

## SPECIAL ISSUE

# Entrepreneurship education and learning and the real world

## Introduction

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It is with great pleasure that we introduce this special issue of *Industry and Higher Education*. The papers that follow have been selected, reviewed and developed for publication following their original presentation in the 'Enterprise Education and Entrepreneurial Learning' tracks of the 36th Annual Conference of the Institute for Small Business and Entrepreneurship (ISBE) held in Cardiff in November 2013.

The papers are collected here to show some of the most interesting developments in academic and practitioner work in entrepreneurship education and learning. Collectively, they explore the utility of entrepreneurship education for the contexts of entrepreneurship and employment and the applicability of skills in 'real world' practice.

In the first paper, 'Freedom or prescription: the case for curriculum guidance in enterprise and entrepreneurship education', Rae *et al* investigate the effectiveness of policy-led frameworks for entrepreneurship education based on the expectation that it will result in value creation in the economy – especially pertinent in this time of economic recovery. The authors note that evidence of a direct link between entrepreneurship education and new venture creation is weak. They explore in some detail the UK's Quality

Assurance Agency (QAA) guidance and a document on entrepreneurship education from Ireland's Higher Education Training and Awards Council (HETAC), comparing the proposed approaches. Rae *et al* advocate caution among educators with respect to the influence of government agendas on the design of entrepreneurship education programmes.

In the next paper, Penaluna *et al* explore the case of assessing creativity through learning outcomes. The authors argue that the prescriptive nature of teaching and learning and the standardized testing of learning outcomes in traditional education may inhibit creativity. Some disciplines do not follow this trend, however, and pedagogies in subjects such as design seem to be highly effective in developing creativity that transforms into social and economic value. Since we know entrepreneurship requires and benefits from those with developed creative abilities, the authors suggest that there are lessons to be learned in entrepreneurship education from practices in the design-based disciplines. With regard to assessment, for example, they suggest that measures including cognitive process, design development and learning from doing and from failing might be more appropriate than discrete outcomes such as products or plans.

In 'Extracurricular business planning competitions: challenging the assumptions', Watson *et al* develop some of these principles further, examining the very common use of business plan competitions in universities. They note that these competitions are assumed to promote entrepreneurship and as such are legitimized as a beneficial form of entrepreneurship education, but they advise caution in the application of these assumptions. First, they highlight the danger that a focus on nascent entrepreneurial activity may exclude post-creation activity. Second, they point out that there is no evidence that those who enter these competitions want to be entrepreneurs. Watson *et al* argue, like Penaluna *et al*, that an over-reliance on planning assumes that nascent business activity is a rational, sequential process, whereas we know that for many established firms this was not the case. Thus, they contend, winning a business plan competition does not make successful business creation more likely and, indeed, not winning does not preclude business start-up success. In conclusion, Eatson *et al* recommend a reorientation in education from planning to implementation-based teaching and learning.

The next three papers are concerned with the skills developed by entrepreneurship education. McNeil *et al* argue that entrepreneurship and employment destinations for graduates are not mutually exclusive. Using observations from Manchester Metropolitan University Business School's Centre for Enterprise, they suggest that support for destinations that include entrepreneurship and/or employment should extend beyond graduation. This would provide more effective support as well as opportunities for ongoing knowledge exchange between universities and their alumni.

Also focusing on support and skills development, Refai and Thompson discuss specifically the entrepreneurship education case for pharmacy students. They report on a qualitative study of pharmacy employers and pharmacy educators in several UK universities. Among their findings is that evidence of enterprise skills development in pharmacy studies is limited, despite employers' expressions of dissatisfaction with graduates' functional business skills and tacit skills such as confidence, communication and initiative, often associated with business and enterprise education. The authors conclude that more needs to be done to prepare pharmacy students for the actual economic and sectoral environment they will enter when they graduate and that pharmacy educators might benefit from training to develop and integrate entrepreneurship education into curricula. The

implications extend beyond pharmacy of course, and the lessons related here may apply to many vocational industries and professions and the educational provision required for them.

From an entrepreneurial learning perspective, Harrison and Kirkham's 'The application of reflexivity in small business research and implications for the business practitioner' provides some interesting insights. The paper reports the experience of a business owner in undertaking a study of his business over time. This ethnographic and reflexive case enables observation and understanding of the processes in a developing company in a dynamic business and social environment. The study is a deliberate departure from the usual methodologies of entrepreneurship and business research, which frequently focus on 'cause and effect'. While the authors do not deny that such approaches have their place, they argue that understanding of business is constrained by a lack of engagement with the idiosyncratic and dynamic. Harrison and Kirkham maintain that reflexivity in particular has much to contribute in terms of experiential learning for practitioners. Further, they argue that there are lessons too for entrepreneurship education, insofar as individuality and process and engagement with different perspectives of business, and how to do business, are worthy of pedagogical consideration and development.

The final paper, by Higgins and Galloway, draws together the themes of the special issue. It outlines the various developments taking place throughout the entrepreneurship education community, including the examination of why we do what we do, how we do it, what works and what does not work, and how learning is applied in entrepreneurship and/or in employment. The use of different learning and teaching methods, particularly those that afford experiential learning for entrepreneurial implementation, is also explored. The authors conclude that the academic case is made for entrepreneurship education and propose greater engagement with theory to further inform and develop the field. Contextual and socially-focused theory, particularly social learning theory, is advocated as a useful framework within which the study of entrepreneurship education and learning might develop.

As guest editors, we are very grateful for the contributions of all the authors and the reviewers. We believe that this special issue constitutes a valuable contribution to the field, particularly in terms of its collective challenging of the assumptions we make about entrepreneurship education and how we investigate its effectiveness and utility in the real world.

# Freedom or prescription: the case for curriculum guidance in enterprise and entrepreneurship education

David Rae, Harry Matlay, Pauric McGowan and  
Andrew Penaluna

**Abstract:** *This article reviews the development of guidance and frameworks for enterprise and entrepreneurship education (EEE) in higher education institutions with reference to the international and European contexts as well as educational development in the UK and Ireland. The arguments for and the possible limitations and disadvantages of such frameworks are discussed. There has been extensive work on EEE and on the development of competence models, for example at secondary education level. This work is critically reviewed to identify its contribution to the development of educational guidance internationally and specifically in the UK and Ireland. The paper provides a critical narrative of the development of the Quality Assurance Agency (QAA) guidance in the UK and the Higher Education Training and Awards Council (HETAC) document in Ireland by experts involved in the design process and compares the approaches proposed. While at European level there has been greater emphasis on institutional frameworks focusing on the 'entrepreneurial university', there is scope for comparison with the above educational frameworks. Feedback and observations from enterprise educators at an international level are summarized to contextualize a debate on the value, contribution, possible disadvantages and future development of such frameworks. The international interest in and adoption of related approaches have been considerable and these are assessed. The paper has implications for educational policies on EEE at national and HE institutional levels, as well as for the practices of educators in designing, validating and delivering educational awards.*

**Keywords:** *education policy; enterprise; employability; entrepreneurship education; higher education curricula;*

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This article explores the role, contribution and issues arising from the development of guidelines for enterprise and entrepreneurship education (EEE) in higher education institutions. The period since 2008 in particular has seen a growing emphasis on the role of entrepreneurship and education in higher education, arising in part from the need to identify strategies for achieving economic recovery from a major recession and ways of creating employment for graduates. Whilst the period preceding the 2008 banking crisis had seen a steady growth in state investment in EEE, since then there has been a reduction of investment but a strengthened policy focus.

There has been extensive work on EEE and on the development of competence models, for example at secondary education level. This work is critically reviewed to identify its contribution to the development of educational guidance internationally as well as specifically in the UK and Ireland. In addition, a critical narrative is provided of the development of the Quality Assurance Agency (QAA) guidance in the UK and the Higher Education Training and Awards Council (HETAC) document in Ireland by experts involved in the design process and compares the approaches proposed. At a European level, there has been greater emphasis on institutional frameworks centring on the 'entrepreneurial university' and there is scope to compare this approach with these curricular frameworks. Using feedback and observations from enterprise educators at an international level, the value, contribution, possible disadvantages and future development of such frameworks are considered and both the substantial level of international interest and the adoption of related approaches are assessed.

The article is expected to have implications for educational policies on EEE at national and institutional levels, as well as for educators involved with the design, validation and delivery of educational awards. It poses questions on the value created by the application of such frameworks as well as in the future revision and development of these approaches.

### **The debate: freedom or prescription?**

Enterprise and entrepreneurship education has developed from a diverse set of starting points, as outlined in the review section. There has been extensive scope for creative approaches and innovation in learning design and delivery, in many cases with a strong emphasis on experiential and discovery-led learning. This eclecticism is in accordance with Gibb's 'entrepreneurial life world' (Gibb, 2011), but the increase in EEE provision and the prevailing policy context, especially subsequent to 2008, creates a tension between the autonomy and

independence given to educators in creating a wide range of approaches, with the drive for models which can be shown to achieve policy goals, with increasing emphasis on measurable impact.

The policy literature – at international, European and UK levels – regards EEE as an instrument for achieving economic goals of growth, value creation and employment. Increasingly, studies based on this approach seek causal links between EEE and an evidence base which can demonstrate direct relationships between educational inputs and outputs that lead to behavioural and economic outcomes. This tendency is exemplified by a recent study by Williamson *et al* (2013) commissioned by the UK Department for Business, Innovation and Skills (BIS) on the impact of enterprise education on further and higher education. This study featured a 'logic model' of student participation based on a 'theory of change gain from formal and non-formal education and training'.

When applied to the extant literature, this approach summarized the evidence and gaps in the research. Overall, only weak evidence was found of any direct relationships between EEE and entrepreneurial actions such as venture creation. The lack of evaluation studies which can directly demonstrate causal links between educational inputs, actions and economic impact was noted, although (perhaps surprisingly, given the overall findings) it also observes that 'it is evident that enterprise and entrepreneurship education leads to economic impacts' (GHK, 2013, p 77). However, both the literature on entrepreneurship education and evaluation and tracking methodologies are found to be deficient in comparison with a recent European study (EC, 2012).

Such commentary raises dilemmas for educators as well as for their universities. The clear direction of policy is that EEE is expected to contribute directly to post-recessionary economic regeneration and performance, as an integral part of a coordinated university-wide approach to entrepreneurship. This direction is embodied in the literature on the 'entrepreneurial university', and more recently with regard to institutional awards and policy studies such as European-level enquiries into the 'entrepreneurial potential of higher education' (EC, 2013). There is a lack of evidence that EEE does make the economic contributions and impact that policy makers require. Moreover, it risks compromising the independence and intellectual autonomy which is rightly held to be a fundamental principle of higher education. Increasingly this principle is seen as a luxury in an era of economic stringency: there is a danger that HE is expected to provide entrepreneurship training with specific outcomes of entrepreneurial action and venture creation.

The policy-led argument includes a critique of the eclectic approaches within EEE and the lack of a single, 'best practice' model or approach. In the 1990s, US-led approaches such as the Babson College model, or the MIT entrepreneurship programme, were seen as exemplars; these approaches have since been recognized for the transferable contributions they can make to indigenous learning models. A difficulty with the quest for an 'optimal' model of EEE is that education and learning, by their nature, are situated in social and cultural contexts and practices, so that what is held to 'work' in one situation is not necessarily transferable to a different, albeit similar situation (Blenker *et al*, 2011). Because there is a strong move by educators to 'embed' EEE in the social and cultural context, just as there is in the subject discipline, adopting a generic model is problematic.

There have been attempts in UK primary and secondary education to define competence frameworks for enterprise education, but these have tended to encounter problems such as confusion in defining what 'enterprise' is, what is being assessed, and the degree of flexibility of interpretation afforded to both educator and learners; it can be argued that prescription of the enterprise curriculum does not really work (Draycott and Rae, 2011). Moves to define a 'core curriculum' in enterprise have recurred, such as at post-16 and FE levels in certain vocational areas – for instance, by inclusion in BTEC awards.<sup>1</sup> However, evaluation and constructive alignment of learning outcomes (Biggs, 2003) have continued to prove elusive (McLarty *et al*, 2010).

In higher education, it is likely that the argument for prescribed or mandatory models of learning would find much opposition and little support. However, the Oslo Agenda (EC, 2006b) is one of a number of calls for 'improved practice-based pedagogical tools'. In the UK, there has been a succession of educator-based initiatives to enhance the quality and effectiveness of entrepreneurship education, including an acknowledgement of the need for greater consistency in the assessment of learning outcomes, one of which was a project supported by the Higher Education Academy (HEA). This paved the way for dialogue between educators and policy organizations on the potential value of a set of guidelines to provide advice and information on the development of entrepreneurship education, supported by information and experience from researchers and practitioners.

### The importance of EEE

In recent years, self-employment and entrepreneurship have grown in importance at both micro- and

macro-economic levels (Parker, 2004; EC, 2006a). The perceptions of individuals, communities and governments converge on the notion that entrepreneurship in general and entrepreneurs in particular make a positive contribution to the socio-economic, cultural and political infrastructure of a nation (Matlay, 2005a). As a result, entrepreneurship has climbed to the top of the political agenda in industrially developed and developing nations as well as in countries in transition (Naudé, 2008; Matlay, 2008). In this context, Van Praag and Versloot (2007) claim that entrepreneurship makes a significant contribution to income generation, job creation, research and development (R&D) as well as generating a wide spectrum of economic benefits that exceed the personal rewards that accrue to the entrepreneurs themselves. In addition, the vast proportion of emergent technological, product, service, knowledge and process innovation is linked to entrepreneurial activities which diverge from imitative and 'me too' approaches to small business creation and management (Bessant and Tidd, 2007; Czop and Leszczynska, 2011).

Wennekers *et al* (2010, p 4) highlight the importance of entrepreneurship to regional and global development and claim that 'entrepreneurship has become a key policy issue ... insight in the relationship between entrepreneurship and economic development across countries is important for policymakers because it provides them with a beacon for their endeavours'. Acs *et al* (2005) posit that the knowledge created by entrepreneurship and related innovation results in knowledge spill-overs that make a considerable contribution to new venture creation, which further reinforces economic growth and wealth creation at local, regional and national levels.

Entrepreneurship is often perceived as a process that drives change and addresses important social issues and humanitarian needs in modern society (Short *et al*, 2009). Social entrepreneurs are seen to confront a multitude of social problems and challenges through their focus and actions that seek to relieve poverty, exclusion and ethnic discrimination. Thus, the outcomes of social entrepreneurship can contribute directly and indirectly to the welfare of individuals and communities as well as societies (Zahra *et al*, 2009).

According to Matlay and Carey (2007), the growing importance of entrepreneurship has enabled enterprise and entrepreneurship education to be elevated on the agenda of policy makers and governments. These authors argue that this reflects a dominant paradigm which asserts that more and better entrepreneurship education will invariably result in a comparable growth in both the quality and the quantity of entrepreneurs entering an economy. Given the current high rates of

adult unemployment in general and youth unemployment in particular, entrepreneurship education is viewed as a cost-effective way to facilitate the transition of large school leaver and graduate cohorts from compulsory and higher education into self-employment or salaried work (Rae, 2007; Draycott and Rae, 2011).

Traditionally, business schools have offered various types of enterprise and entrepreneurship education to increase their students' employability rates and reduce persistent unemployment and underemployment amongst their graduates (Matlay, 2005b; Binks *et al.*, 2007; Refaat, 2009). In recent years, however, faculties other than business schools have begun to provide their undergraduate and postgraduate students with customized enterprise and entrepreneurship education, to facilitate the transition into self-employment and business ownership (Levenburg *et al.*, 2006; Carey and Matlay, 2011) or, for instance in the arts, recognition and redefinition of existing practice as being entrepreneurial (ADM-HEA, 2007). In most countries much of this growth in both undergraduate and postgraduate provision can be attributed to the expansion of enterprise and entrepreneurship education across institutes of higher and further education (Solomon, 2007; Henry and Treanor, 2010).

### **Enterprise and entrepreneurship education in the UK and in Europe**

The adoption of enterprise and entrepreneurship education by higher education institutions (HEIs) in the UK began in the late 1970s; but only during the early 1980s did business schools begin deliberately to develop the skills of graduate entrepreneurs and small business owner-managers (Matlay, 1984). EEE grew slowly during the 1980s, becoming a 'top-up' option for final year business school undergraduates and postgraduate students who were contemplating small business ownership or management (Jack and Anderson, 1999; Peters, 2001). Much of its early development was grounded in Thatcherism and the related ideology of enterprise culture (Gibb, 1993).<sup>2</sup> By the 1990s just over half of all HEIs in the UK were offering courses and modules in enterprise start-up, small business management and vocational education and training in small and medium-sized enterprises (SMEs). There was no more extensive, dedicated provision that embedded enterprise and entrepreneurship education in specialized undergraduate or postgraduate curricula in UK business schools (Matlay, 2005b). However, by 2006 most HEIs were offering courses, modules and educational experiences that focused on enterprise and/or entrepreneurship (Hannon, 2006). Currently, enterprise

and entrepreneurship education is present in all UK HEIs. As part of a wider socio-economic, educational and political strategy, it embeds concepts of enterprise and entrepreneurship, which permeate through the entire UK educational system (Rae *et al.*, 2012). Thus elements of enterprise and entrepreneurship education can be found in the curriculum of primary and secondary schools as well as in HEIs at undergraduate, postgraduate and doctoral levels (McLarty *et al.*, 2010; McKeown *et al.*, 2006)

Recently, there has been significant activity at international level to connect entrepreneurship education with economic development (World Economic Forum, 2009), to establish activity levels (Martínez *et al.*, 2010) and to assess its effects and impact (EC, 2012). The United Nations Conference for Trade and Development provides clear policy guidance on the role of education in the entrepreneurship ecostructure that they wish to enhance (UNCTAD, 2012). An international theme is emerging that indicates a requirement for new and innovative assessment strategies (Pittaway and Edwards, 2013), and the formation of the European Commission's Thematic Working Group Entrepreneurship Education indicates the level of support that is emerging for active change in strategies for educational evaluation. This provides an international context for the development of curricular guidance in the UK and Ireland

### **The development of the QAA guidance in the UK**

During 2010–2011 there was acceptance of the need in the UK for a comprehensive approach to recommending a framework for the development of enterprise and entrepreneurship education. This was signalled by the Concordat agreed at the Cardiff IIEC in September 2010 (EE UK, 2010) and in contributions to policy dialogues with the responsible government department, BIS, following the 2010 General Election. The new coalition government published a Higher Education White Paper as a precursor to its planned radical reform of the sector and, while this never resulted in legislation, it included two commitments on enterprise in HE: one to the development of enterprise student societies, and the other to the publication of guidelines on enterprise and entrepreneurship education (BIS, 2011). Both intentions represented the outcome of lobbying and policy dialogue over several months by relevant people and organizations. In this new period of public spending austerity, it was significant that the enterprise society initiative, favoured by the then Minister of State and led by NACUE (the National Association of College and University Entrepreneurs), was funded, whilst the

enterprise education initiative was not. The Wilson Review of HE–industry collaboration (2012) also strongly endorsed the enterprise society initiative.

The QAA is the organization responsible for HE academic standard-setting and quality in the UK. It was given the remit for development of the guidelines and convened a Graduate Enterprise and Entrepreneurship Group (GEEG). This was chaired by Professor Andy Penaluna, at the time the Chair of EE UK and regarded as an influential figure in championing the move towards a guidance document. The group also comprised representatives of key organizations including the Higher Education Academy (HEA), the Institute for Small Business and Entrepreneurship (ISBE), the National Centre for Entrepreneurship Education (NCEE), NACUE, Enterprise Educators UK (EE UK), the Association of Graduate Careers Advisory Services (AGCAS), and a number of experts in the HE enterprise and entrepreneurship field. The GEEG first met in July 2011 and subsequently, on a number of subsequent occasions, in the following 12 months. From a full membership of 13, it effectively became an active working group of around half this number which co-ordinated, drafted, exchanged and revised the content of the document.

After considerable debate and review of the remit, the group agreed that the guidance document would include:

- An introduction stating the purpose and features of the guidance;
- A policy context for and overview of the nature of EEE;
- Definitions of key terms and distinctions;
- Enterprise in the student learning experience;
- Graduate outcomes; and
- Delivery: teaching, learning and assessment.

The group reviewed extant frameworks and models for EEE, including in particular Gibb's (2005) learning outcomes in enterprise education and the guidance intended to build on these, adding coherence to existing approaches to enhance students' experiences of EEE and provide a unifying framework for standards. Noting the definitional confusion about 'What is enterprise and how is it different from entrepreneurship?' the guidance set out clear statements on these terms in relation to education:

'Enterprise is defined here as the application of creative ideas and innovations to practical situations. This is a generic concept that can be applied across all areas of education. It combines creativity, ideas development and problem solving with expression, communication and practical action.

Enterprise education aims to produce graduates with the mindset and skills to come up with original ideas in response to identified needs and shortfalls, and the ability to act on them. In short, having an idea and making it happen.

Entrepreneurship is defined as the application of enterprise skills specifically to creating and growing organisations in order to identify and build on opportunities.

Entrepreneurship education focuses on the development and application of an enterprising mindset and skills in the specific contexts of setting up a new venture, developing and growing an existing business, or designing an entrepreneurial organisation.' (QAA, 2012, p 8)

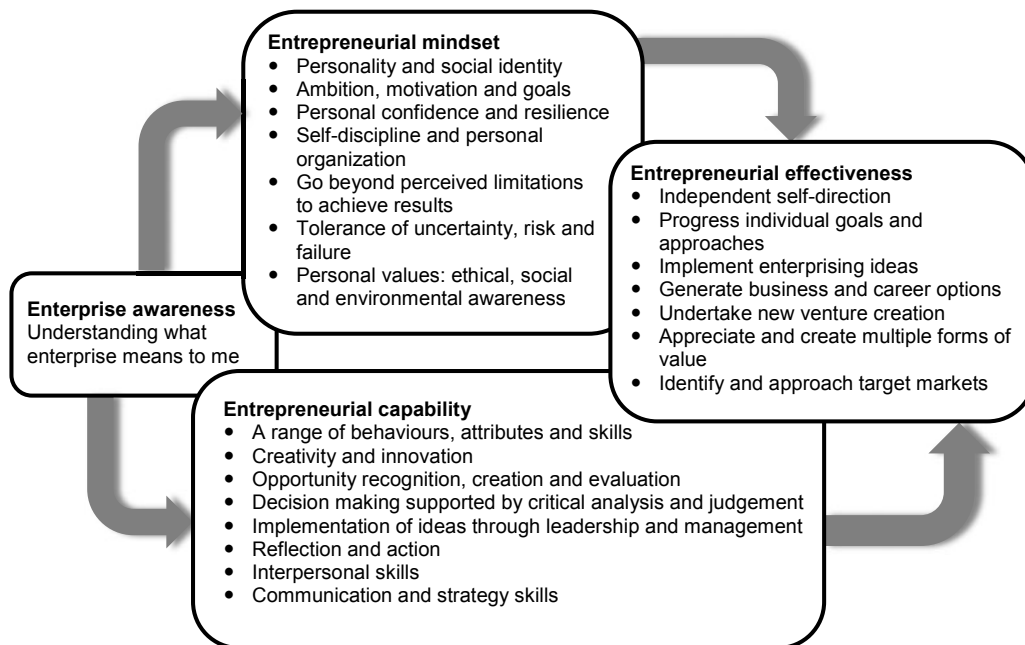
Explanation of the distinction between entrepreneurs and business owners, the inclusion of social enterprise within a broad understanding of enterprise, the relationship between enterprise and student employability, and the distinction between education 'about' and 'for' entrepreneurship were areas of ambiguity and debate which were addressed in this section. The guidance recognized that students often gain practical skills and experience through participation in extra-curricular schemes, such as membership of student societies or participation in 'start-up' schemes, instead of or alongside curricular learning. Although the emphasis of the document was on the curriculum, extra-curricular experiences and activities needed to be valued as part of the learning process of entrepreneurial behaviours.

The document set out a framework for development and assessment of enterprise and entrepreneurship behaviours, attributes and skills which, taken together, contribute towards the development of an entrepreneurial mindset and entrepreneurial effectiveness. Mindset and effectiveness, the ability to function effectively as an entrepreneur or in an entrepreneurial capacity, were seen as critical outcomes for learners from the educational process. It proposed that:

'Entrepreneurial effectiveness is developed through a combination of:

- Enterprise awareness;
- Entrepreneurial mindset; and
- Entrepreneurial capability.'

Entrepreneurial effectiveness was defined as the ability to behave in enterprising and entrepreneurial ways. This is achieved through the development of enhanced awareness, mindset and capabilities to enable learners to



**Figure 1.** Connecting the development of entrepreneurial effectiveness with graduate outcomes.

Source: QAA, 2012, p 15.

perform effectively in taking up opportunities and achieving desired results.’ (QAA, 2012, p 10)

The relationship was developed and is illustrated in Figure 1, which was included in the document. The concepts of awareness and entrepreneurial mindset, capability and effectiveness were seen as existing, proven and generally accepted ideas from the entrepreneurship literature that could be used as the basis for a generic framework. The guidance was explicit about its applicability across all subject and academic disciplinary areas, and the need to move entrepreneurship beyond its ‘comfort zone’ in business studies into the creative arts, sciences and indeed all areas.

In terms of learning style, ‘as students pass through the stages of enterprise awareness, entrepreneurial mindset and entrepreneurial capability to achieve entrepreneurial effectiveness, there is expected to be an associated shift in the focus of learning: from learning by transmission or passive learning to problem solving and active engagement’ (QAA, 2012, p 24).

Each of these concepts was defined, explained and detailed in the guidance together with suggestions on learning strategies. The section on entrepreneurial capabilities introduced a framework of graduate outcomes of enterprising behaviours, attributes and skills. This suggested assessable outcome statements of what students should be able to demonstrate or do, and learning opportunities which should be included in the

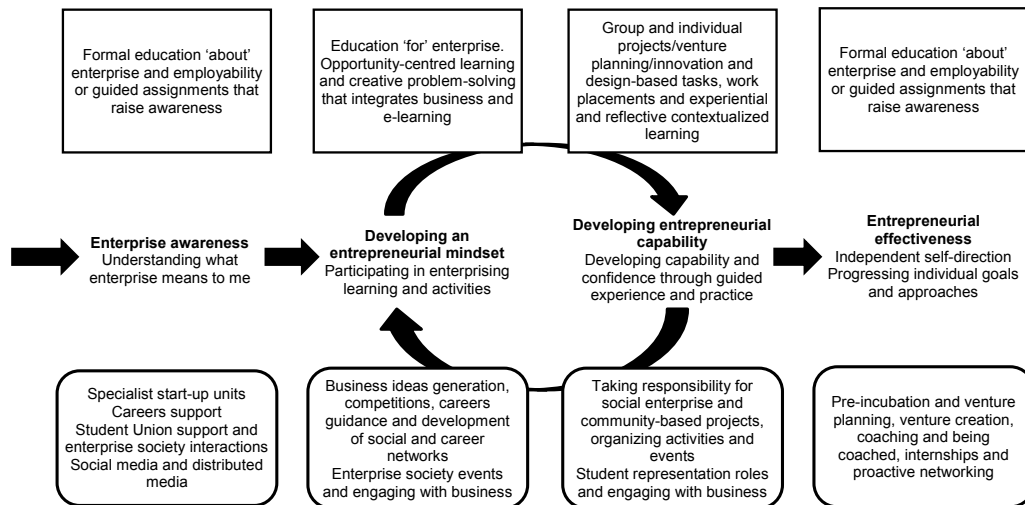
curriculum. These were expanded into eight thematic areas:

- Creativity and innovation;
- Opportunity recognition, creation and evaluation;
- Decision making supported by critical analysis and judgement;
- Implementation of ideas through leadership and management;
- Reflection and action;
- Interpersonal skills; and
- Communication and strategic skills.

Any such framework of capabilities is inevitably quite generalized and overlaps with other lists and taxonomies, in particular graduate outcomes and employability skills. Rather than this being problematic, it should enable course developers to identify where entrepreneurial skills and learning opportunities already exist or can be developed in programmes. This is consistent with viewing enterprise and entrepreneurship as generic and transferable life skills rather than specialized or domain-specific skills.

The guidelines adopted a student-centred rather than curriculum-centred approach, recognizing that the development of entrepreneurial mindset, capabilities and effectiveness is individual and occurs through unique combinations of experience, formal and informal learning. With such an approach a university can create a rich entrepreneurial learning environment with a range





**Figure 2.** Developing entrepreneurial effectiveness within and outside the curriculum.

Source: QAA, 2012, p 12.

of opportunities with which students will engage in many different modes, in iterative rather than linear ways, with diverse starting and future transition points. This was conceptualized in a model showing how the development of entrepreneurial effectiveness could occur in relation to both curricular and extra-curricular learning (see Figure 2).

Finally, the section on 'Delivery: teaching, learning and assessment' proposed general principles for individual learning within this 'ecostructure' and a progression of learning strategies and methods from controlled, 'safe' modes towards enterprising, personalized and active behaviours. That is, from:

- Case studies to emerging situations;
- Abstract problems to innovation;
- Passive learning to active learning;
- Objective analysis to subjective experience;
- Text-heavy communication to multimedia communication;
- Neutrality to personal perspectives;
- Formal activities to authentic activities;
- Fearing failure to learning from failure; and
- Dependency to self-reliance and resilience. (QAA, 2012, p 25)

The guidelines were published in draft for consultation in spring 2012 and circulated in the HE sector to all HEIs and related interest groups. Over 70 responses were received which were considered by the GEEG. A key theme emerged, with critical and positive responses being almost equally balanced, with respondents commenting on there being insufficient considerations of creativity and too little business-related guidance. The QAA itself played an important role in editing,

publishing and distributing the guidelines at both draft and final stages. Once the responses to the consultation had been incorporated, in summer 2012, the final version of the document was published in September of that year.

Following this, Enterprise Educators UK was asked by its membership to provide a series of workshops and best practice events to help educators to develop new provisions. Focusing on in-curriculum developments, these workshops took into account the QAA's thematic approaches with regard to writing and evaluating for assessment (EEUK, 2013).

## Development of the HETAC guidance in Ireland

The Higher Education and Training Awards Council (HETAC) case illustrates the Entrepreneurship Education Agenda in Ireland, and its development provides an interesting comparison with the case of the UK, highlighting similarities, shared issues and starting points, as well as differing responses.

The *Entrepreneurship in Ireland* report (FORFAS, 2002) found that the country's school system did not support sufficiently the idea of self-employment as a realistic career option and that the Irish education system was perceived by entrepreneurs to have played a limited role in supporting entrepreneurship up to that point. In 2004 the Enterprise Strategy Group report (ESG, 2004) and in 2007 the report *Towards Developing an Entrepreneurship Policy in Ireland*, together with reports from the Global Entrepreneurship Monitor (GEM), argued for the development of entrepreneurship education at all levels of the Irish

education system in order to ensure a sustainable source of locally grown entrepreneurs. The 2008 European Commission (EC) report *Entrepreneurship in Higher Education, Especially Within Non-Business Studies* noted that at higher education institutions across the EU entrepreneurship had not been sufficiently integrated into the curricula. In Ireland the *National Strategy for Higher Education*, also known as the 'Hunt Report' (2011), highlighted the central role to be played by HEIs in nurturing greater levels of creativity and entrepreneurship, and advocated the need for widespread reform of the HEI system at all levels. The arguments on the importance of and the need to promote the entrepreneurship and entrepreneurial learning agenda appear to have been universally recognized and accepted.

In response, HETAC launched an initiative in 2011 to develop draft guidelines and key criteria for enterprise and entrepreneurship education. The Council convened a panel of experts from across Ireland and drew on other expertise from the UK and the EU. Following a series of workshops and conferences the Council published its guidelines to support HEIs in Ireland. The guidelines acknowledged the work already ongoing in Irish HEIs to promote the agenda, but recognized that much more needed to be done before the full potential of the guidelines to contribute to the entrepreneurship agenda could be realized

Agreeing a definition for 'entrepreneurship' was, as in the UK, a key starting point for the panel of experts. The EC Report (EC, 2008b), given its focus on entrepreneurship education especially including non-business studies faculties, provided a useful starting point in that it referred to an individual's ability to turn ideas into action. It was seen to include creativity, innovation and risk taking as well as an ability to plan and manage projects to achieve objectives. Critically, this pushed the definition beyond the notion of entrepreneurship as being solely about starting a new business and embraced a wider agenda for the development and growth of established business and the launch of social or community enterprises. As suggested by Timmons and Spinelli (2009) 'entrepreneurship' was understood to be more a way of thinking and behaving, and identifying opportunities; about the realization of value, and building and learning from relationships; a way of gathering and using scarce resources; about being positive and taking risks; and about building for the future. Reflecting the work of Heinonen and Poikkijoki (2005) 'entrepreneurship education' was identified as being aimed at developing enterprising or entrepreneurial people and increasing their understanding of and knowledge about entrepreneurship and enterprise. Drawing on the EC Report of 2008,

'entrepreneurship education' had to be differentiated from general business and economics studies, to be seen as more about developing personal attributes and skills that form the basis of an entrepreneurial mindset and behaviour. It was conceived as including creativity, initiative, risk-taking, autonomy, self-confidence, leadership and team spirit: it aims to raise students' awareness of self-employment and new venture creation as possible career choices by means, for example, of work on practical enterprise projects and activities and by providing specific business skills and knowledge of how to start and run a company successfully.

Three quite distinct roles for entrepreneurship education informed the response of the HETAC panel of experts, each being context specific. These suggested that students might (i) study entrepreneurship with a view to acquiring knowledge about the subject as a concept; (ii) learn to become entrepreneurial, developing entrepreneurial skills and competencies; and (iii) learn to become new venture entrepreneurs, by acquiring the knowledge and skills specifically needed for starting up and developing a new business venture, (Bridge *et al*, 2011; Heinonen and Poikkijoki, 2005).

The HETAC guidelines were designed to help HEIs in developing and sustaining a healthy 'entrepreneurial ecosystem', an environment that included and empowered all of an institution's entrepreneurially active people and directed appropriate resources to supporting the propagation of enterprising activity and the development of entrepreneurial skills and attitudes amongst staff as well as students. General criteria were identified to help individual HEIs evaluate the health of their entrepreneurial ecosystems, including learning outcomes, leadership, culture, learning approaches and assessment.

The 'learning outcomes' criterion articulates outcomes at an appropriate level in a higher education programme as statements of what students need to know, understand and can do in relation to enterprise and entrepreneurship. Such outcomes are organized under the headings of:

- Entrepreneurial Behaviour;
- Attitudes and Skill Development;
- Creating Empathy with the Entrepreneurial Life-World;
- Key Entrepreneurial Values;
- Motivation and Entrepreneurship Career;
- Understanding of Process of Business Entry and Tasks;
- Generic Entrepreneurship Competencies; and
- Key Minimum Business Know-How and Managing Relationships.

Leadership at all levels of the institution is recognized as key to the development and maintenance of any entrepreneurial ecosystem, particularly coming from 'top management' (Gibb *et al.*, 2009). An explicit demonstration by those in senior roles in HEIs of their strong commitment to the entrepreneurship education agenda is seen as critical if others are to take the agenda seriously. Such demonstration includes giving due reward, recognition and empowerment, including promotion, to those in the institution who demonstrably engage with entrepreneurial practitioners and work at the interface with the business sector. This is no easy task in a climate of economic recession which constrains the resources of HEIs.

According to the EC *Survey of Entrepreneurship Education* (EC, 2008), in addition to appropriate leadership and the development of core learning outcomes the adoption of experienced-based learning approaches is identified as more effective in fostering entrepreneurial skills in comparison with traditional lectures. Furthermore, the involvement of entrepreneurial practitioners in curriculum development was also recognized as important and influential in developing a supportive culture for generating and maintaining a healthy entrepreneurial ecosystem. The HETAC guidelines recognized that staff might need to be convinced of the benefits of integrating the entrepreneurship agenda into their programmes and of their own capacity to achieve this outcome. To that end appropriate training support and recognition and rewards are acknowledged as important factors in generating the culture needed for development of a healthy entrepreneurial ecosystem.

The embedding of entrepreneurial learning outcomes in curricula is recognized in the HETAC guidelines as an essential part of a strategy to support the learning experience of students and the development of an entrepreneurial ecosystem in an HEI. Such learning outcomes should never be a 'bolt-on' to any programme at any level. The challenge is to provide students with an environment in which they can safely practice the entrepreneurial skills they are acquiring. The exclusive provision of discrete entrepreneurship modules was thought to be unlikely to provide students with authentic learning opportunities unless the modules were integrated into other aspects of the programme.

A key factor for programme teams is the design of appropriate assessments. The HETAC guidelines recognized the critical relationship between learning outcomes, teaching and learning activities and assessment, and the importance of ensuring that appropriate modes of assessment were designed for each level of programme that authentically tested the stated learning outcomes. Interestingly, HETAC itself was

restructured during educational reforms in Ireland and the document has remained in draft form, although it is influential in the enterprise education community.

In recent times HEIs in the UK and the EU more generally have faced unprecedented challenges from government, business and wider society to become 'more meaningful' in terms of how they carry out their role as centres of learning. They are increasingly required not only to become more relevant to society but also to demonstrate the economic impact of their teaching and research. HEIs are required to behave much more entrepreneurially and to reflect more closely this new world in their efforts to support students' learning and to prepare them for the job market (Gibb and Hannon, 2005). In this regard, HEIs are being asked to develop a new culture and ecosystem that supports greater creativity and innovation in what and how students learn that will make them 'more relevant' in society as enterprising employees or as new business venturers. In Ireland the HETAC guidelines and criteria aim to support HEIs in reviewing enterprise and entrepreneurship education provision, helping their staff to build on current activities and to generate more entrepreneurial activities themselves.

## Conclusion

In this paper, we provide a critical narrative of the development of the QAA Enterprise and Entrepreneurship Education guidance in the UK and the HETAC document in Ireland. These two documents were developed by experts who, individually and cumulatively, contributed their knowledge, experience and empirically rigorous research to inform future developments in enterprise and entrepreneurship education in the UK, Ireland and Continental Europe as well as other industrially developed and developing nations. Feedback, consultation and observations from various stakeholders were all sought during and after the completion of drafts. The relevant content and process are summarized in this paper, in order to frame a debate on the future value, contribution, possible disadvantages and future development of these and similar frameworks.

This process started at a workshop at the 2012 ISBE conference. A number of key themes and questions have emerged since that workshop, including:

- (1) The definitional stance, distinguishing between enterprise and entrepreneurship helps to make sense of learning outcomes, because it indicates whether the learning is innovation-led and based on individual competencies, or implementation-led and based on procedures and processes;

- (2) Enterprise is a necessary precursor to entrepreneurship: without the skills of creativity and innovation, new avenues for business opportunities (rather than replication) cannot readily be explored; and
- (3) If learning is to be considered authentic and context-based, in order to ensure relevance, broader stakeholder engagement is required to limit the potential for over-subjectivity by a single university-led assessor.

At the core of these issues is a question related to associative learning, which assumes that learners can and will make new and innovative connections, within the limits of their own knowledge and experience. In terms of evaluation and assessment, this assumption can present a problem. If divergent, creative and non-conformist approaches bring forth new ideas and perspectives, how can such activities in learning be evaluated within the prescribed learning outcomes that predict achievement? Moreover, if each student learns as an individual, whilst often acting as a team member, how can this be evaluated within the perceived robustness of a standardized assessment strategy?

We would like to continue this debate on the value of formal guidance on enterprise and entrepreneurship education by seeking feedback and responses from a wide variety of national, regional and international stakeholders. Some indicative questions relating to this context might be as follows.

- (1) How useful are these guidelines in practice?
- (2) How have they been used? For example, (a) in developing, designing, delivering, assessing, evaluating programmes and (b) in generating staff awareness and staff development?
- (3) How could the effectiveness of the guidelines be evaluated?
- (4) How can the policy-led requirement for assessment of the impact of EEE be accommodated?
- (5) How can they be revised, developed and improved in future?

## Notes

<sup>1</sup>BTEC, the Business and Technology Education Council, a leading provider in the UK of vocational qualifications, was merged in 1996 with the University of London Examination and Assessment Council (ULEAC), one of the major exam boards in the UK for GCSEs and A-levels (secondary school level), to form Edexcel. The term 'BTEC awards' refers generically to vocational qualifications.

<sup>2</sup>'Thatcherism', which has acquired a wide range of interpretations, is the term used to describe the political and economic policies of Margaret Thatcher when she was Britain's Prime Minister: it is therefore especially associated with the 1980s in Britain. The policies placed an emphasis on private enterprise, privatization, a reduction in inflation and government

spending and the idea that people should help themselves rather than relying on the state to help them.

## References

- Acs, Z.J., Audretsch, D.B., Braunerhjelm, P., and Carlsson, B. (2005), 'The knowledge spillover theory of entrepreneurship', *Research Paper #2705*, Max Planck Institute of Economics, Jena, Germany.
- ADM-HEA (2007), *Creating Entrepreneurship: Entrepreneurship Education for the Creative Industries*, Art Design and Media Subject Centre of the Higher Education Academy, <http://www.adm.heacademy.ac.uk/projects/adm-hea-projects/creating-entrepreneurship-entrepreneurship-education-for-the-creative-industries> (accessed 03 September 2013).
- Bessant, J., and Tidd, J. (2007), *Innovation and Entrepreneurship*, John Wiley and Sons, Chichester.
- Biggs, J. (2003), *Teaching for Quality Learning at University*, SRHE and Open University Press, Maidenhead.
- Binks, M., Starkey, K., and Mahon, C.L. (2007), 'Entrepreneurship education and the business school', *Technology Analysis and Strategic Management*, Vol 18, No 1, pp 1–18.
- Blenker, P., Korsgaard, S., Neergaard, H., and Thrane, C. (2011), 'The questions we care about: paradigms and progression in entrepreneurship education', *Industry and Higher Education*, Vol 25, No 6, pp 417–428.
- Bridge, S., Hegarty, C., and Porter, S. (2010) 'Rediscovering enterprise: developing appropriate university education', *Education + Training*, Vol 52, No 8/9, pp 722–734.
- Carey, C., and Matlay, H. (2011), 'Emergent issues in enterprise education: the educator's perspective', *Industry and Higher Education*, Vol 25, No 6, pp 1–10.
- Czop, K., and Leszczynska, A. (2011), 'Entrepreneurship and innovativeness: in search of the interrelationships', *International Journal of Innovation and Learning*, Vol 10, No 2, pp 156–175.
- BIS (Department for Business, Innovation and Skills) (2011), *Learners at the Heart of the System*, BIS White Paper, <http://discuss.bis.gov.uk/hereform/white-paper> (accessed 10 July 2013).
- Draycott, M., and Rae, D. (2011), 'Enterprise education in schools and the role of competency frameworks', *International Journal of Entrepreneurial Behaviour & Research*, Vol 17, No 2, pp 127–145.
- Enterprise Educators UK (2013), 'Assessment of learning in curricular and extra curricular enterprise and entrepreneurship education', <http://www.enterprise.ac.uk/index.php/events/past-events/event/48-assessment-of-learning-in-curricular-and-extra-curricular-enterprise-and-entrepreneurship-education> (accessed 3 September 2013).
- Enterprise Strategy Group (2004), *Ahead of the Curve: Ireland's Place in the Global Economy*, FORFAS, Dublin.
- EC (European Commission) (2006a), *Entrepreneurship Education in Europe: Fostering Entrepreneurial Mindsets through Education and Learning*, final proceedings of International Conference on Entrepreneurship Education in Europe, Oslo, 26–27 October.
- EC (European Commission) (2006b), *The Oslo Agenda for Entrepreneurship Education in Europe*, European Commission, Brussels, [http://ec.europa.eu/enterprise/entrepreneurship/support\\_measures/training\\_education/doc/oslo\\_agenda\\_final.pdf](http://ec.europa.eu/enterprise/entrepreneurship/support_measures/training_education/doc/oslo_agenda_final.pdf) (accessed 16 December 2011).
- EC (European Commission) (2008a), *Entrepreneurship in Higher Education, Especially Within Non-business Studies*, European Commission, Brussels.
- EC (European Commission) (2008b), *Survey of Entrepreneurship Education in Europe*, European Commission, Brussels.

- EC (European Commission) (2012), *Effects and Impact of Entrepreneurship Programmes in Higher Education*, European Commission, DG Enterprise & Industry, Brussels.
- EC (European Commission) (2013), *Thematic Working Group on Entrepreneurship Education*, European Commission, DG Enterprise & Industry, Brussels, <http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetailDoc&id=8251&no=2> (accessed 07 June 2013).
- FORFAS (2002), *Towards Developing an Entrepreneurial Policy for Ireland*, FORFAS, Dublin.
- Gibb, A.A. (1993), 'Enterprise culture and education: understanding enterprise education and its links with small business, entrepreneurship and wider educational goals', *International Small Business Journal*, Vol 11, No 2, pp 11–34.
- Gibb, A.A. (2005), 'Towards the entrepreneurial university: entrepreneurship education as a lever for change', National Centre for Entrepreneurship in Education, [http://www.ncee.org.uk/publication/leading\\_the\\_entrepreneurial\\_university.pdf](http://www.ncee.org.uk/publication/leading_the_entrepreneurial_university.pdf) (accessed 03 November 2014).
- Gibb, A.A. (2011) 'Concepts into practice: meeting the challenge of development of entrepreneurship educators around an innovative paradigm: the case of the International Entrepreneurship Educators' Programme (IEEP)', *International Journal of Entrepreneurial Behaviour & Research*, Vol 17, No 2, pp 146–165.
- Gibb, A.A., and Hannon, P. (2005), 'Towards the Entrepreneurial University: entrepreneurship education as a lever for change', *Policy Paper #003*, National Centre for Entrepreneurship in Education, Coventry.
- Gibb, A., Haskins, G., and Robertson, I. (2009), *Leading the Entrepreneurial University: Meeting the Entrepreneurial Development Needs of Higher Education Institutions*, National Centre for Entrepreneurship in Education, Coventry.
- Goodbody Economic Consultants (2002), *Entrepreneurship in Ireland*, FORFAS, Dublin.
- Hannon, P.D. (2006), 'Teaching pigeons to dance: sense and meaning in entrepreneurship education', *Education + Training*, Vol 48, No 5, pp 296–308.
- Henry, C., and Treanor, L. (2010), 'Entrepreneurship education and veterinary medicine: enhancing employable skills', *Education + Training*, Vol 52, No 8/9, pp 607–623.
- Heinonen, J., and Poikkijoki, S. (2005), 'An entrepreneurial-directed approach to entrepreneurship education: mission impossible?', *Journal of Management Development*, Vol 25, No 1, pp 80–94.
- International Entrepreneurship Education Conference (2010), *IEEC Concordat*, [www.ieec.co.uk/images/stories/ieec/2010/concordat/ieec2010%20concordat.pdf](http://www.ieec.co.uk/images/stories/ieec/2010/concordat/ieec2010%20concordat.pdf) (accessed 16 December 2010).
- Jack, S.L., and Anderson, A.R. (1999), 'Entrepreneurship education within the enterprise culture: producing reflective practitioners', *International Journal of Entrepreneurial Behaviour & Research*, Vol 5, No 3, pp 110–125.
- Levenburg, N.M., Lane, P.M., and Schwarz, T.V. (2006), 'Interdisciplinary dimensions of entrepreneurship', *Journal of Education for Business*, Vol 81, No 5, pp 275–281.
- Martínez, A., Levie, J., Kelley, D., Rögnavaldur, J.S., and Schött, T. (2010), *Global Entrepreneurship Monitor Special Report: A Global Perspective on Entrepreneurship Education and Training*, Global Entrepreneurship Research Association, Babson, MA.
- Matlay, H. (1984), *Vocational Education and Training in UK Universities: An Agenda for Developing Skills for Future Entrepreneurs*, Research Seminar Series, University of Warwick, Coventry.
- Matlay, H. (2005a), 'Researching entrepreneurship and education, Part 1: what is entrepreneurship and does it matter?', *Education + Training*, Vol 47, No 8/9, pp 665–677.
- Matlay, H. (2005b), 'Entrepreneurship education in UK business schools: conceptual, contextual and policy considerations', *Journal of Small Business and Enterprise Development*, Vol 12, No 4, pp 627–643.
- Matlay, H. (2008), 'The impact of entrepreneurship education on entrepreneurial outcomes', *Journal of Small Business and Enterprise Development*, Vol 15, No 2, pp 382–396.
- Matlay, H. (2011), 'The influence of stakeholders on developing enterprising graduates in UK HEIs', *International Journal of Entrepreneurial Behaviour & Research*, Vol 17, No 2, pp 166–182.
- Matlay, H., and Carey, C. (2007), 'Entrepreneurship education in the UK: a longitudinal perspective', *Journal of Small Business and Enterprise Development*, Vol 14, No 2, pp 252–263.
- McKeown, J., Millman, C., Sursani, S.R., Smith, K., and Martin, L.M. (2006), 'Graduate entrepreneurship education in the United Kingdom', *Education + Training*, Vol 48, No 8/9, pp 597–613.
- McLarty, L., Highley, H., and Alderson, S. (2010), *Evaluation of Enterprise Education in England*, Department for Education, London.
- Naudé, W. (2008), 'Entrepreneurship in economic development', *Research Paper No 2008/20*, UNU-WIDER, United Nations University (UNU), Bruges, Belgium.
- Parker, S.C. (2004), *The Economics of Self-Employment and Entrepreneurship*, Cambridge University Press, Cambridge.
- Peters, M. (2001), 'Education, enterprise culture and the entrepreneurial self: a Foucauldian perspective', *Journal of Educational Enquiry*, Vol 2, No 2, pp 58–71.
- Pittaway, L., and Edwards, C. (2012), 'Assessment: examining practice in enterprise education', *Education + Training*, Vol 54, No 8, pp 778–800.
- QAA (Quality Assurance Agency for Higher Education) (2012), *Enterprise and Entrepreneurship Education: Guidance for Higher Education Providers in England, Wales and Northern Ireland*, QAA, Gloucester.
- Rae, D. (2007), 'Connecting enterprise and graduate employability: challenges to the higher education culture and curriculum?', *Education + Training*, Vol 49, No 8/9, pp 605–619.
- Rae, D., Martin, L., Antcliff, V., and Hannon, P. (2012), 'Enterprise and entrepreneurship in English higher education: 2010 and beyond', *Journal of Small Business and Enterprise Development*, Vol 19, No 3, pp 380–401.
- Refaat, A.A. (2009), 'The necessity of engineering entrepreneurship education for developing economies', *International Journal of Education and Information Technologies*, Vol 3, No 2, pp 85–96.
- Short, J.C., Moss, T.W., and Lumpkin, G.T. (2009), 'Research in social entrepreneurship: past contributions and future opportunities', *Strategic Entrepreneurship Journal*, Vol 3, No 1, pp 161–194.
- Solomon, G. (2007), 'An examination of entrepreneurship education in the United States', *Journal of Small Business and Enterprise Development*, Vol 14, No 2, p. 168–182.
- Timmons, J., and Spinelli, S. (2009), *New Venture Creation*, 9th Edition, McGraw-Hill, New York.
- UNCTAD (2012), *Entrepreneurship Policy Framework and Implementation Guidance*, United Nations Conference on Trade and Development, Geneva, [http://unctad.org/en/Pages/DIAE/Entrepreneurship/UNCTAD\\_Entrepreneurship\\_Policy\\_Framework.aspx](http://unctad.org/en/Pages/DIAE/Entrepreneurship/UNCTAD_Entrepreneurship_Policy_Framework.aspx) (accessed 03 September 2013).
- Van Praag, M., and Versloot, P. (2007), 'What is the value of entrepreneurship? A review of recent research', *Small Business Economics*, Vol 29, No 4, pp 351–382.
- Volkman, C., Wilson, K., Mariotti, S., Rabuzzi, D., Vyakarnam, S., and Sepulveda, A. (2009), 'Educating the next wave of entrepreneurs: unlocking entrepreneurial capabilities to meet

- the global challenges of the 21st Century', World Economic Forum, Davos, Switzerland.
- Wennekers, S., Van Stel, A., Carree, M., and Thurik, R. (2010), *The Relationship Between Entrepreneurship and Economic Development: Is it U-shaped?*, EIM Research Report H200824, Zoetermeer, The Netherlands.
- Williamson, N., Beadle, S., and Charalambous, S. (2013), *Enterprise Education Impact in HE and FE – Final Report*, ICF GHK, for Department for Business, Innovation and Skills, London.
- Wilson, T. (2012), *A Review of Business–University Collaboration*, Department for Business, Skills and Innovation, London.
- World Economic Forum (2009), *The Global Competitiveness Report 2009–2010*, World Economic Forum, Davos, Geneva.
- Zahra, S.A., Gedajlovic, E., Neubaum, D.O., and Shulman, J.M. (2009), 'A typology of social entrepreneurs: motives, search processes and ethical challenges', *Journal of Business Venturing*, Vol 24, No 5, pp 519–532.