



# Entrepreneurship education: a review of its objectives, teaching methods, and impact indicators

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## Abstract

**Purpose** – This paper aims to take stock of existing publications devoted to entrepreneurship education and assess the alignment existing between its generic objectives, target audience, teaching methods and impact indicators.

**Design/methodology/approach** – A semi-systematic literature review is applied; using six thematically separated excel data collection spreadsheets. Datasheets were used in order to reduce the author's bias. A total of 108 articles are reviewed in stages and by categorizing in terms of educational objectives, target audiences, community outreach activities, applied teaching methods and impact indicators.

**Findings** – Scholars in this field of study, though differing in a number of definitive issues, are converging towards a single framework of entrepreneurship education. There is a shift from a start-up view to an attitude-changing perspective of entrepreneurship education. However, with a diversity of target groups, there is still a non-alignment between what educators and other stakeholders wish to achieve in educating for entrepreneurship with the applied pedagogical approaches, and success indicators.

**Research limitations/implications** – The work has some limitations involved with literature reviews. The main noticeable limitation is the inclusion of both empirical and theoretical literature; it would be more appropriate to use a meta-analysis approach.

**Practical implications** – Entrepreneurship education is reviewed in its totality. This is beneficial to educators and policy-makers that are involved in setting or facilitating entrepreneurship educational programmes. The work will, specifically, help to understand problems related to non-alignment in setting entrepreneurship educational programmes; a common pitfall for most of education designers.

**Originality/value** – The novelty of the work is in the use of data collection sheets. This has minimized the author's own bias, and brought some logical quantification into drawing meanings and conclusions from the existing literature in entrepreneurship education.

**Keywords** Entrepreneurs, Education, Teaching methods

**Paper type** Literature review

## 1. Introduction

For decades, since the first class of 1945 by the Harvard Business School, scholars have been interested in the explosive growth of entrepreneurship education. A number of good studies have traced developments and the state of entrepreneurship education (Pittway and Cope, 2007; Kuratko, 2005; Solomon *et al.*, 2002; Vesper and Gartner, 1997; Garavan and O'Connell, 1994a, b; Hills, 1988) and all have unearthed a remarkable progress made in this field.

However, in 2002, the audience was reminded of the inherent lack of consensus (Pittway and Cope, 2007; Klapper, 2005; Singh, 1990) within this field when Solomon *et al.* (2002) made observations on the maturity of entrepreneurship as a field of study. Many scholars share the same opinion that there is remarkable progress made



(Johnson, 2006; Matley, 2005a, b; Kuratko, 2005; Vesper and Gartner, 1997) and, as a field of study, it has achieved itself a place in the world of academics.

This level of progress is attributed to the growing support received from many stakeholders, including policymakers, academician, and students. Among these stakeholders there is a common belief that entrepreneurship education would help to influence culture and build enterprising economies (McKeown *et al.*, 2006; Matley, 2005a, b; Kirby, 2004; McMullan and Long, 1987). But, if looked at closely and within their individual groups of interest, these stakeholders are interested in entrepreneurship education due to the perceived socio-economic benefits, at both an individual and societal level. This perception has contributed in fast-tracking most of its developmental stages. Stakeholders' interest may somehow be explained by the use of the demand and supply relationship. For instance, policy makers, on the demand side, are charged with the economic development responsibilities and have a belief that enterprise culture is a key to more new ventures and job creation. Students, also on the demand side, are faced with changing job markets, which renders more graduates to either compete for few but challenging vacancies or opt for self-employment. On the supply side, the academicians, plus their usual interest in academic advancement, are to provide entrepreneurship education as an interventional tool to building enterprising societies (to satisfy the policy makers), and further to have more innovative training programmes to satisfy the students. Therefore, it is these combined shared interests that have contributed to the explosive growth within this field of study, plus a now tentative agreement that entrepreneurship or some of its aspects can be taught (Henry *et al.*, 2005a, b).

However, despite the general consensus on the teachability and the progress so far made, Sexton and Bowman (1984) explained their concern on the persistent lack of consensus on some of the very basic issues in this field of study. There is still a strong disagreement in some of the crucial definitional issues, especially on the most pivotal terms like entrepreneurship itself, enterprise, and who is an entrepreneur (Cunningham and Lischeron, 1991; Gartner, 1990; Hebert and Link, 1989). Also, there is a confusing application of terms like "entrepreneurship education" and "enterprise education" (Pittway and Cope, 2007; Garavan and O'Cinneide, 1994a, b; Gartner, 1990).

The unresolved definitional terms make the purported progress seem fragmented. It is here viewed that different interpretations of entrepreneurship, enterprise, and an entrepreneur have far-reaching effects on the understanding of the objectives of entrepreneurship as field of study, the setting of specific course objectives, the choice of target audiences, the design of course content, the teaching methods applied, and ultimately on evaluating progress and on the design of impact assessment frameworks.

It is acknowledged that entrepreneurship education ought to vary somehow, mainly due to contextual issues. However, in this work, it is argued that the current state of variations (Fayolle *et al.*, 2006; Matley, 2005a, b) is mainly due to the lack of consensus on the definitive issues and the field's conceptual fragmented state. As a body of knowledge, entrepreneurship education should be built on a foundation of a common theoretical framework. Departing from this view, this work is embarked to take stock of the alignment (or the lack of) existing on the main components of entrepreneurship education. It asks: "what are the generic objectives, teaching methods, and impact indicators in entrepreneurship education?". The following five sub-questions are used to arrive at the major objective:

- (1) What are the perceived meaning, definition and objectives of entrepreneurship education?
- (2) What are the types, contents and target audiences of entrepreneurship education?
- (3) What are the most advocated teaching methods? What are the applied teaching methods?
- (4) What role does entrepreneurship education play to local entrepreneurs, local communities and society at large? What are the strategies used to achieve this?
- (5) How do trainers and researchers assess the impact? What indicators do they use?

It is hoped that answers to these questions will draw a clearer picture of the common features that exist in what seems to be a fragmented field of study. By compiling the main features and the advocated delivery methods, this work will concisely bring at view a guide to entrepreneurship educators, scholars and other stakeholders, who are at the moment divided by scholarly debates. Further, the discussion on success and impact indicators and assessment methods will be another input into revealing the outcomes and legitimacy of entrepreneurship education in the society.

This is a literature review, arranged into five sections. An overview of the review conceptual framework and methodology will be presented, leading to a presentation of the review findings. These findings will be critically discussed by correlating them with the given conceptual framework and recommended practice on entrepreneurial learning. Finally, the work will be concluded by bringing to light some research and practical implications.

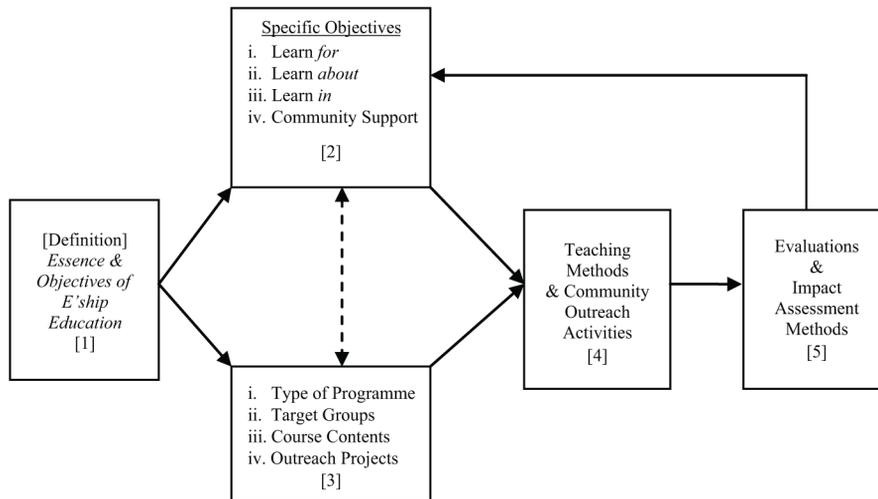
## 2. Methodology

### 2.1 *The review framework*

This review is conceptually arranged in the framework depicted in Figure 1; which was formulated to guide the grouping of articles in their respective categories numbered 1 to 5. It is pictured in this framework that, to be able to have a smooth conceptual flow, entrepreneurship education should be traced from its essence and objectives ([1] in Figure 1), the specific objectives (i.e. to train individuals *for*, *about* or *in* entrepreneurship) and, to support local communities ([2i-iv] in Figure 1), its forms, type of courses, target groups and outreach projects ([3i-iv] in Figure 1), the applied teaching methods and community outreach activities ([4] in Figure 1), and; finally the success indicators and methods for evaluation and impact measurement ([5] in Figure 1).

The concept behind this framework suggests that training efforts in entrepreneurship education have to be in conformity with its definitional essence and general objectives (Box 1 in Figure 1). These definitional meanings and objectives of entrepreneurship education will form a basis for obtaining the specific entrepreneurship programme or course objectives i.e. to train individuals either *for*, *about* or *in* entrepreneurship, and level of involvement with local community (Box 2 in Figure 1), and will influence the forms, course contents and target audience and community outreach projects (Box 3 in Figure 1).

It is viewed that, if Box 1 is taken as an original idea, then Boxes 2 and 3 in Figure 1 are components that need to be considered simultaneously. This means, the design of



**Figure 1.**  
Framework used to guide  
this review

entrepreneurship courses should be done with a clear view of the type of graduates the trainer intends to produce, likewise, outreach projects to conform with the level of a desired role to the local entrepreneurial environment.

Further, the arrangement of course contents and specific course objectives have to be supported with appropriate teaching methods (Box 4 in Figure 1). Here, it is believed that, though no clear demarcation exists, those who need to be trained *for* entrepreneurship will require a different set of teaching approaches to those who learn *about* and *in* entrepreneurship. And, community outreach project goals have to be strategically aligned with implementation activities. At some points there can also be interactions between teaching methods and activities for community outreach. Implying that, while an institution is implementing its entrepreneurship training plans, it may for example, link its students with local entrepreneurs for both exposing the students to the real-world and assisting entrepreneurs to acquire best practice.

Finally, in Box 5, as for any training or intervention effort there is a need for an evaluation and impact assessment. It is argued that evaluation and impact assessment are two separate processes each with its own end results. At this juncture trainers, policy makers and other stakeholders need to specifically outline the desired quality standards, measures of progress, impact indicators, and applicable assessment frameworks. And, both success/impact indicators and quality/progress benchmarks have to be consistent with the original intents and specific programme objectives.

## 2.2 The review procedure

As explained above, this review was guided by the summative framework in Figure 1, from which six data excel extractions sheets were prepared for the purpose of drawing the authors' names, common features and indicators. The main databases used were ABI/INFORM Fulltext and Emerald Fulltext; the search in these databases was limited to only full text and scholarly peer-reviewed journals. To extend the search, working papers from conference CD-ROMs for IntEnt 2004 and 2007, and references in downloaded articles were also checked.

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This review did not specifically target studies that gave an exact thematic match or conclusion on any given feature in Figure 1; this means articles that are included in the data extraction sheets must have some points that are related to the topic under investigation (e.g. in Matley, 2005a, b). But, grouping of authors and quantification of the items were used to minimize reviewer's bias; a limitation observed in Matley's review. These inputs were grouped in common columns and later counted to obtain a total, which was given a percentage weight in relation to the number of articles it has appeared in. This information was ultimately used as a basis for the findings, discussions and conclusions.

A decision of whether to include or exclude a publication in the full review was based on the article's title and abstract, which led to a quick perusal for deciding whether or not the article provides sufficient information for the category under review. The search and review was done in stages; meaning that the categories in Figure 1 were treated separately in the following groups:

- (1) *1 and 2: definition and objectives* – 20 articles were reviewed;
- (2) *3: target groups* – 19 articles were reviewed; course contents 21 articles reviewed; community role ten articles reviewed;
- (3) *4: teaching methods* – 21 articles reviewed; and
- (4) *5: evaluation and impact indicators* – 17 articles were reviewed.

Therefore, the total number of articles reviewed ( $n$ ) was 108 articles. There are instances where some articles addressed more than one category.

At this juncture, it is prudent to highlight two methodological challenges within this review: a review of studies that originate from different geographical contexts; and the treatment of both qualitative and quantitative studies within a single review. On contextual diversity of the reviewed articles: the majority of articles come from the UK and Ireland, the USA, and others from European countries; also a few from Asia, Australia and South Africa. And, in some instances there were some papers that were co-authored by scholars from different countries. The diversity of these studies may raise doubts on their comparability due to contextual differences. However, as it has been observed in this review, a major challenge in comparing or combining studies in entrepreneurship (education) originates more from authors' differences in defining some of the pivotal issues, than on their contextual embeddedness; an observation that was also made in Coviello and Jones (2004). From this knowledge, it is argued that while entrepreneurship programmes may be affected by issues that are unique in a given country, the essence and goal for these programmes are universal. Therefore, to avoid this whirlpool of definitional debates, this review did not differentiate studies on the basis of author's context; rather it took advantage of their diversity and summarized them into a single generic work (Harden and Thomas, 2005; Coviello and Jones, 2004). On the research designs of the reviewed articles, here there was no effort to categorise them based on their methodology as done in a purely systematic literature review (see Pittway and Cope, 2007; Gorman *et al.*, 1997). This led to the inclusion of both qualitative and quantitative studies, and others that employed a mixed methods approach. Apparently, it is a common myth that for results of such reviews to be reliable they should only consider quantitative or randomized studies (Petticrew, 2001); which would lead to a "meta-analysis". Petticrew (2001) justifies that a proper review

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should aim mainly at limiting the bias of the reviewer, and the choice of which study design to include is not a restriction of the review methodology but a choice that is made by the reviewer. For this matter, in this work, data extraction sheets were used in order to arrive at somehow quantified results and hence limit the reviewer's own bias.

### 3. The review findings

#### 3.1 *Meaning and definition*

Hytti (2002) is of the opinion that it is impossible to examine a field of study without visiting its definition. A definition, in this case, is a starting point to a full understanding of the phenomena under discussion. It is in a definition where one may be able to discover the essence, concerns and objectives of entrepreneurship as a field of study (Hytti and O'Gorman, 2004; Jones and English, 2004; Henry *et al.*, 2005a, b; Gartner, 1990). These basic issues, emanating from a definition, are later taken to be the basis for conceptually aligning entrepreneurship education with the appropriate target audience, course contents and teaching methodologies.

In this study, a total of 20 articles were reviewed for the purpose of establishing what entrepreneurship education is. In reviewing these literatures, it shows that very few authors have attempted to directly define entrepreneurship education. And for those who did, most of the times, they have been caught in conflicting sides of entrepreneurship schools of thoughts, and an inherent lack of a common definition of entrepreneurship (Sexton and Bowman, 1984). For instance, a debate was noticed in the application of terms like entrepreneurship education versus enterprise education (see Hynes, 1996; Garavan and O'Cinneide, 1994a, b) also a substitution of entrepreneurship education with entrepreneurial education (see Jones and English, 2004). Garavan and O'Cinneide (1994a, b) argue that there is a conceptual difference between entrepreneurship education and enterprise education: the former has to do with creating an attitude of self-reliance and the later is for creating opportunity-seeking individuals. But to others, like Gibb (1993), as echoed in Garavan and O'Cinneide (1994a, b), the two terms are conceptually the same, but contextually different. According to Gibb (1993) entrepreneurship education is a term mainly used in America and Canada, and enterprise education in the UK and Ireland. Another interesting observation is in the work of Jones and English (2004) who have constantly substituted entrepreneurship education with entrepreneurial education; and defining it as "a process of providing individuals with the ability to recognize commercial opportunities and the insight, self-esteem, knowledge and skills to act on them" (Jones and English, 2004).

Apart from the above readily visible contrasting views, it is learned in this review that in most of the other articles these terms (entrepreneurship education, enterprise education or even entrepreneurial education) are used interchangeably; or the term entrepreneurship education stands as a generic nomenclature to other similar educational processes (see Gorman *et al.*, 1997; Wai and Man, 2007; Hynes, 1996). And, the definitions that are given are structured in a way that they reflect the major aims and objectives to be achieved among various target audiences. As it can be seen in Figure 2, 32 per cent of the reviewed articles related entrepreneurship education to some kind of educational (or training) process that is aimed at influencing individuals' attitudes, behaviour, values or intentions towards entrepreneurship either as a possible career or to enhance among them an appreciation of its role in the community (i.e.

creating an entrepreneurial society). This educational view is an exhibition of scholars' partial convergence towards a behavioural view of an entrepreneur, but at the same time being sceptical to strictly associate it with new venture creation as a sole educational objective (Kuratko, 2005; Kirby, 2004). Similarly, in Figure 2, an equally strong observation (at 32 per cent) related entrepreneurship education with the acquisition of personal skills in entrepreneurship, whereas others related it to new business formation (18 per cent), opportunity recognition (9 per cent) and, managing of existing small firms (9 per cent).

3.2 Objectives of entrepreneurship education

As mentioned in the previous section, most authors who have attempted to define entrepreneurship education have done so by relating it to its supposed outcomes. In this case, the 20 articles reviewed under the definition section were also found to be relevant in the review of objectives. Figure 3 gives this summary, and shows a close relationship between what has been earlier found as to what comprises entrepreneurship education with the generic objectives that it attempts to achieve. It is learned that most scholars (at 34 per cent) argue that entrepreneurship education is generally aimed at creating or increasing entrepreneurial attitudes, spirit and culture among individuals and in the general community (Co and Mitchell, 2006; Henry *et al.*, 2005a, b; Galloway *et al.*, 2005; Hytti and O'Gorman, 2004; Kirby, 2004; Bechard and Toulouse, 1998; Gibb, 1993; Hills, 1988). Others (27 per cent) associate it with new venture creation and job creation; also 24 per cent associate it with contribution to the community by helping local entrepreneurs to form and grow (Matley, 2005a, b; Henry

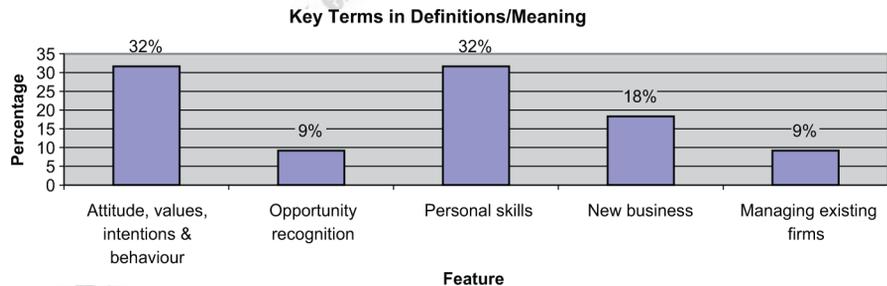


Figure 2. Key terms in the meaning of entrepreneurship education

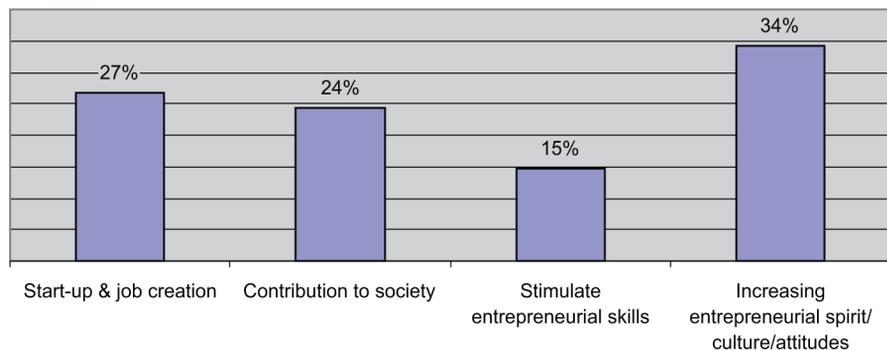


Figure 3. General objectives of entrepreneurship education

*et al.*, 2005a, b; Kirby, 2004; Vesper and Gartner, 1997; McMullan and Long, 1987) and lastly 15 per cent relate it to the imparting of entrepreneurial skills among individuals (Henry *et al.*, 2005a, b; Galloway *et al.*, 2005).

However, some authors have given a more concise categorization of these objectives into what they termed as educating *for*, *about*, *in* or *through* entrepreneurship (see Co and Mitchell, 2006; Kirby, 2004; Hytti and O’Gorman, 2004). Here, it is argued that objectives are narrowed in terms of what educators (or/and students) intend to achieve and hence a determinant for the choice of pedagogical approaches. To educate *for* entrepreneurship means to create an entrepreneur; that is, an individual who is destined to starting a new venture. Co and Mitchell (2006) explain that educating *for* entrepreneurship addresses both the present and potential entrepreneurs with the aim of stimulating the entrepreneurial process, providing them with the tools to starting a business. In actual fact, this is the most desired outcome and yet highly debated – hence the question in Henry *et al.* (2005a, b): “Can entrepreneurship be taught?”. Also, to learn *about* entrepreneurship is to obtain a general understanding about entrepreneurship as a phenomenon (Hytti and O’Gorman, 2004). This objective may also include sensitization activities to different stakeholders including policy-makers, financiers and the general public on the role of entrepreneurs in the community. Lastly, some scholars have added as an objective, that we can also train individuals *in* entrepreneurship. Educating *in* entrepreneurship is said to aim at making individuals become more entrepreneurial (innovative) in their existing firms or place of work (Henry *et al.*, 2005a, b; Kirby, 2004; Dreisler *et al.*, 2003). Hytti and O’Gorman (2004) clarify that this objective aims at making individuals to take more responsibility of their learning and career life. Kirby (2004) gives another term: educating *through* enterprise which, according to him (Kirby, 2004) is when educators use new venture creation to help students acquire a range of both business understanding and skills or competences. It seems that educating *through* entrepreneurship is more of a teaching approach in educating *for* entrepreneurship than an objective in itself.

However, taking all the three objectives in consideration, Dreisler *et al.* (2003) could not see if there is any visible demarcation between *for* and *about*. Educating *for*, if taken in perspective, it is an objective that also encompasses all the other two aims (*about* and *in*). This is due to the fact that at start participants are expected to be given a general understanding on entrepreneurship which means they will have learnt *about*, whereas as the training progresses students are exposed to more advanced learning activities that are aimed at sharpening their innovativeness and equip them with opportunity discovery skills, which is also expected of those who are educated *in* entrepreneurship. Despite this blurred demarcation among these objectives, however, it is still of value for educators to have a pre-conception of aims on their specific educational programmes. This may assist them to understand well in advance the expected impact of their programmes, and give them an advantage in the selection of the appropriate teaching methods and in the fine-tuning of other determining factors.

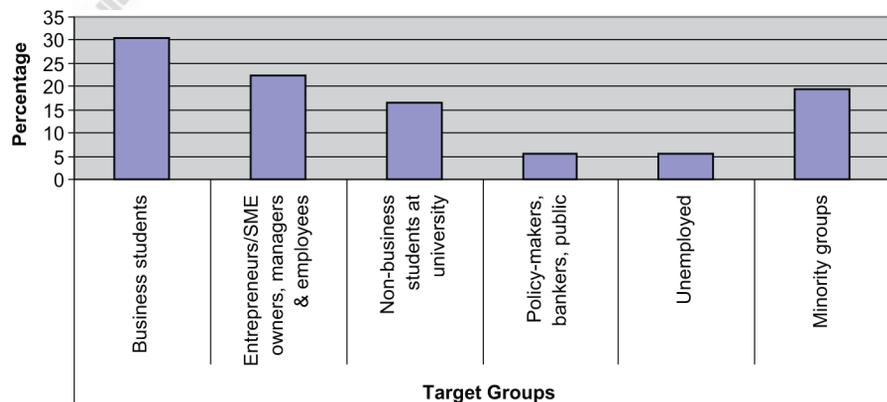
### 3.3 Types of programmes and target groups

A total of 19 articles were reviewed for the purpose of identifying the different types of entrepreneurship programmes. It came to be understood that it is possible to group entrepreneurship programs in terms of their focus, level of education, and target audience (see Honig, 2004; Kirby, 2004; Finkle and Deeds, 2001; Charney and Libecap,

2000; Laukkanen, 2000). For instance, Kirby (2004) reviewed about 205 entrepreneurship programmes and found that they have three main focuses:

- (1) programmes that are for giving an orientation and awareness about entrepreneurship;
- (2) programmes that develop competences for new enterprise formation, self-employment, or economic self-sufficiency; and
- (3) programmes that focus on small business survival and growth. It can be recalled that Kirby's grouping is actually consisted with the earlier section on educational objectives (educating *for*, *about*, and *in*).

Again, basing on target audience (and level of education), Figure 4 gives a summary of the popularity of different target groups identified in this review. It is evident that university business students are the most favoured group (30 per cent). This group is an important target group because, according to Pretorius *et al.* (2005), it includes students who learn to become entrepreneurs (especially undergraduate students), and those who seek advanced theoretical knowledge about entrepreneurship (at postgraduate levels). The next group of audience, at 23 per cent, is that of owners, managers and employees of existing small businesses. As pointed out by Kirby (2004), this is the group that is trained with the focus on how to manage existing firms and to work for growth. Also, entrepreneurship education is offered to minority or disadvantaged groups in society, for example. women, ethnic groups, and people with disabilities (Gorman *et al.*, 1997; Kourilsky and Esfandiari, 1997). Mescon (1987) argues that minorities, especially immigrants, have become an important economic force in most cities because they form a larger proportion of small business owners, but still are faced with a high rate of business failure. Typically, the training focus to such a group would be on how to start and manage growth of a small business (Kirby, 2004). Further, entrepreneurship education is increasingly being directed at non-business students and other vocational disciplines like engineering (Keogh and Galloway, 2004; Katz, 2003; Hynes, 1996). There are also efforts to introduce such courses in pre-university education levels (Lee and Wong, 2006; Henry *et al.*, 2005a, b; Peterman and Kennedy, 2003). The major aim for such a group is to cultivate entrepreneurial attitudes at an early age when their career options are still open (Lee and Wong, 2006;



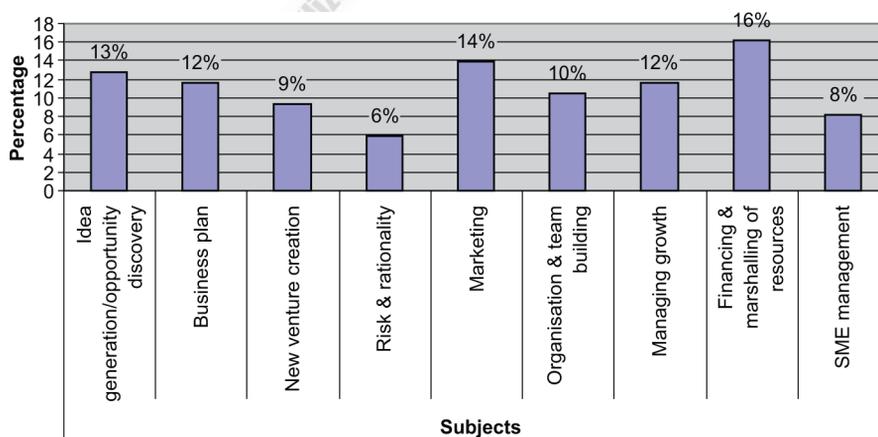
**Figure 4.**  
Forms and target audiences

Henry *et al.*, 2005a, b). The unemployed also form another target group (Linan, 2004; Hytti and O’Gorman, 2004; Monroy, 1993), of which the main focus is to give them awareness and the necessary skills on self-employment. The last group, though not very popular, includes policy-makers, bankers, tax authorities and the general public (Lee and Wong, 2006; Kent, 1990). This group, according to Verheul *et al.* (2002) and the World Bank (2002), forms an important part of the local institutions that may have an effect on entrepreneurial activities.

### 3.4 Course content

One of the challenges faced in this review is to ascertain course content in a typical entrepreneurship programme. It seems that every training institution has its own approach in building an entrepreneurship curriculum. This has resulted in wide variations of modules making up an entrepreneurship programme (Hills, 1988). A similar observation was also made by Fiet (2000a, b), who in his collection of just 18 different entrepreneurship courses found a total of 116 different topics. Although Hynes (1996) is of the opinion that both the course focus and content ought to vary in accordance with the specific requirements and needs of students, Matley (2005a, b) observed that the current variation is so wide as to make the general appropriateness and effectiveness of entrepreneurship courses questionable. This is also reflected in Fiet’s (2000a, b) remarks: “the contents of our courses vary so much that it is difficult to detect if they [courses] even have a common purpose”. Bennett (2006) attributed these variations, again, to the lack of a common definition of entrepreneurship and to the absence of a cohesive theoretical framework in entrepreneurship education.

In this section, 21 articles were reviewed. Given the understanding that there is a wide variation in programme contents, this study resorted into ascertaining only the most common subjects or course contents in a typical entrepreneurship programme. Owing to the variety of subjects and an inconsistent naming of subjects, this part was likely to be prone to some shortcomings. However, it was decided to group the subjects in what seemed to be similar fields of study. At start a total of 18 most popular subjects were identified, which later and for the sake of space were shortened to the nine most popular subjects (see Figure 5). According to this summary the most taught subjects are:



**Figure 5.**  
Most common subjects  
taught in entrepreneurship  
programmes

- (1) resources marshalling and finance (16 per cent);
- (2) marketing and salesmanship (14 per cent);
- (3) idea generation and opportunity discovery (13 per cent);
- (4) business planning (12 per cent);
- (5) managing growth (12 per cent);
- (6) organisation and team building (10 per cent);
- (7) new venture creation (9 per cent);
- (8) SME management (8 per cent); and
- (9) risk and rationality (6 per cent).

Other subjects, which ranked the lowest, are not included in Figure 5. These were:

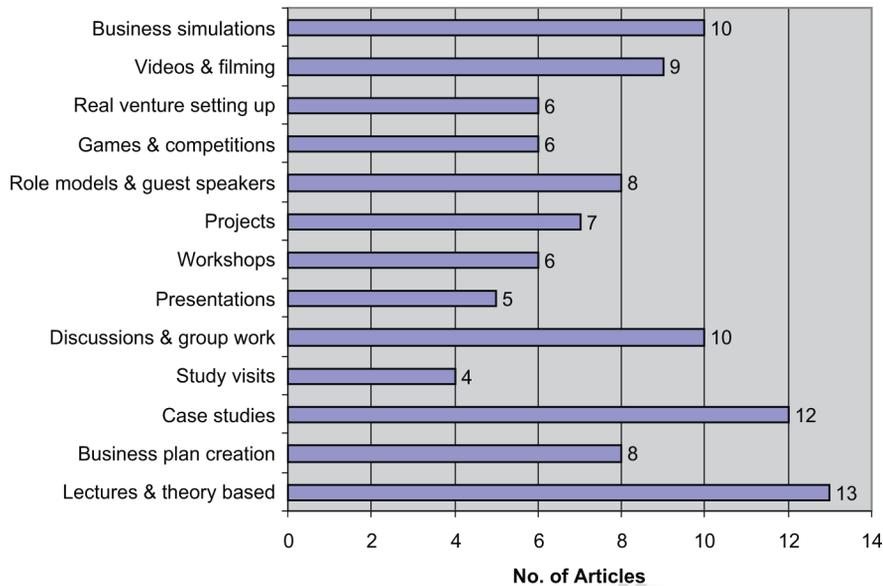
- legal issues;
- management of innovations and technology;
- franchising;
- family business;
- negotiation skills;
- communication skills; and
- problem solving.

### 3.5 Teaching methods

A number of scholars purport that the question of whether entrepreneurship can or cannot be taught is now irrelevant, since it has been proved that it can (Henry *et al.*, 2005a, b; Kuratko, 2005), and therefore educators should move ahead. While it is not a difficult decision for universities to run entrepreneurial courses, it is, however, a challenge to academicians to choose teaching methods that align to their course objectives, environments and even the type of students in the program. If scholars are able to dodge the question “Can entrepreneurship be taught?” they still will have to face the next question, i.e. “How should it be taught?”

This review has come across an overwhelming number of articles addressing teaching methods. Most of these articles report on experiments on teaching methods (see Izquierdo *et al.*, 2007; Lourenço and Jones, 2006; Heinonen and Poikkijoki, 2006; Robertson and Collins, 2003; McMullan and Boberg, 1991). Many also propose what they consider to work best (see Verduyn *et al.*, 2009; Hannon, 2006; van Auken *et al.*, 2006), and others give a reflection of present teaching approaches (see Smith, 2006). And, like the previous sections, teaching methods is another area over which there are many disagreements. For example, Bennett (2006), in his study involving 141 entrepreneurship lecturers, found that the lecturers had no consensus on how the course should be taught.

Twenty-six methods were identified from a total of 21 articles, and these were summarised to the 13 most important (see Figure 6). It seems that most authors categorise teaching methods into two groups, which are termed “traditional methods” (comprising normal lectures) and “innovative methods” (which are more action-based), also known as “passive methods” and “active methods”, respectively. Compared with



**Figure 6.**  
Teaching methods

passive methods, active methods according to Bennett (2006) are those that require the instructor to facilitate learning, not to control and apply methods that enable students' self-discovery.

As can be seen in Figure 6, in order of importance, the three most used methods are:

- (1) lectures;
- (2) case studies; and
- (3) group discussions.

These are actually the same methods used in other business-related courses, which according to Bennett (2006) are passive and less effective in influencing entrepreneurial attributes. Fiet (2000a, b) explains that instructors rely on lecture-based methods because they can be easily accomplished, and also because they require less investment. Other methods used, but not as common as the previous group, include:

- business/computer or game simulations (Hindle, 2002);
- video and filming (Verduyn *et al.*, 2009);
- role models or guest speakers (Hegarty, 2006; Fiet, 2000a, b);
- business plan creation; and
- project works.

Also used were games and competitions, setting of real small business ventures, workshops, presentations and study visits (Keogh and Galloway, 2004). This latter category of methods is termed "active" and is said to be more appropriate for nurturing entrepreneurial attributes among participants (Bennett, 2006), but as the low rankings in Figure 6 reveal, they are used less than traditional methods.

3.6 Community outreach activities

Entrepreneurship programmes and faculties are expected to be a part of the social support system that assists indigenous enterprises to form and grow (Gorman *et al.*, 1997; McMullan and Long, 1987). De Faoite *et al.* (2003) point out that outreach activities to the community are those specific services that are of benefit to the community, for example knowledge/technology transfer, consulting, teaching and research.

It was found in this review that very few studies have been dedicated to the investigation of the role of entrepreneurship education in community improvement. This scarcity of studies in this area is in line with a comment by McCarthy *et al.* (1997) that community outreach activities by most entrepreneurial programmes are still in their introductory phase. This review came across 11 activities that were linked to outreach activities by training institutions, as summarised in Figure 7. The following is a summary of the activities grouped according to number of articles cited:

- business centres and entrepreneurship clubs with local entrepreneurs and technical and management assistance to entrepreneurs (Co and Mitchell, 2006; Fukugawa, 2005; Edwards and Muir, 2005; Robertson and Collins, 2003);

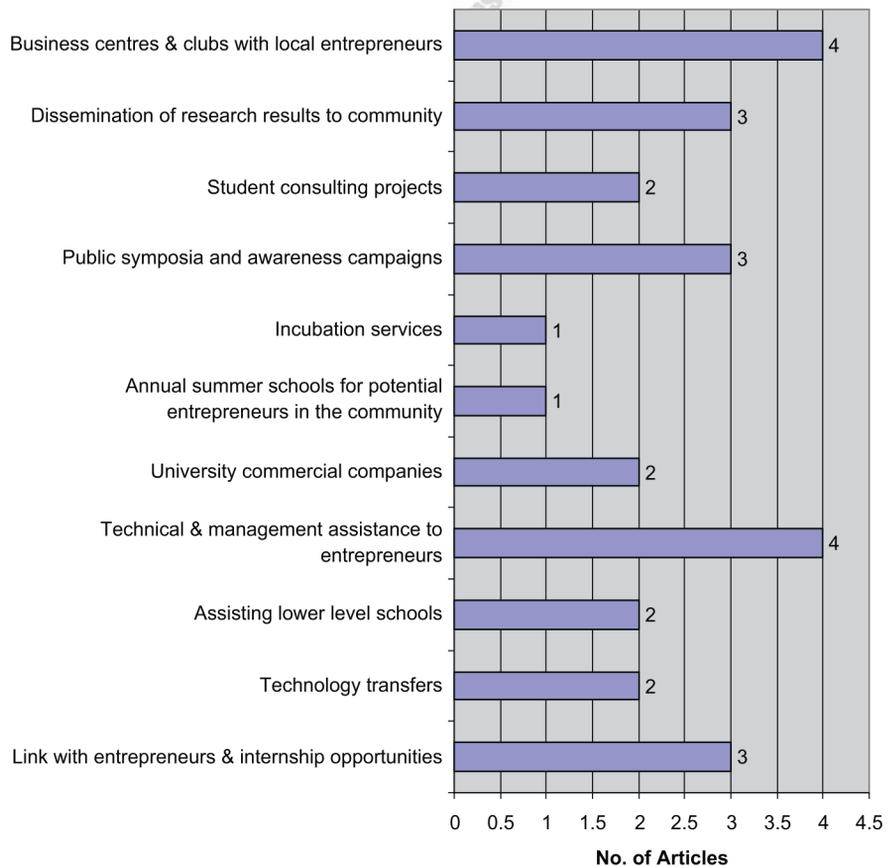


Figure 7.  
Role to community and outreach activities

- link with local entrepreneurs through internship opportunities for students (Co and Mitchell, 2006; De Faoite *et al.*, 2003; Hytti, 2002; Gibb, 1993);
- public symposia and awareness campaigns (Edwards and Muir, 2005; Hytti, 2002; Vesper and Gartner, 1997);
- dissemination of research results to the community (Mok, 2005; Kuratko, 2005; Edwards and Muir, 2005; Vesper and Gartner, 1997); and
- students' consulting projects with local entrepreneurs (Kuratko, 2005; Edwards and Muir, 2005; Vesper and Gartner, 1997).

Other activities include technology transfer, incubation services, and annual summer schools for potential entrepreneurs in the community.

However, the above review was limited to articles that were searched collectively without regard to a specific outreach activity. This implies that the review did not go into detailed analysis of, for example, incubation services as a specific type of outreach strategy by universities (for an overview on university incubators, see Kirby (2004), or Mian (1996)). It is acknowledged that if this had been done some of the rankings would probably be different. However, in this instance, a collective review was intended to draw a general picture of how a specific type of outreach activity is ranked among others.

### 3.7 Evaluation and impact indicators

It has been observed that impact assessment in entrepreneurship education is currently receiving increasing attention from various stakeholders. Donors, policy-makers, students and scholars in entrepreneurship are keen to find out if it is truly worth investing more efforts and money in entrepreneurship education (Matley, 2005a, b; Charney and Libecap, 2000). Now and then, scholarly doubts on the teachability of entrepreneurship keep on resurfacing, mainly due to the absence of coherent proof of its impact. Charney and Libecap (2000) point out that many still wonder if students from these courses will have the ability to compete in the job market as well as in the business arena.

One of the challenges in impact assessment is the choice of generally accepted success indicators. This is because at the moment entrepreneurship [education], as a developing field of study, is characterised with debates from stakeholders that have differing interests and theoretical orientations with regard to entrepreneurship. Henry *et al.* (2005a, b) observe that each of the contributors to this field of study does so from its own perspective, hence making the field more fragmented. For example, while on the one hand entrepreneurship theoreticians are still debating whether entrepreneurship is an acquired behaviour or an inborn trait (Herron and Sapienza, 1992) and questioning its teachability, on the other hand politicians and policy-makers continue to advocate entrepreneurship education because they think of it in terms of its perceived economic role (e.g. more new ventures and more jobs). Also, employers would probably think that hiring a graduate from an entrepreneurial course will lead to more innovative ways of doing business, and the discovery of new competitive products/services and new ways of marketing. Students, meanwhile, would like to see favourable examination scores, satisfaction with course delivery, competence in the job market, and the realisation of their career and financial aspirations. Therefore, the

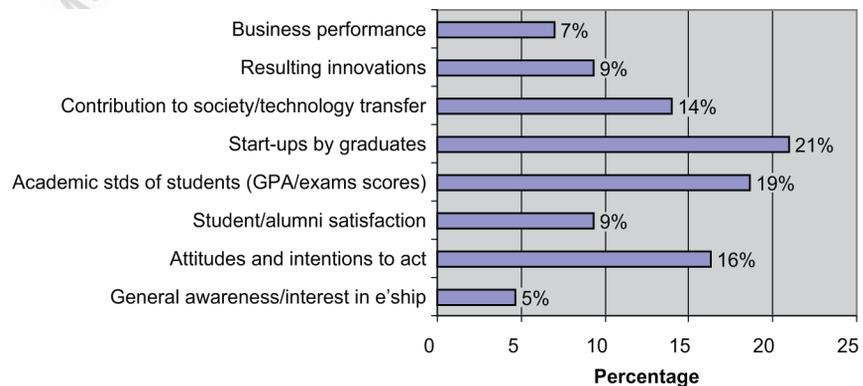
diversity of these views presents a challenge in choosing impact indicators, and even methodological arguments.

In this regard, this review came across two types of studies:

- (1) studies that have attempted to measure the general progress in entrepreneurship education as a field of study (see Matley, 2006; McKeown *et al.*, 2006; Dana, 2001; Vesper and Gartner, 1997); and
- (2) studies that attempted to measure a change in some pre-determined variables among students as a result of attending a course in entrepreneurship (see Fayolle *et al.*, 2006; Henry, 2004; Charney and Libecap, 2000).

Due to the nature of the fifth research question it was decided to only concentrate on the second group of studies, i.e. studies that measure the impact on students as a result of attending a course in entrepreneurship. And therefore, a total of 17 articles were reviewed, in which 27 indicators were noted and grouped.

According to the scores in Figure 8, graduate start-ups were the highest ranked success indicator. This means that in order to measure the success of an entrepreneurship course, one needs to establish the number of graduates who have started their own ventures as a result of attending a course in entrepreneurship. This finding is in line with the views of scholars who associate entrepreneurship with the creation of new ventures, but contrary to Kuratko's (2005) remarks that entrepreneurship is more than the mere creation of business. Despite the three different educational objectives in entrepreneurship (i.e. to educate for, about, or in entrepreneurship), many stakeholders do generally associate entrepreneurial courses with the creation of individuals who are destined to start businesses (Henry, 2004; Rosa, 2003; Charney and Libecap, 2000). Also, students' academic standards (including examination scores and GPAs) were ranked the second most immediate impact indicator (Charney and Libecap, 2000; Vesper and Gartner, 1997; Hynes, 1996). Hynes (1996) argues that the use of formal examinations is mainly aimed at testing students' knowledge and aptitude (towards entrepreneurship). The third group of indicators originates from psychological constructs, for example change in students' attitudes, perceptions, interest, self-efficacy, confidence, abilities and skills towards entrepreneurship (see Souitaris *et al.*, 2007; Lee *et al.*, 2006; Fayolle *et al.*, 2006; Veciana *et al.*, 2005; Peterman and Kennedy, 2003; Rosa, 2003). What is interesting in



**Figure 8.**  
Indicators for impact  
assessment

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this third group, however, is the formulation of attitudinal measuring questions. Most of the questions, if read closely, seem to focus on ascertaining students' attitudes/intentions towards starting their own business; this gives the impression that venture creation is still the main preferred impact indicator, although addressed in a different way (the attitudinal way).

Further, some scholars measure impact in terms of how much entrepreneurship programmes contribute to the community, for example in terms of technology transfer, new jobs created, or assistance to local entrepreneurs (Henry, 2004; Vesper and Gartner, 1997). Others have used indicators like students' satisfaction with the course, resulting innovations and graduates' business performance (Henry, 2004; Charney and Libecap, 2000). Lastly, some scholars measured impact using a change on students' need of achievement and *locus* of control (see Hansemark, 1998).

Methodologically, it is argued that there is still an inherent design problem in impact assessment studies and that most of the studies apply methods that bias the results in favour of entrepreneurship education (Matley, 2006). In this review, it was observed that most impact assessment studies ranged from simple surveys of participants or and trainers to longitudinal survey of participants (i.e. a questionnaire administered at the start and at the end of the course), while others made use of control groups plus some qualitative interviews or focus group discussions. Although most studies vary in terms of approach and theoretical orientations (which also consequently influence the choice of indicators), their results seem to conclude that entrepreneurship education has some positive impact on students. For example, Fayolle *et al.* (2006) concluded that there was a strong measurable impact on entrepreneurial intentions, but less on perceived behavioural control. Lee *et al.* (2005) found that there was an increased level of confidence, knowledge and ability of venture creation among students. Souitaris *et al.* (2007) concluded that entrepreneurship education did raise students' attitudes and the overall intention towards entrepreneurship. Also, Henry (2004) found that there was a significant impact on the level of business skills and knowledge, and confidence in enterprising capabilities. Peterman and Kennedy (2003) also reported that there was an increase in participants' perception of desirability and feasibility of starting a venture. Hansemark (1998) proved that an entrepreneurship programme had an impact on students' need for achievement and locus of control. However, as will be discussed later, most of these conclusions are based on constructs/indicators that predict the probability (as opposed to giving actual confirmation) that graduates may in the future act entrepreneurially.

#### 4. Discussion

The goal of this review was to establish the essence, objectives, applied teaching methods and impact indicators for entrepreneurship education. To some extent the above section on findings has succeeded in giving a more descriptive view of entrepreneurship education along the lines drawn by the research questions. This section attempts to bring forth a collective understanding of the above findings and to highlight some possible implications. Mainly, there are three issues that arise:

- (1) the alignment among the major educational components in entrepreneurship programmes (i.e. objectives, target groups, course content, methods, impact indicators);

- (2) the time lag between the moment that impact is assessed and that at which an individual is expected to manifest entrepreneurial actions as predicted by the theory (or indicators) used in impact assessment; and
- (3) a brief highlight on the need to separate progress evaluations from impact assessment studies, and presentation of a few criteria on the choice of success indicators and quality benchmarks.

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#### 4.1 *The alignment concept*

Biggs's (1996, 1999) concept termed "constructive alignment" is used to examine the alignment of major educational components in teaching entrepreneurship. In this concept, Biggs (1999) perceives teaching as a complex system comprising teachers, students, the teaching context, student learning activities, and the outcome. Biggs (1999) challenges educators to seek a proper *alignment* between course objectives, the teaching/learning activities and the assessment tasks. According to this concept the course objectives define what should be taught, how it should be taught, and how impact should be assessed. Learning is a complete system in which the achievement of learning objectives needs maximum consistency throughout the system (Biggs, 1996, 1999).

In this case, taking Figure 3 versus Figure 6, the two major educational objectives are:

- (1) increasing entrepreneurial attitudes or culture; and
- (2) more tangibly, new venture creation.

The major teaching methods are lectures, case studies, and discussions. In Figure 3, the two major objectives confirm the concept by Kuratko (2005) that although new venture creation is an important feature of entrepreneurship, entrepreneurship has more to do with an individual's perspective. To understand Kuratko (2005) in the *Concise Oxford Dictionary*, the word "perspective" means "a particular way of regarding something", which is also consistent with a definition of attitudes: "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 2005). It is evident here that many scholars are now converging towards this behavioural mindset and cultural view of entrepreneurship (see Fayolle *et al.*, 2006; Kuratko, 2005; Krueger *et al.*, 2000), and are somehow discarding a once strict emphasis on venture creation as sole feature of entrepreneurship. However, using Biggs's (1999) concept, a major issue may be seen between this behavioural view in the teaching objectives of entrepreneurship and the dominant teaching methods (i.e. lectures, case studies and discussion groups). Although it is still debatable as to what educational methods have an impact on changing behavioural attributes, it is however also generally agreed that traditional methods are less effective in encouraging entrepreneurial attributes. It is said that such methods actually make students become dormant participants. These methods prepare a student to work for an entrepreneur, but not to become one (Aronsson, 2004; Kirby, 2004). The existing shortfall in teaching methods confirms Kirby's (2004) comments that most entrepreneurship educators though relate their courses with new ventures creation (educate *for*), they actually end up teaching *about* entrepreneurship. If entrepreneurship is to be learned as a career, it is best done using some kind of apprenticeship (Aronsson, 2004). In Aronsson (2004), Birch suggests that traditional methods should only be used to give students the

commercial underpinnings of their entrepreneurial actions. But, doing something practical and having an opportunity to question, investigate, converse, and discuss with real-world entrepreneurs gives both knowledge and skills and also stimulates attitudes. However, in a practical sense most of the advocated active/action-based teaching methods are costly and somehow may not align to the conventional university system of teaching and awarding.

Also, another examination would be to check the fit between programme objectives, methods, and selection of students to the programme, and even the subjects that make up the programme. Talking about types of students versus programme objectives, Biggs (1996) argues that learners bring in the classroom an accumulation of motives, intentions, and previous knowledge that affect the learning process and determines the course and quality of learning that may take place. Although in this review no specific findings have pointed out on the quality and attributes of the participants, the participants' prior intentions should be among the inputs that determines the level of effort in teaching. For example, an increasing number of training institutions are making it compulsory for students to take entrepreneurship courses. In this case, therefore, most programmes end up taking onboard a mixed group of students, i.e. those who have favourable attitudes, some level of skills or experience and intentions towards entrepreneurship, and those who do not. Also, for voluntary entrepreneurial courses (e.g. an elective single module or a complete Bachelor's or Master's degree), students will enrol on a course for a number of different reasons that are the result of many factors. Some students intend to become entrepreneurs and the course to them is one a means towards this end. Some may be aspiring to work in innovative organisations. Some simply join the course in order to learn about the phenomenon or to obtain further knowledge. Some students may join the course because they consider it as an easy one to pass and hence improve their grades. Or in cases like in least developed countries (LDCs), students may join an entrepreneurship Bachelor's programme just for the convenience of obtaining a university degree after failing to secure other more competitive courses. From a similar view, to achieve better results, Fayolle *et al.* (2006) wondered whether such students' attributes could be used as a criterion in the admission process, or whether educators may see the need to fine-tune their programmes so that they align with some specific types of participant.

Also, a tricky question will still be the course structure or the selection of subjects to be taught. Staying with Biggs's (1999) alignment concept, the choice of subjects should again be based on the course objectives; this should dictate the necessary skills to be developed among the participants. It is understood that most entrepreneurship courses have combined objectives – i.e. they educate for, about, and in entrepreneurship; this is contradictory, since the selection of subjects and teaching methods will also be in a haphazard manner. For effective results, course objectives should be focused on specific skills that are required for a particular type of graduate. For example, this review has revealed that one of the most desired outcomes is to create graduates who will start new ventures (see Figure 3). In this regard, the course content could be structured in such a way that it comprises subjects that match the skills and abilities that are said to be exhibited by real-world entrepreneurs, for example as given by Kuratko (2005) and Birch (Aronsson, 2004), the ability to recognise opportunities, the ability to create new products/services, business planning skills, skills to marshal resources, selling skills, the and ability to form and manage teams. Interestingly, this

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list of skills is also in agreement with the most common subjects cited in Figure 5. However, what is still tricky is whether the choice of subjects is also sufficient for imparting behaviour-related attributes to students. It is here viewed that most of the subjects in entrepreneurial programmes focus mainly on the activities that a would-be-entrepreneur should be able to perform “functionally”, as opposed to “behaviourally”. The question is: in order to stimulate entrepreneurial behaviours, is it a matter of proper choice of subjects (i.e. what to teach) or of teaching methods (i.e. how and who to teach it), or both?

#### *4.2 Time and other situational influences on impact indicators*

As shown in Figure 8, the three most common impact indicators are:

- (1) start-ups by graduates;
- (2) the academic standards of students (or examination scores); and
- (3) a change in students’ attitudes and intentions towards entrepreneurship.

In this review it has been found out that most impact assessment studies are carried out shortly after students have completed a course in entrepreneurship. For the purpose of academic grading, examinations are appropriate to be done immediately after the course. Hynes (1996) explained that examinations are aimed at testing students’ knowledge and aptitude. But what remains unexplained is the linkage between students’ grades and their future behaviours as a subject of time and other situational influences. Although in their study DeVolder and Lens (1982) concluded that students with high grades seemed to value future goals more highly than students with low grades, this conclusion was still limited on students’ future intentions, and not the actual achievement or actions towards the goals. Similarly, it is currently argued that intention-based models have proved to be good predictors of future entrepreneurial events. And, specifically it is mentioned that since intentions are made of constructs like attitudes, subjective norms, and self-efficacy (Fayolle, 2007; Krueger *et al.*, 2000; Ajzen, 1991; Bird, 1988), these constructs can also be used as a measure of impact of an intervention like entrepreneurship education (see Fayolle, 2007, Fayolle *et al.*, 2006; Charney and Libecap, 2000). Of interest at this point is the time lag between the point of measuring these indicators (i.e. student examination grades, attitudes, perception and intentions) and the time of action (i.e. starting a new venture or behaving entrepreneurially). Souitaris *et al.* (2007) argue that the link between an individual’s future goals and intentions is affected by the time-lag between the moment the goal/intention was set and the time of action. Now, if entrepreneurship education is related to the most important target group (university students) it may be seen that it is here where the time-lag effect comes to be of most influence. University students are a group of young people, of which the majority have high but unstable career aspirations that decline with age/time (Jacobs *et al.*, 1991). The study of Galloway and Brown (2002) and many other studies indicate that most graduates usually plan to start their own businesses after five to ten years of work experience. Over a period of five to ten years a graduate’s attitudes and intentions may change several times. This is justified by Audet’s (2004) study, in which he measured the stability of entrepreneurial perception and intentions over a period of just 18 months and concluded that the temporal stability of these constructs is questionable. Linan (2008) argues that situational factors (e.g. time constraints, task difficulty and social

pressures) have an influence on attitudes towards entrepreneurship. As time and other situational influences continue to act on the students even after graduation, they make most impact assessment conclusions (especially those taken immediately after the completion of the course) tentative at best.

#### 4.3 Evaluations versus impact assessment and choice of indicators

The use of students' grades and other academic quality indicators make scholars commit a common mistake of mixing evaluations studies with impact assessment studies (Hulme, 2000). According to Hulme (2000), impact assessment is associated with the outcomes of an intervention rather than with input and output. The goal in impact assessment is to "prove the effects" and later improve the intervention. On the other hand, an evaluation entails a review of both students and the programme to measure either quality or progress (Solomon *et al.*, 2002). Measuring effect (impact) means looking for causality, which is quite a separate process to that of measuring progress and quality (evaluation). For instance, evaluations are based on a set of standards as a benchmark, whereas impact assessment draws its basis from the predetermined objectives of an intervention (Hulme, 2000). A common problem in both exercises, as observed in this work, is the choice of quality standards for evaluations and effect indicators for impact measurement.

For example, in an impact assessment exercise the major questions would be:

- (1) What will indicate success/effect to individuals, institutions, communities, etc.?
- (2) How will these be measured?
- (3) How are the simultaneous effects of other influencing agents in the environment (Descy and Tessaring, 2005) to be separated?

Most of the indicators that will be adopted for impact assessment will, as McMullan and Long (1987) pointed out, relate to socio-economic issues. However, measuring these variables is a formidable task, and it is probably the major cause for the current absence of a common impact assessment framework in entrepreneurship education. From an educational point of view, Preston and Green (2003) explain that the best probable method to measure the impact of any educational intervention is the use of cross-country comparisons. This is done, according to Preston and Green (2003), through the identification of differences and similarities between countries and their systems, and one may make macro-causal comparisons. Later this should be supported by comparative studies of micro-indicators from a longitudinal study (see Lee *et al.*, 2005, 2006). This approach, however, requires more time, and the cost implications are enormous.

Similarly, in evaluation studies, the absence of common quality standards or benchmarks in entrepreneurship education leaves most evaluations open to subjectivity and criticisms. Quantifications and comparisons based on the number of courses offered, the number of students enrolled/graduated, or academic standards are themselves arbitrary. If any attempt is made to develop a set of quality or progress indicators for entrepreneurship education such indicators should be, as suggested by Hudson and Anderson (2005), relevant to policy makers, valid and able to measure the condition accurately, reliable and consistently used, easy to interpret and understand, and able provide timely information. Each indicator should be logically connected to other indicators.

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## 5. Conclusion

In this review entrepreneurship education has been traced from its essence to impact assessment. The main concern was to investigate the inherent disagreement and the fragmented nature of this field of study, and its resultant variations in the educational process. The main question was to ascertain the meaning of and general objectives in entrepreneurship education, and to identify various types of programmes, subjects taught (course content), the teaching methods applied and impact indicators.

It has been learned that, although there is no consensus in the basic definitional issues, there is a common understanding of what entrepreneurship education is generally attempting to achieve. Again, there is a diversity of types of educational programmes that can be grouped into three in respect of their focus and objectives – i.e. educating for, about or in – entrepreneurship, but still there is a substantial variation in teaching methods. Entrepreneurship is taught to various target groups ranging from students to the unemployed and minority groups in the community. However, not only do the educators differ in the choice of subjects to be taught, they also have failed to substantiate the impact of most entrepreneurship programmes mainly due to the absence of a generally accepted framework for evaluating and assessing the outcomes of the training process.

Specifically, it has been found that there is a relative agreement that the major rationale for entrepreneurship education is more economical than social. Following a belief that entrepreneurship is a panacea to some economical problems, especially employment, entrepreneurship education is to promote entrepreneurship by influencing attitudes, values and the general community culture. This aim is the driving force behind all other objectives, namely start-ups, self-employment, job creation, knowledge advancement and skill development. It has also been found that most scholars are of the opinion that there is a need to be more innovative on designing modules that will enable learners to achieve their predetermined outcomes in learning either for, about or in entrepreneurship. The objectives and type of audience have to be matched with the course contents and teaching methods. With more focus being on increasing the number of start-ups, the majority of articles reviewed have questioned the use of traditional teaching methods. There is an almost common understanding that students destined for self-employment need a more action-based approach rather than traditional methods. However, on the other hand, some have also recommended that it is not wise to abandon theory-based teachings completely. The main focus for each of the contributors has been on how to enable students to acquire the attributes, behaviours and skills that are exhibited by successful entrepreneurs.

By looking at the approaches, theories and indicators used in impact assessment studies, it seems that the current focus of most scholars is directed towards the behavioural or cognitive type of entrepreneurship. This is evidenced by the convergence of recent scholars towards the use of constructs relating to intention-based models, and less emphasis on new venture creation and personal qualities as there was in the 1980s. Recent scholars seem to agree that entrepreneurship can be taught. However, this agreement is still problematic due to the fact that there are still different versions of what entrepreneurship means, which means teaching will still be in a variety of forms with respect to one's definition of entrepreneurship.

In a more general picture, there are research opportunities on the practical implications of all of the five categories on the framework in Figure 1. This means that

the framework used in this literature review could also be empirically replicated to assessing a given educational programme. Some questions that arise with this review are, for example, why Institutions of Higher Education decide to establish entrepreneurship centres and programmes. What are the driving forces? How do they strategically link these programmes to the societal needs, policy agendas, and the limited resources? Further, relating to the programme implementations, there is a need to investigate how these institutions set their specific programme objectives (for, about, and in entrepreneurship), and how they match them with subject contents, target audience, delivery methods, and even local environments in which learning is taking place. But, more specific, it has been observed that there is very limited research and publications on the role of entrepreneurship education with regard to local entrepreneurs, communities, policy-makers, financiers and other related institutional players that affect regional entrepreneurial efforts. Many studies have indicated how policy-makers have been a major force in promoting entrepreneurship education (e.g. Pittway and Cope, 2007; Lourenço and Jones, 2006; Matley, 2005a, b). But it is also observed that there is a two-way relationship of influence, especially at lower levels of societies where academicians can also influence policy, or faculties can act as a source of innovations and a catalyst entrepreneurial revolution. This observation does not lead to a quagmire of finding the cause-effect of entrepreneurship education. But this could be approached as case studies on specific strategies, activities, success-stories and improvements made by a particular entrepreneurship faculty to a local community and its components. Similarly, it is thought that too much educational effort has been directed to producing entrepreneurs and less has been directed towards the study of the institutional environments in which these graduates are going to operate. The World Bank (2002) argues that institutions (e.g. political, judicial, financial, society, media, etc.) influence both entrepreneurial opportunities and entrepreneurs' ability to use their skills and resources. It would be interesting to study the role of entrepreneurship education towards these institutions, or how these environmental institutions shape the curricula and approaches in entrepreneurial programmes. Also, there is an opportunity for educators to conduct entrepreneurship teachings, as a mainstream faculty activity, alongside sensitisation activities to people who build up these institutions. This would lead to educating another important target group that comprises the facilitators of entrepreneurship in society.

Also, relating to evaluation and impact assessment, educators' attention has been directed to start-ups and self-employment as an objective and as a success indicator. This has reduced the focus towards the fate of other types of learners. It is a fact that not all students joining entrepreneurship programmes intend to start businesses of their own, hence the categorization for, about, and in. Therefore, if there are attempts to establish progress made within this field of study, there is also a need for further research on the performance of entrepreneurship graduates in workplaces, which happen to form a bigger proportion among entrepreneurship graduates. This is more relevant in least developed countries (LDCs) for both the public and private sector, where massive investment is committed to modernise working styles in the public sector and to improve the competitiveness of the graduates needed by an expanding private sector.

Lastly, it has been argued that attitudinal variables are the best predictors of future entrepreneurial behaviours, and that attitudes and intentions are hard to change. But,

what remains uncertain is when and how these attitudes and intentions start to build and become actions, given the time lag between the two. Therefore, there is a need for scholarly efforts to find proof of the link between measures of impact and graduates' performance in the field. This could probably be done using extended longitudinal studies, which will require faculties to keep track of their graduates for over a period of ten years or so. Most entrepreneurship research at the moment fails to conduct such studies, mainly due to a lack of comprehensive alumni databases and their huge cost implications.

A general opinion from this review is that there has been remarkable progress in entrepreneurship education. Although the current debates and variations signify that entrepreneurship education is a developing field of study (Singh, 1990), this review has shown that the field is moving towards a common conceptual approach in terms of agreement on educational objectives, advocated (as opposed to the most applied) teaching methods, and convergence towards behavioural impact indicators.

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