Reconceptualising Curriculum Design for Entrepreneurship in Higher Education*

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Abstract

This paper challenges some of the assumptions that underlie the now widespread provision of third level 'entrepreneurship education' and seeks to open up the debate by suggesting an alternative view which, while the case for it is not fully proven, might nevertheless merit some consideration.

Although entrepreneurship education appears now to be well established, it has in-built contradictions because it encompasses both being entrepreneurial and being an entrepreneur which, according to some arguments, are not the same thing. Nevertheless, because of an apparent assumption that in essence they have a lot in common, and because the business plan provides a convenient and ready-made guide to what to teach for being an entrepreneur, the content of being entrepreneurial courses often appears to follow similar business plan-based lines.

If, however, it is accepted that being entrepreneurial and being an entrepreneur are not variations of the same thing, and in particular that being entrepreneurial is not a sub-set of being an entrepreneur, then it could be helpful to explore the implications of treating them as being different. In particular this would challenge the apparent presumption that a business plan-based approach is valid as the basis for all entrepreneurship education situations.

Instead the paper suggests a process of 'reverse engineering' course content from the outcomes it is hoped to produce. Because there is little in the published literature to indicate what the content of a 'being entrepreneurial' course might be, it outlines some ideas based on exploring epistemological approaches to teaching entrepreneurship and the authors' own experiences. For instance it is suggested that such programmes should help learners:

- To consider different perspectives.

- To explore possibilities in an 'effectual' way.

- To analyse situations and to persuade others of the relevance and desirability of new solutions.

- To acquire and use the different forms of social capital that will assist them in being entrepreneurial as a 21st Century graduate.

In all this the paper does not seek to close the argument by proving conclusively all its suggestions. Instead it seeks to stimulate discussion by making a *prima fac*e case for changing assumptions and also by making new proposals for the content of 'being entrepreneurial' courses

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Reconceptualising Curriculum Design
For Entrepreneurship In Higher Education

1. Introduction

1.1 The rise of entrepreneurship education

Entrepreneurship education is not a new concept. It may have started as early as 1947 or 1938 (Hannon, 2004) but it was at the end of the 1970s that it seems to have had its main stimulus when unemployment was rising in many countries and research by Birch in the USA showed that it was small businesses which were net creators of jobs (Birch, 1979). On the assumption that small businesses created jobs and that entrepreneurship meant entrepreneurs creating small businesses, governments often wanted more entrepreneurship. And therefore they wanted the education sector to encourage it.

For instance in Ireland in the early 1990s the influential Culliton Report reflected that 'the need for productive enterprise should be an issue of primary importance at all educational levels' (Culliton, 1992, p.11). This was not just limited to business-related disciplines and considerations such as the potential of the STEM disciplines to contribute to economic growth has resulted in a drive to embed entrepreneurship education across a wide educational spectrum. As Ireland's Enterprise Strategy Group noted:

> 'Ireland's economic development will depend to a large degree on knowledge and innovation, both of which are essential in making the transition to higher value activities that support economic growth and wealth creation. People are the enablers of such activities and the education and training system must adapt to produce the skills to drive successful enterprise.' (Enterprise Strategy Group, 2004, p.73).

As a result of this interest over the last 30 years there have been a lot of initiatives in the higher education sector which have been aimed at enterprise or entrepreneurship. While this trend may have been instigated largely by governments, it has to an apparently varying extent been welcomed, implemented and/or enhanced by the higher education sector. The extent of this exemplified in a report by Rae *et al* who noted in 2012 that, of the 126 HEIs in England they tried to survey, 116 responded of which 93 per cent reported that they supported student enterprise and graduate entrepreneurship – a response which indicates that it was available in at least 85 per cent of the whole sample (Rae *et al*, 2012).

If anything this appeal seems still to be spreading. Not only is entrepreneurship education now being reconceptualised more than ever (see Morris, Kuratko and Cornwall, 2013) but Sarasvathy and Venkataraman (2011) suggest that entrepreneurship has the potential to be recast as something as large as a 'social force' (p.114). However, although an economic development objective may have provided the major stimulus for entrepreneurship education, this motive has had its critics. Shane (2008), for instance, has pointed out a number of myths associated with entrepreneurship which he suggests mis-direct entrepreneurs, investors and policy-makers into believing that entrepreneurship is a panacea for revitalizing and stimulating economies. Further, as Gibb (2002) has pointed out, there is no absolute agreement among providers about the basic concept of entrepreneurship that should be taught and, in any case, any returns from this investment in the development of entrepreneurship education within the Higher Education sector are most likely only to be

apparent in the longer term (see Matlay, 2008 and Hegarty and Jones, 2008). Such concerns prompt a reflection on the need for appropriate curriculum design for campus wide initiatives and how this might filter down into classroom based teaching (see also Rae *et al*, 2012).

1.2   The aim of this paper

Thus, although enterprise education may have become widespread, there are concerns about what is being delivered in its name and whether that is appropriate. Therefore the aim of this paper is to explore an aspect of that provision and to open up the debate by suggesting an alternative analysis and approach which, while the case for them may not fully be proven, might nevertheless merit some consideration.

In particular the paper explores an epistemological approach to entrepreneurship teaching in Higher Education, and examines the need for 'reverse engineering' in curriculum design. A summary set of proposed constructs and concepts is provided, albeit in outline, with the aim of stimulating debate among education providers or practitioners as to how to design appropriate curricula.

2.   An Epistemological View of Entrepreneurship Education

Initially there was a tendency to use 'enterprise' as the label for the education in question but the terms 'enterprise' and 'entrepreneurship' have often been used synonymously (Gibb, 1993) and, more recently, the designation 'entrepreneurship' seems to be preferred. But, in this context, what does entrepreneurship mean? While there may have been an early presumption that entrepreneurship meant the same thing to everyone, it is now clear that that is not the case and it has a range of sometimes different meanings. Bridge, for instance, provides examples showing that in one situation entrepreneurship has been defined as 'the entry and creation of high-growth firms' and in another as 'the ability of an individual ... to make a unique, innovative and creative contribution in the world of work, whether in employment or self-employment' (Bridge, 2010, pp.99/100) – two concepts which are clearly not the same thing.

This also applies within entrepreneurship education where there are different interpretations. For example Gibb in 1993 spoke of enterprise education as being either 'about' or 'for' entrepreneurship and Hannon (2004) added 'through' entrepreneurship as a third category. The 'about', 'for' and 'through' distinctions are, in effect, those used by Hytti and Kuopusjärvi (2004) who highlighted three different roles which might be assigned to 'entrepreneurship' education programmes depending on which of the following aims were being pursued:

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

Bridge *et al* (2010) asserted that the second and third of these aims are typical of the majority of core programmes and suggested that they could be distinguished as two separate constructs by being labelled 'enterprise for new venture creation' and' enterprise for life' respectively. They also noted that, although the former might appeal to governments

and funders with economic development and job creation aims, it is the latter which is thought to appeal more to students.

2.1   The assumption of similarity and its consequences

Although it is clear that entrepreneurship can refer to different things, the application of the same label to those things inevitably implies that, even if they are not identical, they are at least similar. This may be a hang-over from an earlier time when it was assumed that everyone used the word entrepreneur in the same way - but as a result there still appears to be a belief that there are only relatively slight shades of difference between different interpretations of entrepreneur and/or entrepreneurship - such as being an entrepreneur and being entrepreneurial. However the reality is that the words entrepreneur, entrepreneurial and/or entrepreneurship are now applied to some fundamentally different things and therefore, it is suggested, the assumption of similarity should be abandoned. If that were done what would be the implication a critical rethink leading to the treatment of 'being an entrepreneur' and 'being entrepreneurial' as being disparate concepts?

Whilst there is extensive literature on entrepreneurship education, which includes for instance papers on the different interpretations of entrepreneurship underlying the programmes on offer and their different concepts (Gartner *et al*, 1994; Galloway and Brown, 2002; Falk and Alberti, 2002; Rae *et al,* 2012), there is a dearth of research into precise content or pedagogical approaches and how these might be applied in generic campus wide initiatives. For instance in 2007 Forfás mapped Irish enterprise education and other entrepreneurship support initiatives but, while the report lists many entrepreneurship education programmes, little is revealed about the basis of their content - although it does give an indication that it was largely based on 'being an entrepreneur' (Forfás, 2007). In addition, both authors of this paper had experience of the delivery and/or evaluation of two recent higher education initiatives on the island of Ireland: the Northern Ireland Centre for Entrepreneurship (NICENT) from 2000 to 2009 in the North and Accelerating Campus Entrepreneurship (ACE) from 2008 to 2012 in the South. These programmes were multi-institutional and both had a wider interpretation of entrepreneurship than just business start-up - yet a subsequent review (see Appendix) of the learning outcomes and indicative content for particular modules demonstrates upon reflection that curricula was centred on the business start-up process.

Not only might course content be inadvertently biased towards the business start-up process but also there is evidence to suggest that third level institutions tend to use common modules irrespective of the study discipline (see Hegarty, 2010). Instead it is advocated that course provision should be linked to the aspirations of the stakeholders, not least the students engaged in a particular course of study. If it is accepted that 'being an entrepreneur' and 'being entrepreneurial' are different things, then the learning outcomes and indicative content for one will not automatically be appropriate for the other. The authors contest that 'being entrepreneurial' (enterprise for life) is not a sub-set of 'being an entrepreneur' and, if anything, it is the other way around with 'being an entrepreneur' being the narrower concept and something which might be built on a broader 'being entrepreneurial' foundation. Therefore 'being entrepreneurial' needs its own distinct curriculum design and is a better place to start for curriculum development.

3. Reverse Engineering for Curricula Development

It is therefore suggested that the way that entrepreneurship is interpreted in the context of entrepreneurship education appears to have in-built contradictions because it encompasses both being entrepreneurial and being an entrepreneur - which, according to some arguments, are not the same thing. Nevertheless, because of an apparent assumption that essentially they have a lot in common, and because the business plan provides a convenient and ready-made guide to what to teach for being an entrepreneur, the content of being entrepreneurial courses often appears to follow similar 'business plan consideration' lines.

If the assumption of the validity of business plan-based course content for all entrepreneurship education situations is rejected, then what should replace it for those situations for which it is not appropriate? Instead of just borrowing a conveniently ready-made, but inappropriate, model of course content, a process or reverse-engineering is suggested to develop content appropriate for the desired outcome.

The meaning of 'being entrepreneurial' in this interpretation is specifically not 'enterprise for new venture creation' and it is instead 'enterprise for life'. While enterprise for life might nevertheless lead to business start-up and/or business success, being entrepreneurial in this sense is essentially about problem solving and opportunity finding and taking. Such people are 'engineers' in the sense of 'a person who carries through an enterprise through skilful or artful contrivance' (Kennedy, 2014. p.xvi). And not only can they find new ways of doing things but also they can persuade others of the value of those ways. Gibb indicated that enterprise education which was not aimed directly at stimulating business ownership or management should instead be intended 'to help develop enterprising people and, in particular, to inculcate an attitude of self-reliance' which, among other things, includes characteristics such as opportunity seeking, initiative taking, making things happen and problem-solving' (Gibb, 1993). While some progress might be achieved by imitating the curricula of others; in order truly to move ahead and discover new knowledge boundaries, it is necessary to identify, develop and implement new methods relevant to the stakeholders of the particular course.

3.1 Ditching business plan based teaching

This approach could also help to improve employability as it would be informed by, and encompass, the skills that employers seek such as innovation, an ability to articulate and critical analysis (Rae 2007). 'Being entrepreneurial' can signify being capable and ready to analyse and solve problems, to see and explore new opportunities and to innovate and persuade others of the benefits of that innovation - developing creativity and knowing how to manage risk (see Watson 2001). For this the content of many existing 'being entrepreneurial' courses is not a good place to start because much current teaching is based more or less on the requirements for business start-up and/or the business plan. Therefore, not only does it include some things which are not relevant to being entrepreneurial and exclude some things which are relevant, but also it is based on the assumption of similarity between the different things labelled 'entrepreneurial' and so is likely to communicate an unhelpful perspective for both educator and student. Even for business start-up the business plan may not be appropriate because it is argued that a business plan is essentially a big-business tool (Bridge and Hegarty, 2013) primarily useful in some established business contexts and, despite being widely advocated as the entrepreneurship tool, often not helpful in a new venture context.

Therefore, for 'enterprise for life', the authors suggest a fresh start - which should itself be enterprising. In the absence of published evidence detailing what the 'being entrepreneurial' curriculum might look like, the authors have relied on their own teaching experience and the influence of seminal works linked to 'what is being entrepreneurial' (see for instance, Kolb 1984; Gibb 1993; Gibb and Cotton 1998; Rae 2000; Jones-Evans et al. 2000; Gibb 2002; Edwards and Muir 2005; Edwards and Muir 2012; Abaho *et al*. 2015). From this, five core topic areas are suggested:

- Seeing other perspectives – because a fresh start will be helped by a fresh perspective and the possibilities it can reveal, and so will opportunity seeking.

- Exploring and effectuation – because exploring and effectuation can be useful guides to making things happen, especially in conditions of change and an uncertain future.

- Problem analysis – because being able to use a flexible analysis framework will aid problem solving and making decisions.

- Persuasion and selling – because little will be done unless others can be persuaded to assist or otherwise contribute.

- Understanding social capital – because humans are super-social creatures so it is vital to understand social forces and the need to build and use connections.

3.2   Seeing other perspectives

McGilchrist is a psychiatrist who has studied how the human brain works. He has written about the different functions of the two sides of the brain and suggests that in the West left-brain thinking has become too dominant. He is not suggesting that we should focus exclusively on the right side but should instead learn to use both sides in combination:

> 'One way of looking at the difference would be to say that while the left hemisphere's raison d'être is to narrow things down to a certainty, the right hemisphere's is to open them up into possibility. In life we need both. In fact for practical purposes, narrowing things down to a certainty, so that we can grasp them, is more helpful. But it is also illusory, since certainty itself is an illusion ... . Similarly the right hemisphere appreciates that all things change and flow, and are never fixed and static as the left hemisphere sees them. Nor are they isolated and atomistic (left hemisphere), but reciprocally interconnected (right hemisphere).' (Rowson and McGilchrist, 2013, p.14)

Subjects like accountancy and finance can emphasise left-brain thinking which produces the accuracy and clarity often sought, but, when exploring, it is the right-brain's ability to see possibilities which can be a crucial component of success. According to Brooks 'through most of human history, people have tried to understand their world through reductive reasoning. That is to say, they have been inclined to take things apart to see how they work' (Brooks, 2011, p.108). This is essentially a left-brained approach with the assumption that, even for complicated things, once we understand the parts, it will be easier to work out the behaviour of the whole.

However the problems in such a reductive approach can be illustrated by using Sir Karl Popper's distinctions between clocks and clouds (Popper, 1973). Clocks, he suggested, are predictable and can be understood using reductive methodologies by taking them to pieces to see how the parts interact. Clouds, however, cannot be understood as the sum of their parts, they are unpredictable, irregular and dynamic, changing from second to second. They can best be described through narrative, not numbers. Popper originally introduced the

analogy to make a point about the direction science had taken since the days of Newton. Newton's brilliance showed how the motions of the planets could be predicted with clock-like precision from a few simple physical laws and that led to what Popper referred to as 'physical determinism': assuming that the behaviour of a system could be predicted from the predictable behaviour of its components. However, Popper concluded, it doesn't work, 'physical determinism is a nightmare' and it 'destroys, in particular, the idea of creativity'. Most things are not clocks but clouds. Sarasvathy and Venkataraman (2011) also warn against "putting a thing into a class to which it does not belong" (p.113) and perhaps this has been done to the detriment of entrepreneurship education.

3.3   Exploring and effectuation

It has been suggested that most 'professional' business thinking is essentially based on established big business methods – but that is often not the appropriate thinking for new or small ventures. As Penrose pointed out over 50 years ago:

> 'The differences in the administrative structure of the very small and the very large firms are so great that in many ways it is hard to see that the two species are of the same genus. We say they are because they both fulfil the same function, yet they certainly fulfil it differently, and it may be that in time the differences will become so great that we should consider in what sense they can both be called industrial 'firms'. In other words, ... as the large firms grow larger and larger ... it is much more likely that their organization will become so different that we must look on them differently; we cannot define a caterpillar and then use the same definition for a butterfly.' (Penrose, 1959, p.19)

Innovation involves working towards a destination where the exact nature of the outcome is unknown and cannot be determined in advance – and therefore innovators are to some extent explorers on that journey. Bridge and Hegarty (2013) posited that instead of thinking of small businesses as small big businesses, we should see them as having more in common with explorers and this led them to derive a guide to new venture exploring, based in part on the ideas of 'effectuation'.

Sarasvathy studied how entrepreneurs actually operate – as opposed to how they were supposed to operate. She interviewed nearly 30 'expert' entrepreneurs: people 'who, either individually or as part of a team, had founded one or more companies, had remained a full-time founder/entrepreneur for ten years or more and participated in taking at least one company public.' She found that most of the time, when contemplating a new venture, they did not conduct extensive market research as pre-planning. In fact, they distrusted market research and revealed 'a profound distrust of attempts to predict the future' and they did not try to plan the shape of the venture in advance and then try to implement those plans (Sarasvathy, 2008) - which is the essence of the business plan-based approach.

Instead these entrepreneurs mainly followed a process, not of 'causation', but of 'effectuation'. Sarasvathy notes that traditionally entrepreneurs were thought to pursue a causal approach in which they fix on a target and then try to cause it to happen whereas effectuation starts with the means available and then proceeds to see what can be made from that. Causation is like doing a jigsaw puzzle, - where you start with a picture of the final result you are aiming to create and then look for and put into position just those pieces that will construct it. Effectuation, on the other hand, is like making a patchwork quilt where you start by looking at what pieces are available because the nature of the pieces you find helps to determine what the final result will look like. Also, as Sarasvathy points out, a finished patchwork quilt is often much more useful than a completed jigsaw puzzle. Sarasvathy

suggested that the five key principles of effectuation are:

- **The *bird-in-hand* principle** – Effectuation is means-driven, rather than goal-driven. Its emphasis is on creating something new with existing means rather than on devising new means to chosen goals.

- **The *affordable* loss principle** – Instead of making a business plan based on sales projections and trying to raise the investment the expected returns appear to justify, this principle indicates that your commitment to a venture should be limited to no more than you can afford to lose on it.

- **The *crazy-quilt* principle** – Effectuation involves building connections, putting together commitments from stakeholders, and determining the goals based on who comes on board.

- **The *lemonade* principle** – If life gives you lemons, make lemonade.

- **The *pilot-in-the-plane* principle** – Effectuation recognises human agency as the prime driver of opportunity so the venture should not always stay on a pre-determined path and the entrepreneur can, and should, create opportunities and steer the venture accordingly. (Sarasvathy, 2008)

Sarasvathy also suggests that effectuation and business plans should both be seen as tools and it is better to have both tools and to know when best to use each of them, instead of always relying only on one.

3.4 Problem analysis

Being able to apply an appropriate approach for analysing a new problem is thought to be useful in any situation. Figure 1 illustrates a possible framework, based originally on a military appreciation structure (see Lean Six Sigma, 2015). It is presented here under headings which might be helpful if the analysis, and its conclusions, are to be recommended, recorded or communicated in written form. It might be felt that this is just a decision-making process but, as a tool for use when problem-solving, it also helps those who are being entrepreneurial in the widest sense.

Figure 1: A problem analysis framework

Deciding what should be done

Introduction. An introduction to the analysis including a review of the situation and the reasons why something needs to be done

Aim. It is important to specify what has to be done. So the factors affecting the selection of the aim should be considered followed by a statement of the aim - which should indicate what is required, but not how it might be done, and which should produce a favourable result if it is achieved.

Deciding how it might best be done

Factors. The factors are those issues which are relevant to how the aim might be achieved. So include a paragraph or section on each factor and its implications, and finish with a summary of the key deductions from the factors.

Courses Open.   The next stage is to consider the possible courses open. Each potentially feasible course should be described together with its pros and cons.

Decision.   Finally a choice of course can be recommended – based on the best apparent balance of the most pros and fewest cons.

3.5   Persuasion and selling

One reason for being able to record clearly and succinctly a logical analysis of a situation is to help to persuade others to accept and/or implement its conclusion – in other words to 'sell' it to them. The 'management trinity' postulates that the three key skills required to start a new venture are the technical skills necessary to provide the product or service in question, the ability to sell it to others and the ability to manage its finances (Sirolli, 2005). When a venture starts to grow the ability to manage people is also likely to be required. Of these skill areas, it is clear that the ability to sell is needed early on when selling the idea. Many initiatives will not be achieved by individuals acting on their own so being able to persuade others to contribute to something, or at least to permit it, is often a necessary part of being entrepreneurial – and the best way to persuade others is to show what is in it for them, which is the essence of selling something. Therefore entrepreneurs can benefit from acquiring sales ability at an early stage.

3.6   Understanding social capital

The ingredients necessary for a new enterprise, such as a business, are traditionally supposed to include financial capital, physical capital, human capital and even intellectual capital. It has been suggested, however, that that is rather like listing the essential components of a healthy diet without mentioning vitamins (see for discussion Bridge and O'Neill, 2013) and the vital ingredient often not listed in the enterprise mix is social capital. Although it is now increasingly recognised as very necessary for any sort of business, the importance of social capital has long been overlooked (Hegarty and Jones 2008) and it is also essential for other forms of enterprise (Bridge, 2013). One feature of the vitamin analogy is that it suggests that social capital exists in different non-substitutable forms. Based on a categorisation proposed by Coleman (1988, pp.102-4) the following are suggested as some of the possible forms that might be relevant to enterprise (for further discussion see Bridge, 2014):

- Access to relevant information. Enabling individuals and organisations to access information from inside or from outside their organisations or communities.

- Trust, support, co-operation, obligations and/or credibility. A set of interactive (often mutual/reciprocal) relationships which deliver benefits such as a climate of trust and obligations to help others.

- Shared norms of behaviour, commitment and belonging. Including encouraging individuals and/or organisations to share values and ways of thinking and providing 'social glue'.

Social capital has been described as 'the networks, norms and trust that enable participants to act together to effectively pursue shared objectives' (Putnam, 2007). It is about the quality of these relationships and especially the capacity of the groups to mobilise resources in their own interests (Sabitini, 2006). Social capital is important not least because humans are such social creatures. It is suggested that it can be more important than financial capital but it has also been noted that, whilst 'it is neither tidy nor mature; it can be abused, analytically and politically; its future is unpredictable; … (but) it offers much promise' (Schuller *et al*, 2000, p.35). Social capital is important for enterprise education, not least because learning happens most often in social situations, so its relevance should be included within curricula design.

4. In Conclusion

This paper suggests that many 'enterprise for life' courses seem to be based on an inappropriate 'enterprise for new venture creation' approach. This paper suggests that, instead of essentially following a business start-up curriculum, enterprise educational programmes could usefully help students to learn how to consider an issue from different perspectives, how to explore possibilities in an 'effectual' way, how to analyse situations and new information and to persuade others of the relevance and desirability of new solutions, and how to acquire and use the different forms of social capital that are likely to help this. These skills/abilities are suggested as key components in an 'enterprise for life approach' – because they should be useful in a wide range of situations (Sarasvathy and Venkataraman, 2011) and can provide a foundation both for being more employable and for self-employment.

This paper is not seeking to close an argument by proving conclusively all its suggestions, but instead it aims to stimulate discussion by making a *prima fac*e case for changing assumptions and also by making new suggestions for the content of a 'being entrepreneurial' course. The suggested content framework is not organised in order of importance and it is expected that the contents and their order would be conditioned by the educator and student in a collaborative learning environment where the approach is co-created. Also, as Donnelly and Harding's study of diverse disciplines in two Institutes of Technology in Ireland indicates, 'for anyone who has been involved in a programme team, there would generally be an understanding that curriculum development is continuous work' (2014, p.2255).

Perhaps there is a need for educators to act entrepreneurially themselves. There is mounting empirical evidence that opportunities are often created by the entrepreneurial process itself - in other words, entrepreneurs and their stakeholders often end up co-creating new opportunities that neither they nor those of us in their immediate periphery could or did anticipate (Read *et al*, 2009; Sarasvathy, 2008). Entrepreneurship in a wider context is about problem solving and opportunity finding. It encourages people not to rely on previously established approaches but to 'engineer' new ways appropriate to new situations. It is thus 'enterprise for life' and not a sub-set of 'enterprise for new venture creation'.

The authors are not the first to call for further evidence-based research relating to pedagogy and systematic curriculum design (see Davis and Fenton, 2015) and Edwards and Muir (2015) also call for the evaluation aspects of enterprise education to expand to embrace (and recognise) the 'learning development of the whole person, as opposed to economic measures based on quantitative data of number of businesses and number of new jobs created' (p.287). It is important to note that there is still the criticism that much assessment evaluates intention and the gap between intention and behaviour is not known or understood. To this end this paper has been exploratory in nature and presents further opportunity for evidence-based research into the strands of pedagogy, curricula design and implementation that might address entrepreneurship education content frameworks through campus wide initiatives.

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