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Title: "Experiential Learning, New Venture Creation, Strategic Entrepreneurship, Knowledge and Competency in the University Context"

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Abstract

This conceptual paper aims to explore the role of experiential entrepreneurial learning in the provision of university entrepreneurship education¹ while students engage in parallel in actually creating a new venture. In so doing, we compare and contrast two different, but philosophically aligned, approaches to entrepreneurship education at UK universities. We discuss the importance of students starting a real business, rather than just learning with cases or participating in simulations, business games, or role plays. Finally, we illustrate the importance of collaboration between 'complementary' Universities and the building of a sharing community, something of a federation which might grow over time.

Key words: entrepreneurship education, entrepreneurial learning, universities, experiential learning, impact, new venture creation, strategic entrepreneurship

¹ “Entrepreneurship education” and “enterprise education” are considered as synonymous in this paper, although we recognise that the former term is used in the US, while the latter is more commonly applied in Europe.

Executive Summary

In this paper, by analysing two different entrepreneurship education programmes in the UK, we explore how experiential entrepreneurial learning can be optimised while students engage in parallel in actually creating a new venture.

Until the programmes are properly up-and-running - with graduates – it will not be possible to draw firm conclusions about the types of business being started. Thompson (1999) offered the E-V-R (environment-values-resources) framework as a test of a strategically entrepreneurial business, arguing successful businesses achieve *and maintain through emergence and change* a congruency between their resources and opportunities.

We identified four important issues arising from our analysis. First, a clear importance within these programmes that students start a real business, rather than just learn with cases or participate in simulations, business games, or role plays. In addition, we see a need to capture the learning with a portfolio. Second, there remains a debate about whether such a pedagogical intervention is best achieved at Undergraduate (Bachelor's) or Postgraduate (Master's) level. However, an important point about these programmes is that students can still graduate because there is a valuable learning experience in business start up to capture in a portfolio. Third, it remains unclear whether entrepreneurship (as opposed to enterprise skills) should be in the curriculum or adjunct to it. Or, indeed, whether the optimal situation is to have entrepreneurship as both part of the curriculum and adjunct to it. Fourth, it is important to recognise the potential of collaboration between 'complementary' Universities and the building of a sharing community, something of a federation which might grow over time, grounded with reference to entrepreneurial universities (e.g. Leitch et al, 2007).

1. Introduction

In this paper, our aim is to explore the role of experiential entrepreneurial learning in the provision of university entrepreneurship education while students engage in parallel in actually creating a new venture. Our chosen focus is particularly salient given contemporary debates about the effectiveness of entrepreneurship education (Henry et al, 2003), evaluation of programmes and the alignment of objectives with learning outcomes (Hytti, 2001; Hytti and Kuopusjärvi, 2004a, b) and, therefore, the importance of providing solid ‘entrepreneurial outcomes’ (Hannon, 2007; Pittaway and Cope, 2007b; Pittaway and Hannon, 2008). We build upon prior studies that have argued the case for a ‘learning by doing and learning from doing’ approach (Thompson, 2008) or even an explicitly new-venture-based-learning experiential pedagogy (Gibson et al, 2009) in order to discuss the practical and theoretical rationale for delivering the most experiential and high-impact enterprise education possible. As such, we compare and contrast two philosophically and ideologically aligned degrees, at the University of Huddersfield (Undergraduate/Bachelor’s level) and Queen’s University Belfast (postgraduate/Master’s). Although there is prior evidence of the starting up of real businesses as part of entrepreneurship education courses in Europe (Hytti and Kuopusjärvi, 2004b), it is far from clear whether such pedagogies have been effective or successful, i.e. Hytti’s (2001: 45) cautionary note that, “the setting up of virtual or real businesses in entrepreneurship education programmes does not automatically create positive attitudes towards entrepreneurship.” As a result, we have sought to ensure that our respective pedagogies are grounded sufficiently theoretically and practically, as well as linking the classroom sessions, assessment, mentoring, and the new venture creation (NVC) itself in the most coherent and symbiotic way in order to optimise students’ entrepreneurial learning.

We need to set this work in the context of enterprise and entrepreneurship education.

Jamieson (see Henry et al, 2003: 92-93) delineated between:

- ‘education about enterprise: awareness creation ... educating students on the various aspects of setting up and running a business mostly from a theoretical perspective.
- ‘education for enterprise: the preparation of aspiring entrepreneurs for a career in self-employment with the specific objective of encouraging participants to set-up and run their own business.
- ‘and education in enterprise: management training for established entrepreneurs and focuses on ensuring the growth and future development of the business’.

It is important at this point to separate what we would call ‘generic enterprise skills’ from more specific entrepreneurship skills. The former comprise valuable skills that arguably all students can benefit from having upon graduation. They include communications, problem solving and decision making skills and they will help with . They can be developed in a variety of ways, but in particular through practical exercises, case studies and problem based learning. Entrepreneurship skills are then those associated with business start up and they can be developed through either simulation or real business experience. The important issue is that students are exposed to opportunity and risk. We will see in the Huddersfield model (Section 3.1) that generic enterprise skills provide a foundation for entrepreneurship skills as the degree develops. Hytti and Kuopusjärvi (2004a) identified three approaches:

- ‘To learn to understand entrepreneurship (What do entrepreneurs do? What is entrepreneurship? Why are entrepreneurs needed?)
- ‘To learn to become entrepreneurial (I need to take responsibility for my learning, career and life. How to do it)
- ‘To learn to become an entrepreneur (Can I become an entrepreneur? How to become an entrepreneur? Managing the business).’

It will be appreciated that the two degrees featured in this paper cover all three.

The word 'entrepreneur' is used relatively loosely and flexibly in this paper. In many cases our students are really would-be entrepreneurs who aspire to develop a genuinely entrepreneurial business. Not all businesses are entrepreneurial (i.e. they are not genuinely different from other rival organisations) and not all would-be entrepreneurs become entrepreneurs in a tight definition sense, although they may start and maintain micro and small businesses that survive for a number of years. There are many definitions of entrepreneurs but if we use that of Bolton and Thompson (2000) we can see the key distinction. They define the entrepreneur as 'a person who habitually creates and innovates to build something of recognised value around perceived opportunities'.

The remainder of the paper is now structured as follows. Section 2 sets the scene by outlining a theoretical perspective on entrepreneurial learning and new venture creation and developing two conceptual models – one of informal and formal entrepreneurial learning, and one of the link between 'experientiality' and entrepreneurial impact. In Section 3 we describe succinctly, in a case study format, the BA Enterprise Development at the University of Huddersfield and the MSc New Venture Creation at Queen's, in order to develop an integrative discussion, using our two conceptual models as an analytical framework, in Section 4 and a series of conclusions and recommendations in Section 5.

2. Entrepreneurial learning, NVC and universities: a theoretical perspective

In this section, we develop two conceptual models, building upon the theoretical literature on entrepreneurial learning and NVC. Clearly, universities have had a major role to play in providing entrepreneurship education, and these have been extensively reviewed by academics (for example, Dainow, 1986; Scott and Twomey, 1988; Plaschka and Welsch, 1990; Solomon et al, 1994; Gorman et al, 1997; Kolvereid and Moen, 1997; Vesper and Gartner, 1997; Leitch and Harrison, 1999; Laukkanen, 2000; Hannon et al, 2004; Hytti and

Kuopusjärvi, 2004a, b; Bécharde and Grégoire, 2005; Henry et al 2005a, b; Akola and Heinonen, 2006; Hannon, 2006; Hannon et al, 2006; Van Auken et al, 2006; Botham and Mason, 2007; Bridge and McGowan, 2007; Hannon, 2007; Pittaway and Cope, 2007a,b; Smith, 2007; European Commission, 2008; Herrmann et al, 2008; Hussain et al, 2008; Pittaway et al, 2009). However, while there have been clearly a wide variety of approaches to entrepreneurship education (see Hytti, 2001), it is not evident that many of these pedagogies have enhanced entrepreneurial learning or, indeed, contributed to effective, successful (i.e. high performance), and sustainable strategic entrepreneurship.

Authors have previously advocated that HEIs adopt an explicit strategy of business generation (Laukkanen, 2000) and the inclusion of practitioner and practice-relevant learning, or “a shift from transmission models of teaching (learning ‘about’) to experiential learning (learning ‘for’) and offers students techniques that can be applied in the real world” (Hermann et al, 2008) . Similarly, it has been noted that UK entrepreneurship education, even at Master’s (postgraduate) level, has had a predominant focus upon ‘pre-start’ and assisting students to prepare to create a new venture (Gibson et al, 2009). Tellingly, the authors conclude that: “Most of these programmes are clearly aimed at ... ‘thinkers’ (those thinking of starting a business), not ‘doers’ (those who actually are doing so).” (ibid). Elsewhere, Akola and Heinonen (2006: 16) have argued that assessments in entrepreneurship education are ineffective or un conducive to entrepreneurial learning, “if they are not embedded in a real-life situation.” While there are clearly many different approaches to assessment (just as there are various approaches to entrepreneurship education (Hytti, 2001)), it is critical also to connect assessment to learning outcomes (Pittaway et al, 2009). In other words, there needs to be clear integration and coherence between the aims, teaching, learning, assessment, and ultimately outcomes, whether academic or entrepreneurial, of entrepreneurship education programmes (Hytti, 2001; Hytti and Kuopusjärvi, 2004a, b; Pittaway et al, 2009). This again

links in closely with the debate around the effectiveness of entrepreneurship education and its entrepreneurial outcomes (Henry et al, 2003; Hannon, 2007; Pittaway and Cope, 2007b; Pittaway and Hannon, 2008). However, in parallel to the field of entrepreneurship education, the process of entrepreneurial learning has also been researched to a more limited extent but this concept tends to be applied in a practical context, i.e. starting and/or growing a new venture, and not from a university perspective (Cope and Watts, 2000; Jones-Evans et al, 2000; Rae and Carswell, 2000; Heinonen and Akola, 2007; Pittaway and Cope, 2007a; Leitch and Harrison, 2008; Politis, 2008). Broadly, entrepreneurial learning can be conceptualised as a complex transformative process in which career experience is converted into entrepreneurial knowledge (Politis, 2008), though Heinonen and Akola (2007) noted that it has no agreed 'precise definition'. For the purposes of this paper, Politis' (2008) definition is appropriate. Much entrepreneurial learning literature has been influenced by theories and models of experiential learning (Dewey, 1938; Lewin, 1942; Kolb, 1984) in which people learn through a process of reflection and review (e.g. Jones-Evans et al, 2000; Cope and Watts, 2000; Pittaway and Cope, 2007; and Politis, 2008). In particular, some authors have argued that a learning-by-doing, reflective, and experiential approach is clearly so much more appropriate (Cope and Watts, 2000; Cope, 2005, Thompson, 2008). While even David Birch has stated that, "If you want to encourage entrepreneurship, it should be through some kind of apprenticeship" (Aronsson, 2004: 289), Hindle (2007) suggested that universities could offer such an apprenticeship and, indeed, asks: "Is the culture of the business school an immutable constant, or could business schools be induced to adapt and diversify their educational approaches to suit different subject matter and different student needs using different approaches than those that currently prevail?" Although the entrepreneur's personal development should be considered when designing entrepreneurship education programmes (Rae and Carswell, 2000), Politis (2008: 65) cautions that:

“attempts to stimulate entrepreneurial activities through formal training and education is not likely to have an strong and direct impact on the development of entrepreneurial knowledge ... [but] should primarily focus on developing creativity, critical thinking and reflection among individuals, which in turn can have a profound influence on both their motivation and ability to develop entrepreneurial knowledge throughout their professional lives”

So can universities stimulate effective experiential entrepreneurial learning for students who are involved in new venture creation while simultaneously participating in an *uber-*experiential entrepreneurship education program? Despite a plethora of different approaches to entrepreneurship education, whether experiential or not (Hytti, 2001; Fisher et al, 2008), we would argue that the Kolbian reflective experiential entrepreneurial learning process is influenced by four elements (Figure 1), which may manifest themselves as formal education inputs, work experience, books we choose to read, or people we meet and listen to. In a sense, the latter is of most interest to us, because it may concern organised mentoring, on the one hand, or more informal role models, on the other. Clearly, reflective learning, i.e. concrete experience, reflection, abstract conceptualisation and active experimentation (Kolb, 1984), and career or work experience (Politis, 2008) are critical to this process, but so too are the other elements. Intuitively, then, any entrepreneurship education programme that claims, or indeed aims, to contribute to effective entrepreneurial learning should be benchmarked against this model, and should contribute strongly to both the ‘left’ and the ‘right’ hand side of the model. Yet, while the two leftward quadrants (*knowledge-based learning*) are important as a basis for future entrepreneurship, they are impotent if they are not symbiotically linked to the rightward quadrants (*experience-based or experiential learning*), work experience and ‘people we meet and listen to’.

Linked to this entrepreneurial learning model, Figure 2 then illustrates how certain approaches to entrepreneurship education (lectures; case studies; simulation & gaming / role plays; and New Venture Based Learning or creating a ‘real life’ new venture) differ in terms of their level of experientiality and real-life relevance and, as a result, whether they can be categorised as knowledge- and/or experience-based learning.

In addition, our second model illustrates how experientiality, therefore, has a direct influence on the impact and outcomes of such pedagogical approaches – where at the basic, non-experiential level, for example, lectures help to develop knowledge, whilst other approaches, particularly ‘real life’ or new venture based learning actually build competency, essentially the ultimate and most effective form of entrepreneurial learning.

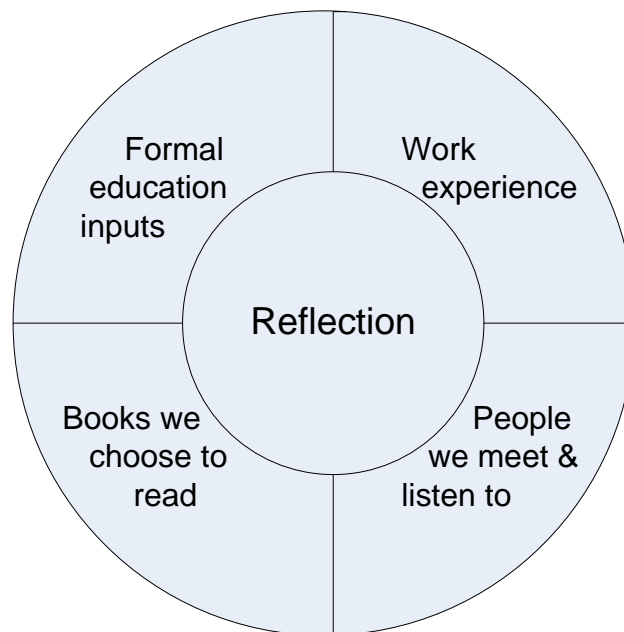


Figure 1: Formal & Informal Entrepreneurial Learning Model

Source: Developed by authors

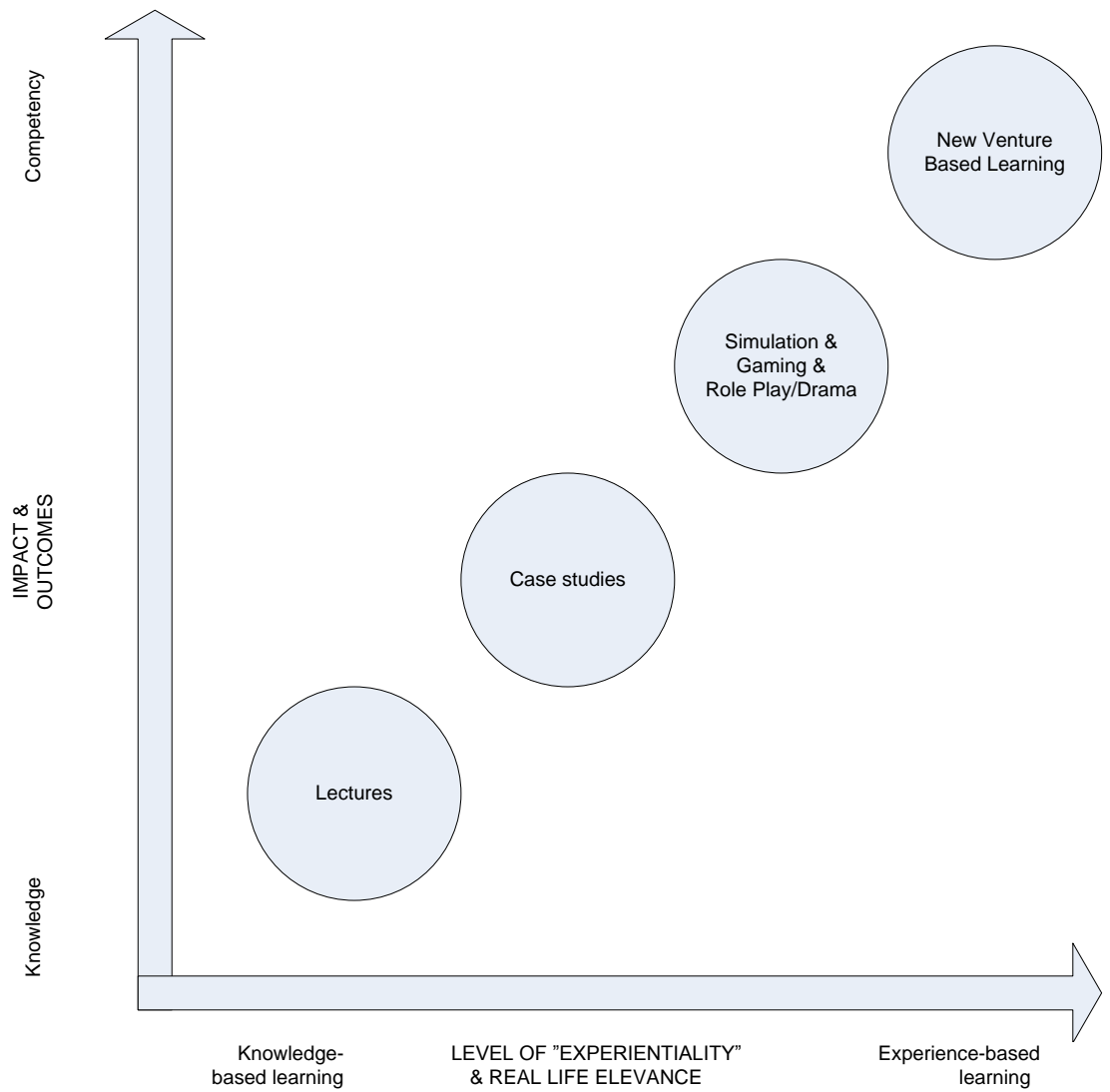


Figure 2: Experiential learning and entrepreneurial impact

Source: Developed by authors

3. Two complementary approaches

3.1 BA (Hons) Enterprise Development, University of Huddersfield

A key feature of this new degree is that students in part learn by doing and learn from doing.

After three years students will have accumulated the necessary credits for an undergraduate honours award; they will also have started their business and have it up and running.

Admission therefore requires applicants to be able to demonstrate previous entrepreneurial endeavour and serious intent; this may well embrace entrepreneurship programmes in schools. The basic approach is that in the first year students explore a number of possible ideas and opportunities before settling on one. In the second year they develop this in detail and possibly launch the business, which they are required to do by the end of the year. In the third year they are running the business. Some of their credits thus come from work-based learning and experiential reflection.

They will:

- Learn by listening – somewhat passively, but not entirely so – to academics, certainly, but also to ‘experts’ and practising entrepreneurs
- Learn by and from doing, with a real focus on reflective experience
- Be confronted with problems and the need to make decisions, both individually and in groups
- Be exposed to ambiguity, uncertainty and some risk throughout
- Be encouraged to learn from their mistakes and manifest poor judgment.

In designing the programme the Huddersfield team were keen to ensure that the degree deals effectively with the three key transformational themes of new business development:

1. An idea into a product and a real opportunity
2. A would-be entrepreneur into a competent practitioner
3. The informal beginning into a proper organisation.

It is a designed three year developmental experience that embraces knowledge, skills and behaviours – both doing and thinking - and attitudes along the following line

Year One - the foundation part – developing the person

We believe it is important to start the programme by making sure every student is ‘on message’ and understands how the programme will develop. The need to test ideas robustly, and not assume every idea for a new product or service is a real opportunity, is critical and this will be instilled by exposing the students to a ‘dreaming room’ experience where their ideas and thinking are put to the test, probed and scrutinised. This environment needs to be both firm and fair if it is to help build student confidence.

Relevant foundation modules will be based around Personal and Study Skills (relevant for this degree and including the abilities to screen opportunities and to pitch an idea effectively), Creativity, Innovation & Entrepreneurship, Problem Solving and Decision Making. Seminars require students to work both individually and in groups to develop their ideas creatively. The intention is that at the end of Year One students will have explored a number of options and ideas and chosen to focus on one that they will develop as a business in their second year. They will also have been exposed to a number of different entrepreneurs.

Students will also be required to think about, assess and address their own personal characteristics – to both understand their entrepreneurial potential and put in place mechanisms to deal with the implications.

Year Two - the establishment element – crafting the business opportunity

Students will develop their business plans, which will stretch beyond the start-up stage and factor in growth issues from the beginning.

Support modules will include and cover relevant Legal Aspects, Project Management (as part of Business Planning), Marketing and Selling and Finance. The relevant ‘technical’ aspects are supported by allowing students a floating option module from across the campus.

Assessment will be a mixture of academic work and business-related artefacts. At the end of the year the students will have a business that is either in its embryo stage or ready to launch.

Year Three - the final stage – preparing for growth

In their final year students will be running their business. Key modules on strategy, growth and leadership support the year. The students will complete a dissertation with an important reflective component. In addition their work experience will be accredited.

Exit Routes

Although careful entry selection will attempt to recruit students who are most suitable for this degree it is recognised some will not succeed in starting a growth business. Those students who are instead able to demonstrate success from self-employment or starting a small social enterprise or running a successful one-off project will be able to complete all the modules and graduate, because they will have relevant experiences to reflect upon.

Those students who are not able to do one of these options successfully will be able to complete most of the specified modules but in their final year they will be asked to submit a more conventional dissertation and exchange the work-based experience credits for two relevant taught modules from the Business School. The name of their degree award will be amended to reflect this.

Networks

Networks and networking are important themes in entrepreneurship (Anderson et al., 2007; Casson and Della Giusta, 2007; Greve and Salaff, 2003) and their significance is recognised. Figure 3 (from Thompson, 2008) describes the Entrepreneur's Learning Community and argues that student entrepreneurs on this programme will find learning opportunities from their interactions with fellow students undergoing the same development opportunity, from the academic team as both teachers and mentors, from practising role model entrepreneurs and relevant professionals that are invited to the University and from external mentors that we find and that they find for themselves. We have set out to build this community as effectively as we can from the outset.

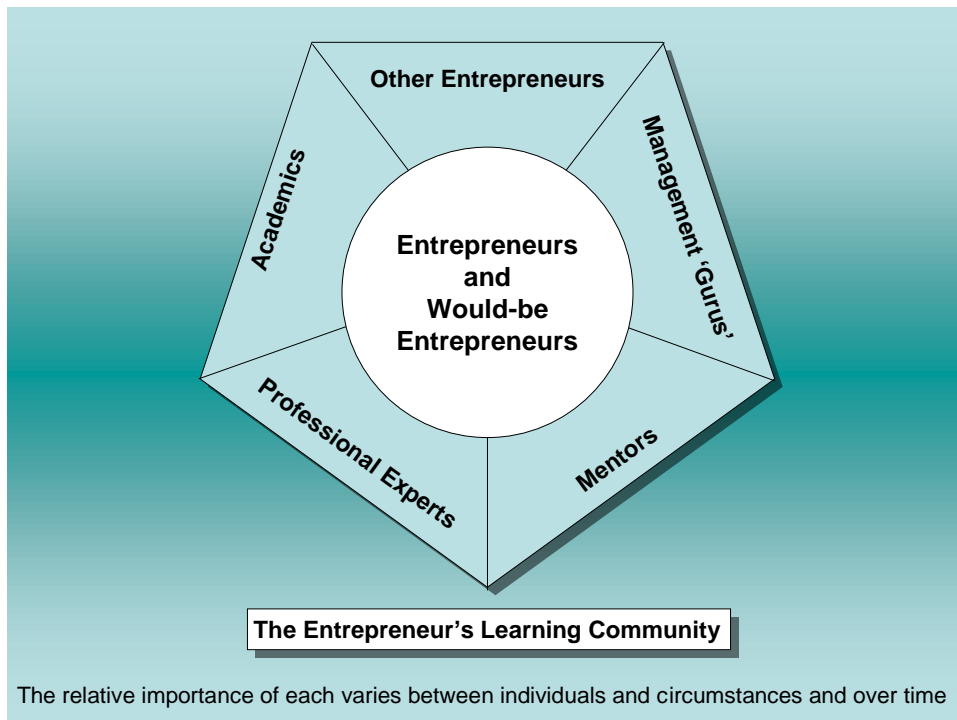


Figure 3 The Entrepreneur's Learning Community (Thompson, 2008)

3.2 MSc New Venture Creation, Queen's University Belfast

This approach is part of the innovative pedagogy strand of the ELVIS model², building on the 100 per cent embedded curriculum model at Queen's University Belfast in the degree pathway of 22,000 students. The university's model was benchmarked in a Directorate General (DG) Enterprise report as a best practice curriculum model (European Commission, 2008). Enterprise is embedded within existing modules in 67 non-business disciplines at the University. The enterprise for life model has a focus on students going through the entrepreneurial process of creating, innovating and executing – with students given the choice to focus on starting their own business, social enterprise or intrapreneurial project in the corporate setting. There is an opportunity for students to learn by having an opportunity to implement their innovation through developing their own business. Queen's University has been shortlisted for the UK Entrepreneurial University of the year for the last two years. The

² The acronym ELVIS refers to **E**MBEDDING Enterprise; **L**IFELONG learning skill system; **V**ALUE all resources; **I**NNOVATIVE teaching strategies/Institutional support; and **S**TUDENT centred with Alumni.

Queen's approach has also been adopted as best practice in a variety of countries including China, India and Latvia amongst others. Over 500 students started part time businesses at Queen's in the last year. However, the new Masters is aimed at giving Queen's graduates the opportunity to implement business ideas with High Growth potential, building on their entrepreneurial learning within their own curricular area.

The difference from Babson College type models is the focus on learning, as well as business success; at Babson, students are given poor marks if they do not raise venture capital (which is very tied to American culture). As we believe that serial entrepreneurs have to learn from failure, our pedagogy – whilst aiming for success – allows students to apply the Kolb model (plan, do, and reflect) and to learn from failure, as well as success. It should not be surprising to the reader that the key recommendation emerging from this paper is that we would encourage universities not only in the UK but in other parts of Europe (and elsewhere) to introduce exploratory programmes that implement the New Venture Based Learning model. At Queen's University Belfast, we are in the process of validating a Masters programme in New Venture Creation for commencement in September 2009. Discussions between the university's Regional Office and Queen's University Management School have identified the critical need for a Masters-level programme which provides practical and academic support to graduates who have a viable idea with growth potential over the first year that they create and grow their new venture. The primary rationale for this new programme is, therefore, to meet an economic and social need within Northern Ireland for focused, practice-oriented provision of postgraduate entrepreneurship education for graduates who have a viable business idea with growth potential. The MSc New Venture Creation builds on activity at the Undergraduate and Postgraduate level to enable students to develop the capacity to apply their project practically. The MSc New Venture Creation is in line with the regional development agency, Invest NI's, aim to create new ventures with high growth potential. We

anticipate that students will have started implementing their new venture by the time they begin the course or, if not, within the first few weeks. In some cases, they will not be trading – but most should at least be looking for their first customer(s) and some may even have successfully made the first sale. Our definition of start up is that students will have registered the business whether they are actively looking for customers at that stage or not.

There are two potential types of students on this programme, both of whose needs will be catered for effectively through the provision of mentors and other support. First, those who are ready to trade, who may have ideas which are low growth, relatively low (or medium) risk, low entry barriers (e.g. funding requirements), and are near to market; and, second, those who will be non-trading for some time, who have a high-growth potential, distant from market, high risk, and may be developing a prototype or other technology which means they may not be able to start trading during the MSc.

Mentors and the Course Director will monitor the speed and robustness of the development or implementation of the new venture (through the portfolio of evidence and notes from mentor-student meetings): although not a formal part of the assessment of this MSc, such monitoring is necessary to ensure students can progress the implementation of their new venture at a satisfactory speed, and that developmental issues or barriers can be identified by an “early warning system” and resolved.

In the first semester, three modules will run concurrently, the first of which introduces students to the concepts and practicalities of entrepreneurship and more specifically to the model of New Venture Based Learning applied within the MSc New Venture Creation. At the same time, in a module on Entrepreneurial Strategy and Planning, students will gain the ability to enhance and develop their idea into a more strategic vehicle for the future development and growth of the business. The third module in the first semester will focus on

Entrepreneurial Marketing & Sales, and hence students will gain the ability to undertake sales and marketing activities in an entrepreneurial way, which builds upon the existing idea.

Semester two involves three further concurrent modules. The first is on Entrepreneurial Finance, giving students the ability to obtain finance and financially manage the business. The second focuses on Innovation, i.e. the ability to be innovative to grow the new venture. The third focuses on Leadership and Management, hence providing the ability to lead and manage the new venture in a strategic and entrepreneurial manner. Finally, students will undertake a Strategic Review of their business. Throughout all modules, students will be mentored and assessed on that particular functional aspect of their new venture.

At the end of the degree course, the 'Project' – which is not a dissertation in the traditional sense due to its experiential, reflective and New Venture Based Learning approach – is a Strategic Review of students' experience over the course, both of the pre-start activity, the process of starting the business and beginning to trade. Students are required to write a 15,000 word (minimum) reflective document: a Strategic Review of how successful or otherwise their strategy has been over the first year. This Strategic Review is not assessed on how successful the business has been in its first year as it is often the most difficult for many businesses. The Strategic Review will vary depending on the type of student and how near/distant from market their idea is; level of funding required, risk, and growth potential. Furthermore, it is an opportunity for some students to review the implications of taking their idea to market. Indeed, while some students may have a real business at the end of this process (which may or may not be trading), others may rather have a refined set of ideas.

4. Discussion of the issues being raised and Conclusion

A note on the businesses: Until the programmes are properly up-and-running - with graduates – it will not be possible to draw firm conclusions about the types of business being started. Although Huddersfield is working with financiers to establish a venture fund, it is by no means certain the types of businesses generated will need substantial funding – at least in the beginning. The majority of the students will be young and lack either an educational or an experiential grounding in specific technologies. The QUB students are likely to be different – many will have relevant first degrees that can underpin their business proposal.

In many ways this is not a relevant issue. Businesses which require only limited capital and are not underpinned by technology can be set up to be either (or both) scalable and saleable – using as a template the franchise preparation extolled by Gerber (1995). We need look no further than Subway for a perfect example. This business was set up by the seventeen year old Fred DeLuca as a single sandwich shop. The main issue is the extent to which the business is both strategic and entrepreneurial. If we take the basic principles of competition described by Porter (1985), namely cost management and difference, we can see that an entrepreneurial business is different in some critical way. Either the product or service offers something different from its rivals, something that matters to customers, or the business does what other businesses can do, but faster or cheaper. Students will be driven to achieve one (or even both) of these regardless of the nature of the business. In other words they will be pushed to create a robust business model where it is clear what the product or service is, who the target customers are, and (especially) what their compelling reason to buy is. It goes without saying there should be a sound accompanying revenue model. Thompson (1999) offered the E-V-R (environment-values-resources) framework as a test of a strategically entrepreneurial business, arguing successful businesses achieve *and maintain through emergence and change* a congruency between their resources and opportunities.

Related to our preceding description of both universities' programmes and, in particular, when considering the wider implications for entrepreneurship practice (the "So what?" question), there are four critical strategic issues for entrepreneurship educators

First, there is a clear importance within these programmes that students start a real business, rather than just learn with cases or participate in simulations, business games, or role plays. In addition, we see a need to capture the learning with a portfolio. Whilst, at least according to our conceptual model of entrepreneurial learning and entrepreneurial impact (Figure 2), case studies are more experiential – and, therefore, have higher competency-building outcomes than lectures, (and more so with role/play and drama) – these are still fairly low impact compared to actual "New Venture Based Learning". Inevitably, one can imagine certain pitfalls (for example, if a student-entrepreneur's idea turns out to be unviable or their new firms does not perform as well as anticipated), but then such is a risk with starting any business. We would suggest that these programmes would enable students/entrepreneurs, through higher-impact experiential learning and the building of competence and experiential knowledge (not just academic knowledge, as per Figure 1) and, consequently, to be better prepared for an entrepreneurial career.

Second, there remains a debate about whether such a pedagogical intervention is best achieved at Undergraduate (Bachelor's) or Postgraduate (Master's) level. Conceivably, students at Master's level are more likely to have more knowledge than undergraduates and, indeed, may have more work experience that can be applied to their new venture.³ Then again, it may be that, in forming entrepreneurial attitudes and an "entrepreneurial mindset", the minds of undergraduates may be more receptive to such a programme. However, the

³ Given that there are, conceptually, three types of student: i. undergraduates, ii. graduates and iii. graduates with experience >5yrs or <5yrs.

answer to this question *remains* unknown and will remain so we would suggest, that without further research, we can say they are different and should achieve different outcomes. For example, the pedagogy is condensed into a year at PG level while it may be over 3 years at UG, which may give more opportunities for pedagogical intervention. A related question for future investigation is whether one takes a different approach with UG and PG students; in one sense, then, there is an analogy here with the PGCE (Postgraduate Certificate of Education – 1 year of educational development and teacher training/classroom practice after completing a Bachelor’s degree in a subject) and the BEd (Bachelor of Education – 4 years of subject learning and teacher training) education courses in the UK. Some would argue that the BEd may enable students to develop their teaching ability over a longer period before embarking on their career; but with NVBL there may or may not be a similar benefit of the UG approach.

Third, it remains unclear whether entrepreneurship (here, as in our earlier discussion in the introduction we do mean entrepreneurship as opposed to enterprise skills) should be in the curriculum or adjunct to it. Or, indeed, whether the optimal situation is to have entrepreneurship as **both part of the curriculum and adjunct to it**. These degrees imply a clear choice by students and there is room and opportunity for incubation-themed activities to operate on campuses for students seeking to try out their business ideas without committing to a dedicated degree.

Fourth, it is important to recognise the potential of collaboration between 'complementary' Universities and the building of a sharing community, something of a federation which might grow over time, grounded with reference to entrepreneurial universities (e.g. Leitch et al, 2007). This particularly provides a wonderful opportunity for international collaboration of various forms – which is one of the rationales for presenting this paper at USASBE and for discussing its findings with a North American audience. For such a federation, it is relevant

to consider if we are developing entrepreneurial or enterprising individuals *or both*? Similarly, what about approaches that are either practical/applied (engineering) or theoretical/pure (business and management)? Other issues include how to balance creativity, on the one hand, with the managerialism or bureaucracy that is often espoused within Business School courses and which is a feature of “management” within very large-scale corporations. Similarly, informal versus formal learning is another important debates. While we recognize that two thirds of entrepreneurship education in England is business school led (Hannon et al, 2006), and which we are aware is similar in universities in most other Western countries, basing entrepreneurship education within an environment in which students are being prepared for “corporate” careers (aside from the relevance of entrepreneurship to “corporate entrepreneurship” and intrapreneurship) may not be the most optimal to foster entrepreneurial learning and creativity.

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