to create indigenous entrepreneurs have been less profitable until this decade. The Goodbody Report (2002) highlighted that the school system does not support the idea of working for oneself and entrepreneurs believed it to have played a limited role in supporting entrepreneurship. De Faoite et al (2003) noted that the role that Irish universities and institutes of technology play in the economic development of the country only became formally recognised relatively recently with the inclusion of clear economic development objectives in their statutes. The universities, while traditionally recognised for their contribution to learning and research, only took on a formal economic development role at national level during the late 1980s, while the institutes of technology (formerly regional technical colleges) saw their regional economic development role formalised in the 1992 RTC Act. Interestingly, some of the universities and institutes of technology, recognising their inherent economic development function, had already begun to establish industrial liaison and incubation units several years ahead of the formal legislation. A Forfas (2007) report highlighted the significant role that institutes of technology now play in regional economic development and remarked that while there was a need for an overarching policy framework for the institute of technology sector, each institute should develop its own strategy which reflected their relative strengths, context and potential.

Young people in Ireland are increasingly being encouraged to explore entrepreneurship and enterprise development through a range of different programmes. For example, the
Young Entrepreneurs Scheme targets second-level students between the ages of 12-18, Young-ebiz.com targets 15-17 year olds, Shell LiveWIRE targets 16-30 year olds, and the Graduate Enterprise Scheme targets university and college graduates. In third-level institutions there are approximately 400 modules/courses relating to entrepreneurship being provided across 26 educational institutions, supported by 22 Centres for Enterprise and/or Innovation. Furthermore, the report of the Small Business Forum (2006) stressed the need to reinforce entrepreneurship within the education system across all levels if indigenous enterprise is to flourish in future years. However, the GEM Report (2005) identified the following initiatives relating to entrepreneurship education in Ireland as necessary for a positive entrepreneurial environment:

- More education required at all levels on the benefits of entrepreneurship. Also educate teachers and trainers on the topic to enable them to effectively teach enterprise skills;
- Develop an entrepreneurship agenda in the education system and have a stronger focus on the importance of entrepreneurship as a career option;
- Identify entrepreneurship as a career option through all levels of education – primary, secondary and tertiary;
- The education system needs to be overhauled: enterprise, entrepreneurship, risk taking and innovation are absent;
- Encourage creativity and innovation at all levels of the education system from primary through to third-level to help develop the entrepreneurial characteristics and traits in our young people. This will require an interdepartmental response (e.g. Department of Education, Department of Enterprise, Trade & Employment) and various agencies given specific responsibility for programme delivery (e.g. CEBs, EI, etc.);
- Entrepreneurship education throughout all levels is critical if the culture is to be changed in terms of people willing to consider entrepreneurship as a career option and reduce begrudgery.

The points made by the GEM Report (2005) illustrated that the development of entrepreneurship needed to be at the forefront of education. Such a prioritisation is required in order to foster the creative and entrepreneurial qualities of young people, and
encourage a future career in entrepreneurship. The government and state agencies need to develop their support of this goal as they play a significant part in developing this process.

Further to the reports mentioned above, a European Commission (2006) report identified encouraging innovation and entrepreneurship as a micro-economic policy requirement for Ireland, while another European Commission (2005) report recommended that all national curricula should include explicit objectives for entrepreneurship education, accompanied by practical implementation guidelines, support mechanisms and teacher training in order to facilitate its local implementation. If the requirements in entrepreneurship education, together with the initiatives and support systems discussed earlier, are taken into account and implemented, Ireland could indeed see a thriving entrepreneurial culture over the coming years. However, while much has been achieved in recent years, Ireland remains a long way from the cutting-edge of entrepreneurship education in global terms.

What is Entrepreneurship Education?

Within the study of entrepreneurship, the debate continues as to whether or not entrepreneurship can be taught. According to Kirby (2006) some believe that ‘entrepreneurs are born and not made’, and while indeed some people are undoubtedly ‘born’ or ‘natural’ entrepreneurs and will display entrepreneurial skills and behaviour without any enterprise education or training, there is a school of thought that believes that entrepreneurship is a skill and thus can be learned. Drucker (1985) had argued that entrepreneurship is neither an art nor a science, but a practice. If one accepts Drucker’s version of entrepreneurship, it implies that if entrepreneurship is a practice then it can be learned, and therefore it is something that can be taught. Gibb (1987) proposed that while the entrepreneurial role can be both culturally and experimentally acquired, it is consistently being influenced by education and training.
Blenker et al (2006) also made the argument that entrepreneurship or enterprising behaviour can actually be learned and that as such, it should be taught. They noted that there seems to be a large variation in teaching approaches. They identified the dilemma of whether to teach ‘for’ entrepreneurship or ‘about’ entrepreneurship. The decision is closely related to the question of whether education seeks to improve the student’s ability to perform entrepreneurial action as a practical activity or whether to learn about entrepreneurship as an academic subject. Entrepreneurship is traditionally associated with a particular form of business activity, the creation of a firm. Entrepreneurship education is therefore customarily directed towards stimulating entrepreneurship in the form of new venture creation and the focus is on business renewal in an economic sense.

The lack of entrepreneurial experience among teaching staff, combined with the general lack of entrepreneurial experience among students tends to produce classroom situations which focus heavily on what participants feel is a comfortable working and studying environment. It is also difficult to make clear definitions between entrepreneurship and enterprise, and between education and training when it comes to this subject matter. Teaching for entrepreneurship is often centred on improving the student’s ability to write a business plan. Students are taught to see the formulation of their potential business idea as sequential by going through a number of phases. Guest lecturers from the ‘real world’ can serve as case study input. However, enterprising behaviour cannot be created in a contextual vacuum. To enhance this behaviour networks need to be created between departments and faculties, and industry and government networks should be offered and encouraged. Henderson and Robertson (1999) made the point that if entrepreneurs can be trained and developed, then educationalists could have a positive effect on the small business environment. Hytii and O’Gorman (2004) suggested that entrepreneurial education is an important part of industrial and educational policy in many developed countries. They conceded that the need for enterprise education is most commonly interpreted as the need to ‘train’ or ‘develop’ more entrepreneurs. Thus programmes are typically targeted at an audience believed to be in ‘demand’ of enterprise. They suggested that enterprise education needs to be linked to an extensive in-career development for teachers/trainers.
Over the past decade there has been significant growth in the provision of entrepreneurship interventions, including structured education and training programmes (Henry et al, 2003). A distinction was made between entrepreneurship education and entrepreneurship training by Jamieson (1984) which he categorised as follows:

1. Education about enterprise (aspiring entrepreneurs),
2. Education for enterprise (aspiring entrepreneurs),
3. Training in enterprise (established entrepreneurs).

The first category is focused on awareness creation and is academic in nature, the second is aimed at the preparation of aspiring entrepreneurs who want to set up and run their own business, while the third category, training in enterprise, is an extension of the second category and provides further entrepreneurial development to growing or established entrepreneurs.

But there are also other important distinctions that can be made when assessing the field of entrepreneurship education. Entrepreneurship is frequently considered to be a skill applied in the development of a new business, although this is only one aspect of the role and importance of entrepreneurial skills and attitude. Increasingly it is being recognised that entrepreneurship is not only a means for creating a new business, but it is also an attitude that can be developed and applied by everyone in day-to-day life and working activities (Iredale, 2002). Many large corporations now seek to instil entrepreneurial attitudes and skills in their workforce, more usually associated with smaller companies. This is known as intrapreneurship and can bring about many benefits for large companies who need to be creative and innovative to stay ahead of their competitors. The demand, therefore, for entrepreneurship education has widened significantly during the past decade as people’s understanding of the concept has broadened.

As previously mentioned, educational systems have not traditionally been geared towards the development of entrepreneurship but have tended to have as their final goal, the creation of employees who would work in large companies or public administration (European Commission, 2003). However, this situation is changing and there is a
growing awareness in Europe that initiatives should be developed that promotes an enterprise culture and engenders risk-taking, creativity, and innovation as key life-skills. Obviously, the field of enterprise education has an important role to play in enhancing and developing entrepreneurial skills and capabilities since enterprise education from an early age should underpin the process of developing a culture of enterprise within society as opposed to one of dependency (Iredale, 2002), and in doing so, recognise that not everyone can be an entrepreneur, but that everyone has the potential to be enterprising.

**Development of an Entrepreneurial Society and Culture**

Entrepreneurship growth enables change in small business policy, the delivery of more educational programmes in entrepreneurial studies, and an increase in business opportunities, all of which have associated cultural changes. European policies for entrepreneurship appear to combine individual and collective approaches that reflect upon cultural, social, and environmental aspects. These policies propose to make entrepreneurship more accessible to new entrants by explaining the concept and its attractiveness, and by providing the necessary skills (which is linked to the EU’s life-long learning policy). Whilst it is recognised that entrepreneurship should be nurtured at earlier stages, for instance in early schooling and in family business, EU policy recommends that entrepreneurial training should be more flexible with distance learning or mentoring scheme. Policy advisors thus advocate the supporting role of education policy for entrepreneurship and its adaptability to suit the educational needs of the learner in a particular culture.

In Ireland, efforts to promote youth enterprise are very active. Young people are encouraged to explore entrepreneurship and enterprise development from the ages of 12 and up, under a number of different programmes. According to Hynes (1996) the increased interest in entrepreneurship education and training can also be attributed to:

- The changing structure of the Western economy,
- The trend in downsizing in large companies,
- Changing business patterns,
• Developing market economies in Eastern Europe.
Charney and Libecap (1999) attributed the growth in entrepreneurship education to the range of benefits that can be derived from the inclusion of entrepreneurship in the teaching curricula. Such benefits include:

• The integration of a variety of business subjects through entrepreneurship, thus offering students a richer learning experience,
• The promotion of new business creation and decision making skills,
• An increase in technology transfer from the university/college to the marketplace,
• The forging of links between the business and academic communities,
• The opportunity for experimentation with pedagogy and curricula (due to the newness of the subject), thus enhancing other, non-entrepreneurship courses.

More recently, Bennett (2006) identified a range of current factors contributing to the demand for entrepreneurship courses at third-level:

• Governments are encouraging entrepreneurship education due to the crucial role small businesses play in a country’s economic growth,
• Strong connections are known to exist between entrepreneurship and the first diffusions of new technologies,
• Entrepreneurship adds to a country’s international competitiveness,
• Small enterprises are seen to be the ‘net creators of jobs’,
• Greater flexibility of the labour market has induced growing numbers of people to aspire to self-employment,
• In particular, females and ethnic minority individuals, who may otherwise face discrimination in the labour market, can succeed as owner-managers of small businesses.

Indeed, such is the spread in popularity of entrepreneurship education and training that some commentators believe entrepreneurship will be the business discipline of the twenty first century.

It is important to note that ‘intrapreneurship’ (i.e. the application of entrepreneurial approaches to management of large organisations) is increasingly viewed as a desirable attribute among company executives, thus contributing also to the overall demand for
entrepreneurship education (Boyett, 1996; and Morris et al, 2001). Hisrich & Ó’Cinnéide (1996) argued that entrepreneurship and the spirit of enterprise are actually needed in large, private, and government organisations, as well as in small and start-up firms. They also suggested that a spirit of enterprise in an institution should be rewarded, and that while entrepreneurship education today is a formidable challenge, ‘with imagination, a proper culture-sensitive blending of education, training, and development can result in innovative programmes being instituted for furthering the understanding of entrepreneurship and enterprise creation’.

Models of Entrepreneurship Education

When considering the teaching of entrepreneurship, it is clear that this subject area requires quite a different approach to other business subject areas. Weaver et al (2003) reviewed a large number of entrepreneurship education courses, showing that those dealing with starting new business ventures and small business management are the most common courses available. They proposed that there is a difference between the needs and attitudes of small business managers and those of entrepreneurs, and that these include factors such as personality characteristics, innovativeness, desire for job creation, independence, and profits. Therefore conventional models of education are not necessarily the most appropriate for entrepreneurship education. Traditional models of education involve the transfer of knowledge from teacher to student, often with a pre-determined syllabus or course content outlined in advance. The amount of knowledge gained can be measured by means of examination following completion of the course of study.

A distinctive model of entrepreneurship education is therefore required to illustrate the differences between the teaching of entrepreneurship education and that of conventional teaching approaches that may be used in other areas of business. The challenge for ‘teachers/trainers’ is that they must have action-oriented teaching styles and be capable of using a variety of teaching methods. In referring to the role of educational establishments in the provision of enterprise education, Gibb (1996) highlighted some of the key
differences between the conventional approach and the enterprising approach to education delivery. The differences identified are shown in Table 1 and while they relate to an academic institution, they can be equally well applied to any agency charged with the delivery of entrepreneurship education.

<table>
<thead>
<tr>
<th>CONVENTIONAL APPROACH</th>
<th>ENTERPRISING APPROACH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major focus on content</td>
<td>Major focus on process delivery</td>
</tr>
<tr>
<td>Led by teacher</td>
<td>Ownership of learning by participant</td>
</tr>
<tr>
<td>Expert ‘hands-down’ knowledge</td>
<td>Teacher as fellow learner / facilitator</td>
</tr>
<tr>
<td>Emphasis on ‘know-what’</td>
<td>Emphasis on ‘know-how’ and ‘know-who’</td>
</tr>
<tr>
<td>Participants passively receive knowledge</td>
<td>Participants generate knowledge</td>
</tr>
<tr>
<td>Learning objectives imposed</td>
<td>Learning objectives negotiated</td>
</tr>
<tr>
<td>Emphasis on theory</td>
<td>Emphasis on practice</td>
</tr>
<tr>
<td>Subject / functional focus</td>
<td>Problem / multidisciplinary process</td>
</tr>
<tr>
<td>Sessions heavily programmed</td>
<td>Sessions flexible and responsive to needs</td>
</tr>
</tbody>
</table>

Source: Gibb (1996)

Entrepreneurship education does not fit neatly into conventional models of education that are assessed by means of examination, nor is this framework necessarily appropriate to all situations (Gibb, 1996). It is clear however that the teaching of entrepreneurship requires a practical approach where information and knowledge is generated among participants and a more action orientated teaching method would assist participants in understanding the overall concepts of entrepreneurship. It also means that traditional methods of examination have to be reconsidered if they are to be appropriate to the curricula that are specifically designed for entrepreneurship programmes.

How Can Entrepreneurship Education be Evaluated?

The evaluation of entrepreneurship education has to date been the subject of much debate. It is an area that has not been explored thoroughly or is clearly understood from either an academic or practical perspective. Menzies (2003) pointed to the fact that education, as opposed to training, is not an ‘instant payback phenomenon’ and noted that,
while a number of studies do exist, research related to the outcomes of entrepreneurship education is under-researched in the entrepreneurship literature. Henry et al (2003) made the same observation and commented on the point made by Hill and Ó’Cinnéide (1998) that, while some studies have investigated the effectiveness of entrepreneurship education, they often tend to focus on one particular programme and its immediate outcomes. There also appears to be a lack of longitudinal studies, such as that by Owusu-Ansah et al (2001), which monitor the impact of entrepreneurship education over a significant period of time.

Iredale (2002) pointed out the importance of the appreciation of the fact that entrepreneurship education is a long-term investment and that results take time. She likened enterprise education to a tree – it is planted in the knowledge that it will take several years to come to fruition and it is not a good idea to keep digging it up to look at the roots. However, it is perhaps easier to see the visible progress that the tree is making without digging it up, whereas the impact of enterprise education is more difficult to ascertain. There are a number of studies on the outcomes or impact of entrepreneurship education at graduate level (Owusu-Ansah et al, 2001; Bernardi et al, 2003; Hill et al, 2003) but the results from these are not conclusive. The studies vary in their approach and monitor the impact of education through a longitudinal survey, present an international ‘consumer study’ of enterprise education, and assess the design and evaluation of a new enterprise courses. Elements of qualitative and quantitative data have been generated and used in these studies, but with little commonality it is difficult to undertake comparative analysis. While these studies are valuable in their own right, they do not, nor were they intended to, provide a universal model for enterprise education evaluation.

Hegarty (2006) stated that one of the pedagogic difficulties of teaching entrepreneurship is rooted in the complex and diverse range of entrepreneur ‘opportunity-resource’ situations. Taking into account that each entrepreneurial individual is different, these situations may also vary in terms of risk, uncertainty, technology, and financial or social implications. However, by amalgamating traditional third-level institutional approaches
to teaching with modern techniques used within training organisations, the participant’s enthusiasm for entrepreneurial action, together with the learning continuum for the entrepreneurial process and subject theory, is better satisfied.

**Course Curriculum for Entrepreneurship Education**

The quality of the curriculum of a course depends on a number of factors including teaching strategies, learning styles, and delivery modes. The first generation of modern entrepreneurship programmes and courses in Ireland owed much in origin and design to developments in the leading business schools of the United States (Kavanagh, 2005). Bennett (2006) believed that ‘the teaching of entrepreneurship is multi-faceted and necessarily involves the provision of instruction across a wide range of topics’. He argued that entrepreneurship relates to the running of an entire business and concerns acumen, the possession of certain attitudes, personal resourcefulness as well as financial, marketing, and organisational design skills, and that these skills need to be incorporated into any course design. In recent times, entrepreneurship education at third-level has progressed from being a sub-section of a business to its own course, and even a sub-section of non-business courses.

In the first generation of entrepreneurship curricula, according to a study conducted by Vesper (1985), the basic programme structure used in most schools to teach enterprise development included venture design products, case studies, readings, and lectures by guest speakers and instructors. Ronstadt (1987) suggested that the content of entrepreneurship modules needed to be changed, that too much emphasis was placed on the preparation of a detailed business plan, and too little was directed towards other skills and entrepreneurial insights. Preshing (1991) and McMullan and Boberg (1991) have each evaluated the effectiveness of the project-based method teaching of entrepreneurship. They conceded that students generally favoured project-based courses for the development of skills related to knowledge, comprehension, and evaluation. Case method teaching was considered to be more effective in developing skills of analysis and synthesis.
Dana (1987) suggested that entrepreneurial learning style preferences are consistent with active participation. He stressed that the emphasis should be on improving entrepreneurial skill development and the importance of successful implementation. This skill is an on-going process (Kavanagh, 2005). Sexton and Bowman (1984) argued that entrepreneurship courses should be relatively unstructured and should ‘pose problems which require a novel solution under condition of ambiguity and risk’. In essence, entrepreneurs prefer individual activities, effort, and analysis of situations. Instead of considering the objectives of entrepreneurship programmes from the viewpoint of facilitators and teachers, Hisrich and Peters (1998) examined objectives from the participants’ perspective. While raising awareness was not listed, those features that participants believed should be included in potential courses were more practically oriented and geared at improving one’s chances of success. Some of the key learning aims of entrepreneurship students included developing an understanding of the strengths and weaknesses of different types of enterprises, as well as the opportunity to assess one’s own entrepreneurial skills. In addition, knowing the essentials of marketing, finance, operations planning, organisation planning, and venture launch planning, together with obtaining resources, was also considered essential.

Undergraduates and graduates in Ireland can now avail of a vast number and variety of courses and programmes, while the number of departments and academic chairs dealing with entrepreneurship has also increased in recent times (Hill et al, 2003). Generally, entrepreneurship education is offered in faculties of business, but the concept and potential benefits of offering entrepreneurship education outside of the business faculty have recently become more widely recognised (Menzies, 2003; Hill et al, 2003, European Commission, 2008). More and more third-level institutions are now offering entrepreneurship or enterprise based modules in non-business related courses, and the interest and demand in these modules is growing among science, engineering, and arts faculties. Under the Irish National Development Plan, over €12 million is being provided to support graduate entrepreneurs through the Enterprise Platform Programme (EPP), which is being run in the country’s Institutes of Technology. Graduates from any
discipline and educational institution with a relevant business idea or existing small business can apply for the Programme, with the objective of launching or strengthening a business. The Enterprise Platform Programme is a one-year rapid incubation programme which includes an appropriate balance of formal education, training, personal development, counselling, business mentoring, and business guidance to provide participants with the skills necessary to develop a business idea to a sufficient stage of development to be launched or - in the case of businesses which are already trading – to strengthen their market or trading position. Businesses that are classified as ‘high potential start-ups’ are targeted and supported through the EPP programme and the establishment of campus companies as part of Ireland’s Regional Growth Strategy. This programme is reflective of the way in which entrepreneurship education has moved in Ireland in recent years.

**Challenges Faced by Entrepreneurship Education in Ireland**

There are a number of challenges currently facing entrepreneurship education in Ireland. Presently there is no dedicated Irish conference or journal on the subject matter. Additionally there is a low level of activity related to research and publications, and few Irish books and case studies published in the area. However, the Irish Network of Teachers and Researchers of Entrepreneurship (INTRE) was established in 2006 to alter this position, so a positive change is occurring in Ireland. Nevertheless, the potential culture of entrepreneurship remains hindered by five broad factors:

(1) Traditional perceptions and attitudes,
(2) Presence of ‘fear of failure’ culture,
(3) A parochial attitude to risk and business ownership,
(4) Relatively low levels of entrepreneurs among high earners,
(5) Lower levels of female entrepreneurs.

With these points in mind it is clear that there is a substantial need for ‘pracademics’\(^2\) in entrepreneurship education. Participants in entrepreneurial education need encouragement, support, and most importantly the hands-on knowledge that a pracademic

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\(^2\) A ‘pracademic’ is an American term that is used for practitioners who are also academics.
can offer. These factors hindering entrepreneurship culture could then be addressed in a practical, efficient, and positive approach.

Whilst traditional attitudes towards entrepreneurship are changing, many entrepreneurs on the island of Ireland still feel that they do not have the necessary skills to execute a feasible venture. Irish entrepreneurs also have an insular island mentality which negatively influences their business and individual traits. Additionally, both the number of entrepreneurs among high earners and the number of female entrepreneurs has remained low in recent years (O’Reilly and Hart, 2005), which has had implications for the type of entrepreneurship approach being selected (e.g. opportunity or necessity entrepreneurship). Creating a culture that recognises and values entrepreneurs and the contribution that they make to economic growth is crucial. A starting point for any cultural change exists within the schools in Ireland, including primary and secondary schools. Government departments are seeking to further embed entrepreneurship principles and competencies in further and higher education in Ireland, and within the context of lifelong learning, but a great deal of work still lies ahead for everyone involved in entrepreneurship education.
4. **Entrepreneurship and Third-Level Institutions**

*Some people look at things and say why; I see things that never were and say why not!*

*(G.B. Shaw)*

As has been highlighted in earlier chapters, entrepreneurship learning initiatives have been growing in demand and popularity in recent years in Ireland, and in response to this many third-level institutions are now delivering specific modules in entrepreneurship and other related subjects, such as new venture creation and enterprise development. These programmes are not only being delivered to business faculties, but more recently there has been an increase in the demand and interest in entrepreneurship from faculties such as engineering, science, and arts. Incorporated into many of these modules are the practical elements of new venture creation, offering students the opportunity to create business plans and work in conjunction with prominent entrepreneurs, both national and international. A practical hands-on approach and the opportunity to put knowledge into practice are being offered on many of these courses, with some having the added bonus of a work placement.

Over the past decade there has been a significant increase in the number of students interested in studying venture creation as a viable career option and who are now looking at business courses that offer them the opportunity to use their creative initiative. Entrepreneurship programmes and modules offer students the tools to think creatively, be an effective problem solver, analyse a business idea objectively, research an industry efficiently, and communicate, network, lead, and evaluate any given project. Students are gaining confidence at the prospect of setting up their own business as they can now get the opportunity to test their own business idea in an educational, supportive environment. Additionally there has been a significant growth in the requirement to provide educational environments that are more applicable to people who do want to engage in full-time education but yet require training support. This has led to the development of

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3 The information provided in this section is based on material that was provided to the authors by a member of staff from each institution highlighted. All institutions were contacted on a second occasion to ensure that the information included in the report was correct. However, it should be noted that the information was gathered in 2007 and so some programmes and initiatives may have changed since then.
business incubation centres in almost all institutions. These incubation centres are also used by graduates who have been encouraged to start their own business following the completion of an entrepreneurship module while studying as an undergraduate.

It is important to note that the goal of entrepreneurial education is not necessarily that all participants should launch businesses immediately upon completion of their studies. In fact, given the inherent risks and difficulties of the venture creation process, it is often unwise to push students too hard or to take an evangelical approach. Students are young, easily influenced, and often looking for models (Fayolle and Degeorge, 2006). Additionally not all educational institutions offer the same political, social, and cultural environments. An institutional environment that accepts and values entrepreneurial behaviour and employment in small and medium sized enterprises is likely to have a greater impact on the entrepreneurial intentions of students. Through its policies, incentives, and behaviours, an institution can encourage its students to take initiative and engage in venture creation, while also conveying a positive image of entrepreneurship as a career choice (Autio et al, 1997). The following are the third level institutions on the island of Ireland that currently offer entrepreneurship education either through modules, courses, and/or support activity.

(1) Athlone Institute of Technology

Athlone Institute of Technology offers a Masters of Business. The programme has been designed to provide students with a critical awareness of concepts, debates, problems, issues, and insights in the business field. Students develop and demonstrate a range of high-level knowledge and skills in areas such as research, strategic thinking, and reflective learning, thereby establishing the foundation for a successful career, as well as for continuing academic and professional development. The overall aim of the programme is to facilitate the personal and intellectual development of students, encompassing the skills of analysis, interpretation, and synthesis within their chosen field of knowledge. The course offers the following stream subjects: The Enterprise Environment, Innovation and Creativity, New Venture Creation and Growth.
The Institute’s Business School also offers Bachelor of Business degrees at Ordinary and Honours levels. All Bachelor of Business degrees include Enterprise Development as a core subject. Students must prepare group business plans for new business. These include market research, product or service development and identifying sources of funding. The most innovative business each year is awarded a cash prize by WSETBIC. Students are also encouraged to enter into business competitions.

The Midlands Business Innovation Centre, which is located on the Athlone Institute of Technology campus, was established in 2003. The Centre has secured funding in the region of €2.54 million since its foundation to support the design and construction of a new state-of-the-art Innovation Centre that will remain on the Institute campus. The Centre provides support programmes, which deliver comprehensive levels of business development and financial support to assist individuals to grow and commercialise their ideas. One of the programmes currently being run which provides this support is the Midlands Enterprise Platform Programme (MEPP). The Centre supports enterprises through the first three stages of business growth (Embryo, Nurture and Fledgling), and then preparing the ‘incubated’ enterprises for relocation when they reach ‘Take Off’ Stage. The External Services Unit (ESU) acts as a central contact point for companies and community organisations to the Institute’s range of industrial services. It aims to forge strategic links between Institute staff, business and industrial groups through the provision of consultancy/business expertise, customised training programmes and opportunities for the development of collaborative research projects.

<table>
<thead>
<tr>
<th>National Certificate in Business Studies in Equine Studies</th>
<th>Enterprise Development and Management module</th>
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<tbody>
<tr>
<td>National Diploma in Business Studies in Management Finance</td>
<td>Enterprise Development and Management module</td>
</tr>
<tr>
<td>Graduate Diploma in Computing</td>
<td>Enterprise Development and Management module</td>
</tr>
<tr>
<td>National Diploma in Hotel and Catering Management</td>
<td>Enterprise Development and Management module</td>
</tr>
<tr>
<td>National Diploma in Business Studies in Information Technology</td>
<td>Business Management and Enterprise Development module</td>
</tr>
<tr>
<td>National Diploma in Business Studies in Marketing</td>
<td>Business Management and Enterprise Development module</td>
</tr>
<tr>
<td>National Diploma in Business Studies in European Business Management</td>
<td>Business Management and Enterprise Development module</td>
</tr>
</tbody>
</table>
Cork Institute of Technology’s School of Business offers a range of undergraduate and postgraduate business programmes. These programmes include enterprise related modules, and students have the opportunity to explore entrepreneurship and new venture creation at a deeper educational level. The School of Business and the Educational Opportunities Department offer a specific Higher Certificate in Business for Mature Students. Enterprise modules are included in this course, and the course is aimed at mature students who are interested in all aspects of business.

The Genesis Enterprise Programme (GEP) is a one-year rapid incubation programme designed to facilitate budding entrepreneurs in the development of their businesses. It is an amalgamation of state resources in the South West - Cork & Tralee Institutes of Technology, Enterprise Ireland, University College Cork, CorkBIC and Udaras na Gaeltachta. The programme is administered as a partnership between these participating organisations, in which CIT plays a leading role, allowing the participants' access to a broad range of assistance, both technical and commercial as well as library facilities and research laboratories. The programme is administered by a dedicated Programme Manager and is funded by the Department of Education and Science under the National Development Plan 2000-2006 and Enterprise Ireland.

The newly opened Rubicon Centre in Cork Institute of Technology measures 1,250 m2 and aims to stimulate an environment of creativity and innovation with a continual focus of nurturing the growth of knowledge based business in the South West Region. The
Centre provides a supportive on-campus environment for start-up businesses. In essence, the Centre's role as an incubator is to assist the formation and growth of early stage knowledge based businesses by providing physical space, in-house management support, access to advice and support from Institute resources. The Centre aims to become an important focal point with the region for knowledge intensive business and commercial research.

The CIT Prize for Innovation is an annual competition that is sponsored by the South Cork Enterprise Board, for both students and staff. The competition awards cash prizes (€5,000) to those whose inventions and business ideas are judged most creative, novel, innovative, and likely to succeed in the marketplace.

Bachelor of Business Studies in Information Systems 2 modules on Strategic and Business Management and Entrepreneurship
National Certificate in Agriculture Farm Business Management module
Adults into Higher Education Certificate Business Management module
BA degree in Multi Media Marketing and Enterprise module
BSc Computerised Instrument Systems Business & Enterprise Studies module
BSc in Rural Development Module on business start-up and entrepreneurship

(3) Dublin City University

Entrepreneurship is a key discipline in the academic curriculum at DCU both at undergraduate and post graduate level. It is a core 10 credit module on three of the main undergraduate degree programmes: Batchelor of Business Studies (BBS), BSc in Marketing Innovation and Technology (MInT) and BA in European Business (BAEB). It is also delivered on the following degree programmes: BA in Accounting and Finance, B.Eng. in Digital Media Engineering, and BSc Sport Science and Health. All students taking these modules are required to undertake business plans in teams. Additionally, Fiontar provides innovative modules at undergraduate and postgraduate level through the medium of Irish, linking entrepreneurship with journalism, culture and minority languages.
Dublin City University Business School offers an MBS in Entrepreneurship, a part-time programme run over two years. The programme is open to entrepreneurs and potential or aspiring entrepreneurs, from all sectors of business activity. Specifically the MBS in Entrepreneurship programme is of interest to people who are an entrepreneur in the process of developing a business idea, a potential entrepreneur with or without a specific product idea, a manager involved in the support of entrepreneurs and new ventures, employed in a development agency, enterprise board or the financial sector, or an individual interested in acquiring a high level of understanding of entrepreneurship and possibly working for a large entrepreneurial company. Delivery is primarily by way of lectures, seminars, and one-to-one mentoring. Relevant visiting speakers are an integral feature of the programme, including staff from development agencies, banks, and venture capital funds.

Dublin City University also offers a number of further business postgraduate courses that include modules of entrepreneurship or one of its enterprise counterparts. It delivers a High-Technology Entrepreneurship module on the MSc in E-commerce, a Masters programme where students work on the commercialization of university based IP, as well as the Practicum Project which focuses on the development of student high-tech business plans.

The academic year 2007-2008 saw the first intake of students on the Entrepreneurship stream of the Professional Doctoral Programme at DCU. The Professional Doctoral Programme is a part-time, research-based programme leading to the award of Doctor of Business Administration. The programme affords senior managers the opportunity to undertake research on issues and problems of direct relevance to their own professional interests and organisational requirements. DCU also houses the INVENT Incubation Centre which offers business support and programmes for students, including the Malin Award and the Commercialization of University Research Student Awards.

<table>
<thead>
<tr>
<th>Bachelor of Business Studies</th>
<th>Core Module</th>
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<tbody>
<tr>
<td>Bsc in Marketing, Innovation &amp; Technology</td>
<td>Core Module</td>
</tr>
<tr>
<td>BA in European Business</td>
<td>Core Module</td>
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</tbody>
</table>
BA Accounting & Finance
Entrepreneurship Module
Bachelor of Engineering in Digi Media
Entrepreneurship Module
Bsc Sports, Science & Health
Entrepreneurship Module
MBS Entrepreneurship
Core Module
Msc E-commerce
Hi Tech Entrepreneurship Module
PhD
Entrepreneurship Stream

(4) Dublin Institute of Technology

The Dublin Institute of Technology offers a wide range of entrepreneurship modules across its faculties and in 2004 introduced a tailored MSc in Business and Entrepreneurship. This is a one-year programme dedicated to transforming Science, Engineering, Social Science, Business and Technology graduates into leaders who will guide and create tomorrow's businesses. It aims to achieve this by providing technology and business related graduates with the acumen to successfully move ideas and innovations into commercial practice. In doing so it addresses Ireland's need to remain competitive by cultivating cross-functional, entrepreneurial graduates. Its MBA programme also offers a stream in Entrepreneurship.

The 'Institute for Minority Entrepreneurship' within DIT was established to offer the different minority groups in Ireland equal opportunity through entrepreneurship education and training. 'Minority Entrepreneurship' has been broadly defined by the Institute to be inclusive of those communities who are generally regarded as being outside of mainstream Irish society in terms of entrepreneurship. The following groups are considered by the Institute to be ‘minority entrepreneurship groups’: Ethnic, Grey, Disabled, Travellers, Gay, Prisoners, and Socio-Economically Disadvantaged. The primary objective of the Institute is to bring significant benefit to its target audiences by researching the needs of these minority entrepreneurship groups, developing appropriate training programmes and materials, and delivering these programmes in the most effective manner possible for each individual group.

Initiated by the Dublin Institute of Technology in 1983, and operating under the Directorate of External Affairs, the Project Development Centre (PDC) has been
instrumental in encouraging and stimulating the development of indigenous enterprise through a range of activities. These activities include:

- In 1996 the Centre launched the Fast Growth Programme. This Programme helps owner/managers of fast growing companies deal with the challenges associated with rapid expansion. In the last three years, almost 50 entrepreneurs have successfully grown their businesses through this initiative. Research has shown that within one year of the programme, average turnover levels have doubled and profits have increased by 300%.

- PROSPECT, Commercialising University Research, a pre-start-up training programme that helps academic entrepreneurs to evaluate the commercial potential of their research and provides them with the necessary management skills to exploit the business opportunity.

- HOTHOUSE, a start-up programme that helps entrepreneurs of knowledge-intensive businesses to start up and build firms with global potential.

- The Small Enterprise Seed Fund, a Designated Business Expansion Scheme Fund was initiated in 1995 in order to create a source of equity funding for small companies. Managed by Castle Hill Fund Management Ltd., the Fund raises monies from private investors to provide seed funding to a portfolio of young growth-oriented businesses. As with all BES investments investors can write off the investment against their tax bill whilst acquiring an equity share in the investee companies. To date the Small Enterprise Seed Fund has invested almost £2 million in more than 20 businesses.

Today the PDC is one of the leading centres in the country for enterprise and innovation. It provides a comprehensive range of services and products, including skills development programmes, incubation space & facilities, business counselling and funding and access to R&D expertise.
<table>
<thead>
<tr>
<th>Degree in Tourism Marketing</th>
<th>Enterprise Development module</th>
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<tr>
<td>Degree in Planning and Environmental Management</td>
<td>Property and Entrepreneurship module</td>
</tr>
<tr>
<td>BA in Marketing</td>
<td>Optional Entrepreneurship modules</td>
</tr>
<tr>
<td>Degree in Transport and Logistics</td>
<td>2 Modules Business Management and Business Strategy</td>
</tr>
<tr>
<td>Certificate in Business Management</td>
<td>Enterprise Development module</td>
</tr>
<tr>
<td>Certificate in Security Management</td>
<td>Enterprise Development module</td>
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<tr>
<td>Diploma in Computer Science</td>
<td>Set up Your Own Business module</td>
</tr>
<tr>
<td>Degree in Geomatics</td>
<td>Business and Management Studies module</td>
</tr>
<tr>
<td>Honours Degree in Product Design</td>
<td>Enterprise Development module</td>
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<tr>
<td>Honours Degree in Electrical/Electronic Engineering</td>
<td>Business Studies module</td>
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<tr>
<td>Degree in Electrical and Control Engineering</td>
<td>Business Studies module</td>
</tr>
<tr>
<td>Food Technology/Pharmaceutical Technology Degree</td>
<td>Food Business Management/Pharmaceutical Business Management module</td>
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<tr>
<td>Diploma in Applied Science</td>
<td>Optional Business Studies module</td>
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<tr>
<td>Degree in Optometry 2 Business Studies modules</td>
<td>Entrepreneurship module</td>
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<tr>
<td>Postgraduate Certificate / Postgraduate Diploma / Masters in Advanced Engineering [part time and full time] Engineers</td>
<td>Entrepreneurship module</td>
</tr>
<tr>
<td>MBA</td>
<td>Entrepreneurship module</td>
</tr>
<tr>
<td>MSc in Marketing [business to business option or International option]</td>
<td>Business planning element</td>
</tr>
<tr>
<td>Masters in Business and Entrepreneurship</td>
<td>Entrepreneurship course</td>
</tr>
</tbody>
</table>

(5) Dundalk Institute of Technology

In September 2001, DKIT established the Centre for Entrepreneurship Research. Drawing on the Institute’s educational, research, training, and incubation experience, the Centre focuses on research projects in a broad range of areas within the field of Entrepreneurship. Its team of researchers comprises both academic and non-academic staff, including external associates from academic institutions in Ireland, mainland Europe, and the USA. Collectively, the Centre's research team has published a wide range of articles in the field of Entrepreneurship and related areas. A key activity of the Centre involves the supervision of postgraduate research students working towards Masters and PhD qualifications. In addition, the Centre contributes to the development of Entrepreneurship teaching curricula at undergraduate and postgraduate levels, and recently, through the School of Business Studies, developed a taught Masters programme (MBS) in Entrepreneurship and Marketing. Entrepreneurship courses are offered across
all faculties within DKIT and each of the undergraduate students has the opportunity of completing an entrepreneurship module at some point in their studies.

Established in 1989, the Regional Development Centre acts as the Institute’s Innovation Support and Technology Transfer organisation. The Centre acts as a commercially oriented interface between DKIT and the industrial, commercial and business life of the region, and makes available the expertise, facilities and resources of the Institute for the wider benefit of the regional economy. Through the Research and Developmental endeavours of its Academic Staff, DKIT has developed a strong applied R&D reputation in Software Development, Electronics and Engineering Design, Applied Humanities, Cultural Studies and Enterprise Development & Innovation with a new and emerging area in the field of Renewable Energy and Digital Media. The evolution of this range of Research expertise has a direct bearing on new course development, on staff development and on the relevance of graduate provision to the skills needs of the Regional and National economy.

MBS in Entrepreneurship and Marketing
BA in Accounting and Finance
Bachelor of Business Studies Degree
National Diploma in Humanities Applied Cultural Studies [Course offered with a Film Option, French Option or German Option]
BA Humanities - Cultural Resource Management
B Eng Product Design Engineering
BSc in Food Science -

MBA
National Diploma in Business Studies
National Certificate in Computing
National Diploma in Business Studies Management and Administrative Studies
National Certificate in Community Studies Community
MBS in Entrepreneurship and Software

Business Strategy module
Strategic Management module
Management of Cultural Enterprises module in each
2 modules covering Entrepreneurship
Innovative Business module
Product Development Management / Enterprise module
3 modules on Business Strategy and Enterprise Development
Business Strategy module
Business Management module
Business Strategy module
Enterprise module
Core Module
Entrepreneurship course

(6) Galway – Mayo Institute of Technology

The Innovation in Business Centre at GMIT aims to play a strategic role in the economic development of the region by driving the new enterprise model of market-led and
knowledge-based industry development. A critical goal of the Innovation in Business Centre is to maximise the number of successful start-up companies that emerge from the incubation pipeline. These new companies will have survived through the early stages of growth and become independent stand-alone entities which have successfully developed new products or services for global markets. The entry criteria for selection into the Centre include that the business idea must be knowledge intensive/innovative, potential to create jobs/export, high-potential start-up capability, commercialisation of applied research, and possess a business plan. GMIT also provides a range of entrepreneurship modules in undergraduate and postgraduate courses.

The Midlands & West Enterprise Programme (MWEP) commenced in March 2008. This is a one-year programme providing entrepreneurs with business skills, networks, facilities and supports necessary to navigate the business start-up process. Applicants should ideally have a number of years industry experience and have the enthusiasm and drive necessary to develop and grow a successful business. Participants may apply to Enterprise Ireland for CORD funding, which could provide up to 50 per cent of previous year's gross salary. The MWEP provides participants with business acumen, concept desk space, mentoring, networking, facilities, and supports necessary to help them in establishing and running their own businesses. Participants should have a business idea with growth and export potential.

National Diploma in Business Studies in Outdoor Education and Leisure
National Diploma in Humanities and Heritage Studies
BA in Humanities and Heritage Studies
National Diploma in Humanities, Film and Television
Bachelor of Design in Textiles
National Certificate in Technology, Furniture Design and Manufacture
National Certificate Marketing For Small Tourism
National Diploma in Business Studies, Tourism and Services Marketing
National Diploma in Business Studies
National Diploma in Business Studies Rural Enterprise and Agri-Business
Bachelor of Business Studies
National Diploma Hotel Catering and Management
Marketing and Business Development module
Marketing and Business Development module
Enterprise Development and Management module
Media Business Management module
Marketing and Business Development module
Enterprise Development and Management module
Enterprises Business Planning module
Enterprise and Service Management module
Marketing Enterprise Development module
Business and Enterprise Management module
Entrepreneurship module
Business Studies module
(7) Griffith College Dublin

Griffith College is the largest independently owned third level college in Ireland with campuses in Dublin, Limerick, Cork, Moscow and China. Its business courses include: BA (Hons) in Business Studies, BA (Hons) in Accounting and Finance, BA in Marketing, BA in Business Studies, BA (Hons) in International Hospitality Management, and a Higher Certificate in Business Studies. The Graduate Business School courses include: Professional Cert. in International Business Management, PG Cert. in International Business Management, PG Diploma in International Business Management, MSc in International Business Management, and an MBA in International Business Management. All of the business courses encompass enterprise subjects or an entrepreneurial theme.

BA (Hons) in Business Studies  Entrepreneurial themes/modules
BA (Hons) in Accounting and Finance  Entrepreneurial themes/modules
BA in Marketing  Entrepreneurial themes/modules
BA in Business Studies  Entrepreneurial themes/modules
BA(Hons) in International Hospitality Management  Entrepreneurial themes/modules
Higher Certificate in Business Studies (HETAC)  Entrepreneurial themes/modules
Professional Cert. in International Business Management  Entrepreneurial themes/modules
PG Cert. in International Business Management  Entrepreneurial themes/modules
PG Diploma in International Business Management  Entrepreneurial themes/modules
MSc in International Business Management  Entrepreneurial themes/modules
MBA in International Business Management  Entrepreneurial themes/modules

(8) Institute of Art, Design and Technology, Dun Laoghaire

IADT offer a degree programme entitled a Bachelor of Business & Entrepreneurship. This three year degree provides an environment where students learn to act upon good business ideas and in particular their own business ideas. The programme of study includes hands on entrepreneurial activities (i.e. running micro businesses, participating in business games, debates, funding pitches, and mentoring). The programme focuses on innovation and the strategies that turn innovation into wealth creation. As well as
studying traditional business subjects (finance, marketing, management), IADT places a strong emphasis on how knowledge can be used dynamically across different business disciplines. Students study entrepreneurship and are exposed to opportunities to develop their own entrepreneurial skills through business planning, idea generation and participation in Student Enterprise Week. The Post-Graduate Diploma in Business in Cultural Event Management delivers a core business qualification geared specifically towards the cultural sector with a focus on how to manage events successfully within that sector. As part of the programme students study Cultural Entrepreneurship which focuses on issues of managing sustainable businesses in the Cultural Sector.

<table>
<thead>
<tr>
<th>Course</th>
<th>Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Diploma in Business &amp; Entrepreneurship</td>
<td>2 modules in Small Business Management and Enterprise Studies</td>
</tr>
<tr>
<td>National Diploma in Business Studies</td>
<td>2 Modules on Small Business Management and Enterprise Studies</td>
</tr>
<tr>
<td>Bachelor of Business &amp; Entrepreneurship</td>
<td>Entrepreneurship modules</td>
</tr>
<tr>
<td>BA Business Studies with Arts Management</td>
<td>Entrepreneurship module</td>
</tr>
<tr>
<td>The Foundation Certificate</td>
<td>Business Studies module</td>
</tr>
</tbody>
</table>

**(9) Institute of Technology Blanchardstown**

The Institute of Technology Blanchardstown (ITB) provides undergraduate courses in business that includes entrepreneurship-based modules. ITB is also part of an institutional team that has developed a significant enterprise initiative known as The M50 EPP. This is an innovative enterprise support programme, provided in partnership by four higher education institutions located in the M50 economic corridor. It targets graduates wishing to make the leap from employment to starting their own high potential knowledge-intensive businesses, providing them with a range of effective supports over a twelve-month period. I.T.B. has partnered with I.T.T. Dublin, Nova UCD, and DCU Invent to deliver the programme. The four institutions together provide immense business development expertise as well as access to an extremely wide range of resources. The four campuses also provide excellent gateways into the constituent communities and areas that make up the fastest developing economic region in Ireland.
I.T.B. was awarded almost €400,000 by Enterprise Ireland’s Regional Innovation Strategies Infrastructural Support Programme to complete I.T.B.’s Learning and Innovation Centre to include incubation units, training facilities, and Research and Development Space. The Learning and Innovation Centre will be ITB’s tangible link between the Institute and the business community and other participants in regional economic activity. The main knowledge transfer activities located in the Centre include: applied research and development, incubator space to support any spin off companies from applied R&D or local entrepreneurial activity, development activities for new and established business including IT training and executive development, and business planning. ITB also provides a range of entrepreneurship modules across many of its undergraduate and postgraduate programmes.

National Diploma in Business Studies
National Certificate in Business Studies
National Diploma in Business Studies Information Technology with a Language
National Certificate in Computing
BA Business Studies with a Language
National Certificate in Computing
HETAC Foundation Certificate
National Certificate in Interdisciplinary Studies
Accelerated Technician Programme
Diploma in Purchasing and Materials Management
Accounting Technician Course

Entrepreneurship module
Business Management module
Business Management module
Business Management module
Business Management module
Enterprise Development module
Business Management module
2 Business Studies modules
Business Management module
Business Management module
Business Management module
Business Management module

(10) Institute of Technology Carlow

IT Carlow provides a range of entrepreneurship modules across a variety of full-time & part-time courses at undergraduate level. The Institute’s applied R & D activities are complemented by various campus-based specialist centres and campus companies. Located on the campus of IT Carlow, the Campus Innovation Centre and Enterprise & Research Incubation Centre provide the infrastructure, resources and expertise for researchers, entrepreneurs and established companies seeking to bring innovative ideas to commercial realisation. The Campus Innovation Centre, which was established in 1992, offers suitable research projects access to a range of facilities and supports that have been
designed to accelerate the R & D period for new product and process ideas. In this way, the Centre assists in the development of small-to-medium size high-technology indigenous enterprises throughout the South-East region and nationally. Supported by the IDA, local industries, and the Carlow Chamber of Commerce, the Centre has had a full-time occupancy rate since its inception.

The success of this Campus Innovation Centre in supporting company development was recognised through the awarding of additional funding to the Institute to establish a second Enterprise and Research Incubation Campus under the Regional Innovation Strategies Infrastructure Measure (operated by Enterprise Ireland on behalf of the Office of Science and Technology of the Department of Enterprise, Trade and Employment) of the NDP 2000-2006. Located on the grounds of the Institute, the centre is a purposely built, fully serviced building providing 831 sq. m of industrial and commercial space dedicated to the growth of young knowledge-based companies.

The Enterprise Platform Programme, run in conjunction with the Institutes of Technology and funded by the Department of Education and Science under the National Development Plan, is a one-year full-time professional training and enterprise support programme aimed at entrepreneurs who have a well thought out innovative business idea or technology that has the potential to be transformed into a High-Potential-Start-Up company. The programme is intended to train graduate entrepreneurs in the skills required to establish and run their own businesses. The entrepreneurs receive shared office space at the Institute of Technology’s new Enterprise & Research Incubation Centre, are provided with access to a comprehensive range of resources, supports and expertise at the Institute including hands-on business advice, structured training and an introduction to networks and other support agencies. Each participant also undergoes personal mentoring based on their business sector and the stage of their company’s development.

IT Carlow offers training in a variety of ways. Structured accredited evening courses are delivered through the Lifelong Learning Centre while business / enterprise specific
courses are delivered either on-campus or in-house. Training programmes are available across a wide range of topics and are designed in consultation with client companies to meet their specific requirements.

Bachelor of Business Studies  Strategic Business Management module
National Diploma in Industrial Design Technology  2 modules on Business Planning
National Certificate in Computing  Business Management module
National Diploma in Computer Systems Management  Business Management module
Degree in International Business with German  Strategic Business Management module
Degree in International Business with French  Strategic Business Management module
Degree in Services Marketing  Strategic Business Management module

(11) Institute of Technology Sligo

The Institute of Technology Sligo offers a range of undergraduate and postgraduate courses at their business school. IT Sligo particularly encourages non-business students to consider post-graduate programmes in business, and more and more students from engineering, arts, and science faculties are availing of these options. The MBA programme offers modules focusing on entrepreneurship and new venture creation for those students wishing to explore the career option or starting up and owning a business. IT Sligo also offers a range of entrepreneurship modules across different courses at undergraduate and postgraduate level. The following courses additionally hold core entrepreneurship modules: Enterprise and Innovation (MBA), Enterprise and Financial Management (MSC), Marketing Research and Enterprise Development (Higher Certificate in Business Studies, Year II), Contemporary Management (Year III Degree), and Enterprise Development (Year III, BBS Degree).

The Institute has been involved in a number of successful Enterprise Development Programmes. These are one-year projects which are designed to fast-track entrepreneurs as they start up their businesses. The current programme (called CEIM) is being run in association with Letterkenny Institute of Technology (in collaboration with ADM-CPA, Enterprise Ireland and Údarás na Gaeltachta). The participants receive training, mentoring, space in the BIC and financial support as appropriate. At the end of each
programme the participants are positioned to start-up their business and some move into the BIC to continue their development.

MBA Enterprise & Innovation  Core module
MSC in Enterprise and Financial Management  Core module
Higher Certificate in Business Studies  Marketing Research and Enterprise Development
Bachelor of Business Studies  Contemporary Management, Enterprise Development

(12) ITT Dublin

ITT Dublin (formerly the Institute of Technology, Tallaght) provides undergraduate courses in business that include entrepreneurship based modules. On the Innovation and Development side, ITT Dublin is also heavily involved in the M50 Enterprise Platform Program which has been awarded substantially increased funding for the years 2004 - 2007 and is recognised by Enterprise Ireland as one of the top sources for the production of High Potential Start-Up (HPSU) companies, especially in areas related to its R&D strengths. ITT Dublin has also been awarded €2.54m by Enterprise Ireland to set up a Business Incubation Centre, the Synergy Centre. Clients of Synergy Centre are supported through a wide range of networking and training provisions including:

* A 6-month rotating mentor panel to be matched with client companies based on stage of development and mentor expertise
* A series of networking events
* A series of one-to-one clinics in areas such as marketing, recruiting, employee related issues etc.
* Lightning training programmes in non-core areas such as finance, marketing, public relations, time management, recruitment etc.
* Office space for small ventures with high potential;
* Concept desks for entrepreneurs with an early stage idea; and
* Virtual tenancy to companies requiring non-physical supports.

Opened in November 2006, the Synergy Centre is based on campus at ITT Dublin, Tallaght.
The School of Business at the Institute of Technology Tralee offers a range of entrepreneurship modules across a variety of undergraduate programmes. The institute also provides a one year full-time Master of Business, which provides entrepreneurship based modules for graduates who are interested in exploring the entrepreneurial career path. The Institute in association with The Tom Crean Business Centre, Kerry Technology Park and Jerry Kennelly (local entrepreneur) also offers a unique awards scheme for Kerry Students in both Second and Third level. This is fully supported with its own website at www.youngentrepreneur.ie.

Kerry Technology Park is the flagship location for knowledge-based enterprise in County Kerry. It is part of the Shannon Development Knowledge Network – a network of world class business locations owned and managed by Shannon Development. The Park is situated on a 113 acre parkland campus, adjoining the new North Campus of the Institute of Technology, Tralee. Innovation Works is a 2,500 sq. m. state of the art business incubation facility located within Kerry Technology Park, and is designed specifically to support the development of new technology-based start-ups. Office units range from 30 to 90 square metres. Each self-contained office includes extensive electrical points and structured CAT5e UTP cabling, linked to a central communications room. Resident companies have access to an extensive range of services including advanced telecommunications facilities, high speed internet access at competitive rates, meeting and conference facilities, as well as Shannon Development’s range of business advice and support services. InnovationWorks is positioned as a premier location for technology based companies with significant growth potential.
(14) **Letterkenny Institute of Technology**

The Development Office at Letterkenny Institute of Technology is involved in providing an expanding array of services ranging from services to local industry including training and internships, a continuing education and lifelong learning programme, and developing the internationalisation of the college through foreign partnerships and exchange programmes.

The Business Development Centre opened in July 2000. Its mission is to stimulate innovation and nurture the growth of knowledge-based business in the region. The BDC provides flexible *space arrangements* from which to grow or develop new products or services, and offers campus based incubation facilities to start-up companies, facilities for industrial research and commercial services to local industry. The occupants of the BDC consist of projects with a technology / IT / knowledge base, developing new / innovative products or services that have a potential for growth in employment and revenue. The BDC provides an innovative environment to encourage and facilitate research and development in the North-West of Ireland. Links with industry and the commercial sector provide opportunities for Letterkenny Institute of Technology to fulfil its obligation as a vehicle for economic growth.
The Institute's courses are updated constantly to match emerging trends in the workplace. All college courses are validated by the HETAC (National Council for Educational Awards) or by other recognised organisations. The courses on offer by the Institute have a strong 'applied' focus, and therefore make graduates attractive to employers. The Careers offices in conjunction with the various departments actively liaise with the business sector and state agencies in placing graduates in employment. Prospective employers are regularly invited to make presentations and to meet the students. The college also participates in various programmes that encourage companies to take on graduates with technological skills including: Enterprise Ireland Techstart Programme, Enterprise Ireland Pilot Partnership Programme, Graduate Enterprise Programme, HETAC Manufacturing and Computer Technology Courses. As part of this process, it delivers a range of entrepreneurship modules across a variety of undergraduate and postgraduate courses.

Bachelor of Business
Bachelor of Business in International Tourism and Hospitality
Bachelor of Business in International Culinary Enterprise
Bachelor of Engineering in Computing Engineering
Bachelor of Engineering in Biomedical Engineering
Bachelor of Science in Applied Computing
Higher Certificate in Enterprise Development
Certificate in Food Product Development
BA in Graphic Design
BA in Product Design
BA in Creative Digital Media

Innovation and Entrepreneurship

(15) Limerick Institute of Technology

Limerick Institute of Technology’s Enterprise Acceleration Centre (EAC) is a business incubation centre serving the Mid-West region of Limerick, Clare and Tipperary. Enterprise Ireland, the national enterprise development agency, provided 82% of the funding required for the building which involved a total investment of €3.1 million - completed March 2006. The mission of EAC is to deliver a unique business environment that stimulates innovation, research commercialisation and entrepreneurship. The Centre
facilitates the transition from education, research and employment to ‘start up business success’ by assisting clients in two complimentary areas: Research Commercialisation; and early stage Enterprise Start Up. The Centre has 17 business incubation units available to entrepreneurs with early stage companies who meet the criteria set by Enterprise Ireland for High Potential Start-Ups (HPSUs).

In 2007, Limerick Institute of Technology officially launched the LEAP programme, a full year programme for start-up entrepreneurs. During the 12 month programme, LEAP provides a range of integrated supports focused on strategic planning and practical business set-up in the form of management training, business coaching, mentoring and consultancy. These supports work together to challenge and guide the participants during the year long programme to develop an investor ready business plan thereby creating a platform for their business to succeed by achieving the sales that will make each business profitable. Participants are provided office accommodation in the Enterprise Acceleration Centre at no charge for the duration of the program. It is envisaged that the LEAP programme will run again in 2008 for another cohort of entrepreneurs. LIT also provides a range of entrepreneurship modules at undergraduate level.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>National Diploma in Business Studies with Business Computing</td>
<td>Enterprise Development module</td>
</tr>
<tr>
<td>BSc Multi Media and Computing Design</td>
<td>Entrepreneurial Studies module</td>
</tr>
<tr>
<td>BA in Business Studies with Tourism</td>
<td>Entrepreneurship and Innovation module</td>
</tr>
<tr>
<td>National Certificate in Technology in Agricultural Mechanisation</td>
<td>Business Management module</td>
</tr>
</tbody>
</table>

(16) National College of Ireland

ICELT (International Centre for Education and Learning Technologies) has been established to provide an environment where companies who operate in the e-learning and educational/training sectors can develop and grow. ICELT has been designed around the concept of building a 'community of peers', where businesses operating out of the Centre will benefit from shared knowledge, resources and equipment as well as the
support of entrepreneurs, state agencies, academics, and international networks. The Centre, through its international connections and specialist support mechanisms, will provide a unique rarefied environment for companies identified in the field of innovation in Education and Learning space:

- Pre-incubation research projects moving towards commercialisation,
- Indigenous high potential start-ups,
- Specialist research projects from major multinational corporations.

NCI also provides a range of entrepreneurship modules at undergraduate and postgraduate levels.

<table>
<thead>
<tr>
<th>Course</th>
<th>Module Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Certificate in Enterprise Studies</td>
<td>Entrepreneurship modules</td>
</tr>
<tr>
<td>BA (Hons) in Business</td>
<td>Entrepreneurship module</td>
</tr>
<tr>
<td>KESP online Knowledge Economy Skills Passport</td>
<td>Entrepreneurship module</td>
</tr>
<tr>
<td>BA in Training &amp; Development</td>
<td>Business Management module</td>
</tr>
<tr>
<td>BA (Hons) in Finance</td>
<td>Introduction to Business Module</td>
</tr>
<tr>
<td>BA (Hons) in Accounting</td>
<td>Introduction to Business Module</td>
</tr>
<tr>
<td>BA (Hons) in HR</td>
<td>Introduction to Business Module</td>
</tr>
<tr>
<td>Higher Certificate in Business</td>
<td>Introduction to Business Module</td>
</tr>
<tr>
<td>Higher Certificate in Business &amp; IR</td>
<td>Introduction to Business Module</td>
</tr>
<tr>
<td>Bachelor Business in HRM</td>
<td>Business Management module</td>
</tr>
<tr>
<td>BSc (Hons) in Business Information Systems</td>
<td>Entrepreneurship module</td>
</tr>
<tr>
<td>BA (Hons) Technology Management</td>
<td>Entrepreneurship module</td>
</tr>
<tr>
<td>BA (Hons) IR/HR</td>
<td>Business Management module</td>
</tr>
</tbody>
</table>

(17) National University of Ireland, Cork

The National University of Ireland, Cork presented its first New Venture Creation course in 1983 and continues to provide a range of entrepreneurship modules at undergraduate and postgraduate levels. UCC provides an MBS in Co-operative and Social Enterprise (by e-learning) which aims to equip participants with the skills to participate meaningfully and effectively at leadership level in co-operatives and social enterprises, and to develop the capacity of senior practitioners in co-operative and social enterprises to respond creatively to the needs and problems of the wider community and society.
The John C. Kelleher Family Business Centre was established to support the sustainability of family business across Ireland through the provision of a suitable environment where family businesses are nurtured and supported in responding to the increasing challenges of modern society. Its core mission is to promote a holistic perspective on family business that addresses the needs of the family, in parallel with the needs of the business. The Centre strives to achieve its mission through excellence in teaching, research, and business support. The dissemination of family business information will raise the understanding of the complexities of the sector and provide insights for both practitioners and policy makers. This will provide a basis for enhancing the strategies employed in the family business sector and will also improve the provision of education and training courses available to family business owners/managers and family business advisors.

<table>
<thead>
<tr>
<th>Course</th>
<th>Module/Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Commerce Small business ventures</td>
<td>Module in Creativity, Innovation &amp; Entrepreneurship</td>
</tr>
<tr>
<td>B Commerce Enterprise and innovation</td>
<td>can be taken by Computer Science, Accounting and Engineering</td>
</tr>
<tr>
<td>MBS in Co-operative &amp; Social Entrepreneurship</td>
<td>Core Module</td>
</tr>
<tr>
<td>BSc In Food Business</td>
<td>Enterprise Module</td>
</tr>
<tr>
<td>B Commerce Small business ventures</td>
<td>Module in Creativity, Innovation &amp; Entrepreneurship</td>
</tr>
<tr>
<td>B Commerce Enterprise and innovation</td>
<td>can be taken by Computer Science, Accounting and Engineering</td>
</tr>
<tr>
<td>MBS in Co-operative &amp; Social Entrepreneurship</td>
<td>Core Module</td>
</tr>
<tr>
<td>BSc In Food Business</td>
<td>Enterprise Module</td>
</tr>
</tbody>
</table>

(18) National University of Ireland, Dublin

NovaUCD is responsible for the implementation of UCD policies relating to intellectual property (IP) and for the provision of advice on the identification, protection and exploitation of this IP. NovaUCD works with UCD researchers in identifying the most appropriate business model for the commercialisation of the IP which may involve licensing to commercial partners or the creation of spin-off companies. NovaUCD provides entrepreneurs and knowledge-based start-up companies with a comprehensive business support programme comprising advice, seminars, consultancy, workshops, and individual training. NovaUCD also provides incubation and other related facilities for entrepreneurs, campus companies, and knowledge-based ventures. In addition NovaUCD
is the main point of contact for companies seeking partners for collaborative research and advice on licensing and other commercial opportunities and is responsible for the development of co-operation with industry and business. UCD also offers a Graduate Diploma in Entrepreneurial Studies. The nine month course is targeted at non-business graduates who plan to become entrepreneurs. Additionally, UCD provides a range of entrepreneurship modules across undergraduate and postgraduate levels such as: Entrepreneurial Management, Financing the New Venture, Planning the New Venture, and Opportunity Recognition.

Graduate Diploma in Entrepreneurial Studies
Entrepreneurship (Masters)
Building and Managing the Entrepreneurial Venture (Masters)
Understanding Entrepreneurs and Evaluating the Nature of Valuable Opportunities (Undergrad)
MSc in Biotechnology
MSc in Biomedical Science
MA in Community Development
Higher Diploma in Microbiology
MSc in Analytical Biochemistry/Chemistry
Higher Diploma in Analytical Biochemistry/Chemistry

Entrepreneurship Course
Entrepreneurial Management
Planning the New Venture
Financing the New Venture
Introduction to Business Module
Introduction to Business Module
Introduction to Business Module
Introduction to Business Module
Introduction to Business Module

(19) National University of Ireland, Galway

The J.E. Cairnes Graduate School of Business & Public Policy provides the following postgraduate and undergraduate courses, which include entrepreneurial or enterprise based modules: Executive Master of Business Administration, Master of Business Studies: Corporate Strategy & People Management, Higher Diploma in Management, and Bachelor of Commerce Degree. In 1990 the faculty launched a pioneering programme entitled an Introduction to Business Programme which is taught to the following student cohorts in the science and arts faculties: 3rd BSc in Biotechnology, MSc in Biotechnology, MSc in Biomedical Science, MA in Community Development, Higher Diploma in Microbiology, MSc in Analytical Biochemistry/Chemistry, and Higher Diploma in Analytical Biochemistry/Chemistry. Over the 12 weeks of the programme, groups are required to develop and present a business plan around a chosen business idea.
This programme has made a significant contribution to development of the business acumen of scientists. Since the foundation of one of Ireland’s first Technology Transfer offices at NUI Galway, faculty members have been involved in mentoring and contributing to funded initiatives to assist entrepreneurs. In recent years faculty members have also contributed to the Technology Transfer Initiative and Enterprise Development Programme sponsored by Enterprise Ireland.

<table>
<thead>
<tr>
<th>Degree Program</th>
<th>Entrepreneurship Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Master of Business Administration</td>
<td></td>
</tr>
<tr>
<td>Master of Business Studies: Corporate Strategy &amp; People Management</td>
<td></td>
</tr>
<tr>
<td>Higher Diploma in Management</td>
<td>Entrepreneurship Course</td>
</tr>
<tr>
<td>Bachelor of Commerce Degree</td>
<td>Entrepreneurship Course</td>
</tr>
<tr>
<td>BSc in BioTechnology</td>
<td>Introduction to Business Programme</td>
</tr>
<tr>
<td>MSc in BioTechnology</td>
<td>Introduction to Business Programme</td>
</tr>
<tr>
<td>MSc in Biomedical Sciences</td>
<td>Introduction to Business Programme</td>
</tr>
<tr>
<td>MA in Community Development</td>
<td>Introduction to Business Programme</td>
</tr>
<tr>
<td>Higher Diploma in Microbiology</td>
<td>Introduction to Business Programme</td>
</tr>
<tr>
<td>MSc in Analytical Biochemistry/Chemistry</td>
<td>Introduction to Business Programme</td>
</tr>
<tr>
<td>Higher Diploma in Analytical Biochemistry/Chemistry</td>
<td>Introduction to Business Programme</td>
</tr>
</tbody>
</table>

(20) National University of Ireland Maynooth

NUI Maynooth offers degree courses in Finance, Finance and Accounting, and Finance and Venture Management. The latter is a four year program which combines finance and venture management as core subjects along with a third core subject selected from IT, Engineering, or Bioscience. Entrepreneurship development and skills are a key part of the curriculum. In addition, NUIM launched a business and management undergraduate degree in 2007. NUI Maynooth also has a commercialisation programme in place, designed to promote the licensing of new technologies as well as the incubation of start-up enterprises. Part of this programme is the development of a culture of enterprise development, support and business development. Potential entrepreneurs also have access to mentors and advice programmes. The Innovation Value Institute (IVI) researches and develops unifying frameworks and road-maps for IT and business executives which enable them to create more value from IT and better deliver IT enabled innovation, whilst
validating that these frameworks and tools have a broad applicability across differing industries and contexts.

- BEng in Computer Engineering
  Entrepreneurship and Enterprise Development module
- BEng in Electronic Engineering
  Entrepreneurship and Enterprise Development module
- BEng in Communications Engineering
  Entrepreneurship and Enterprise Development module
- Diploma in Arts [Rural Development]
  2 enterprise modules
- BSc Finance & Venture Management
  Entrepreneurship and Enterprise Development module
- Bachelor of Business Studies
  Enterprise module
- Bachelor of Business Studies in Accounting & Computing
  Business Management module

(21) Queens University Belfast

Queen's University, Belfast is committed to ensuring that its students graduate not only having gained a detailed knowledge of their subject areas, but also having developed the range of valuable transferable skills and experiences necessary for high quality, challenging and successful careers. The University provides students with many opportunities to develop academically and personally and to enhance their skills, thereby producing sought-after and well-qualified graduates who will become the leaders, innovators and entrepreneurs required to drive the new knowledge economy. The work of NICENT has been central to the development of these valuable transferable skills, not only embedding entrepreneurship within the curriculum but also providing students with opportunities outside of the curriculum to apply their learning, enhance their skills and network with entrepreneurs, funders and others in the economic development community. Entrepreneurship education has been a major success in the Science, Engineering and Technology disciplines, and NICENT are continuing that success by providing similar courses in the Arts, Humanities and Social Sciences in the coming years.

- BSc in Management
  Entrepreneurship module
- BSc in Management with a Language
  Entrepreneurship module
- BSc Management Information Systems
  Entrepreneurship module
- BA Management & Business (P/T)
  Business Enterprise
- Meng in Mechanical Engineering
  Innovation and Entrepreneurship module
- MEng in Electronic Engineering
  Business and Innovation module
The business department at Tipperary Institute offers business development courses at undergraduate level to prepare graduates with the knowledge and skills required for management careers in the rapidly changing global economy. These business courses foster a spirit of entrepreneurship and innovation, and utilise the latest information and communication technology to ensure their relevance to the emerging needs of business. Modules in entrepreneurship are provided as part of the following programmes: Bachelor of Business (Ord & Hons) contains "Entrepreneurship" (5 Credits) and "Venture Management" (5 Credits) - 3rd Year modules on both courses above; Bachelor of Science
(Honours) in Information Technology (Creative Multimedia) contains "Entrepreneurship in the Digital Media Industry" (5 Credits) - 4th year module.

Tipperary Institute has a very clear concept in terms of embedding innovative practices and creative thinking as programme outcomes for all of its degree courses. They additionally run Personal Development modules and Effective Teamwork modules on all of courses to encourage entrepreneurial traits amongst their students. Assessments for business modules across the functions all include elements for encouraging creative thinking and/or innovation.

<table>
<thead>
<tr>
<th>Degree Programme</th>
<th>Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA Rural Development</td>
<td>Entrepreneurship module</td>
</tr>
<tr>
<td>National Diploma in Business Studies Small and Medium</td>
<td>2 modules on Entrepreneurship and Marketing for Small Business</td>
</tr>
<tr>
<td>Medium Enterprise full time and part time</td>
<td></td>
</tr>
<tr>
<td>BSc in Computing Software Development (full time and</td>
<td>Entrepreneurship module</td>
</tr>
<tr>
<td>part time</td>
<td></td>
</tr>
<tr>
<td>National Diploma in Computing Software Development</td>
<td>Business Studies module</td>
</tr>
<tr>
<td>part time and full time</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Business Studies in e-business full time</td>
<td>Entrepreneurship module</td>
</tr>
<tr>
<td>and part time</td>
<td></td>
</tr>
<tr>
<td>Foundation Certificate</td>
<td>optional Business Studies module</td>
</tr>
</tbody>
</table>

(23) Trinity College Dublin

The School of Business at Trinity College Dublin provides a number of postgraduate courses, which include entrepreneurship modules. The school has a specific interest in the research of Social Entrepreneurship. Trinity College Dublin also has an alliance with Babson College to deliver entrepreneurship modules at post-graduate and executive education levels. The Trinity Technology and Enterprise Campus has approximately 16,000 sq.m. of lettable space for small and medium-sized enterprises. The Centre was originally a general-purpose enterprise development centre for Dublin City, under the ownership of the Industrial Development Authority. Trinity College purchased the Centre in 1999 and it is now being converted to a knowledge-based company generation and support facility. The Trinity Technology and Enterprise Campus is an integral part of the research function of Trinity College. The TCD Entrepreneurship Development Programme is designed to assist entrepreneurs with starting and growing a high potential
business, and explores the main issues arising in the development of new ideas so that commercial ventures may ensue. Students at any stage of their postgraduate research are welcome on a first-come, first-served basis. Trinity College also provides a small number of entrepreneurship modules at undergraduate and postgraduate level.

The Trinity College Dublin Entrepreneurship programme for postgraduate students and post-docs is run as part of a SIF Programme on Commercialisation training for postgraduates in collaboration with NUIG and UCC. All disciplines contribute although most of the projects that arise are from the new knowledge-related technology fields of research. Additional special Entrepreneurship Programmes, in conjunction with the School of Business, are run with TCD MBA Programme working on research output from TCD. The Entrepreneurship Programme is a part of the Research and Innovation activities of the Dean of Research. The Programme is also run for specialized technology areas on request.

<table>
<thead>
<tr>
<th>Entrepreneurship Training Course</th>
<th>Post graduates and Post doctoral course</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA course</td>
<td>Lecture series</td>
</tr>
<tr>
<td>R&amp;IS/ SIF Programme</td>
<td>Entrepreneurship modules</td>
</tr>
<tr>
<td>R&amp;IS Specialist intensive</td>
<td>Intensive entrepreneurship courses for sectoral groups</td>
</tr>
<tr>
<td>BA Computer Science</td>
<td>Food and Agriculture groups, April 2008, in collaboration with UCD.</td>
</tr>
</tbody>
</table>

(24) University of Limerick

The first Entrepreneurship initiative was introduced at the University of Limerick in 1983. The programmes introduced since then have been designed to develop and transfer knowledge about the enterprise process, and to encourage students to examine entrepreneurship as a viable career option. Programmes operate at both undergraduate and graduate levels. They range from structured courses consisting of lectures, assignments, case studies and readings to innovative integrated programmes where students actively participate in the small business sector, develop business plans and are exposed to prominent entrepreneurs.
As part of the new Bachelor of Business Studies (BBS) degree which commenced in 2006/7, all BBS students have the opportunity of taking "Entrepreneurship and Innovation" as a core component of Year 2 of the four year programme. This programme is designed to encourage students’ entrepreneurial behaviour through the introduction of the principles of entrepreneurship, the process of creativity and innovation, and the impact of this process on the success of new enterprise creation. As part of business and non-business degree programmes at the university, students are offered an ‘Entrepreneurship’ minor option. This multiple integrated programme covers a period of four semesters during years 3 and 4 of study. The structure of the minor option includes the following modules: Enterprise Formation (semester 1 of Year 3); Enterprise Development (semester 1 of Year 4) and Business Consulting (semester 2 of Year 4).

The Enterprise Formation module consists of five parts. The module commences with providing an understanding of entrepreneurship, how to prepare for the entrepreneurial journey; how to recognise and create opportunities and concludes with the development of a business model. Part two examines entrepreneurship and the economy. This part examines the role of the entrepreneurial firm in economic development and the measurement of global entrepreneurship. Part three examines the industry, the market and start-up resources. This leads into part four which examines the business plan legal options (incorporating ethics and social responsibility), the development of an entrepreneurial organisation, the development of an entrepreneurial marketing plan, and funding a start-up venture. Part five concludes the module by examining the issues of business development and growth.

The course on ‘Enterprise Development’ is concerned with the practical application of the knowledge acquired in ‘Enterprise Formation’. It requires multidisciplinary teams of students (marketing, finance, personnel, engineering and science) to prepare a business plan for a manufacturing or internationally traded service area. Teams are required to conduct a thorough market analysis in order to evaluate the opportunity identified, to design and develop a prototype of their product, and to formulate a comprehensive
business strategy including funding requirements and financial projections. The module is run in tandem with the national Enterprise Ireland Student Enterprise Awards and other competitions introduced to encourage young entrepreneurs. The module includes the following topics: creativity, innovation, idea generation, evaluation of business opportunities, business formation process, feasibility study, the business plan, industry analysis, competitive strategy, secondary and primary research, identifying target markets, product/service development, manufacturing/operations, forecasting demand, intellectual property, market/sales strategy, legal forms of organisation, Board of Directors, sources of finance, debt versus equity, financial projections, cash flow, profit and loss, balance sheets, visual and oral presentation of the business plan.

In their final semester, students progress to undertake formal business consulting assignments. The course involves teams of four to five students from different disciplines consulting with a small company in the region. Preparation of feasibility studies, strategic marketing plans, market research reports, industry analysis and the implementation of financial control systems represent typical assignments. The consulting process involves both functional skills and management skills as the students work independently of any syllabus for most of the semester. Students define their terms of reference with their client company and determine the quantity and format of the report. Each student group is allocated a project supervisor who is a member of the entrepreneurship faculty. Formal presentations to the client company and other interested parties take place at the end of the course. The module involves a project management task structure for learning under conditions of uncertainty and an enterprising teaching mode.

The entrepreneurship minor stream has proved highly popular, attracting business, engineering, science and arts students. In addition to the ‘hands-on’ minor option described above, taken on an ‘elective’ basis, all students on the full-time Bachelor of Business Studies (BBS) program must complete a core module ‘Entrepreneurship and Innovation’. The course incorporates an ‘Entrepreneurship Forum’ and special seminars on entrepreneurship topics, with invited expert speakers, to complement the lectures and tutorials.
The University of Limerick undertakes a taught postgraduate programme in Entrepreneurship at Masters level [Master of Business Studies in International Entrepreneurship Management]. It also supports research programmes at both Masters and Doctorate level. The Master of Business Studies in International Entrepreneurship Management was introduced in 2007 and replaces the previously existing Graduate Diploma/Master of Business in Entrepreneurship Management, which has been offered by the Kemmy Business School since 1994.

The Master of Business Studies in International Entrepreneurship Management has been specifically designed to meet the needs of recent graduates, graduates with work experience or owner/managers of small businesses who wish to understand how to manage and grow a small business internationally. Students explore their own entrepreneurial potential and learn in a practical manner, how to develop and grow a small business internationally. This one-year (full-time) or two-year (part-time) programme focuses on the theoretical and practical aspects of managing and growing a small business internationally. Participants explore their own entrepreneurial potential and learn in a practical manner how to develop and grow a small business internationally and will be in a position to develop an international business strategy for a small firm. The main focus of the programme is on an experienced-based education where the teaching methodology will include lectures, tutorials, case studies, assignments, projects, presentations and guest speakers including entrepreneurs, consultants and government agency specialists. Continuous assessment will be by assignments, project work and end-of-term examinations. An entrepreneurship course is offered on the Executive and Corporate MBA programmes. This module – Creativity, Innovation and Entrepreneurship – is now a mandatory module on the MBA programmes whereby in the past it was an elective module. Participants form teams of three or four persons and develop new business proposals. An Entrepreneurs’ Forum series is held at which leading national and international business owners share entrepreneurial experiences with students. Entrepreneurship is incorporated into the Graduate Diploma in Business Administration in the Market and Enterprise Planning module.
Bachelor of Business Studies | Enterprise and Innovation Module + optional Entrepreneurship minor stream
---|---
Bachelor of Business Studies with German | Enterprise and Innovation Module + optional Entrepreneurship minor stream
Bachelor of Business Studies with Japanese | Enterprise and Innovation Module
Bachelor of Business Studies with French | Enterprise and Innovation Module + optional Entrepreneurship minor stream
Bachelor of Arts - Irish Music and Dance | Enterprise and Innovation Module
Bachelor of Arts in Languages and Cultural Studies | Enterprise and Innovation Module
ERASMUS/Study Abroad Students | Enterprise and Innovation Module + optional Entrepreneurship minor stream
Bachelor of Science Equine Science | Entrepreneurship minor stream
Bachelor of Science Wood Science and Technology | Entrepreneurship minor stream
Bachelor of Science Applied Computing and Network Technologies | Entrepreneurship minor stream
Bachelor of Science in Electronic Systems | Entrepreneurship minor stream
Bachelor of Science in Project Management | Entrepreneurship minor stream
Bachelor of Arts in Public Administration | Entrepreneurship minor stream
Masters of Business Studies in Int Entrepreneurship Management | Opportunity Recognition
Executive & Corporate MBA | Module in Creativity, Innovation & Entrepreneurship

(25) Ulster University

The University of Ulster is home to the Northern Ireland Centre for Entrepreneurship (NICENT), a collaborative initiative undertaken in conjunction with QUB. NICENT’s agenda recognizes that entrepreneurship is not just about starting small businesses but is about the development of particular attitudes and competencies within individuals that encourages and supports them in wanting to pursue new ideas and to take action (despite risks and uncertainties) that make a difference and adds value to their own lives and of others. NICENT is committed to instilling a culture of entrepreneurship and innovation in student and staff cohorts. As part of this activity the Centre has developed modules in Entrepreneurship which are available on WebCT. The Modules promote a culture of entrepreneurship and innovation throughout the constituent university colleges. The Modules are also designed to introduce students to the possibility of entrepreneurial new venturing as a possible future career alternative. The key modules are:
• Entrepreneurship Awareness

This module seeks to build students awareness of entrepreneurship and provide them with a framework for assessing the viability of any innovative project or new venture or the development of an existing one. It aims to give the student insights to the problems and issues associated with establishing and managing the development of a new or existing venture. Finally it seeks to give students an opportunity to audit their personal entrepreneurial potential.

• Entrepreneurship Applied

This module seeks to build on and complement the module in "Entrepreneurship Awareness" and to expose students to the practical challenges involved in managing the entrepreneurial process. It aims to present students, where possible working in teams, with an opportunity to undertake a practical entrepreneurial project where their ability to evaluate and resolve problems and issues associated with such entrepreneurial activity will be tested. It aims to bring out entrepreneurial attitudes in the students, to build entrepreneurial competencies and to provide students with an opportunity to "try on" Entrepreneurship in practice.

The core learning outcomes of these modules are to engender greater knowledge and understanding of entrepreneurship, the entrepreneur, and the entrepreneurial process. The students will be able to identify steps required to research the potential for a new venture opportunity or innovation, the development of skills to examine the key resources available for new venture creation, and an understanding the key steps required for setting up a new venture. Additionally they will be able to recognise the central role of creativity and innovation in entrepreneurship and the core challenges of protecting new ideas, will be able to discuss the components of a new venture/project plan and aspects of the planning process, and have the ability to manipulate an e-learning environment.
<table>
<thead>
<tr>
<th>Degree</th>
<th>Specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSc Hons Consumr Sts DIS PH FT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BSc Hons LesEv Cul MgDIS PH FT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BA Hons Trav&amp;Tour Mgt PRUSH PT</td>
<td>Entrepreneurial studies</td>
</tr>
<tr>
<td>BSc Hons Les Ev Cult Mng PH PT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>AB in Engineering FT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>PG Dip Engineering FT</td>
<td>Entrepreneurship (Engineering)</td>
</tr>
<tr>
<td>BSc Hons Housing Mangt DIS FT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BEng Hons Civil Engineer+DIS FT</td>
<td>Diploma in Industrial Studies</td>
</tr>
<tr>
<td>BSc Civil Engineering + DIS FT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BSc Hons Const Eng&amp; Mgt+DIS FT</td>
<td>Construction Econ &amp; Bus Env.</td>
</tr>
<tr>
<td>BSc Construct Eng. DIS FT</td>
<td>Construction Econ &amp; Bus Env.</td>
</tr>
<tr>
<td>BSc Hons Urb Plan&amp;ProDevDIS FT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BEng Hons BldSer&amp;Ene EngDIS FT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BSc Hons Tport w Spec DIS FT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BSc Hons Quantity SurveyDIS FT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BSc Hons Building SurveyDIS FT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BSc Hons Prop Invest&amp;Dv DIS FT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BSc Hons Tech w Design DIS FT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BEng Hons Electr &amp; Software PT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>PG Dip Engineering PT</td>
<td>Entrepreneurship (Engineering)</td>
</tr>
<tr>
<td>BSc Construction Eng. PT</td>
<td>Construction Econ &amp; Bus Env.</td>
</tr>
<tr>
<td>BSc Hons Construc Engin&amp;Mgt PT</td>
<td>Construction Econ &amp; Bus Env.</td>
</tr>
<tr>
<td>PG Dip Infrastructure Engin PT</td>
<td>Entrepreneurship (Engineering)</td>
</tr>
<tr>
<td>BSc Hons Quantity Surveying PT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BSc Hons Building Surveying PT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>BSc Hons Property Inves&amp;Dev PT</td>
<td>Entrepreneurship Awareness</td>
</tr>
<tr>
<td>AB in Computing FT</td>
<td>Professional issues &amp; entrepre</td>
</tr>
<tr>
<td>AB in Computing Science FT</td>
<td>Professional issues &amp; entrepre</td>
</tr>
<tr>
<td>BSc Hons Comp w EntrepreDIS FT</td>
<td>Informatics Entrepreneurship</td>
</tr>
<tr>
<td>BEng Hons Electr&amp;Com SysDIS FT</td>
<td>Informatics Entrepreneurship</td>
</tr>
<tr>
<td>BSc Hons Comp w Market DIS FT</td>
<td>Informatics Entrepreneurship</td>
</tr>
<tr>
<td>BSc Hons Comp with PsyDIS FT</td>
<td>Informatics Entrepreneurship</td>
</tr>
<tr>
<td>BEng Hons Comp Games DevDIS FT</td>
<td>Informatics Entrepreneurship</td>
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<tr>
<td>BSc Hons MmedComp Games DIS FT</td>
<td>Informatics Entrepreneurship</td>
</tr>
<tr>
<td>BSc Hons Comp with Accoun FT</td>
<td>Informatics Entrepreneurship</td>
</tr>
<tr>
<td>BSc Hons Comp with French FT</td>
<td>Informatics Entrepreneurship</td>
</tr>
<tr>
<td>BSc Hons Comp with Business FT</td>
<td>Professional issues &amp; entrepre</td>
</tr>
<tr>
<td>BSc Hons Computing with Edu FT</td>
<td>Professional issues &amp; entrepre</td>
</tr>
<tr>
<td>BSc Hons Comp with HR Mng FT</td>
<td>Informatics Entrepreneurship</td>
</tr>
<tr>
<td>BSc Hons Comp w Amer Stds FT</td>
<td>Professional issues &amp; entrepre</td>
</tr>
<tr>
<td>BSc Hons Comp with Irish FT</td>
<td>Informatics Entrepreneurship</td>
</tr>
<tr>
<td>BSc Hons Comp with Span FT</td>
<td>Informatics Entrepreneurship</td>
</tr>
<tr>
<td>BSc Hons Comp with Journal FT</td>
<td>Professional issues &amp; entrepre</td>
</tr>
<tr>
<td>BEng Hons Software Engn+DIS FT</td>
<td>Professional issues &amp; entrepre</td>
</tr>
</tbody>
</table>
The Centre for Entrepreneurship, School of Business at Waterford Institute of Technology (WIT) is one of the conduits of WIT's mission to be a major contributor to the economic growth and development of Ireland's South East region. With extensive expertise amongst its academic and research staff, in a wide range of disciplines, WIT is well resourced to be a key force in supporting, promoting and developing entrepreneurship in the region. The Centre for Entrepreneurship brings this expertise together in an open, flexible and collegiate manner. It provides a framework and environment for entrepreneurs, researchers, academics and policy makers/implementers to engage in a mutually complementary manner to support economic growth and development in the region.

The School of Business in WIT provides the following postgraduate courses which include entrepreneurial modules: Master of Business in Internationalisation, Masters in Business Studies, Master of Business in the Management of Change, Executive MBA (Part-time), MBA in International Business. These courses are growing in interest by business and non-business graduates interested in exploring the new venture aspect of business. WIT also provides a range of entrepreneurship modules across many undergraduate courses.

- BA in Marketing
- National Certificate in Agriculture
- National Diploma in Horticulture
- National Diploma in Computing in Multimedia Applications Development
- MBA
- National Diploma in Business Studies in Recreation and Leisure
- Bachelor of Business Studies
- National Certificate in Business Studies
- Bachelor of Engineering in Electronic Engineering
- Bachelor of Technology in Computer Aided Manufacture
- Post Graduate Diploma in Farm Financial Management
- Bachelor of Technology in Electronic Engineering
- 2 modules on SME Marketing and Enterprise Development and Innovation
- Farm Business Management module
- Horticultural Business Management module
- Enterprise Studies module
- Innovation and Entrepreneurship module
- Entrepreneurial Studies module
- Enterprise Development module in each year of the course
- Entrepreneur Studies module
- Business Management module
- Entrepreneurship and Business Development Module
- Enterprise Studies module
Conclusion

Entrepreneurship suffers from the myth that it only deals with the creation of a new venture. However, entrepreneurship is much broader than that as it is not just about establishing a new business but instead it is about a way of thinking and behaving. Entrepreneurship is about recognising opportunities to make a difference and then making them happen. It is about a positive approach that contributes rather than a negative mindset of criticism. Entrepreneurship is applicable equally within the public sector, not-for-profit organisations such as charities, or within large organisations. Indeed it is the strong contention of the authors that the best example of entrepreneurial activity in Ireland over the past decade was the Special Olympics in Dublin in 2003. Local examples of entrepreneurship can include the development of facilities by sports and social clubs, charities, and the thousands of other initiatives that happen every year in Ireland but which are not recognised as ‘entrepreneurship’. In reality, all of these forms of entrepreneurial activity not only bring economic benefit to the country, but also generate social and artistic wealth.

For the young people to develop this new way of thinking, entrepreneurship education must be at the heart of the curriculum, no matter what their major area of study. Indeed, research by Henry et al (2003) highlighted that those students who take entrepreneurship programmes are more likely to:

- Create more businesses / jobs,
- Generate more business contacts,
• Have a broader range of skills and knowledge,
• Become more confident in their entrepreneurial abilities,
• Test the commercial viability of their idea,
• Improve their employability even if they do not start a business.

A society where people have been educated not just in terms of reading, writing, and arithmetic, but who have also been educated to be positive, to have confidence in oneself, to behave entrepreneurially, and to make a difference to society, is certainly a vision worth striving to achieve.
5. **Entrepreneurship Education Good Practice Framework**

While the range and depth of entrepreneurship courses on the island of Ireland has been greatly extended in recent years, the quality of what is being provided remains largely unknown. Evaluating the effectiveness of such programmes is highly problematic (as highlighted in Chapter 3) since enterprise and entrepreneurship requires more than understanding and analytical skills. It is widely recognised as a complex concept incorporating knowledge, expertise, values, motivations and behaviours. In 2006, the National Council for Graduate Entrepreneurship (NCGE) in the UK established an international research project which examined good practice in entrepreneurship education in different countries. To assist comparative analysis across participating countries, NCGE developed an analytical framework under which examples of good practice could be examined. This framework is shown in Table 2 below.

The framework is derived from an analysis and understanding of what is involved in setting up and growing a small business either within or outside of an organisation. While specifically concerned with entrepreneurship, many of the outcomes are equally relevant to generic enterprise skills. The framework has been designed to guide the development of higher education institutions’ enterprise activities and to help identify the outcomes that should be delivered. Many of the outcomes highlighted cannot be achieved via traditional higher education teaching methods which focus on knowledge and understanding with less concern for skills, behaviour and practical application of knowledge. Furthermore, teaching business concepts generally does not enable individuals to act in an enterprising way or set up one’s own business. In this context it is possible to distinguish between ‘education about’ and ‘education for’ entrepreneurship, with the former concerned with an understanding of entrepreneurs and their role within society, while the latter focuses on enabling students to actually do it. From an Irish perspective many of the courses currently being provided are ‘about’ entrepreneurship.

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4 The early part of this chapter is taken from ‘Good Practice in Enterprise Development in UK Higher Education’ by Ron Botham and Colin Mason. The report was published in March 2007 by the National Council for Graduate Entrepreneurship and its methodology has been utilised by all country parties participating in the study (including Ireland).
# Table 2 - Good Practice Framework

<table>
<thead>
<tr>
<th>Desired Outcomes Category</th>
<th>Analysis Frame</th>
<th>How is the institution contributing to this outcome?</th>
<th>How well is the desired outcome being achieved?</th>
<th>How is this assessed?</th>
<th>What are specific areas of good practice?</th>
<th>Additional comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Entrepreneurial behaviours, attitudes and skills developed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Empathy with the life-world of the entrepreneur</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Key entrepreneurial values inculcated</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>D. Motivated toward an entrepreneurial career</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Understanding the processes of venture creation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Generic entrepreneurship competencies developed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Key minimum business how-to’s acquired</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Effective management of stakeholder relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** NCGE (2007)

* A. **Entrepreneurial behaviours, attitudes and skills developed**
  - opportunity seeking
  - initiative taking
  - ownership of a development
  - commitment to see things through
  - personal locus of control (autonomy)
  - intuitive decision making with limited information
  - networking capacity
  - strategic thinking
  - negotiation capacity
  - selling/persuasive capacity
  - achievement orientation
- calculated risk taking

**B. Empathy with the life world of the entrepreneur**
- living with uncertainty and complexity
- having to do everything under pressure
- coping with loneliness
- holistic management
- no sell, no income
- no cash in hand – no income
- building know who and trust relationships
- learning by doing, copying, making things up, problem solving
- managing interdependencies
- working flexibly and long hours

**C. Key entrepreneurial values inculcated**
- strong sense of independence
- distrust of bureaucracy and its values
- self made/self belief
- strong sense of ownership
- belief that rewards come with own effort
- hard work brings its rewards
- believe can make things happen
- strong action orientation
- belief in informal arrangements
- strong belief in the value of know-who and trust
- strong belief in freedom to take action
- belief in the individual and community not the state

**D. Motivated toward an entrepreneurial career**
- understand the benefits
- can compare with employee career
- have some ‘heroes’ as friends / acquaintances
- have images of entrepreneurial people ‘just like them’

**E. Understanding of the processes of venture creation, entry and associated tasks**
- can go through the total process and know what challenges will arise at each stage
- know roughly how to handle them

**F. Generic entrepreneurship competencies developed**
- how to find an idea
- how to appraise an idea
- how to see problems as opportunities
- to identify the key people to be influenced in any development
- know how to build the know who
- know how to learn from relationships
- know how to assess business development needs
- know where to look for answers
- emotional self awareness, manage and read emotions and handle relationships
- to constantly see yourself and the business through the eyes of stakeholders and particularly customers

**G. Key minimum business how to’s acquired**
- see products and services as combinations of benefits
- develop a total service package
- price a product service
- identify and approach good customers
- appraise and learn from competition
- monitor the environment with limited resource
- choose appropriate sales strategy and manage it
- identify the appropriate scale of a business to make a living
- set standards for operations performance and manage them
- finance the business appropriately from different sources
- develop a business plan as a relationship communication instrument
- acquire appropriate systems to manage cash, payments, collections, profits, costs
- select a good accountant
- manage, with minimum fuss, statutory requirements

H. Effective management of stakeholder relationships
- understand the needs of all key stakeholders at the start–up and survival stage
- know how to educate stakeholders
- know how to learn from them
- know how best to build and manage the relationship.

As part of this study, all third-level educational institutions were contacted and invited to submit examples of good practice within their institution under the headings of the framework. Unfortunately some institutions did not respond to this invitation and therefore the examples highlighted below are indicative of good practice on the island of Ireland and should not be viewed as the only examples of good practice.

A. Entrepreneurial behaviours, attitudes and skills developed

- Dublin Institute of Technology encourages the development of entrepreneurial skills by including practical new venture creation options in its undergraduate business courses, and also at post graduate level through the M.Sc in Entrepreneurship. The Institute of Minority Entrepreneurship and The PDC are initiatives used by Dublin Institute of Technology to encourage students to become actively involved in real life scenarios in entrepreneurship.

- The University of Limerick provides students with an insight into the role of the entrepreneur and the entrepreneurial process. They develop useful skills and perspectives such as creative problem solving, diagnostic skills, communication, and project management. The outcomes of these objectives are extremely well received and there are a high number of students now establishing their own businesses, as well as entering into the small business sector.
Dundalk IT contributes to the development of entrepreneurial attitudes and skills by developing specific entrepreneurship modules across all levels and across all disciplines by including practical projects such as idea generation and business planning. This is being achieved quite successfully and evidence of entrepreneurial skills is seen in higher quality practical projects from students and there is also a more ‘can do’ attitude. Assessment is a combination of formal exams and practical projects and presentations, including the development of a business plan and research entrepreneurial businesses. The specific areas of good practice is the new first year Creativity and Innovation module offered across several business studies programmes – it introduces students to entrepreneurship modules from first year and helps build a positive attitudes.

In Griffith College Dublin, each business course has an enterprise module and each course is practical. The learning outcome is being achieved and assessed by idea generation, application, and presentation. Teachers utilise GCD itself (a private college) as an example of entrepreneurial success and invite many outside speakers to the college.

The University of Ulster established the Northern Ireland Centre for Entrepreneurship (NICENT) in 2000 in order to promote the agenda for entrepreneurship across SET faculties. The areas of specific good practice are a combination of innovative approaches including the extensive use of web-based learning. Not only has the level of awareness in entrepreneurship increased but also the degree of engagement among SET students.

Athlone IT has developed a specific entrepreneurial programme – the Higher Certificate in Business in Enterprise. This programme includes practical projects, such as idea generation and business planning as part of the training process. Additionally, in conjunction with Cork IT and IT Tralee, a one year full-time Masters of Business commenced in September 2006.

The Institute of Technology Blanchardstown, ITT Dublin, University College Dublin, and Dublin City University have partnered together to launch the M50 Enterprise Programme, which targets graduates wishing to take the step from employment to start their own business.
IT Carlow has an Innovation Centre on campus, which supports research and development for new ideas – ideas which may eventually become independent businesses.

Letterkenny IT has a Business Development Centre on campus, which aims to stimulate innovation and nurture growth of knowledge-based business in the region. It offers incubation facilities to start up companies and links the expertise and resources of students from Letterkenny IT with the development needs of the commercial sector of their community.

B. Empathy with the life world of the entrepreneur

The University of Limerick achieves this through research and also by having real world entrepreneurs visit the university. UL has found that both the students and the entrepreneur benefit greatly from this. An area of good practice is that students become aware of the impact that entrepreneurship can have on the work/life balance of an entrepreneur.

Dundalk IT also encourages guest speakers across all disciplines and levels. This is working quite well for them as the business project module on their Level 7 programmes indicates that students have a better understanding of the real-life world of an entrepreneur. The quality of projects submitted has also improved, as have student attitudes. The area of best practice Dundalk IT has achieved has been the entrepreneurship module and business project module in Year 3 of the Level 7 Business Studies programmes.

NICENT in the past 5 years has had over 7000 students undertake programmes in entrepreneurship within the SET faculties. NICENT is a member of the UK SEC network and this also encourages entrepreneurial activity.

Athlone IT’s initiatives are in conjunction with Lionra. Students on the Masters programme interact with entrepreneurs in the Midland Innovation and Research Centre located on AIT Campus.

The Institutes of Technology Blanchardstown AND ITT Dublin, along with UCD and DCU under their M50 Programme encourage graduates to move from
employed jobs and provide the support needed for these graduates to start new venture creations.

- Dublin Institute of Technology is continuously encouraging graduates to develop a hands-on knowledge of entrepreneurship and this is done through the PDC and Bolton Trust initiatives.

C. **Key entrepreneurial values inculcated**

- The key entrepreneurial values inculcated by UL are creative problem solving, diagnostic and analytical skills, IT skills, business planning skills, feasibility study skills, communication, and project management. This is being achieved to a very high standard, and is being assessed through business simulation, business planning, and case studies. The specific areas of good practice are the provision of core competencies and skills of entrepreneurship are being developed.

- Dundalk IT fosters this by developing specific entrepreneurship modules across all levels and across all disciplines. This is working quite well and is evident in many cultural studies entrepreneurship projects. The area of best practice here for Dundalk IT is the business ethics module of Bachelor of Business Studies programme.

- NICENT develops specific entrepreneurial areas including new venturing, enterprise development, and social entrepreneurship. Graduates however need to be alerted to this new environment and need to be prepared for it.

- Values are inculcated by Athlone IT by developing specific entrepreneurship courses across all levels of the business discipline.

- IT Sligo believes it is developing student values to a higher standard by introducing a core entrepreneurship programme.

- Dublin Institute of Technology fosters such values through specific modules in new venture creation and entrepreneurship, and specifically have targeted this value through its successful development of a post-graduate course aimed specifically at the entrepreneurial sector.
D. Motivated toward an entrepreneurial career

- Students are being motivated towards an entrepreneurial career in UL by having guest speakers, case studies, and DVD’s in the classroom environment. A large proportion of their students have established their own business. Graduates are contacted after 5 years to review their career path progression.

- In Dundalk IT this is achieved by developing specific entrepreneurship modules across all levels and across all disciplines by promoting the EI Student Enterprise Awards via their Centre for Entrepreneurship Research (CER), in conjunction with their entrepreneurship lecturers and incubation centre, and by hosting the Enterprise Awareness Days/Sessions. The area of best practice here is the incubation centre links to their undergraduate programmes and entrepreneurship training courses (i.e. NEEP, Coca Cola Programmes).

- NICENT has greatly expanded the level of engagement of students in the local £25k enterprise competition. At the end of 2004 Northern Ireland was reported to be at the bottom of the UK entrepreneurship league table and NICENT has been responding positively to this challenge.

- Students at IT Carlow and IT Sligo are motivated towards an entrepreneurial career by programmes developed in conjunction with the Línra and BMW colleges, and the Midlands Innovation and Research Centre.

- The development of the Higher Certificate in Business in Enterprise Development at Sligo is in direct reaction to interest and demand from students wishing to develop specifically venture creation interests and ideas. As this is a BMW colleges, Línra, and Fás initiative, it fosters student interest and illustrates a desire to encourage entrepreneurship in Ireland.

- The M50 programme run by ITT Dublin, IT Blanchardstown, DCU and UCD, encourages graduates to take the risk of setting up their own business, with the knowledge that there is a strong support system behind them.

- Dublin Institute of Technology’s initiatives are continuously aimed at encouraging an entrepreneurial career path. The hands on approach and
programmes, initiatives and competitions offered challenge students to be successful in this sector.

E. Understanding of the processes of venture creation, entry and associated tasks

- The process of venture creation is understood by UL by having 2 modules specifically designed pertaining to this subject area. Having a concentrated subject area along with participating in a business plan competition is helping to achieve desired outcomes. External people evaluate the business plans. The specific areas of good practice are teamwork, communication, and presentation skills.
- In Dundalk IT this is developed by developing specific entrepreneurship modules across all levels and all disciplines. There is also a competition for the WESTBIC Award. The area of best practice is the Business Project, EI Awards, promotions via the CER and WESTBIC award. Entrepreneurship modules are also provided in Food Science, Hospitality, and Cultural Studies programmes.
- In Athlone IT this is developed by developing specific entrepreneurship modules in the Higher Certificate in Business in Enterprise Development and in the Masters in Business.
- In GCD, the process of venture creation is done through lectures. Many business students come from business families and some role playing is used to encourage students to be creative.
- NICENT has developed an understanding for the process of venture creation through entrepreneurship programmes organised within the SET faculties.
- In IT Sligo this is developed by developing specific entrepreneurship modules in business programmes and through the development of a specific core entrepreneurial programme.
- Within DIT, the venture creation option in Year 2 of BSc in Marketing and Management encourages students to use their academic knowledge and entrepreneurial characteristics by organising and running a charity event.
module is graded totally on this assignment so students have extra encouragement to succeed and do well.

F. Generic entrepreneurship competencies developed

- Generic entrepreneurship competences are being developed in UL through having open dialogue within the classroom environment. The lecturer monitors the contribution of students and the specific area of best practice is the identification of student’s communication skills and the fostering of these skills.
- Dundalk IT achieves this through developing specific entrepreneurship modules across all levels and across all disciplines, and it is being achieved quite well. The Business Project, EI Awards, the WESTBIC Award and modules in non-business courses are all examples of best practice in these areas.
- The practical application of an idea into a business plan that can be presented to a financial institution is what GCD considers that it does best.
- The introduction of the Masters in Business with specific specialism in entrepreneurship in Athlone IT illustrates the development of generic entrepreneurship competencies.
- The MSc Entrepreneurship at DIT fosters specific entrepreneurship and enterprise modules along with practical projects in which graduates apply their learning and business sense skills.

G. Key minimum business how to’s acquired

- UL contributes to this through the design of a course which has input from industry specialists and support agencies. UL has excellent relationships with industry and support agencies which enables open communication to occur. The specific area of best practice is relationship development with support agencies and industry.
- At UL, the process of programme development has involved a series of iterative steps whereby courses and initiatives have been introduced over time and growth
has taken place through the extension of courses, at both undergraduate and postgraduate levels. A strategic entrepreneurship plan has been developed to ensure continuation and expansion of this popular and important field of endeavour. A very close synergy exists between the University of Limerick, industry and Shannon Development. The programme involves close working relationships with Shannon Development and small enterprises in the Shannon region, with University faculty contributing to a number of entrepreneurship programmes and initiatives run by local development agencies.

- Dundalk IT achieves this through developing specific entrepreneurship modules across all levels and across all disciplines, and it is being achieved quite well. There are an increased number of entrants to the EI student Enterprise Awards and WESTBIC competition.

- The NICENT and the UU School of Marketing, Entrepreneurship and Strategy encourage practical involvement with businesses. Students are exposed to how theory actually works in practice due to the excellent industry links with senior business people throughout Northern Ireland and internationally.

- The Midlands Innovation centre plays a huge role in business and entrepreneurial development on the Athlone IT campus. Students have the opportunity to work with real world entrepreneurs.

- Association with the BMW colleges, Líonra and Fás contributes to the practical knowledge of entrepreneurship at IT Sligo and illustrates to students the support groups that are available should they choose venture creation as their career path.

**H. Effective management of stakeholder relationships**

- UL contributes to effective management of stakeholder relationships by having industry and support agency contacts. As above, the university has excellent relationships with industry and support agencies, and has the experience to effectively management and foster stakeholder relationships.

- In Dundalk IT this is achieved through sales, business ethics, and marketing modules, and also through new venture creation modules on the MBS. There is
strong evidence of student’s abilities in this regard in the business ethics module – students required to run a charity event and raise funds for a local charity. This is extremely well managed, promoted, and attended. The area of best practice is the business ethics module of the BBS and the new venture creation module of the MBS

- NICENT has developed excellent industry links throughout Northern Ireland and internationally
- Athlone IT has built up strong relationships with industry in the Midlands, illustrated by the continuous and intimate involvement the institution has with the Midlands Innovation Centre
- IT Sligo has developed relationships with the BMW colleges, Lionra and Fás in order to support its students in their new venture initiatives. These relationships can assist in advice, financing, etc.
- DIT has developed excellent industry links with its connections to Enterprise Ireland, and The PDC.

Each of the examples given above is indicative of the type of entrepreneurship education that is being undertaken across the island of Ireland. It reflects the enormous change that has taken place in this area of activity in recent years, but it also highlights the amount of work that remains ahead if third-level education is to play a central role towards engendering an entrepreneurial culture throughout the island.

Conclusion

While this study has highlighted what is being offered on the island of Ireland with some examples of best practice, it has not sought to address the principal issues faced when seeking to improve the quantity and quality of entrepreneurship courses. Anecdotal evidence during this study and research from the UK by Botham and Mason (2007) have indicated that funding is the most critical challenge to scaling-up the level of activity in this area. Many ‘host’ departments are not willing to pay the full-funding costs of enterprise teaching to ‘service providers’ and top-up funding has to be ‘donated’ by the
‘service provider’ department. Obviously this arrangement is not sustainable in the long-term, particularly if the ‘service provider’ department is not receiving any institutional ‘credits’ in terms of student numbers. Additionally, according to Botham and Mason (2007), good quality participative, experiential problem solving enterprise education is more expensive than traditional ‘talk and chalk’ style lectures, and such resource requirements are not adequately recognised in funding allocation mechanisms.

Another issue challenging the expansion of entrepreneurship education is the supply of suitable lecturing staff. The move towards a more experiential style of learning requires personnel with some experience of business. Many academic staff do not possess such experience and businesspeople looking to contribute to such courses do not have teacher training experience. Entrepreneurs delivering an entrepreneurship module require an additional skillset that is not needed when delivering a one-off guest lecture. Furthermore, many institutions are highly dependent upon a single staff member who is championing the cause of entrepreneurship education within that institution, and should that individual leave then there is a question mark over the very survival of entrepreneurship education within that institution.

Another challenge facing institutions is the teaching – research conflict. Many institutions now pinpoint research and publications amongst the highest priorities for their staff, and career reward systems are increasingly built around one’s publication record. The importance placed on research and publications effectively means that less time can be afforded by individuals to teaching, particularly to programmes that are intensive in terms of their commitment outside of the classroom (e.g. experiential entrepreneurship education). It is possibly unsurprising therefore that in the UK, Botham and Mason (2007) found that some of the best entrepreneurship education is found in the less research orientated higher education institutions. These challenges together ensure that even though an evangelical desire for the expansion of entrepreneurship education might exist, the realities of educational institutions means that any progress will be slow.
6. **Conclusions**

The provision of entrepreneurship education programmes is currently attracting much interest from researchers as the demand is consistently strong for courses such as venture creation, and there is an increasing desire by educational institutions for the development of an entrepreneurial spirit within their students. All of this has triggered a need for a definition and evaluation of best practice in third-level educational institutions (Fayolle and Degeorge, 2006). Whilst there is a growing consensus regarding how to develop entrepreneurial behaviours, there remains widespread concern as to how to define and monitor the outcomes of entrepreneurial education. Evidence suggests that students favour a practical approach to business ideas, writing business plans, and participating in potential enterprise scenarios. The end-result of entrepreneurship teachings should be a dynamic mix of process and action (Hegarty, 2006).

As a result of completing some form of entrepreneurship education, students can progressively see themselves as becoming entrepreneurial. The goal of many policy makers is that this will translate into real ventures being created, but just as importantly, it will positively contribute to an attitudinal change towards entrepreneurship within the Irish culture. A consistent monitoring of entrepreneurship education (even for cohorts who have graduated) and the sharing of best practices is essential to an emergent entrepreneurial future, particularly amongst third-level institutions. An OECD report (2004) on education policy made the point that the importance and size of non-university third-level institutions has grown dramatically in the past 30 years and that they have become clear alternatives to universities for students because they offer flexibility, high levels of equity and access, overtly vocational goals, and a different approach to research and public service. The report suggested that the development of this sector has come from two sources: one is the need to expand tertiary education, in response to pressure from student aspirations and from the perception that in a knowledge based economy more workers will need high-level skills; a second reason has been the need to create a more diverse supply of tertiary education. Universities are often criticised for being too rigid or too academic in the sense of being detached from the real world, and that they are
insufficiently interested in economic development and occupational preparedness. Ireland’s Institutes of Technology offer tertiary education that is oriented primarily towards occupational purposes, including starting one’s own business. Until recently, some universities on the island of Ireland have been accused of having poor teaching methods, dominated by lectures in large classes, little interaction among students and professors, dry academic content, and few applications. However, university educational institutions are now being seen to create new cultures around teaching to facilitate more student centred approaches, more applied teaching, more inter-disciplinary teaching, greater use of new technology, and a greater respect for vocational subjects. These developments are critical for the development of entrepreneurship education.

While entrepreneurship education is still very much in its infancy on the island of Ireland, the provision is increasingly available in all third-level institutions in the form of business modules and structured academic programmes. Basic entrepreneurship modules and courses at undergraduate and postgraduate levels currently form the basis of much of the educational provision at universities and institutes of technology. Programmes are also being offered to aspiring entrepreneurs, and typically include structured training or workshops to help participants develop a business plan, mentoring, networking opportunities, financial assistance, and shared incubation space. Some such programmes offer links to venture capital funds for the more developed business projects, while others provide a prize fund as seed capital. Much has been achieved with these programmes but most institutions remain a long way from the cutting-edge of entrepreneurship education in global terms. The question being posed by many people remains – are these educational institutions just paying lip-service to entrepreneurship education or is there a real desire to make it part of their core identity?
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