

National Council for Graduate Entrepreneurship

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Entrepreneurship Education and Integrative Learning

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The purpose of this paper is to identify the underlying reasons for the growing popularity of entrepreneurship education in its most general sense and how this demand can be accommodated on a large scale basis. The meaning of the terms entrepreneurship education and also integrative learning will be considered prior to a brief assessment of the impetus behind their modern relevance and application. The focus of attention will move from general applicability to the case of higher education and the design adopted at the University of Nottingham. The benefits of integrative learning can then be made clear and the potential for large scale and broader applications can be identified. The strategic and policy implications of this particular approach towards entrepreneurship education through integrative learning are then considered for higher education, schools and further education, businesses large and small and their representative organisations and, finally, Government both regional and central.

Terminology

Since the meaning of 'Entrepreneurship Education' varies widely according to the context in which it is used and the concept of 'integrative learning' may be unfamiliar to many, it is necessary to explain these for the purposes of this paper.

Here, 'Entrepreneurship Education' refers to the pedagogical processes involved in the encouragement of entrepreneurial activities behaviours and mindsets from the point of insight and creativity at the outset to innovation and progress when fully implemented. In short, it covers all aspects of the route from brain to market and more generally from brain to improvement and progress.

'Integrative learning' involves rich intentional learning characterised by the individual student's ability to make deep level connections between the processes of academic learning, reflective self awareness / personal development and experiential learning in a range of practical contexts. In schools, colleges, universities and in general, there is a strong tendency for people to 'compartmentalise' their learning rather than integrating the benefits, knowledge, realisations and understanding that they gain in different situations and from different sources. Educational processes tend to reinforce this approach through discipline based channels and modularisation. The convenience and clarity that this brings is at the expense of broader and more integrated learning.

'Fostering students abilities to integrate learning - across courses, over time, and between campus and community life - is one of the most important goals and challenges of higher education'

(This statement was developed in conjunction with the national project, Integrative Learning: Opportunities to Connect. March 2004)
Association of American Colleges and Universities
Carnegie Foundation for the Advancement of Teaching

Entrepreneurial creativity and its realisation in practice requires precisely this integrative approach since it needs a mixture of knowledge and understanding, interpersonal skills and competences and various thinking styles and behaviours in order to be successful.

The Popularity and Growing Demand for Entrepreneurship Education

There are three main drivers behind the growing demand for entrepreneurship education. These refer to the characteristics of smaller businesses, the skills associated with successful entrepreneurship and the root causes of economic development.

The Changing Focus on Smaller Businesses

In the 1960s and 70s conventional wisdom suggested that smaller businesses were less efficient because they could not command the benefits of economies of scale and size. This view was particularly strong in the UK where the focus upon the needs of larger businesses meant that smaller firms were virtually ignored. The attitude was less marked in the USA, Japan and many countries in Europe. As the benefits enjoyed by more entrepreneurial smaller businesses in terms of opportunity recognition, responsiveness, flexibility and marketing orientation were more widely recognised an increasing focus was placed upon the needs of smaller firms. In an increasingly complex market environment the importance of these characteristics attracted more attention. Larger firms adopted flatter organisational structures, creating individual cost and profit centres in an attempt to capture similar benefits.

There was a natural tendency to associate these developments in the attitude towards smaller firms with the notion of more individualistic and entrepreneurial activity. The increasing focus upon smaller businesses encouraged a growing emphasis upon the importance of

'entrepreneurship education' even though the terms and meanings involved are poorly understood and specified.

Entrepreneurial Skills and Capabilities

An important motive for individuals and organisations to focus upon entrepreneurship education refers to the skills and capabilities associated with successful entrepreneurship. Circumventing debates as to the differences between skills and competencies, attributes and knowledge, the focus here will be on characteristics associated with successful entrepreneurial activity. Put simply these can be categorised in terms of the entrepreneur as catalyst, opportunist and manager. Naturally in practice there is much overlap and blurring between these identities.

The entrepreneurial characteristics of the 'Catalyst' refer to imagination and creativity alongside effective problem solving and vision. These characteristics are those associated with the Schumpeterian entrepreneur who generates 'creative destruction' as they bring distinctly new discoveries to the economy.

A less purposeful and rather more reactive but crucially important role refers to the characteristics of the opportunist that refer to alertness, opportunity recognition, knowledge management, risk assessment, initiative and will to react. In conjunction with the catalyst these characteristics provide the realistic potential for realising new insights and discoveries.

The benefits, opportunities and possibilities created by the catalyst will only be fully realised in terms of innovation and competitive advantage if they are properly managed. The entrepreneurial characteristics of management involve a multifaceted capability. Successful innovation relies upon the ability to manage people, investment in plant and equipment, finance, the supply chain, marketing, knowledge and much more in terms of tacit understanding within different markets and industries.

The growing recognition and demand for entrepreneurship education is therefore motivated by the increasing need for the characteristics described above when attempting to realise the opportunities presented by a rapidly changing, global, multidisciplinary and multi-sectoral economic environment. Realising the opportunities created by this environment requires just these skills and characteristics. That is why they are in such high demand by employers when considering recruitment strategies.

Economic Development

The final and in some senses overriding motive for focusing upon entrepreneurship education refers to the pursuit of economic development and international competitiveness. In his 'The Theory of Economic Development' first published in 1934, Joseph Schumpeter identified the relationship between entrepreneurial creativity, entrepreneurial potential, entrepreneurship and economic development. In his definition of entrepreneurship, Schumpeter highlighted the crucial distinction between gradual and discrete change. Gradual change and improvement referred to developments that were clearly related to and derived from the existing pattern of activity. These occurred within the context of existing and well understood technologies. Discrete change referred to changes in technology and processes that were not derived from or related to established and traditional methods, but a discontinuity and break from traditional operations. For Schumpeter the history of economic development could be viewed in terms of these discrete entrepreneurial events that generated opportunities or progress in innovation and created waves of new activity and innovation.

The distinction between gradual and discrete change emphasised by Schumpeter can be portrayed in terms of convergent and divergent thinking, lateral thinking, thinking 'outside the box', derivation and induction as opposed to insight and creativity. In short Schumpeter established the link between creativity and economic development through entrepreneurship.

The third motive for our increasing demand for entrepreneurship education is fundamental and refers to the desire and need for economic development.

The Applicability of Entrepreneurship Education

The three sources of demand for entrepreneurship education explained above mean that its remit and relevance is very wide. For individuals, businesses and organisations, small and large, there are clear benefits to be gained from the greater acquisition of entrepreneurial behaviours and characteristics. This implies in turn an obligation upon education providers at all levels to respond to and anticipate demand. Consider the implications and responsibilities for higher education.

Entrepreneurship Education in Universities

Given the observations made above in terms of smaller firms, entrepreneurial skills and economic development, it is incumbent upon universities to ensure large scale access to entrepreneurship education. Efforts to achieve this may encounter resistance for a number of reasons.

The nature and generic relevance of entrepreneurship education may not be well recognised by students and staff as appropriate curriculum content in universities. In many disciplines the curricula is already overcrowded with content.

Many of the techniques associated with successful entrepreneurship education involve experiential and reflective learning. Those unfamiliar with these applications may be less supportive of their introduction. In introducing entrepreneurship education programmes it is important to raise awareness in students and staff of the positive benefits that can accrue in any discipline and indeed outside the curriculum.

Successful entrepreneurship education is often resource intensive in terms of academic and support staff. The need to engage students with practitioners through mentoring and intensive group work means that this kind of innovative curriculum is less conducive to large block lectures. Assessment requirements are also less conducive to exam only based approaches. Many of these resource implications can be ameliorated through innovative curriculum design. The approaches to entrepreneurship education fall into two broad categories, those which engage students through integrative and reflective learning and those which teach students about entrepreneurship.

The first of these, and by far the most effective, attempts to engage students in the decision making processes associated with entrepreneurial behaviour. They often rely on significant inputs from practitioners drawn from all areas of the private and public sector. Whilst feedback from such approaches is very positive the number of students involved is often relatively small particularly when considered as a percentage of the total undergraduate and postgraduate populations. The second category refers to traditional lecturing approaches accompanied by exam only assessment. These courses are valuable in enabling students to learn about entrepreneurship but do not attempt to highlight and influence their preferred thinking styles or problem solving capabilities. The main advantage of this approach is that it can accommodate

students in large numbers. This approach may also be viewed as more 'acceptable' by both staff and students.

There is a need to design more courses which combine the strengths of learner engagement with large scale impact in terms of student numbers.

Curriculum Content

As indicated above, the curriculum in entrepreneurship education covers all aspects of activity 'from brain to market' or from creative insight to successful innovation. Each element of the entrepreneurship curriculum therefore falls somewhere along a continuum from entrepreneurial creativity and effective problem solving at one extreme to innovation in practice at the other. Traditionally, the approach taken in higher education and particularly in business schools is well suited to the middle ground on this continuum after the impact of entrepreneurial creativity has been realised in terms of new concepts and before the practical innovation of these in reality, with all the complexities and uncertainties that this may bring. This middle ground refers to identifiable areas of focus which can be taught and learnt, almost in isolation, in appropriately labelled modules such as finance and accounting, marketing, risk assessment, human resource management, insurance, strategic planning, business planning etc. Assessment methods within these fields of activity are also relatively well established and proven. Courses will often involve significant levels of group work and non-exam based course work with visiting speakers and historical case study analysis. As indicated above, most of these courses will not attempt to focus explicitly upon or have as their central purpose entrepreneurial creativity and effective problem solving or on the actual innovation of new concepts in practice. To focus on the former is often problematic for the reasons described above and to engage with the latter is usually impractical given the resource requirements for successful product or process innovation. Whilst the large scale innovation of new products and processes may not be the direct responsibility of universities, such operations in the private and public sector provide useful material for students to learn in those middle ground areas identified above.

Entrepreneurial creativity and effective problem solving are appropriate areas of development for students at university and can be introduced relatively effectively on a wide scale basis. Resistance from staff and students can, in the experience at Nottingham, be overcome by

explaining the generic relevance of the area and the strongly positive feedback from participants of all kinds.

'Entrepreneurship Now' – the Nottingham Approach

The Science Enterprise Challenge Initiative introduced in 1999 provided the incentive and, indeed, the requirement for Universities to explore different models of entrepreneurship education. At the University of Nottingham, as in other Science Enterprise Centres, a number of different approaches were adopted. Whilst the advantages of more traditional module designs were clear and accepted, there was an increasing focus upon the need to address the issues raised by any attempt to combine student and practitioner engagement with large scale application. It was well recognised by staff and students that an integrative approach to entrepreneurship education would involve 'live case studies' rather than a reliance on historical evidence. Past experience and evidence were clearly valuable when attempting to convey the impact and behaviours associated with successful entrepreneurship. To engage students in the experience of entrepreneurial decision making in practice, required the 'live case study' approach where they worked upon their own unsolved problems or those provided from outside the University by businesses both private and public sector. The need to involve students in unsolved problems from their own or others experience was considered paramount in terms of their understanding of 'entrepreneurial behaviour'. The emphasis upon 'Entrepreneurship Now' reflects this pre-occupation with live rather than solved problems as the main material from which students can learn. A successful example of how this can be applied in a scaleable way is the module 'Entrepreneurship and Business'.

The module 'Entrepreneurship and Business' was introduced as part of the Business School's response to Science Enterprise Challenge. The course is based upon a design which had been applied successfully with masters' students and executives in the USA, UK and the Far East. The course was designed to meet four key objectives. Students should understand various definitions of entrepreneurship and the theoretical foundations of its relationship to economic development. Participants should work in small groups to identify and define contemporary problems and then be mentored through a six stage creative problem solving process to determine the optimal solution. Teams should present their concepts as a poster and accompanying 30 second 'elevator pitch' to module convenors but, more importantly to

industrialists, entrepreneurs, venture capitalists, bankers and others. Throughout this process students should be required to take a high level of responsibility for their own learning and progress. Finally an overriding objective of the course was to identify a model of operation that was scaleable to accommodate very large numbers of participants.

All of the course content and the techniques used were available to students in the accompanying text – ‘Entrepreneurship, Creativity and Effective Problem Solving: Keep on Moving!’ by Edward Lumsdaine and Martin Binks first published in 2003.

On the basis of student feedback and the ambition at Nottingham to involve large numbers of students in the process of entrepreneurial creativity and effective problem solving, a new design emerged to meet more effectively the requirements of theoretical context, student engagement, practitioner involvement and large scale applicability. This design was tested as a prelude to the establishment of the Centre for Integrative Learning under the auspices of the Centres of Excellence in Teaching and Learning Initiative introduced in 2004/5. This course will be compulsory for first year business students in their second semester as it forms part of their core curriculum from 2005 / 6 onwards.

The new design for ‘Entrepreneurship Business’ involves three formal lectures to explain the design of the course, and the main theoretical content involved. Subsequent sessions are divided between 100% mentored group work or 100% formal lecture. Students are mentored intensively by entrepreneurs and other practitioners in tracks of 100 involving 20 groups with, on average, 4 groups per mentor. Intervening lectures are given to the student body as a whole. In 2005/6 for example, it is envisaged that around 400 students will be involved in this module. They will be lectured as a single group for 6 of the sessions and mentored in tracks of 100 with 5 mentors and an academic supervisor per track. Numbers are forecast to grow to around 800 students in 2006/7 and over 1000 students in subsequent years. The model is infinitely scalable on the assumption of an efficient administration and an effective reservoir of mentors in the private and public sector. Experience to date demonstrates that the mentoring experience of discussing new concepts and ideas with groups of undergraduates for an hour of two is regarded as a positive area of personal development which is enthusiastically embraced by participating mentors. Student feedback suggests that the combination of an innovative curriculum design with the emphasis upon different preferred thinking and learning styles and

the involvement of practitioners from industry creates a significant and memorable impact in their university experience.

The assessment procedure for the module was unchanged in terms of the emphasis on poster presentation and elevator pitch followed by an exam covering the more formal elements of the content.

Given the universities ambitions to establish a Centre for Integrative Learning, it was also important to incorporate elements of reflective assessment on an individual basis for the students. This was introduced in the new module design through the application of learning logs to be submitted by students within one week of each mentored group work session. These were well received and well presented as reflective logs of their experience.

As indicated earlier, the area of entrepreneurship education is particularly conducive to an integrative learning approach since it requires students to combine learning and experiences from many different and disparate sources. Entrepreneurship education involves factual knowledge and understanding alongside behavioural characteristics and interpersonal skills in order to be effective. The integrative learning approach with its emphasis upon the establishment of connections between different sources of learning is particularly apposite. With the establishment of the Centre for Integrative Learning at the University of Nottingham, this approach will be reinforced through the development of electronic portfolios (ePortfolios) to support students as they take more responsibility for determining and appreciating their own learning. This approach towards student centred responsibility and its support rests upon the recognition that each individuals overall learning experience, with its strengths and weaknesses, is unique. Only they as individuals can appreciate and reflect upon their particular combination of experiences and, therefore, determine how their future learning should evolve.

Beyond Conventional Higher Education

The entrepreneurial creativity and effective problem solving approach has been shown to have applicability to a far broader range of students than those involved in higher education on a traditional basis. It is applicable and accessible to students in schools and further education. The model designed at Nottingham has also been applied successfully with SMEs, business advisors, executives from large organisations and those attending master's level courses as

mature students in the public sector such as the NHS. The generic applicability explained earlier is already evidenced from experience in very different and disparate settings.

Strategy and Policy Implications

It is important not to over-state or exaggerate the potential impact of entrepreneurship education as outlined above, with its emphasis upon entrepreneurial creativity and the generation and use of 'live' case studies. These are simply one element of a much larger and more complex approach. The potential impact of this kind of learning should not be underestimated, however, since it often surprises the learner and challenges the conventional wisdom and traditional views of education. The marginal benefits of a single 'entrepreneurial learning experience' with the characteristics described above may be relatively significant when placed against more traditional learning and training experiences.

Universities

Given the experience of the University of Nottingham and other universities, there is no reason why the majority of undergraduates should not spend 10 or 20 credits out of the 360 which typically constitute higher degree courses, on entrepreneurship education in an integrative and engaged framework. Access to such experiences should be enabled through the timetabling process and awareness of the potential benefits should be raised in the student and staff communities.

Schools, Colleges , SMEs and Others

As indicated above, this kind of learning experience is as applicable and may be enjoyed as enthusiastically by students from very different and disparate backgrounds be they schools, further education colleges, small and medium sized enterprises (SMEs) and large organisations both private and public. The representative organisations for these groups should encourage the emergent interest in entrepreneurship education for their membership.

Government

For government, local, regional, national and beyond, there is a clear and already well recognised need to encourage the large-scale application of these relatively simple learning innovations through the provision of resources and long-term commitment.

In conclusion

The potential value of entrepreneurship education in its broadest sense, alongside its generic applicability and relevance, is now well recognised. The ability to provide discipline-specific learning in terms of all the various elements of setting up, establishing and growing a business are relatively well developed and can of course be expanded relatively easily given sufficient resources. The application of entrepreneurship in practice is the responsibility of the individuals involved although they may be more or less encouraged by government policy initiatives. The domain of entrepreneurial creativity insight and opportunity recognition is less well served and can be addressed on a large-scale basis if the imagination, the will and the resources are available.