
Education and training for entrepreneurs: a consideration of initiatives in Ireland and The Netherlands

Diarmuid De Faoite

Colette Henry

Kate Johnston and

Peter van der Sijde

The authors

Diarmuid De Faoite is an Associate Researcher, **Colette Henry** is Head of Department and **Kate Johnston** is a Senior Researcher, all at the Centre for Entrepreneurship Research at Dundalk Institute of Technology, Dundalk, Ireland.

Peter van der Sijde is Senior Project Manager, at the University of Twente, Enschede, The Netherlands.

Keywords

Entrepreneurs, Education, Training, Ireland, The Netherlands

Abstract

A growing body of academic research has examined the effectiveness of entrepreneurship training and support initiatives, with recent studies focusing on the provision of training and other skills development opportunities. An important theme that has emerged from this work is the failure of many programmes and initiatives to take on board the particular needs of the entrepreneurs in developing training and support systems. By extending research in this area, this article considers the importance of education and training to the economy and focuses on the particular value of entrepreneurship education and training. Some of the fundamental themes in the literature are reviewed, including the difficulties involved in categorising entrepreneurship education and training; the issue of whether or not entrepreneurship can be taught; the content of entrepreneurship programmes and the cultural and evaluative considerations. The article discusses and compares training and support provision for entrepreneurs in Ireland and The Netherlands.

Electronic access

The Emerald Research Register for this journal is available at

<http://www.emeraldinsight.com/researchregister>

The current issue and full text archive of this journal is available at

<http://www.emeraldinsight.com/0040-0912.htm>

Introduction and background

A growing body of academic research has examined the effectiveness of training and support initiatives as a means of providing entrepreneurs with the necessary business skills and acumen to plan, develop and grow their business ideas. Such research has examined this issue in the context of SMEs (Deakins and Freel, 1998), women entrepreneurs (Mallon and Cassell, 1999), MSEs[1] in the cultural industries (Raffo *et al.*, 2000) and young high growth companies (Lean, 1998). More recent studies have broadened the context, examining the provision of training and other skills development opportunities across different regions and countries, for example Scotland, (Lange *et al.*, 2000), Canada (Ibrahim and Soufani, 2002), Asia (Dana, 2001), Europe (Henry *et al.*, 2003a), and in peripheral regions in the UK (Lean, 1998).

An important theme that has emerged from this work is the failure of many programmes and initiatives to take on board the cultural, social and educational background of the “entrepreneurs”, in developing training and support systems. Raffo *et al.* (2000), based on research from the cultural sector in the UK, finds that there was a “lack of knowledge about how the sector, and hence how individuals within the sector worked, leading to potentially inappropriate support mechanisms and training approaches” (p. 360). Furthermore, as noted by Dana (2001) in his review of training and support provision in Asian economies, there are also problems in trans-locating “western vocational education and training” programmes to Eastern Europe or Asian economies. The latter argues that “a prerequisite to training people, is to understand them, their cultural values, historical experiences and mindset” (p. 412). A failure to do so means that, in many cases, the training and economic development programme fails to “assist those it was designed to help and educate” (p. 414).

By way of extending research into this area, this article considers the importance of education and training to the economy, and focuses on the particular value of entrepreneurship education and training. The authors discuss training and support provision for entrepreneurs in Ireland and The Netherlands, and compare and contrast the



Irish and Dutch support environments. The justification for this paper is twofold. First, because of the increasing importance of training and support as an effective way of stimulating entrepreneurial activity and in reducing small business failure, as recognised by academics[2], practitioners and governments[3] world-wide. Second, consistent with, for example, Mallon and Cassell (1999), and Lean (1998), among others, there is a need for further research into the “value-added” of training and support mechanisms for entrepreneurs. The increased availability of such programmes[4], coupled with the importance attached to training and support in promoting entrepreneurial activity[5], necessitates a need to continually monitor and evaluate such initiatives.

The importance of education and training to the economy

The importance of education and training within economic development is well documented in the literature. For example, education has been identified as a critical factor in preventing future high levels of long-term unemployment, and there is evidence of a strong correlation between educational level achieved and high income over a lifetime (Sweeney, 1998; OECD, 2001). Similarly, training in the workplace has been highlighted as an essential element in maintaining the absorptive capacity of innovative firms (Prince, 2002). Indeed, training is now seen as a key part of the human resource management process (Gunnigle *et al.*, 1995), where workers are viewed as a source of wealth creation, rather than a cost to the company (Walley, 1993).

Kennedy (1993) notes that skills and knowledge, as developed through training and education, are one of the few areas where a country can engineer a competitive advantage. As Clinch *et al.* (2002) point out, the education system is one of the few factors advantageous to the economy that is controllable by governments. Clinch *et al.* (2002) also extol the virtues of an educated workforce as being a magnet for foreign direct investment (FDI). This creates a virtuous circle, which in turn leads to an increase in productivity, making the country even more attractive for further FDI. This concept is important because education (including

entrepreneurial knowledge and skills) has been identified as having a direct influence on a country’s level of entrepreneurial activity (GEM, 1999).

Entrepreneurship education and training

A number of commentators have noted the importance of entrepreneurship education and training to economic development, particularly in improving the quantity and quality of future entrepreneurs (Hynes, 1996; Garavan and O’Cinnéide, 1994). This view is supported by Ulrich (1997), who suggests that “the importance of entrepreneurial education is derived from the importance of the entrepreneur throughout the economic system” (p. 1).

The subject of entrepreneurship education and training has received a great deal of attention in recent years. Research in the area is growing (Garavan and O’Cinnéide, 1994), evidenced, in part, by the international growth in the number and type of programme offerings, particularly at universities and other educational establishments (Gibb, 1993; Fiet, 1997, and Ulrich, 1997). According to Charney and Libecap (1999), this growth is attributed to the range of benefits to 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; and
- the opportunity for experimentation with pedagogy and curricula (due to the newness of the subject), thus enhancing other, non-entrepreneurship courses.

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, and developing market economies in Eastern Europe (Hynes, 1996). Furthermore, the fact that new business creation has clearly an important role to play in the economy of a

region in terms of providing employment, offers some justification for entrepreneurship training and support interventions (Lean, 1998). 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 in Central and Eastern European countries (Todorov, 1999).

Categorising entrepreneurship education and training

The rise of entrepreneurship education and training has also led to widespread confusion over what exactly is meant by the term “entrepreneurship” (De Clereq *et al.*, 1997; Bruyat and Julien, 2000). It has been suggested that entrepreneurship is not just confined to the creation of entrepreneurs, as the discipline itself includes: “the teaching of skills, knowledge and attitudes for people to go out and create their own futures and solve their problems” (Jamieson, 1984, p. 19).

Jamieson (1984) suggests that entrepreneurship, or enterprise education and training, can be categorised in three different ways: education “about” enterprise (i.e. awareness creation), education “for” enterprise (i.e. the preparation of aspiring entrepreneurs for business set-up), or education “in” enterprise (i.e. growth and development training for established entrepreneurs). A similar categorisation is adopted by Scott *et al.* (1998, as cited in Matlay and Mitra, 2002), who refer to such education and training as:

- “about” enterprise (awareness raising of entrepreneurship as a key agent of social and economic change);
- “through” enterprise (teaching styles which use entrepreneurial situations, such as projects as part of the education process); and
- “for” enterprise (training both potential and existing entrepreneurs).

Elsewhere in the literature, entrepreneurship education and training provision has been categorised in terms of:

- the implementation of an enterprise or straightforward awareness raising (Watts, 1984);
- distinctly different from management training (Saeed, 1996);

- differentiated from business and personal skills development (Gibb and Nelson, 1996; Gibb and Cotton, 1998); and
- specific to the particular stage of the business lifecycle (McMullan and Long, 1987; Gibb, 1993; Monroy, 1995; O’Gorman and Cunningham, 1997).

Can entrepreneurship be taught?

Despite the attention currently being paid to entrepreneurship, as noted above, Brazeal and Herbet (1999) claim that the study of the concept is still in its infancy and, in consequence, those working in the field continue to be engaged in conceptual and methodological debates (as cited in Henry *et al.*, 2003b). For example, one of the more critical and on-going debates concerns whether or not entrepreneurship can actually be taught. If one equates entrepreneurship with Schumpeterian literature, i.e. the causing of disequilibrium, then it can be argued that entrepreneurs are born rather than made. However, if one links entrepreneurship to Kirznerian literature, where the entrepreneur simply identifies opportunities for profit without actually creating them, then it could equally be argued that entrepreneurs are made and that entrepreneurship itself can be taught (Dana, 2001, p. 405).

Murphy and Young (1995), as cited in Cope and Watts, (2000), observe that entrepreneurial learning can be characterised as both unintentional and accidental, which would seem to cast doubt on the possibility for it to be taught. Thus, while the “born” vs “made” schools of thought still exist, most modern commentators accept the fact that there are some aspects of entrepreneurship that can probably be taught and others that simply cannot. It is for this reason that Jack and Anderson (1998) have suggested that teaching entrepreneurship is an enigma, since the actual entrepreneurial process involves both “art” and “science”. The “science” of entrepreneurship concerns business and management functional skills, and these would appear to be teachable via conventional methods. The “art”, however, relates to the creative and innovative aspects of entrepreneurship, and these do not appear to be teachable in the same way. Others commentators, such as Miller (1987), Shepherd and Douglas (1996) and Rae and Carswell (2001), have adopted a similar view, distinguishing between the teachable and the non-teachable elements of the discipline.

While many entrepreneurial characteristics, like self-confidence, persistence and high-energy levels, cannot easily be acquired in the classroom, entrepreneurship educators and trainers have a key role to play in the entrepreneurial process by providing an understanding of the rigorous analytical techniques required to set up a new business (Miller, 1987). However, it has been suggested that many entrepreneurship training initiatives do not actually address the real needs of entrepreneurs, with a significant gap between the perceptions of training providers and those of the participating entrepreneurs in terms of training needs (Jennings and Hawley, 1996; Lean, 1998). One reason for this may be that many providers have limited managerial or vocational experience of small firms and fail to understand the practical problems facing entrepreneurs (Henry *et al.*, 2003b). If the actual content of entrepreneurship training programmes is examined, it becomes clear that some programmes are more “task” than “behaviour” oriented, focusing on specific skills for small business management, i.e. finance and marketing, rather than creativity, innovation and problem solving abilities (Deakins, 1996).

Content of entrepreneurship programmes

It has been suggested that entrepreneurship support programmes vary greatly in duration, structure and content (Garavan and O’Cinneide, 1994). While the duration and mode of delivery of such programmes can range, the training content would seem to focus on the development of three main areas: technical skills, business management skills and personal entrepreneurial skills (Hisrich and Peters, 1998). Financial management, marketing and management appear to be the most popular topics in entrepreneurship programmes (Le Roux and Nieuwenhuizen, 1996), coupled with what has been described as an excessive focus on the development of a business plan (Gibb, 1997). Interestingly, despite the increase in programme provision, both from an educational and training perspective, there is still no generally accepted curriculum for aspiring entrepreneurs to follow (Curran and Stanworth, 1989; Mullen, 1997).

In addition to structured training, other elements provided in entrepreneurship

support programmes include mentoring, business counselling, incubation/office facilities, subsistence allowance, seed capital, a qualification, networking opportunities, and follow-up support. In particular, mentoring and networking have been identified as extremely valuable programme elements for aspiring and established entrepreneurs (Lean, 1998; Raffo *et al.*, 2000). Cope and Watts (2000), noting that entrepreneurs operate in company specific contexts and have highly individualised needs, suggest that entrepreneurs and mentors must be carefully matched. Sullivan (2000), in investigating the importance of learning to the survival and growth of SMEs, highlights the value of mentors in supporting and advising new start-up businesses. He suggests that a type of “just-in-time” targeted support, that could be either delivered or facilitated by a mentor, might be more cost-effective in the long term than highly structured learning programmes.

With specific reference to SME creation in the cultural industries, Raffo *et al.* (2000) suggest that entrepreneurs in this sector learn best by networking with others, and advocate a more naturalistic approach to teaching and learning for entrepreneurial development.

Cultural considerations

It has been noted that the prevailing culture within a country can impact upon the level of acceptance of entrepreneurship (Sae, 1996; Lasonen, 1999; Van Barneveld, 2002). This has an obvious influence on the amount of interest in entrepreneurial courses and the number of courses made available. While internationally, entrepreneurship programmes may have a common focus in terms of new business creation and the development of a business plan (Hisrich and Peters, 1998), there may be differences in emphasis depending on the particular needs of the participants, the country or the funding available (Aman, 1996). For example, Dana (2001) suggests that transitional economies have different fundamental problems than do countries with long histories of capitalism and entrepreneurship (p. 405): “A key prerequisite to training people is to understand them, their cultural values, historical experience and mindset” (p. 410). “One must not assume that entrepreneurs can be trained in the same way in Vietnam as in Singapore” (p.411). Thus, Dana recommends that alternate methodologies are

required for teaching entrepreneurship in transitional economies. This view is supported by Matlay (2001), who points out that little is known about the education and training needs of entrepreneurs and their workforce in countries, such as those of central and Eastern Europe, which are undergoing radical socio-economic and political transformation (p. 395). Similarly, the results of Lean's study (1998) suggest the need to avoid a dogmatic approach when it comes to designing support programmes for micro firms, and recommend that support packages should take account of the distinct needs of such firms so that the support gaps can be appropriately identified.

The need for evaluation

While the need to evaluate entrepreneurship education and training is well documented in the literature (Curran and Stanworth, 1989; Gibb, 1987; Block and Stumpf, 1992; Cox, 1996; Henry *et al.*, 2003b), effectiveness studies are still lacking (Hill and O'Cinnéide, 1998). In addition to offering a number of reasons why entrepreneurship education and training programmes ought to be evaluated, McMullan *et al.* (2001) suggest that, central to such evaluations are an assessment of the cost effectiveness of a particular programme as well as its opportunity costs. However, evaluating the effectiveness of entrepreneurship programmes can be an extremely difficult process due to the intrinsic procedural and methodological problems involved (Bennett, 1997; Storey, 2000; Curran and Storey, 2002). A lack of specific performance measures (Wyckham, 1989), and susceptibility to "regulatory capture" (Stigler, 1971), can present additional and more complex problems for evaluators.

Entrepreneurship education and training in Ireland and The Netherlands

Ireland

In the past, Ireland has been 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 really increased in Ireland, and the government finally realised the importance of promoting entrepreneurship to advance the economy.

During the 1990s, Ireland's economy witnessed unprecedented growth, with increased inward investment and exceptional employment opportunities contributing to the so-called "Celtic Tiger" phenomenon. The government's latest enterprise strategy document (Forfás, 2000) focuses on the need to create more high skilled/high knowledge-based jobs, and places a great deal of emphasis on the small firms sector, recommending that support is provided through the encouragement of high-tech start-ups; early stage investment, and developing a partnership approach between the development agencies, the financial institutions and SMEs.

The role that Irish universities and institutes of technology can play in economic development 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) only 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 begun to establish industrial liaison and incubation units several years ahead of the formal legislation.

While entrepreneurship education is still very much in its infancy in Ireland, provision is available at secondary and tertiary levels in the form of business modules and structured academic programmes. At secondary level, the young entrepreneurs' programme offers students an opportunity to experience the practical aspects of entrepreneurship through the supervised development of small-scale business ideas in teams. Theory-related entrepreneurship modules and courses at undergraduate and postgraduate level form

the basis of the educational provision at universities, colleges and institutes of technology. Practical entrepreneurship training programmes are available to aspiring or early start entrepreneurs through FAS (Ireland's state training organisation), the county enterprise boards and private training organisations, in addition to the institutes of technology and universities enterprise development programmes (sometimes called spin-off programmes) through their incubation or industrial liaison offices. Such programmes are offered to aspiring entrepreneurs both from within and outside of the university/institute, and typically include structured training or workshops to help participants develop a business plan; mentoring; networking opportunities; financial assistance and shared incubation space. Some programmes offer links to venture capital funds for the more developed business projects, while others provide a prize fund as seed capital. Funding for such programmes is typically sourced from European funds, Enterprise Ireland (the state agency for supporting indigenous industry), or private industry sponsorship.

The Netherlands

With regard to The Netherlands, Hoogenboom and De Jong (1993) note that interest and sympathy for entrepreneurship has fluctuated over time. Since the early 1980s, an improved environment for entrepreneurship has prevailed in the Dutch economy, and this can be attributed to three main developments:

- (1) a high unemployment rate;
- (2) a process of restructuring in industry, which led to a more enterprising spirit; and
- (3) a great number of technological advances, which had subsequent repercussions for product and market innovations (Hoogenboom and De Jong, 1993).

Waasdorp (2002) claims that Dutch economic policies were more focused on larger, rather than smaller, companies up until the 1990s, when policies which favoured SMEs by simplifying business procedures and lowering costs to establish firms were introduced. The resulting change in attitudes towards entrepreneurship was reflected in the significant increase in the number of enterprises during the period 1991 to 2001

(GEM, 2001). According to Prince (2002), the birth rate of new business start-ups in The Netherlands is now around 7 per cent per year (as a percentage of total firms), with 10 per cent of the Dutch labour force classified as entrepreneurs. This latter figure, according to Waasdorp (2002), compares extremely favourably with entrepreneurship in the USA.

More recently, government support in The Netherlands has widened to focus on the student sector as fertile ground to engender young people with entrepreneurial attitudes (Prince, 2002). In addition to supporting a number of business plan competitions, including Livewire and Mini-ondernemingen, the Dutch Ministry of Economic Affairs actively promotes entrepreneurship within the university sector. Currently, all universities in The Netherlands are charged with three key tasks: education, research and service to the community, with the latter task including knowledge and technology transfer. However, it was not until 1982 that "public service" was included as the third aim of universities, as specified in the Higher Education Act (WHW). According to Schutte (2000), public service is defined as:

Specific service for the benefit of the community and includes knowledge (and technology) transfer, as well as consulting in a close relationship with teaching and research (p. 103).

In some cases, industrial liaison offices were established at Dutch universities prior to this change in legislation. Thus, most universities in The Netherlands will offer some form of entrepreneurship educational course at undergraduate level, as well as entrepreneurship training initiatives in the form of spin-out programmes. One of The Netherlands's long-running spin-off programmes is the TOP[6] scheme, which has been in operation at the University of Twente since 1984 and provides support to around 20 aspiring entrepreneurs (mainly graduates of the university) every year. TOP offers participants office space; the use of university facilities and laboratories; practical guidance and an interest free loan.

Conclusions

Both Ireland and The Netherlands appear to have experienced similar economic policy changes over the years. In Ireland, policies promoting small, indigenous start-ups only

came to the fore in the 1980s, a decade ahead of the Celtic Tiger era. In The Netherlands, although the climate for entrepreneurship improved around the same time, it was not until the 1990s that policies favouring SMEs began to appear. Both countries have had to deal with similar economic problems in the past, in terms of the loss of major industries (O'Neill, 2000), which has in turn led to the renewed emphasis on supporting indigenous business creation at regional and national level.

Another notable point of similarity in the entrepreneurship support environment in the two countries is the pivotal role of the third level educational sector. There would appear to be an underlying recognition by both the Irish and the Dutch that university/college students offer a rich seed bed of entrepreneurial talent, which can be nurtured at undergraduate level through structured entrepreneurship educational programmes, and further developed through spin-off initiatives which include more practical support elements. The different types of support offered also suggest that both countries clearly distinguish between the awareness raising and the practical preparation stage of entrepreneurship, i.e. education "about" enterprise and education "for" enterprise (Jamieson, 1984).

While the entrepreneurship training initiatives offered at the universities/colleges generally include similar elements (i.e. office space, training in business plan development and some finance), there is little evidence that the financial supports, as provided by the Dutch TOP programme, are as common place in Irish support initiatives. Evidence provided in other literature suggests that, while the participants in the entrepreneurship educational initiatives in the two countries are, not surprisingly, undergraduate students, those participating in the training or spin-off programmes in Ireland tend to come from outside of the university/institute. In The Netherlands, however, the bulk of the participants for spin-off programmes are recruited from the universities' graduate population, although the programme is also offered to those from universities in other regions.

The literature suggests that changes in policy, as well as a constantly changing economic environment (Curran and Stanworth, 1989; Cox, 1996; McMullan et al.,

2001; Henry et al., 2003b), mean that entrepreneurship education and training initiatives need to be continuously monitored and evaluated to ensure that their objectives are met.

For this study, the authors found little evidence to suggest that evaluation occurs in any rigorous way, apart from basic quantitative analysis conducted by the providers to report on the number of individuals participating and the number of new companies set up (Henry and Titterton, 1996; Schutte, 2000). However, apart from the obvious time and resources involved in conducting evaluations, the authors accept that failure to evaluate may well be attributed to the intrinsic procedural and methodological problems involved (Curran and Storey, 2002). Further research of an empirical nature is, therefore, required to determine the actual impact of the Dutch and Irish support initiatives.

Notes

- 1 Defined as micro and small enterprises.
- 2 See, for example, Ibrahim and Soufani (2002).
- 3 See the Department for Trade and Industry (DTI), 1994, 1995, DfEE's UK Employment Action Plan 1999 in the UK.
- 4 According to Levie (1999) entrepreneurship is a rapidly growing sector of education in English HEIs, with approximately 40 per cent offering entrepreneurship courses.
- 5 See, for example, Sullivan (2000).
- 6 Temporary entrepreneurial positions (TOP) supports technology entrepreneurs.

References

- Aman, T. (1996), *Core Competencies in Russian Small Business: the Business Development Project*, proceedings of the Internationalising Entrepreneurship Education and Training Conference, June.
- Bennett, R. (1997), *SMEs and Public Policy: Present Dilemmas, Future Priorities and the Case of Business Links*, proceedings of the National Small Firms Policy and Research Conference, Belfast.
- Block, Z. and Stumpf, S.A. (1992), "Entrepreneurship education research: experience and challenge", in Sexton, D.L. and Kasarda, J.D. (Eds), *The State of the Art of Entrepreneurship*, PWS-Kent Publishing Company, Boston, MA, pp. 17-42.
- Brazeal, D. and Herbet, T.T. (1999), "The genesis of entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 23 No. 3, pp. 29-45.
- Bruyat, C. and Julien, P.A. (2000), "Defining the field of research in entrepreneurship", *Journal of Business Venturing*, Vol. 16 No. 2, pp. 165-80.

- Charney, A. and Libecap, G. (1999), *Impact of Entrepreneurship Education*, Insights, A Kaufmann Research Series, Los Altos, CA.
- Clinch, P., Convery, F. and Walsh, B. (2002), *After the Celtic Tiger, Challenges Ahead*, The O'Brien Press, Dublin.
- Cope and Watts, G. (2000), "Learning by doing. An exploration of experience, critical incidents and reflection in entrepreneurial learning", *International Journal of Entrepreneurial Behaviour and Research*, Vol. 6 No. 3, pp. 104-24.
- Cox, L.W. (1996), *The Goals and Impact of Educational Interventions in the Early Stages of Entrepreneur Career Development*, proceedings of the Internationalising Entrepreneurship Education and Training Conference, Arnhem.
- Curran, J. and Stanworth, J. (1989), "Education and training for enterprise: some problems of classification, evaluation, policy and research", *International Small Business Journal*, Vol. 7 No. 2, pp. 11-23.
- Curran, J. and Storey, D.J. (2002), "Small business policy in the United Kingdom: the inheritance of the small business service and implications for its future effectiveness", *Environment and Planning C: Government and Policy*, Vol. 20, pp. 163-77.
- Dana, L. (2001), "The education and training of entrepreneurs in Asia", *Education + Training*, Vol. 43 No. 8/9, pp. 405-16.
- Deakins, D. (1996), *Entrepreneurship and Small Firms*, 1st ed., McGraw-Hill, London.
- Deakins, D. and Freel, M. (1998), "Entrepreneurial learning and the growth process in SMEs", *The Learning Organisation: An International Journal*, Vol. 5 No. 3, pp. 144-55.
- De Clercq, D., Crijns, H. and Ooghe, H. (1997), "How a management school deals with the innovation in entrepreneurship education", paper presented at the Conference: Internationalizing Entrepreneurship, Education and Training, IntEnt97, CA, June 25-27.
- Fiet, J.O. (1997), "Education for entrepreneurial competency: A theory based activity approach", paper presented at the Conference: Internationalising Entrepreneurship Education and Training, IntEnt97, CA, June 25-27 IntEnt97.
- Forfás (2000), *Enterprise 2010 – a New Strategy for the Promotion of Enterprise in Ireland in the 21st Century*, Forfás, Dublin.
- Garavan, T.N. and O'Conneide, B. (1994), "Entrepreneurship education and training programmes: a review and evaluation", *Journal of European Industrial Training*, Part I, Vol. 18 No. 8/11, Part II, No. 11, pp. 3-11.
- Garavan, T.N., O'Conneide, B. and Fleming, P. (1997), *Entrepreneurship and Business Start-ups in Ireland*, Oak Tree Press, Dublin.
- GEM (2001), *Global Entrepreneurship Monitor Report*, Babson College, Kauffman Centre for Entrepreneurship, Boston, MA, and London School of Economics, London.
- Gibb (1987), "Enterprise culture – its meaning and implications for education and training", *Journal of Small Business and Entrepreneurship*, Vol. 4 No. 3, pp. 42-7.
- Gibb, A.A. (1993), "The enterprise culture and education", *Journal of Small Business*, April/June.
- Gibb, A.A. (1997), "Small firms' training and competitiveness. Building upon the small business as a learning organisation", *International Small Business Journal*, Vol. 15 No. 3, pp. 13-29.
- Gibb, A.A. and Cotton, J. (1998), "Entrepreneurship in schools and college education – the creating of the leading edge", background paper to the Conference on Work Futures and the Role of Entrepreneurship and Enterprise in Schools and Further Education.
- Gibb, Y.K. and Nelson, E.G. (1996), *Personal Competencies, Training and Assessment: a Challenge for Small Business Trainers*, Proceedings of the European Small Business Seminar, pp. 97-107.
- Gunnigle, P., McMahon, G. and Fitzgerald, G. (1995), *Industrial Relations in Ireland*, Gill and Macmillan Ltd, Dublin.
- Henry, C. and Titterton, A. (1996), *The Effects of Enterprise Support Programmes on the Success of Small Business Start-ups: the Experiences of the Technology Enterprise Programme*, proceedings of the Internationalising Entrepreneurship Education and Training Conference, Arnhem, June.
- Henry, C., Hill, F. and Leitch, C. (2003a), "Developing a coherent enterprise support policy: a new challenge for government", *Environment and Planning C: Government and Policy*, January.
- Henry, C., Hill, A. and Leitch, C. (2003b), *Entrepreneurship Education and Training*, Ashgate Publications, Brookfield, VT.
- Hill, S. and O'Cinnéide, B. (1998), *Entrepreneurship Education – Case Studies from the Celtic Tiger*, proceedings of the Enterprise and Learning Conference, University of Aberdeen, September.
- Hisrich, R.D. and Peters, M.P. (1998), *Entrepreneurship*, 4th ed., Irwin McGraw-Hill, Boston, MA.
- Hoogenboom, R. and De Jong, K. (1993), "Stimulation of entrepreneurship in professional higher education in The Netherlands", paper presented at the Internationalising Entrepreneurship Education and Training Conference, Vienna, 5-7 July.
- Hynes, B. (1996), "Entrepreneurship education and training – introducing entrepreneurship into non-business disciplines", *Journal of European Industrial Training*, Vol. 20 No. 8, pp. 10-17.
- Ibrahim, A.B. and Soufani, K. (2002), "Entrepreneurship education and training in Canada: a critical assessment", *Education + Training*, Vol. 44 No. 8, pp. 421-30.
- Jack, S.L. and Anderson, A.R. (1998), *Entrepreneurship Education within the Condition of Entrepreneurology*, Proceedings of the Conference on Enterprise and Learning, Aberdeen.
- Jamieson, I. (1984), "Schools and enterprise", in Watts, A.G. and Moran, P. (Eds), *Education for Enterprise*, CRAC, Ballinger, Cambridge, pp. 19-27.
- Jennings, P.L. and Hawley, D. (1996), *Designing Effective Training Programmes*, Proceedings of the 19th Institute of Small Business Affairs – Small Firms' National Conference, Birmingham, pp. 1301-26.
- Kennedy, D. (1993), "A Business Response", in Keane, C. (Ed.), *The Job Crisis*, Mercier Press, Dublin, in association with RTE.
- Lange, T., Ottends, M. and Taylor, A. (2000), "SMEs and barriers to skills development: a Scottish perspective", *Journal of European Industrial Training*, Vol. 20 No. 1, pp. 5-11.
- Lasonen, J. (1999), "Entrepreneurship and Self employment training in technical and vocational education", paper presented at the Second International Congress on Technical and Vocational Education, Seoul, 26-30 April, 1999.
- Lean, J. (1998), "Training and business development support for micro businesses in a peripheral area",

- Journal of European Industrial Training*, Vol. 22 No. 6, pp. 231-6.
- Le Roux, E. and Nieuwenhuizen, C. (1996), *Small Business Management Education and Training: An Innovative Approach to the Reconstruction and Development of the New South Africa*, Proceedings of the Internationalising Entrepreneurship Education and Training Conference, Arnhem.
- Levie, J. (1999), "Entrepreneurship education in higher education in England: a survey", University of Strathclyde, Glasgow.
- McMullan, W.E. and Long, W.A. (1987), "Entrepreneurship education in the nineties", *Journal of Business Venturing*, Vol. 2 No. 3, pp. 61-275.
- McMullan, E., Chrisman, J.J. and Vesper, K. (2001), "Some problems in using subjective measures of effectiveness to evaluate entrepreneurial assistance programs", *Entrepreneurship Theory and Practice*, Vol. 26 No. 1, pp. 37-54.
- Mallon, M. and Cassell, C. (1999), "What do women want?", *The Journal of Management Development*, Vol. 18 No. 2, pp. 137-54.
- Matlay, H. (2001), "Entrepreneurial and vocational education and training in Central and Eastern Europe", *Education + Training*, Vol. 43 No. 8/9, pp. 395-404.
- Matlay, H. and Mitra, J. (2002), "Entrepreneurship and learning: The double act in the triple helix", *The International Journal of Entrepreneurship and Innovation*, Vol. 3 No. 1.
- Miller, A. (1987), "New ventures: a fresh emphasis on entrepreneurial education", *Survey of Business*, Vol. 23 No. 1, pp. 4-9.
- Monroy, T.G. (1995), "Getting closer to a descriptive model of entrepreneurship education", in Monroy, T.G., Reichert, J. and Hoy, F. (Eds), *The Art and Science of Entrepreneurship Education*, 3, Ballinger, Cambridge, MA, pp. 205-17.
- Mullen, D. (1997), "Graduates in need of a helping hand: the experiences of Durham students highlight how training could benefit entrepreneurs", *Financial Times*, 20 May, p. 16.
- Murphy, H.J. and Young, J.D. (1995), "Management self development and small business exploring emergent issues", *Management Learning*, Vol. 26 No. 3, pp. 319-30.
- OECD (2001), *Education at a Glance*, available through the OECD Education database.
- O'Gorman, C. and Cunningham, J. (1997), *Enterprise in Action – an Introduction to Entrepreneurship in an Irish Context*, Oak Tree Press, Dublin.
- O'Neill, E. (2000), "Innovation and the university – sharing the riches of the past decades of experience", in van der Sijde, P., Bloem, H. and Ridder, A. (Eds), *Topics in Technology Transfer*, Twente University Press, Enschede, pp. 33-40.
- Prince, Y. (2002), "An introduction to entrepreneurship and its role in dynamism and innovation", *Entrepreneurship in The Netherlands: Innovative Entrepreneurship – New Policy Challenges*, Ministry of Economic Affairs, EIM, Business and Policy Research.
- Rae, D. and Carswell, M. (2001), "Towards a conceptual understanding of entrepreneurial learning", *Journal of Small Business and Enterprise Development*, Vol. 8 No. 2.
- Raffo, C., Lovatt, A., Banks, M. and O'Connor, J. (2000), "Teaching and learning entrepreneurship for micro and small businesses in the cultural industries sector", *Education + Training*, Vol. 42 No. 6, pp. 356-65.
- Saeed, J. (1996), *A Critical Evaluation of Australian Entrepreneurship Education and Training*, Proceedings of the Internationalising Entrepreneurship Education and Training Conference, Arnhem.
- Schutte, F. (2000), "The university-industry relations of an entrepreneurial university", in Schutte, F. and van der Sijde, P.C. (Eds), *The University and its Region*, Twente University Press, Enschede, pp. 97-118.
- Scott, M.G., Rosa, P. and Wlandt, H. (1998), *Educating Entrepreneurs for Wealth Creation*, Ashgate, Aldershot.
- Shepherd, D.A. and Douglas, E.J. (1996), *Is Management Education Developing or Killing the Entrepreneurial Spirit?*, Proceedings of the Internationalising Entrepreneurship Education and Training Conference, Arnhem, June.
- Stigler, G. (1971), "The economic theory of regulation", *Bell Journal of Economics*, Vol. 2, pp. 3-21.
- Storey, D.J. (2000), "Six steps to heaven: evaluating the impact of public policies to support small business in developed economies", in Sexton, D. and Landstrom, H. (Eds), *The Blackwell Handbook of Entrepreneurship*, pp. 29-46; 176-193.
- Sullivan, R. (2000), "Entrepreneurial learning and mentoring", *International Journal of Entrepreneurial Behaviour and Research*, Vol. 6 No. 3, pp. 160-75.
- Sweeney, P. (1998), *The Celtic Tiger: Ireland's Economic Miracle Explained*, Oak Tree Press, Dublin.
- Todorov, K. (1999), *IntEnt 1999 Report*, Report on the 9th IntEnt Conference Sofia, Bulgaria, 14-16 June.
- Ulrich, T. (1997), "An empirical approach to entrepreneurial-learning styles", paper presented at the Conference: Internationalising Entrepreneurship Education and Training, IntEnt97, CA, June 25-27.
- Van Barneveld, D. (2002), "The Twente model – universities as incubators in The Netherlands", available at: on www.Topspin.org
- Waasdorp, P. (2002), "Innovative entrepreneurship: a Dutch policy perspective", *Entrepreneurship in The Netherlands, New Policy Challenges*, University of Economic Affairs, The Netherlands, EIM, Business and Policy Research.
- Walley, P. (1993) "The future of work", in Keane, C. (Ed.), *The Job Crises*, Mercier Press, Dublin, in association with RTE.
- Watts, A.G. (1984), "Education for Enterprise: the concept and the context", in Watts, A.G. and Moran, P. (Eds), *Education for Enterprise*, CRAC, Ballinger, Cambridge, MA, pp. 3-6.
- Wyckham, R.G. (1989), "Ventures launched by participants of an entrepreneurial education program", *Journal of Small Business Management*, Vol. 27 No. 2, pp. 54-61.