

International Entrepreneurship Education

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Issues and Newness

Edited by

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Foreword

Allan Gibb

I have had the privilege to be in touch with the Internationalizing Entrepreneurship Education and Training (IntEnt) conference initiative since its inception and have been lucky enough to participate in many of its workshops. Like most small enterprises it arose from slender beginnings, driven by an entrepreneur with the vision, Heinz Klandt. It has gained in conceptual and pragmatic strength, and in numbers, over the years. Most importantly, in my view, it has served to create a wider view of the concept of entrepreneurship education, challenging in some respects the dominant US paradigm. As international interest in entrepreneurship education has grown, so, appropriately, has the dynamic of the contributions.

This volume, selected from the proceedings of the 2003 Conference in Grenoble, marks another distinctive step. The overall theme is one of challenge to the knowledge conventions, the context, the location and pedagogy of entrepreneurship education. Alongside several contributions from distinguished authors in the field, there are relative newcomers with insights to challenge the reader, both empirical and conceptual.

IntEnt has always been driven by the desire to make sense of things to the teacher and policy-maker in the entrepreneurship field. It never has been an empty vessel to be filled with purely academic papers in the traditional research conference single disciplinary mode. It draws from many different conceptual frames and is unafraid to embrace creative pragmatism. This volume is no exception and as such is always stimulating.

1. Issues and newness in the field of entrepreneurship education: new lenses for new practical and academic questions

Alain Fayolle and Heinz Klandt

Following a trend initiated in the USA in the 1970s (Fiet, 2001), the number of public and private initiatives to train and educate people to be more entrepreneurial have multiplied on both sides of the Atlantic (see, for example, Fayolle, 2000; Klandt, 2004). Those entrepreneurship education programmes respond to, on the one hand, an increasing interest from students about entrepreneurial careers (Brenner et al., 1991; Fleming, 1994; Hart and Harrison, 1992; Kolvareid, 1996) and, on the other hand, an increasing awareness from public authorities about the importance of entrepreneurship as a contributor to economic development (Hytti and Kuopusjärvi, 2004).

In the context of this book we define entrepreneurship education in a wide sense as any pedagogical programme or process of education for entrepreneurial attitudes and skills, which involves developing certain personal qualities. It is therefore not exclusively focused on the immediate creation of new businesses. Hence this definition covers a wide variety of situations, aims, methods and teaching approaches.

The introductory chapter pursues two objectives. First, we would like to highlight some changes in the paradigmatic approach of entrepreneurship education and their consequences on research in the field. Secondly, we provide an overview of the book through a presentation of the chapters.

TOWARDS A CHANGE OF PARADIGM IN ENTREPRENEURSHIP EDUCATION?

Entrepreneurship education is becoming a great focal point of interest for researchers since a dedicated conference¹ to that topic appeared in the scientific world at the beginning of the 1990s. As the entrepreneurship concept itself is

difficult to define, there is no strong agreement on what entrepreneurship education is and how it could be taught. A broad variety of researchers, practitioners and teachers see entrepreneurship and entrepreneurship education from different angles and through specific lenses (see, for example, Bouchikhi, 2003; Fayolle, 2004). For us (Fayolle, 2004; Fayolle and Senicourt, 2005), entrepreneurship and entrepreneurship education can be seen (and defined?) at different levels:

- Entrepreneurship is a matter of *culture* (institutional point of view) or a matter of *state of mind* (individual point of view). That means that entrepreneurship education is helpful to create an entrepreneurial culture within countries, societies, firms, associations, and so on, and/or to change the mindset of individuals. Culture and state of mind could be mainly approached in terms of values, beliefs and attitudes.
- Entrepreneurship is also a matter of *behaviours*. Organizations and individuals can develop entrepreneurial behaviours such as, for example, those described by Stevenson (opportunity orientation, commitment to opportunity orientation, commitment of resources, and so on)² or those suggested through the concept of entrepreneurial orientation (Lumpkin and Dess, 1996).
- Finally, entrepreneurship is a matter of *specific situations* (new firm creation, corporate venturing, acquiring existing businesses, and so on) including change, uncertainty, complexity and requiring entrepreneurial behaviours such as those previously exposed and entrepreneurial competencies in relation to the features of these specific situations.

Both individual and organizational dimensions have to be considered at each level.

As Kirby (forthcoming) suggests, the traditional entrepreneurship education paradigm has focused on new venture creation, the objective being: 'To generate more quickly a greater variety of different ideas for how to exploit a business opportunity and ... project a more extensive sequence of actions for entering business' (Vesper and McMullen, 1988: 9). This assertion is fully relevant with the current contents of the most worldwide diffused textbooks in entrepreneurship. In this paradigm the aim of entrepreneurship education is about teaching students to start their own businesses. This is a concept of teaching entrepreneurship which mainly focuses on the third level (specific situations).

Gibb (2002; 2004a; 2004b) alternatively proposes a 'modern' paradigm in entrepreneurship education which deals more with the first (culture, state of mind) and the second (behaviours) levels. Gibb's departure point is to consider that the considerable and growing interest in entrepreneurship and entrepreneurship education is related to a change of perceptions, coming from the globalization phenomena, characterized by an increasing degree of environment complexity

and uncertainty. Governments, institutions (such as universities and schools), organizations and firms, individuals are changing their perceptions of the world and facing both the complexity and the uncertainty of that new world.

Nowadays, increasingly, each of us has to live with, deal with, create and enjoy uncertainty and complexity (Gibb, 2004a). As Gibb states, there is a need to move away from the traditional focus of entrepreneurship education on new venture management, business plans, growth and innovation, to a broader concept based on an understanding of the way that entrepreneurs live and learn.

Table 1.1 highlights the implications for entrepreneurship education and for research in entrepreneurship education depending on the level considered (culture/behaviour/specific situation) for positioning entrepreneurship.

To provide the reader with a good understanding of what our contribution is and is not, let us briefly underline a couple of limits and precisions.

First, our approach to identify these implications was not exhaustive and, obviously, Table 1.1 could be completed and considerably enriched.

Secondly, the proposed framework does not consider how the different levels (culture/behaviour/specific situation) and how the two dimensions (collective/individual) relate to each other. Certainly, one can find at the crossroads and in the interactions between these key elements new research issues and new entrepreneurship education questions.

Finally, we think that the modern paradigm is a new focus on other elements (culture and behaviours), but it does not mean the traditional focus on new venture creation and on entrepreneurial situations is neglected. From our point of view, the modern paradigm is not an alternative to the past and ought not to be seen as a substitute, but it is much more an extension of the traditional paradigm. As the complexity of the world increases, the complexity of the entrepreneurship education model has to increase too, through the inclusion of new variables and new levels of conception.

Clearly, that change of paradigm and thoughts of what entrepreneurship education is or should be, leads us as researchers in the field to ask new research questions which complete the old ones. However, old research questions remain, as we shall see.

Classical research questions in the field of entrepreneurship education mainly revolve around the audiences, their needs, the educators, the contents and the methods, and the actions. Brockhaus (1993) suggests a research agenda in entrepreneurship education. First, he thought we need to develop research methodology for measuring entrepreneurial education. For instance, our current research programme goes hand in hand with this objective (see Fayolle, 2005; Fayolle and Gailly, 2004; Fayolle et al., 2005; Chapter 5 in this book). Particularly, we try to take into consideration in our research methodology the main elements. Brockhaus stated: 'The student, the student needs, the type of instructor, the format and different outcomes over points in time' (1993: 4).

Table 1.1 From a traditional to a modern paradigm in entrepreneurship education: some implications for educators, practitioners and researchers

Entrepreneurship as a matter of ...	Culture or state of mind	Behaviours	Specific situations	Dimension of analysis
Implications for entrepreneurship education	<p>How can an entrepreneurial culture be created?</p> <p>How can we design and set up a favourable environment to entrepreneurial culture?</p> <p>How can we teach politicians and decision-makers to help them in developing entrepreneurial culture?</p>	<p>How can we teach entrepreneurial behaviours?</p> <p>How can we teach entrepreneurial orientation?</p> <p>How can we teach skills and competencies in relation to entrepreneurial behaviour?</p>	<p>How can we teach corporate entrepreneurship?</p> <p>How can we relate the concept to others such as strategic management or entrepreneurial management?</p>	Collective level
Implications for entrepreneurship education	<p>How can we teach entrepreneurial spirit (contents and methods)?</p> <p>How can we teach entrepreneurial values?</p> <p>How can we develop positive attitudes to entrepreneurship?</p>	<p>How can we teach entrepreneurial behaviours?</p> <p>What are the best contents and methods to teach entrepreneurial behaviours?</p>	<p>How can we teach independent entrepreneurship (mainly new venture creation)?</p> <p>Who can teach entrepreneurship to reach the objectives?</p>	Individual level

<p>Implications for research in entrepreneurship education</p>	<p>How can we conceptualize entrepreneurial culture? What are the differences of entrepreneurial culture between countries? What are the influences of national, professional and corporate identities on entrepreneurial culture?</p>	<p>What does entrepreneurial behaviour mean (what are the key concepts)? Are there organizational frameworks or conditions more favourable than others?</p>	<p>How can we conceptualize corporate entrepreneurship? How can we build conceptual bridges between corporate entrepreneurship and entrepreneurship? Are there specific methods and contents to teach corporate entrepreneurship?</p>	<p>Collective level</p>
<p>Implications for research in entrepreneurship education</p>	<p>How can we conceptualize entrepreneurial spirit? How can we measure entrepreneurial spirit? How can we assess the effects of entrepreneurship education on entrepreneurial spirit?</p>	<p>How can we assess the effects of entrepreneurship education on individual entrepreneurial behaviours? What are the factors which could have an influence on entrepreneurial behaviour?</p>	<p>How can we assess the effects of entrepreneurship education on the formation of the entrepreneurial event and the different stages of the entrepreneurial process?</p>	<p>Individual level</p>

Brockhaus also stated that we should examine what is taught to the audiences: *‘Do they need management education? Do they need information on entrepreneurial processes? Do they need technical skills? Do they need to be more highly motivated?’* (1992: 4).

‘Who does the teaching?’ is also a research need underlined by Brockhaus. In this way, ‘research should attempt to evaluate which ones are the most effective in which situation?’ (ibid., 1992: 4). Who are the ‘best’ teachers? Those who have no formal education in entrepreneurship or those with advanced degrees? Those who have experienced entrepreneurship or those who have not? Are entrepreneurs better teachers than non-entrepreneurs?

The last research need in Brockhaus’s research agenda is in relation to the learning style perspective. Is there a specific learning style with which to teach entrepreneurship? As entrepreneurs seem to think and act differently from managers, the format in which they learn most effectively should attract the attention of researchers.

Table 1.1 shows us that traditional research questions remain in the modern paradigm. They are completed by a growing interest in new research objects such as entrepreneurial culture, entrepreneurial spirit, entrepreneurial orientation, entrepreneurial potential, and so on. These new research objects need first to be defined and conceptualized, and then approached within the diversity of pedagogical contexts and learning situations.

AN OVERVIEW OF THE BOOK: NEW LOOKS ON NEW ISSUES

The chapters of this book certainly reflect this change in paradigm and emphasize the need to address both traditional and new research questions.

The authors come from 10 countries and three continents. All of them are experienced in the field of entrepreneurship education and have a good academic practice. We see in this group some diversity in relation to the scope of the national cultures that are represented and homogeneity coming from a community of practice. Both diversity and homogeneity are strongly evident in this edited work.

The book includes three parts dealing with the new research questions in relation to entrepreneurship education and research. The first addresses key issues in relation to definitional, evaluative and institutional questions. The second part is dedicated to the methodological aspects approached through different contexts. The third part focuses on culture in a broad sense and on the new teaching approaches of enterprising individuals.

PART ONE: KEY ISSUES IN ENTREPRENEURSHIP EDUCATION

The chapters which are included in this first part of the book address both traditional and new questions. The question of how to learn and teach entrepreneurship is at the heart of Chapter 2. It is probably one of the oldest questions in the field of entrepreneurship education. The collective dimension appears strongly in Chapter 3 where the author is wondering about the capacity of some institutions such as business schools to develop in the right way entrepreneurship education. Chapter 4 exposes a review of existing approaches to support academic spin-offs and draws implications for the design of most effective frames and tools. Finally, Chapter 5 deals with the assessment issue and elaborates on a theoretical and methodological framework based on the theory of planned behaviour (Ajzen, 1991) to measure the impact of entrepreneurship education programmes on attitudes and behaviours of students. But let us have a look at the chapters of the first part in more detail.

Chapter 2 (by Blenker, Dreisler, Færgeman and Kjeldsen), 'Learning and teaching entrepreneurship: dilemmas, reflections and strategies', is centred on a basic set of questions.

The question as to whether entrepreneurship could be learned, and whether it should be taught as part of university studies in general and, more particularly, as part of business studies, has been discussed for a number of years. The most widespread answer today seems to be positive: yes, entrepreneurship can be learned and should be taught.

For the authors, a major problem is that the traditional forms of teaching at universities and business schools have shown themselves to be inappropriate for enhancing the motivation and competencies of students towards innovation and entrepreneurship. This phenomenon holds several dilemmas which are described and discussed in the chapter. Most of these dilemmas are related to the relationship between learning and teaching entrepreneurship, and to the question of whether entrepreneurship or enterprising behaviour is to be promoted.

One dilemma is whether teaching should be for entrepreneurship or about entrepreneurship, and another concerns the foundation of teaching; whether it should be based on management theories or on some not-as-yet-defined theory of entrepreneurship. A third dilemma concerns the situating of this education; should it be placed within the secure context of the university auditorium or in small firms – or perhaps somewhere in between academia and practice. A fourth dilemma is whether students should work individually or in teams, and a fifth is the question of how the substance of what is taught is formulated; whether entrepreneurship is conceptualized as an art or a science.

To answer the fundamental questions they have identified, the authors transcend traditional ways of asking questions about how to teach entrepreneurship,

particularly by introducing three different, but related, levels of educational decisions that a university should decide on when choosing entrepreneurship education strategy.

Chapter 3 (by Kirby), 'Entrepreneurship education: can business schools meet the challenge?' offers an original view on the institutional and educational conditions which have been gathered to develop entrepreneurial culture and entrepreneurial behaviours within business schools.

This chapter examines the characteristics and role of the entrepreneur and the challenges for business schools posed by the need to develop more enterprising individuals. It argues that the traditional education system stultifies rather than develops the requisite attributes and skills to produce entrepreneurs, and proposes that, if entrepreneurs are to be developed, considerable changes are required in both the content and process of learning. In particular the chapter suggests that there needs to be a shift in the emphasis in learning from educating 'about' entrepreneurship to educating 'for' it. Equally it stresses that entrepreneurship should not be equated with new venture creation nor small business management but with creativity and change. In this context it proposes that educational institutions need to change the process of learning to enable their students to develop their right-brain entrepreneurial capabilities as well as their left-brain analytical skills. Borrowing ideas from Chia (1996), the author argues that business schools need to weaken the thought processes so as to encourage and stimulate the entrepreneurial imagination.

Chapter 4 (by Cannavacciuolo, Capaldo, Esposito, Iandoli and Raffa), 'To support the emergence of academic entrepreneurs: the role of business plan competitions' is interested in reviewing and analysing existing approaches to encourage academic spin-offs.

Therefore this chapter focuses on the academic spin-off creation process. More specifically, it analyses such process in its early stages. The successful implementation of academic spin-off programmes is hindered by cultural, organizational, legal and financial barriers. To begin with, this chapter analyses barriers preventing academic spin-offs from being created. Secondly, the authors present an overview of supports instrumental in overcoming such barriers. Thirdly, they classify the key features of academic entrepreneurs. These aspects are then utilized in order to identify some basic principles focused on the creation of effective policies facilitating the establishment of academic spin-offs in areas that do not excel in transforming research output into business-related activities.

More specifically, the research work presented in this chapter analyses an academic spin-off support programme implemented in Italy by the University of Naples Federico II. The programme does not take into account all the phases of the entrepreneurial process but only focuses on the first phase of the academic spin-off creation process. This phase is mainly aimed at facilitating the emergence of new business ideas.

To end the first part of the book, Chapter 5 (by Fayolle and Degeorge), ‘Attitudes, intentions and behaviors: new approaches to evaluating entrepreneurship education’ deals with the key questions of ‘what should we measure?’ and ‘how do we assess the impact of entrepreneurship education?’

Entrepreneurship teaching programmes and initiatives in educating people towards entrepreneurship are growing throughout the world. In relation to this development some practical and research key issues are rising. Among them, the question of entrepreneurship teaching programmes assessment is probably one of the most crucial both at a social and at a research level.

As the chapter shows, some research has been undertaken on this topic and the greater part of it clearly underlines the complexity of the assessment question, mainly in terms of indicator choice and because the measure itself is very complicated due to the existence of late effects. Moreover, the field of the entrepreneurship education is diversified and heterogeneous, depending on the teaching objectives, the audiences, the contents, the teacher profiles, the pedagogical methods and approaches, and so on.

Based on this complex reality, the aim of the chapter is to show that it is possible to avoid some of these difficulties by reconsidering and reformulating the assessment question. It seems to the authors that the most important result of entrepreneurship education is not necessarily the creation of start-ups, but could be, among educated students, mindset changes, attitude changes and the development of an entrepreneurial orientation, measured through intentions. The chapter is thus proposing a conceptual framework in assessing the entrepreneurship education programme. This framework uses the theory of planned behaviour elaborated by Ajzen (1991). Under the influences of independent variables related to entrepreneurship education programmes, the theory of planned behaviour is a powerful tool to measure attitudes change towards entrepreneurial behaviour, changes in subjective norms, changes of perceived entrepreneurial behaviour control and, finally, changes in entrepreneurial intentions. The main research idea in this chapter is to consider whether it is expected and feasible to design a dynamic tool using the theory of planned behaviour to assess the entrepreneurship education programmes and so to measure variations on entrepreneurial intention throughout the education process.

PART TWO: ABOUT THE NEWNESS IN METHODOLOGICAL APPROACHES TO TEACH ENTREPRENEURSHIP

This second part of the book includes five chapters which try to bring new views and insights on the pedagogical concepts and practices. Here the question is not only how to teach students to design and start a new business (that is, the tradi-

tional approach in the field), but increasingly the focus is on how to help students to develop entrepreneurial behaviours and entrepreneurial attitudes throughout innovative methods in the classroom or outside.

In a teaching community such as ours, the questions around pedagogy and learning methods are of the first importance. Following an overview of entrepreneurship pedagogy (Chapter 6), the authors explore the pedagogical ways of mentoring (Chapter 7), business planning (Chapter 8), skills demonstration in a specific context (Chapter 8) and new business opportunities (Chapter 9).

Chapter 6 (by Kyrö), 'The continental and Anglo-American approaches to entrepreneurship education differences and bridges' is clearly centred on entrepreneurship pedagogy and compares Europe and North America to highlight some expectations for the future.

From the author's point of view, the discussion between entrepreneurship and education has become more evident since the end of the twentieth century due to the increasing impact of entrepreneurship and small business phenomena on countries. As entrepreneurship in a broad sense relates to a strong social demand, it is obvious that the debate of how to learn entrepreneurship and how to develop successful pedagogies is a priority both for practitioners and decision-makers. So far the focus has changed from the innate perspective (entrepreneurs are born, not made) to the current educative perspective (people are educated to become entrepreneurs). This education-orientated focus has, however, generated studies in entrepreneurship research rather than attracted researchers in education sciences. The chapter suggests that this fact appears to be due to an apparent shortage of pedagogical discussion. In order to encourage a scientific debate as an interplay between entrepreneurship and education, the research delineates the basis for entrepreneurial pedagogy.

Chapter 7 (by Miettinen), 'Mentoring for entrepreneurs as an educational intervention', is studying a very interesting notion, 'mentoring', which is very close to 'coaching', the latter probably more often used in other countries (as is the case, for instance, in France where the word 'mentoring' is replaced in the literature and in practice by the word 'coaching'). Mentoring and coaching are relatively new concepts which have been insufficiently studied in the field of entrepreneurship.

In this chapter, a regionally based mentoring programme in Finland is explored at the end of its first decade of running. The empirical part consists of two surveys, one focusing on the experiences of the mentees ($n = 57$) and the other on the experiences of the mentors ($n = 20$). The results are mostly positive and encouraging: the mentees feel they have benefited from the programme and the mentors have found it rewarding by providing learning opportunities for them, too. In this research, mentoring activities are considered to be informal training and education efforts that supplement more formal education and training for entrepreneurs. Mentoring activities are defined as an intervention

categorized broadly into feedback of data, agenda-setting interventions and coaching or counselling individuals. The educational role of mentoring is further discussed through the concepts of experience and reflection.

Chapter 8 (by Gailly), 'Can you teach entrepreneurs to write their business plans? An empirical evaluation of business plan competitions' is focusing on a well-known tool in the classroom and also in the entrepreneurship literature. But the issues raised by the author have considerable implications both at the pedagogical and the research levels. We have here a good example of how an old question is seen through new lenses.

The aim of this chapter is to provide empirical evidence on the efficiency (do they help the right business?) and effectiveness (do they provide relevant support?) of business plan competitions, through the analysis of data from a business plan competition organized annually since 2000 in four European countries. In this work the author analyses the data from the evaluation, by external experts, of the business plans submitted to the business plan competition, the evolution of those evaluations as the ventures receive support and the subsequent outcome of those ventures, in particular whether they led to the creation of actual businesses.

The conclusions are that the business plan competition approach to select potential ventures based on their business plan only (excluding interviews of the entrepreneur) appears relatively efficient, in the sense that this process helps to select the right business. However the effectiveness of the expert support and training provided to the entrepreneurs appears not to be effective, in the sense that it does not significantly increase the probability of success of the venture. On the other hand, anecdotal evidence gathered from participants indicate that the business plan competition is very effective in providing support to the entrepreneur in terms of networking, in particular through contacts with other prospective entrepreneurs and with the experts involved in the process.

Chapter 9 (by Mahlamäki-Kultanen) 'Skill demonstrations: a possibility for meaningful co-operation with work-life in the internationalizing vocational education' exposes an experience initiated by the Finnish government and based on the implementation of national skills demonstrations in initial vocational secondary-level education.

In this context, the chapter presents an example of theoretically and practically justified assessment of the core processes of entrepreneurship in home economics. It describes and analyses the development project of the national skills demonstration material created for the vocational degree of entrepreneurs in home economics.

The author analyses data from this experience and other similar experiences. The results show us that there is an entrepreneurial cultural transformation going on through this experimentation. The raising of entrepreneurial intention of young vocational students is also a key outcome. Finally, it appears that efficient

practical skills and customer orientation are seen as the most important competences in initial entrepreneurial education.

Chapter 10 (by Kickul) 'Pathways to new business opportunities: innovations and strategies for the entrepreneurial classroom' ends the second part of the book, exposing new approaches and original thoughts about how entrepreneurship could be taught.

The purpose of this chapter is therefore to highlight a new entrepreneurship course that focuses on new opportunity initiation and creation. This course examines the critical factors involved in the conception, initiation and development of new and existing business ventures. The author's position is based on the belief that entrepreneurship is more than a set of tools and techniques for starting and growing a business: it is a mindset, a way of looking at things that is opportunity focused and creative. To a few examples, some of the topics covered by this new course include: (1) identifying new ideas and opportunities; (2) market potential analysis for products and/or services; and (3) initial financing and organizing of the business opportunity.

We clearly find in this chapter ideas and suggestions to teach entrepreneurship in the new paradigm. We are not only in the 'how to start a business' approach but much more in the 'how to develop enterprising qualities' approach.

PART THREE: DIFFUSING AND PROMOTING ENTREPRENEURIAL CULTURE AND DEVELOPING ENTREPRENEURIAL POTENTIAL

The final part of the book includes five chapters which deal with the broad concept of culture. Entrepreneurial intention, entrepreneurial spirit and entrepreneurial potential grow in a favourable culture and context. To highlight the importance of culture at the national level, the chapters expose more or less directly the cultural specificities of a set of countries and continents, including Africa, Argentina, Canada, France and Italy. This part gives us the opportunity to learn from other cultures and, in so doing, to improve our understanding on how an entrepreneurial culture could be created and developed. At the individual level, useful insights show us some ways to make progress in our knowledge of key notions such as entrepreneurial spirit, entrepreneurial intention and entrepreneurial potential.

Chapter 11 (by Verzat and Bachelet), 'Developing an entrepreneurial spirit among engineering college students: what are the educational factors?' is centred on the concept of entrepreneurial spirit.

The purpose of the chapter is to further the exploration of this concept of entrepreneurial spirit, which, as a label, has been widely used, while poorly defined in the relevant literature. The chapter also considers the way it builds up and in

which specific aspects the various teaching activities may be influential. One important objective of the authors is therefore to design a model of the way in which to build up an entrepreneurial spirit among engineering students and young engineers. This model is based on a double – psychological and sociological – theoretical source, but also on the observations carried out by the authors throughout their own experiences in a leading French engineering school.

In their research work, Verzat and Bachelet are dealing with key questions such as: (1) How may the entrepreneurial spirit be seen in relation to the intention of setting up a new business? (2) How can we analyse the emergence process of an enterprising mind with engineering students, within their own identity-building process? (3) What is the impact of the various awareness-raising/facilitating/training means on attitudes, beliefs and self-efficacy making up the entrepreneurial spirit?

As we can see these key research questions are at the heart of the new paradigm in entrepreneurship education.

Chapter 12 (by Postigo, Iacobucci and Tamborini), ‘Undergraduate students as source of potential entrepreneurs: a comparative study between Italy and Argentina’, uses an international comparison to increase knowledge about some essential reasons and conditions which lead students to become entrepreneurs.

There is a growing consensus that ‘information society’ education is one of the key factors for the emergence of new firms and their development prospects. In this context new ventures created by graduates are expected to play a critical role, especially for the emergence of knowledge- and technology-based firms.

The main aim of this chapter is to analyse the influence of different contexts – developed (Italy) and developing (Argentina) countries – on: (1) the perceptions students hold about entrepreneurs; (2) the influence of social background on the motivation to become an entrepreneur; and (3) the perception about what positive or negative factors affect the creation of new ventures.

The results of the study show overall there are more similarities than differences between Argentinean and Italian students in their perception of entrepreneurship and in their attitude to starting up their own firm. However, the social background of the students plays a major role. Although this can be considered an exploratory and preliminary study, it offers interesting indications for the design of entrepreneurship programmes orientated to university students.

Chapter 13 (by Gasse and Tremblay), ‘Entrepreneurship among students at a Canadian university: an extensive empirical study of students’ entrepreneurial preferences and intentions’, offers a study carried out in North America and designed around the concept of entrepreneurial potential. This concept, much less developed in the entrepreneurship literature, appears to us to be of the first

importance in relation to a good understanding of how the skills and abilities to perform an entrepreneurial behaviour can be increased.

The study carried out at Laval University is helpful to determine the entrepreneurial potential on the campus and, at the same time, provides us with a better understanding of the students' needs and expectations with regard to entrepreneurship. The students have been selected randomly from a complete list of Laval University students. A total of 600 students have been interviewed.

The author attempts to see, through this research, how the students' values, attitudes and behaviour, that is, their entrepreneurial potential, could predispose them to found a company, create their own job or have the intention to do so. According to the data, approximately 3.2 per cent of the students are currently involved in starting up a business. Moreover, it would seem that 32.5 per cent of the students have already thought of starting up a business or one day being self-employed. Among these, 43 per cent planned to do so more than five years after their studies, whereas 7.9 per cent intended to do so during their studies.

The research also aims at determining the role that Laval University should play in supporting entrepreneurial students. Moreover, the results show that the respondents prefer certain methods for teaching entrepreneurship. Furthermore, the motivations behind wanting to start up a business are the desire to become their own boss (30 per cent), followed by the wish to be self-sufficient and independent (14 per cent).

Chapter 14 (by Boissin, Castagnos and Deschamps), 'Motivations and drawbacks concerning entrepreneurial action: a study of French PhD students', is one more attempt to measure the entrepreneurial intention among students. Clearly the research tries to explore the effect of entrepreneurship education on students' entrepreneurial intentions.

The study is based on an initial sample of 74 PhD students and aims at understanding their entrepreneurial intentions and their perceptions about entrepreneurship. The authors analyse the data with statistical tools and try to categorize the students depending on their perceived motivations and drawbacks to starting a business.

Even though the research is in a preliminary stage, the results exposed in this chapter are very encouraging and should lead us in designing longitudinal research based on building up student databases aimed at following them inside and just outside their curriculum.

The third part and the book itself end with Chapter 15 (by Cader and Norman), 'Entrepreneurial education for the African informal sector'. Africa is well known for the economic role of the informal sector which provides particularly would-be entrepreneurs with key advice and resources. Developed countries could be inspired to obtain more knowledge about the rules and functioning of this informal sector, and trying, transferring or adapting some of these informal practices.

In this chapter, the authors show us that the informal sector in Africa has a potential for entrepreneurship education and training. Lack of focus on potential entrepreneurs, such as adults with lower educational attainment, in the implementation of any entrepreneurial educational strategy could be a drawback. Entrepreneurial activity can only be planned and organized by entrepreneurs themselves. This chapter therefore proposes an alternative, and practical, educational and training methodology, in the context of the African informal sector. In this specific context, the authors offer an interesting view on how adults learn from their peers and why practising teachers are the best masters. A strong conclusion is that mentoring is one of the alternatives to promote entrepreneurship among the rural adult and, at this level, local entrepreneurs play a critical role as mentors.

CONCLUDING REMARKS

In this introductory chapter we have attempted to propose and discuss paradigmatic changes in the field of entrepreneurship education. These changes come from the emergence of new objects and focus on both the research and educational levels, in relation to economic, politic and social needs. These movements in the field lead us to ask new questions and to use new pedagogical approaches. We hope we have brought, with all the chapters briefly presented in this introduction, a piece of useful knowledge aimed at opening our eyes and our minds to this moving world and to the necessity of renewing the contents and the methods used in our classrooms to teach entrepreneurship. We are conscious that the step we have just taken in this book is a small one and that a lot more research is required. More than ever, research in the field of entrepreneurship education has to be encouraged and facilitated. More than ever, research must go on and should drive the activity of entrepreneurship teachers.

NOTES

1. The IntEnt (Internationalizing Entrepreneurship Education and Training) conference. See also the research work from Bechard and Gregoire (2005) which is proposing an interesting framework for research in entrepreneurship education.
2. See for more details Stevenson and Sahlmann (1987).

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PART ONE

Key Issues in Entrepreneurship Education

2. Learning and teaching entrepreneurship: dilemmas, reflections and strategies

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INTRODUCTION AND BACKGROUND ASSUMPTIONS

Over the past few decades, there has been some discussion about whether or not – and, if positive, to what extent – certain people are born as entrepreneurs. Thus, from birth entrepreneurs seem to have competencies and skills that cannot be taught. We shall not enter this discussion, but rely on the general assumption that at least some personal characteristics, competencies and skills can be nurtured and trained in the entrepreneur's interplay with the environment, including the interplay with the educational system.

Our basic assumption is thus that entrepreneurship or enterprising behaviour can be learned and that, as such, it should be taught. Entrepreneurship education, however, requires thorough reflection on the connection between action and theory and between learning and doing. This is primarily because of the multifaceted nature of the entrepreneurial phenomenon, which makes it difficult to encompass and thus to teach and learn.

Based on this assumption we further assume that the public sector, including the educational system and the universities, should reflect how it could contribute to the stimulation of an enterprising mindset among students. The number of academic institutions teaching entrepreneurship seems to be increasing (Jack and Anderson, 1999; Katz, 2003).

One problem is that traditional forms of teaching at universities and business schools have shown themselves quite inappropriate with respect to enhancement of motivation and competencies among students towards innovation and entrepreneurship. This phenomenon is dealt with increasingly in the literature (Gibb, 2002; Swedberg, 2000; the proceedings of IntEnt conferences), leading to special issues of journals (for example, special issue of *Academy of Management, Learning and Education*, 3 (3), in 2004, focusing on entrepreneurship education), annual workshops on entrepreneurship teaching (IntEnt and ESPRI) and

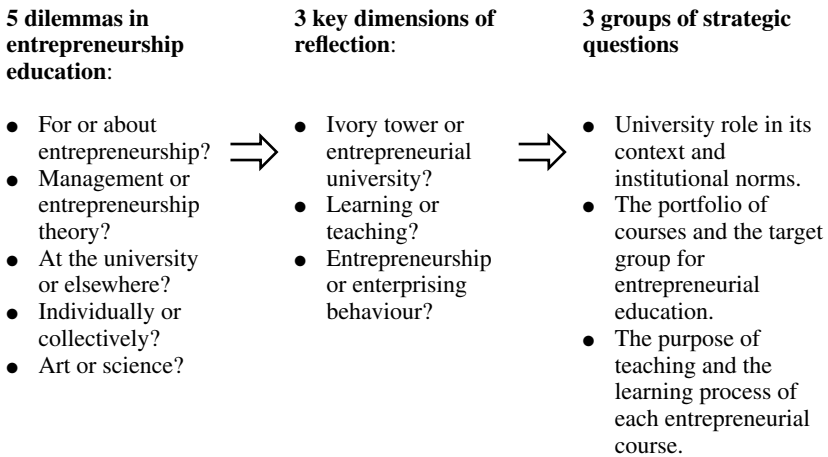


Figure 2.1 The structure of the chapter

even an academic journal (*International Journal of Entrepreneurship Education*) dedicated solely to the study of this phenomenon.

Research on teaching entrepreneurship is thus perhaps no longer sparse, but there is still a lack of generally accepted approaches and paradigms. Instead, there seems to be a large variation in teaching approaches. In this chapter, we attempt to demonstrate that this area holds a number of dilemmas and that the large variety of approaches can be related to the question of how teachers try to overcome these dilemmas.

Figure 2.1 shows the structure of the chapter. First a number of dilemmas observed in entrepreneurship programmes are shown. These dilemmas are condensed into three fundamental dimensions that should be reflected in actors involved in entrepreneurship education. Based on these reflections, it is argued that universities wishing to develop entrepreneurial education should decide on three groups of strategic questions.

SOME DILEMMAS OF TEACHING ENTREPRENEURSHIP

The discussion on how to teach and learn entrepreneurship holds several dilemmas. Through examining the literature on teaching and training entrepreneurship and the literature on entrepreneurial learning, we have identified five fundamental dilemmas expressed in a larger number of texts:

- Whether teaching should be for entrepreneurship or about entrepreneurship.

- The foundation of teaching – whether it should be based on management theories or on some not-as-yet-defined theory of entrepreneurship and intrapreneurship.
- The situating of the education – should it be placed within the secure context of the university auditorium or in small firms, or somewhere in between academia and practice.
- Whether students should work individually (the heroic Schumpeterian entrepreneur) or collectively (the entrepreneurial network entrepreneur).
- How the substance of what is taught is formulated – whether entrepreneurship is conceptualized as an art or a science.

As we shall see at the end of the chapter, most of these dilemmas concern the way the university relates to its context, the relationship between learning and teaching entrepreneurship as well as the question of whether we seek enterprising behaviour or entrepreneurship.

For or About Entrepreneurship

There are several reasons why students might want to study entrepreneurship (Jack and Anderson, 1999); they may want to start up a business of their own, but they may also be interested in acquiring and developing general knowledge about entrepreneurship based on an intellectual ambition.

The decision about whether to teach for entrepreneurship or about entrepreneurship is closely related to the question of whether education seeks to improve the student's ability to perform entrepreneurial action as a practical activity, on the one hand, or to learn about entrepreneurship as an academic subject, on the other (Gibb, 2002; Laukkanen, 1998).

Teaching for entrepreneurship is often centred on improving the student's ability to write a business plan. Students are taught to see the formulation of their potential business idea as sequential by going through a number of phases such as problem recognition (including problem description, information gathering and problem analysis), formulation and evaluation of alternatives as well as implementation. In the business plan courses, the students thus describe and define their business, describe their management team and firm structure, describe the market, decide on a marketing plan and a business system, and choose how to implement their business idea with respect to finance, risks and cash flow.

To gain insight into the different elements of the business plan, entrepreneurship education seeking to improve the student's ability to perform entrepreneurial action often involves a number of functional specialization courses. Similar to traditional management education, courses on marketing, organization, finance

and accounting are given. These courses usually differ from the traditional functional specialization courses only in the way that they are taught 'with a twist' of entrepreneurship.

When the aim of entrepreneurship education is primarily to increase the student's general knowledge about entrepreneurship, courses on the history of entrepreneurship theory dominate. Students are introduced to the classics of entrepreneurship theory. These courses typically have three key elements. One is about Schumpeter (1934), Kirzner (1973) and other pioneers of Austrian economics focusing on creative destruction and on the entrepreneur as the creator of societal innovation. Another element of these courses, with a more psychological and sociological focus, is the personal traits approach. Students are introduced to Weber (1905 [2001]) and the spirit of capitalism, and to McClelland's (1961) theories of the entrepreneur as an individual with a strong need for achievement and high internal beliefs of control. Finally, these courses introduce the students to more contemporary theories of entrepreneurship, for example, theories focusing on the relationship between the entrepreneur and situations that hold opportunities, in order to identify how the entrepreneur identifies or creates opportunities (Eckhardt and Shane, 2003; Shane and Venkataraman, 2000)

The distinction between courses for and about entrepreneurship outlined above is, of course, simplistic. Improving the ability to act entrepreneurially will support the academic competencies of entrepreneurship, and knowledge about entrepreneurship will improve practical competencies, but there is little doubt that some programmes stress practical application while others seek a more conceptual development (Garavan and O'Connell, 1994).

Management or Entrepreneurship Theories

Generally there is a lack of clear definitions of the concept of entrepreneurship, leading to the lack of a clear boundary for the academic field of entrepreneurship. Jack and Anderson (1999) indicated that the term covers different fields, ranging from small business operations via new venture creation to a broader meaning of general innovation and individualism.

Whether or not teaching is for or about entrepreneurship, some sort of theoretical foundation is needed. A key question, therefore, is, which theories to build upon? Entrepreneurship theories can be seen as a means of helping potential entrepreneurs to understand the future and the consequences of their actions. Drawn to its extreme, this line of thinking may even see theory as a way of providing the 'ought' in entrepreneurial action (Fiet, 2000; Gibb, 2002). Such an approach, however, tends to create too much generalization and too little contextualization (Laukkanen, 1998). As indicated in the paragraph above on the dilemma of 'for or about', entrepreneurship education seems to build on

two different kinds of intellectual heritage: the institutional heritage from business schools and the theoretical heritage from entrepreneurship theory. At the business schools, entrepreneurship courses are usually taught by teachers who are primarily educated in economics and management. This leads to a very strong emphasis on management theories as the fundamental theoretical background in entrepreneurship education.

When performing entrepreneurship, fundamental business knowledge and skills are required. Fundamental entrepreneurial problems such as how to discover opportunities, how to evaluate the attractiveness of industries, how to marshal resources and how to create a competitive advantage may be explained by more general economics and management theories such as network theory, consumer behaviour theory, industrial organization theory, game theory, agency theory, transactions cost theory or resource-based theory (Fiet, 2000).

Thus, teaching entrepreneurship often seems to group together a large number of areas and topics from traditional management education (Fiet, 2000), but often without a thorough conceptual foundation relating it to entrepreneurship.

The strong theoretical heritage from entrepreneurship theory is another influence. The theories of entrepreneurship are, however, primarily descriptive. A problem of using entrepreneurship theory in entrepreneurship education is thus that it has little to say with respect to the question of teaching 'for' entrepreneurship.

As argued by Jack and Anderson (1999), each entrepreneurial event is unique and idiosyncratic, and the entrepreneurial process is a result of complex and contingent variables. The essence of the entrepreneur lies in his or her ability to go beyond the difficulties that others have had in foreseeing the opportunity. This involves uniqueness, sensitivity and ability to cope with the unknowable in the sense that no formal correct procedure exists for decisions. Instead, entrepreneurial actions seem explicitly to involve an anti-positivistic, subjective and judgemental approach to problems based on personal knowledge.

These problems could lead to the development of a more action-orientated theory as inspired by Austrian economics (Jakobsen, 1992). However, little has been achieved so far in the attempt to explicitly combine such an approach with more formal entrepreneurship education.

University – Small Firms or Elsewhere

Factual knowledge and skills can be taught in the classroom, but the entrepreneurial event is also dependent on individual and contextual knowledge. This sort of knowledge primarily stems from personal experience.

The lack of entrepreneurial experience among university staff, combined with the general lack of entrepreneurial experience among students (Jack and Anderson, 1999), tends to produce classroom situations which focus heavily on

what the participants feel comfortable with: theory, either normative management theory adjusted to give advice for entrepreneurship and small business, or descriptive entrepreneurship theory explaining societal innovation by the emergence of entrepreneurs and their personal traits.

Since it would probably be quite difficult to change both the population of teachers and the population of students, the experience aspect has to be brought in from elsewhere. One way is in the form of guest lecturers from the 'real world', serving as the case study input which conventional pedagogy is familiar with. These kinds of case stories, however, do not transcend the traditional pedagogy.

Still, enterprising behaviour cannot be created in a contextual vacuum. To enhance this behaviour, universities have to open doors – both within the university to create networks between faculties and departments and to the outside in order to create networks with industry and government in the environment. This is not an easy task. Institutional norms, incitement systems and general prejudices hinder fruitful experiments on these matters.

Individually or Collectively

Most approaches to entrepreneurial education adopt an individually centred approach. This individualism can be expressed in two ways: the entrepreneurship content and the educational context (Laukkanen, 1998: 2–3).

The entrepreneurship content focuses on the individual. An example is the heroic entrepreneur, who (as an alert individual) identifies opportunities and marshals resources in order to start his own firm. It is rarely recognized that this economic process is also an organization of social processes (Johannisson and Lundberg, 2002) where the actions of other people are influenced and co-ordinated.

In a similar way, the educational context focuses on the individual. Conventional university teaching is dominated by the idea of transferring knowledge from one individual to another. One could thus argue that the pedagogical context does little to improve the student's ability to organize the social processes, which a large part of entrepreneurial action is about.

Alternative learning processes may, however, take place in groups or communities which do not have learning, but some sort of enterprising behaviour as its primary goal. Teamwork among students or collaboration with other members of the community with different experiences has the potential for creating entrepreneurial behaviour among students.

Art or Science

Within the university context, we tend to think of entrepreneurship as a theoretical discipline. A central problem is, however, that we cannot theoretically

replicate the experiences of successful entrepreneurs (Jack and Anderson, 1999).

Some of the keywords related to entrepreneurship seem to be 'experimentation', 'novelty', 'innovation', 'creativity', 'flexibility', 'uniqueness', 'autonomy', 'self-direction' and 'self-expression' (Garavan and O'Conneide, 1994; Jack and Anderson, 1999). These words are often associated with artists. From this point of view entrepreneurship may also be characterized as an economic art form, where the entrepreneur creates something that did not exist before (Jack and Anderson; 1999).

On the one hand, entrepreneurship can thus be seen as an art form because it is 'generative proactive' and not just a 'passive, descriptive and contemplative' theoretical discipline trying to describe and analyse entrepreneurial situations (Cockx et al., 2000). The art of entrepreneurship can be understood as an ability or mastery that may be based on profound theoretical knowledge, but where the essence of the art form is the person's 'ability to apply it creatively and with initiative in practice' (Cockx et al., 2000: 22).

From this point of view the person him or herself must generate the skills of thinking entrepreneurially, probably through personal learning processes. This is quite different from more theoretical approaches trying to analyse the entrepreneurial situation. It is probably easier to train someone on the basis of 'situation centred' skills than to train them on the basis of 'personal centred' skills (Cockx et al., 2000).

REFLECTIONS ON REPHRASING THE DILEMMAS

So far a number of dilemmas involved in teaching and training people in entrepreneurship have been juxtaposed. The central question of this chapter has been, how can entrepreneurship be learned and how can it be taught?

In an attempt to answer this question, we recognize that it is impossible to reconcile these different demands when dealing with the dilemmas mentioned above. It is not possible to choose between the questions since they involve decisions at many different levels of education planning. The challenge is thus not to choose one or the other position of the dilemma, but to transcend the dilemmas by rephrasing them.

In order to design the university's entrepreneurial strategy, the mix of entrepreneurship-related courses and the single entrepreneurship course, the involved teachers and university management should reflect on these dilemmas in order to find out how they in particular will seek to overcome them.

In order to transcend the dilemmas, we reflect on three broader strands of discourse that have emerged within the entrepreneurship literature during the past decade.

The first is inspired by the more general debate on the learning organization and organizational learning that has established itself as a dominant theme of the 1990s. It has roots in the search for individual self-development within a continuously self-transforming organization, based on both individual and organizational development. This personal and organizational self-renewal of the learning organization is seen as the key to unlocking a source of competitive advantage, hereby re-creating the world.

The second is inspired by the discussions on entrepreneurship or enterprising behaviour and relates to the question of to what kind of behaviour education seeks to promote.

A third discourse concerns a more general transformation of the university system. Under the headings of 'The entrepreneurial university' and 'Triple helix' new relationships between the university and its context have been discussed.

Learning or Teaching

The disagreement as to whether someone can be educated to be an entrepreneur seems to be strongly related to the question of learning and teaching. Garavan and O'Conneide (1994) argue that there is agreement that one can teach entrepreneurship, while Jonsson and Jonsson (2002) argue that the belief that one can educate someone to be an entrepreneur is wrong; entrepreneurship is not a cognitive issue, but something else.

Traditionally universities have focused on teaching students what the university finds necessary. If entrepreneurship has been part of the study programme, it has usually been rather isolated and part of separate courses. A broader focus on both learning and enterprising behaviour is, however, necessary if the ambition is to improve alertness and encourage the ability to deal with opportunities among students, teachers and central actors in the university environment.

The traditional university has been distributing knowledge based on a teaching approach. For the entrepreneurial university, the ambition is to integrate knowledge of opportunities in a continuous learning process in order to create reflexive action. This calls for experiments in relation to the pedagogical approach with respect to both courses as well as other study activities at the university and in the university environment. While teaching focuses on knowledge transfer, it focuses less on the personal development of the student.

The words 'learning' and 'teaching' were previously used to describe the role of the student and the teacher, respectively, but as many new learning theories emerge it is clearly not this simple anymore.

'Learning' is connected to approaches according to which the student or learner is invited to become an active and equal partner in the learning process. Theoretically it is related to constructivist, experiential, existential and socially orientated theories. Practically and methodically learning is associated with

phrases like ‘taking responsibility for one’s own learning’ and ‘learning to learn’. This approach also offers a more holistic view of education: the focus is not entirely on cognitive development, but affective and connotative purposes are also taken into consideration.

The word ‘teaching’ is still closely connected with what the teacher is doing because students – or perhaps better, ‘pupils’ – are seen as relatively passive receivers of knowledge and skills in this approach. This is why related pedagogical theories and strategies concentrate on finding the best ways for teachers to present the content so that the pupils can easily digest and afterwards – if relevant – practise it. Generally speaking, the approach could be labelled instructionism and consists primarily of cognitive and behavioural pedagogical theories.

When we see enterprising behaviour as a prerequisite for entrepreneurship, we need primarily to adopt a learning approach. The main reason for this is that we relate entrepreneurial behaviour to some personal characteristics. These characteristics are not very likely to be influenced by teaching, which is often exemplified by lectures and so on, unless manipulation is perceived as a special kind of teaching.

However, entrepreneurship itself may be seen as a learning process, or at least learning is closely related to entrepreneurship. Most theories of entrepreneurship are built on the idea that the entrepreneur only holds his or her title as an entrepreneur as long as he or she performs the renewal function of opportunity identification. Thus, an entrepreneur could also be defined as a person that keeps learning in order to identify new opportunities.

Entrepreneurship or Enterprising Behaviour

In the literature there is some confusion over what kind of behaviour should be taught, related to even more confusion over the concepts of small business, entrepreneurship and enterprising behaviour. If these concepts are not well defined, there can be little agreement about the appropriate content and the pedagogical processes of education programmes directed towards these areas (Gibb, 2002).

Small business education is thus understood as providing management tools for small business owners who may not be innovative, but often suffer from the lack of a number of traditional management resources. Teaching small business management is probably to a large extent possible within a conventional pedagogic paradigm (Jack and Anderson, 1999).

Entrepreneurship is traditionally associated with a particular form of business activity, the creation of a firm. Entrepreneurship education is therefore directed towards stimulating entrepreneurship in the form of new venture creation, and the focus is on business renewal in an economic sense.

Contrary to these concepts, enterprising behaviour is a broader concept and the educational effort is directed towards developing self-reliant and enterprising people (Garavan and O’Cinneide, 1994). Enterprising behaviour thus seems to involve a more creative and dynamic approach to problem-solving compared with the more ‘mundane’ (Gibb, 2002: 238) versions related to small business management.

Next we shall focus primarily on enterprising behaviour, which we see as distinct from the two other concepts. Enterprising behaviour is a broader concept, which has been given a number of definitions, but generally seems to relate to personal characteristics such as willingness to change, flexibility, creativity, and so on. Enterprising behaviour may take place in other contexts than the economic world and may take other forms than the entrepreneurial creation of a firm. As argued by Gibb (2002), complexity and uncertainty necessitating an entrepreneurial response affect all people in many different aspects of life, not just when they are involved in creating a business.

From this point of view, enterprising behaviour resembles what Spinoza et al. (1997) have called the ability to ‘disclose new worlds’ and may best be understood as a prerequisite for entrepreneurship. This prerequisite may be described as an ability to see the anomalies of everyday life and use them as a foundation for understanding the world and changing it. In this way, firms are created, societies changed and history made (Spinoza et al., 1997).

Ivory Tower or Entrepreneurial University

Other problems seem to relate to the role of the university. Traditionally the university is involved in studying entrepreneurship and subsequently in teaching it. In both cases entrepreneurship takes place in another system, decoupled from the university system.

A more radical viewpoint could be that the responsibility for entrepreneurial performance is part of university obligations, and the responsibility for teaching entrepreneurs cannot be left entirely to the educational world (Garavan and O’Cinneide, 1994).

Recent approaches such as triple helix (Matlay and Mitra, 2002) or the entrepreneurial university (Etzkowitz et al., 2000; Nelson, 2001) argue for a more complicated view, where the university is seen as a societal subsystem in which education takes place through enterprise. Johannisson and Lundberg (2002) even speak of the university context as the innovative context. The concepts of triple helix and the entrepreneurial university are used to express the university’s relation to its environment, as part of an innovation system or as a regional or national growth generator.

Another understanding of the ‘modern university’ seems to emerge. In this alternative understanding, the modern university is to be understood as a social

system that itself becomes entrepreneurial as its members of faculty, students and employees turn themselves somehow into entrepreneurs. By their interaction with the environment, the coupling between university and region follows entrepreneurial patterns (Clark, 1998; Röpke, 1998).

REFLECTIONS ON UNIVERSITY STRATEGIES

Above we have discussed some of the dilemmas observed in the entrepreneurship education community. These dilemmas are real in the sense that no single formula for learning enterprising behaviour can be prescribed. But, as shown above, the dilemmas might best be dealt with by rephrasing the old dilemmas into new ones. We have suggested the juxtaposition of learning or teaching and entrepreneurship or entrepreneurial behaviour as more fruitful reformulations of the key problems of establishing education within this area.

Some parts of the dilemmas question the overall strategy of the university, others question the mix or curriculum of entrepreneurship courses, while other questions relate to the design of a single entrepreneurship course.

From a more pragmatic and strategic point of view, it may thus be argued that teaching entrepreneurship or stimulating enterprising behaviour at universities involves institutional questions about the norms of the university and how the university relates to its context. It involves different groups of students, who have several different needs, and it seems that these needs can be met by a variety of pedagogical approaches.

	For or about	Management or entrepreneurship theory	Art or science	University or elsewhere	Individually or collectively
Learning or teaching	<i>Pedagogical</i> decisions on both the general <i>portfolio</i> of entrepreneurial courses and <i>each</i> entrepreneurial course			<i>Institutional and contextual</i> decisions on university norms, structures and <i>external relationships</i>	
Entrepreneurship or enterprising behaviour	<i>Didactical</i> decisions on both the general <i>portfolio</i> of entrepreneurial courses and <i>each</i> entrepreneurial course				

Figure 2.2 The central strategic decisions of entrepreneurship education

Figure 2.2 organizes these questions and relates them to the old dilemmas. Figure 2.2 can thus be understood as a scheme for reflection on goals and approaches for people and organizations working with entrepreneurship education and training.

A similar point is made by Gibb (2002), who argues for a better segmentation of clients and needs, and by Laukannen (1998), who argues that there is a lack of explicit goals in terms of learning targets, system objectives, priorities and sequences of education.

The conceptual framework for reflections on teaching entrepreneurship, illustrated in Figure 2.1, should enable us to reflect on how we plan courses for potential entrepreneurs. The courses should help students to cope better with the practical problems of starting a business. But our conceptual framework should also make us reflect on how other courses can assist the learning processes of people who more generally want to develop their ability to act, create and enjoy the uncertainty and complexity of life when it is best (Gibb, 2002; Spinosa et al., 1997).

Following these more general reflections, institutions of entrepreneurial education should probably undergo more detailed analysis. For this purpose, we shall propose three levels of analysis:

- The university itself, its identity, strategy, academic norms and structures – we see this as a contextual question of how a university pursues its entrepreneurial activities with respect to the environment. For each university, this is a question of commitment to an entrepreneurial strategy. It must reflect on its identity, strategy, academic norms and structures in the sense that the university must decide on the general strategy to pursue with respect to target groups and purpose of entrepreneurship teaching. This involves questions of how its entrepreneurial activities relate to its environment.
- The teaching or learning processes used in various forms of entrepreneurship education – we see this as a question of identifying the right course content and pedagogical approach with respect to the portfolio of courses or other study activities belonging to the university's entrepreneurship study programme.
- The target group and the purpose of teaching influence the content and form of each entrepreneurial education element – we see this as a question of deciding on central didactic and pedagogical questions for each entrepreneurship course offered at a university.

There is an interdependence between these three elements. All three are equally important, and changes in one element must be balanced by changes in the other two. By reflecting on these questions, teachers and university management may be able to transcend the traditional ways of asking questions about how to teach entrepreneurship.

CONCLUSION

The world of entrepreneurial education is filled with dilemmas; not primarily theoretical dilemmas, but very real dilemmas facing everyone involved in entrepreneurship teaching or in developing entrepreneurship oriented universities.

Some questions are didactical. The entrepreneurship theory resolving the dilemmas of 'for or about' or 'art or science' is still to be formed, and the theories borrowed from management may do more harm than good.

Other questions are pedagogical. The entrepreneurial learning concept showing new roles, processes and structures of entrepreneurial education is still to be developed.

Further, institutional problems are to be solved. The entrepreneurial university that may bridge the university and its context as well as resolve the individual and collective dilemma is also still to be invented.

In the mean time, we will have to deal pragmatically with setting entrepreneurial university strategies, developing innovative curricula and teaching various forms of entrepreneurship courses. To do so, we need frameworks for organization of our reflections on these themes. In this chapter, a framework for integrating the three groups of strategic questions in entrepreneurship education has been established.

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3. Entrepreneurship education: can business schools meet the challenge?

David A. Kirby

INTRODUCTION

According to Brockhaus (2001: xiv) ‘one of the first courses [in entrepreneurship or small business] was offered at the Harvard Business School in 1947. Peter Drucker taught another early course at New York University in 1953’. However, it was only in the last two decades of the twentieth century that any considerable attention was paid by academia to the role of higher education in the creation of graduate entrepreneurs (Hills, 1986; Scott and Twomey, 1988). With the publication of Birch’s (1979) findings on the role of new small businesses in the creation of employment opportunities in the USA, and the advent of governments in America and Great Britain that focused on reducing the level of state intervention and increasing individual responsibility, governments around the world became interested in the creation of cultures that would promote enterprise and create new ventures. Subsequently, education systems have been charged, in varying degrees, with bringing this about. Nowhere has this been demonstrated more clearly than in the UK. In 1997, the National Committee of Inquiry into Higher Education (1997: 201) recommended universities to ‘consider the scope for encouraging entrepreneurship through innovative approaches to programme design’, and by 2000 business and entrepreneurial development had been listed as one of four strategic goals for British universities (Universities UK, 2000).

Despite such external influences, there has been considerable debate within the academic community over whether universities in general and business schools in particular can or should contribute. To some, entrepreneurs are born not bred, while to others: ‘to teach individuals to become not only more enterprising but businessmen as well ... is an undertaking that in both time and scope is beyond the capabilities of an academic business school’ (Johannisson, 1991: 79).

Interestingly, a UK survey by the Small Business Research Trust (1988) indicated that only 13 per cent of the survey sample believed that entrepreneurial skills could not be acquired by a process of learning. Hence, this chapter argues

that universities and business schools can develop entrepreneurs but that, as Chia (1996: 410–11) has suggested: ‘a radical change in intellectual and educational priorities is needed’. In so doing, the chapter first addresses what is meant by the term ‘entrepreneur’, before going on to consider why entrepreneurs are so important to society and how entrepreneurs (or intrapreneurs as they are known in large organizations) can be developed. The premise is that once it is known what is needed, and why, it should be possible to determine how it can be produced!

ENTREPRENEURIAL ATTRIBUTES

Often, the term ‘entrepreneur’ is equated with small business (Gibb, 1996) and the concepts of owner-management and self-employment. However, this is to oversimplify the concept. The term is much broader than these concepts would suggest. Not all owner-managers are entrepreneurs, nor are all small businesses entrepreneurial, and not all large businesses are unenterprising.

Unfortunately, though, there remains no agreed definition of what constitutes an entrepreneur. Writing in 1986, Brockhaus and Howitz recognized that: ‘the literature appears to support the argument that there is no generic definition of the entrepreneur’. Subsequently Chell et al. (1991: 1) have suggested that: ‘the problem of identification of an entrepreneur has been confounded by the fact that there is still no standard, universally accepted definition of entrepreneurship’.

While there remains no uniform standardized definition, one is needed and for this it is necessary to go back to the origins of the term, which stems from the French verb, *entreprendre* – to undertake. Thus, the entrepreneur is an undertaker – someone who undertakes to make things happen, and does. As a consequence, he or she disturbs the status quo and may thus be regarded as a change agent. In such a capacity, he or she does not just work for him or herself in a small firm but may be employed in a large organization. Frequently such organizations are in the private sector but, increasingly, in the public and voluntary sectors, also (Kirby et al., 1991). Hence it is possible to agree with Timmons (1989: 1) that: ‘Entrepreneurship is the ability to create and build something from practically nothing. It is initiating, doing, achieving, and building an enterprise or organization, rather than just watching, analysing or describing one. It is the knack for sensing an opportunity where others see chaos, contradiction and confusion.’

It would seem, then, that although it may not be possible to define, precisely, what an entrepreneur is, it is possible to identify one. Indeed, if the argument of Lessem (1986) is adopted, in all probability there is no such thing as an archetypal entrepreneur – no single individual who displays, in equal degree, the

Table 3.1 *Entrepreneurship type, personality and attributes*

Entrepreneurship type	Personality type	Attributes
Innovator	Imagination	Originality, inspiration, love, transformation
New designer/ enabler	Intuition	Evolution, development, symbiosis, connection
Leader	Authority	Direction, responsibility, structure, control
New entrepreneur	Will	Achievement, opportunity, risk-taking, power
Animateur	Sociability	Informality, shared values, community, culture
Adventurer	Energy	Movement, work, health, activity

Source: after Lessem (1986).

full range of entrepreneurial attributes. Rather, it is more likely that there are different types of entrepreneur, each with a different personality type and set of attributes and behaviours (Table 3.1).

The work of Lessem is important but all too frequently ignored in the literature. It is important for several reasons. First, it reasserts that entrepreneurs can be found in large as well as small firms, second it moves away from the oversimplistic notion of a single entrepreneurial type and, thirdly, it focuses attention on the attributes of the entrepreneur – very different attributes from those traditionally developed in business schools. Clearly Lessem was not the first to do this. Although no longer in vogue, the psychological literature suggests that entrepreneurs possess certain characteristics or traits, such as:

- *Risk-taking ability.* Classic economic theory suggests that entrepreneurs are risk-takers. By the very nature of their activities and roles in the economy and society, it is clear that entrepreneurs cannot be averse to risk. However, there is no apparent consensus with respect to risk-taking, and the prevailing belief appears to be that entrepreneurs are more predisposed to taking calculated risks than are other sectors of society (Caird, 1991; Cromie and O'Donoghue, 1992), and that they are more able to cope with the consequent ambiguity and uncertainty than are non-entrepreneurs (Koh, 1996). Interestingly, the work of Busenitz (1999) indicates that entrepreneurs are more confident than managers in large organizations and, as a consequence, tend to distort their perceptions of risk. This introduces a

further concept, that of self-confidence, which Koh (1996) believes to be a prerequisite of successful entrepreneurship and Ho and Koh (1992) regard as being linked to both a tolerance for ambiguity and creativity.

- *Need for achievement (nAch)*. First propounded by McClelland in 1961, this suggests that entrepreneurs have a high need for achievement, and achievers will choose situations that are characterized by:
 - individual responsibility
 - moderate (not high) risk-taking
 - knowledge of results of decisions
 - novel instrumental activity
 - anticipation of future possibilities.

It is the prospect of achievement (not money) that motivates them. Once again, empirical research support for McClelland's theory of nAch has been somewhat conflicting and it is generally held that 'although people with a strong need to achieve might well act entrepreneurially, there are problems with elevating nAch to a central position in explaining entrepreneurial motivation' (Cromie, 2000: 17).

- *Locus of control*. This is based on the work of Rotter (1966). Entrepreneurs are believed to possess a high internal locus of control and believe that the achievement of a goal is dependent on their own behaviour or individual characteristics. However, the results of empirical research into this are again inconclusive. Some (Cromie, 1987; Cromie and Johns, 1983) have found significantly higher 'internal' scores compared to experienced managers, while others (Brockhaus and Nord, 1979; Cromie et al., 1992) have found no differences between the scores of these two groups. Additionally, it has been suggested, as Cromie (2000) has recognized, that high achievers will also exhibit these behaviours, and there is conflicting evidence (Chen, et al., 1998; Hull, et al., 1980) about whether locus of control or need for achievement is the more fundamental entrepreneurial attribute.
- *Desire for autonomy*. Entrepreneurs want to be in control – hence they have been found to have a higher need for autonomy and a greater fear of external control than many other occupational groups (Caird, 1991; Cromie and O'Donoghue, 1992). They value individualism and freedom more than do either the general public or managers and they have a dislike of rules, procedures and social norms. As a consequence they have difficulty functioning in constraining environments that stifle creativity, and can experience difficulty relating to others. As Cromie (2000) observes, some are even regarded as deviants.
- *Deviancy*. This is based on the work of Kets de Vries (1977) who argues that entrepreneurial behaviour is the result of negative characteristics and

drives, and its financial benefits and drives do not always lead to personal satisfaction and happiness. According to him, an entrepreneur is ‘an anxious individual, a non-conformist poorly organized and not a stranger to self-destructive behaviour’ (ibid.: 41). Such behaviour, he asserts, is the result of a troublesome and very disturbed childhood where the father is often absent. As a consequence the entrepreneur becomes a person

- with low self-esteem
- who lacks the ability to reflect critically
- who dreams of being in total control and independent of everything and everyone.

This would thus explain why entrepreneurs become engaged in risky activities and choose to create their own organizations. However, research suggests that entrepreneurs are no more troubled than anyone else and may come from families that are stable financially and emotionally.

- *Creativity and opportunism.* Much of the entrepreneurial literature suggests that entrepreneurs are more creative than others (Timmons, 1989; Whiting, 1988). Certainly entrepreneurs tend to think in non-conventional ways, to challenge existing assumptions and to be flexible and adaptable in their problem-solving. All of these are integral to creativity and the creative process (Kirton, 1976; Solomon and Winslow, 1988), though some would argue that entrepreneurs are not so much creative as opportunistic. Rather than creating the new idea, they see opportunities and make them happen. Whatever, research by Utsch and Rauch (2000) suggests that there is a powerful link between innovativeness and venture performance, and that innovativeness is linked to achievement orientation. Whereas people with a low achievement orientation avoid innovation, give up quickly, demonstrate little effort and lack self-confidence, entrepreneurs with high achievement orientation exert considerable effort and persist in the face of problems and barriers. Hence they conclude that ‘an entrepreneur need not be high in achievement orientation to be successful, but it is helpful to be innovative. Especially in fast-growing areas or in high technology areas ... a high achievement orientation is important’ (ibid.: 59).
- *Intuition.* It has been contested (Carland, 1982) that entrepreneurs are intuitive rather than rational thinkers. Instead of adopting a structured, analytical approach to problem-solving, which requires attention to detail, adherence to rules and systematic investigation, it is believed that they prefer a more intuitive approach that requires more holism and synthesis, lateral rather than sequential reasoning and random methods of exploration. However, others contest that although intuition is important, it is more important for certain situations than for others and for certain types

of entrepreneur. For example, Olsen (1995) contends that intuition is important in the invention phase of the entrepreneurial process, while Miner (1997) suggests that of the four types of entrepreneur he identifies, intuition is an important characteristic of just one, the 'expert idea generators'. In an interesting piece of research based on the 437 founders of high-growth companies listed in the role-model publication, *Local Heroes* (Scottish Enterprise, 1997), Allinson et al. (2000) compare the 156 responses to a questionnaire survey with an earlier survey (using the same questionnaire) of 546 managers from various organizations. The results reveal that entrepreneurs in high-growth firms are more intuitive than members of the general population of managers, and middle and junior managers in particular, but are no different in their cognitive style from senior managers and executives. While recognizing that this is a pilot investigation based on a convenience sample, the authors conclude that the findings 'provide empirical support for the widely held view that successful entrepreneurs adopt an intuitive approach to information processing' (ibid.: 41). At the same time they challenge the view that entrepreneurs process information differently from all categories of salaried managers, which is consistent with the view that entrepreneurial behaviour is not confined to the self-employed.

Over the years, therefore, the psychological literature has identified various individual characteristics or traits of the entrepreneur which, it would seem, appear to occur not so much as individual, dominant characteristics but, as the work of Lessem (1986) suggests, in combination. This point is reiterated in the work of Timmons et al. (1985: 153) where they conclude that: 'we do not believe that there is any single set of characteristics that every entrepreneur must have'. Rather, they suggest that there are 15 behaviours that are required by the entrepreneur, depending upon the situation in which he or she is to be found. Importantly, they conclude that these can all be learned. They are:

- total commitment, determination and perseverance
- drive to achieve and grow
- orientation to goals and opportunities
- taking initiative and personal responsibility
- veridical awareness and a sense of humour
- seeking and using feedback
- internal locus of control
- tolerance of ambiguity, stress and uncertainty
- calculated risk-taking and risk-sharing
- low need for status and power
- integrity and reliability

- decisiveness, urgency and patience
- learning from failure
- team-builder and hero-maker.

As might be expected, this is not a definitive listing. For example, Hornaday (1982) identifies 19 similar but slightly different attributes and behaviours, and Gibb (1990) identifies 12. For the purpose of this chapter, the precise number and types of behaviour are unimportant. What is important is the recognition of the sort of behaviours/attributes that characterize the entrepreneur and the fact that these characteristics can be acquired and/or developed.

THE NEED FOR ENTREPRENEURS

There are numerous reasons for the contemporary interest in entrepreneurship and the creation of entrepreneurs. For Gibb (1996) there are essentially three main reasons, namely:

- job creation and economic development
- strategic adjustment/realignment
- deregulation and the privatization of public utilities and state-owned enterprises.

However, it may be asserted that these are the manifestations of a more fundamental reason.

According to Peters (1987) and others, society is entering an era of unprecedented change, a 'world turned upside down'. This is not new. Change has always been a part of social and economic evolution. Previously, however, change was, as Handy (1990: 5) has observed:

more of the same only better. That was incremental change and to be welcomed. Today, we know that in many areas of life we cannot guarantee more of the same, be it work or money, peace or freedom, health or happiness, and cannot even predict with confidence what will be happening in our own lives.

Under such circumstances, Drucker's (1989) 'new realities' society will need not only to accommodate change but also to be capable of anticipating and, more importantly perhaps, initiating it. Indeed, Moss Kanter (1984: 354), writing two decades ago, suggested that: 'Today, more than ever, because of profound transformations in the economic and social environment it should be a national priority to release and support the skills of men and women who can envision and push innovations.'

At the same time, however, there is a somewhat paradoxical set of trends occurring within the world economy. While globalization and the interdependence of markets have been recognized increasingly in recent years, it has also become apparent that world citizenry can no longer rely upon 'they'. Whether 'they' are the wealthy nations of the world, the state or large firms they cannot be relied upon to provide wealth, jobs, homes, health care, and so on. Increasingly, society is having to rely upon itself. So, individuals, communities, organizations and, even, nations are having to be empowered in a way that previously has been unrecognized. In a global economy, every citizen is interdependent, but increasingly will be required to take ownership of their own destinies – for the benefit of themselves, their families, their colleagues, their fellow countrymen and world citizenry. Thus, within individuals, communities, organizations and societies there needs to develop a greater sense of enterprise and self-help. People are needed who see opportunity, create and build, initiate and achieve. Hence it is these entrepreneurial characteristics that need to be developed by business schools in their students.

DEVELOPING ENTREPRENEURS

All too frequently, though, it would seem, that 'education in the sense of a formal academic training dulls the cutting edge of commerce' (Bartlett, 1988: 26). Even in the USA, that hotbed of entrepreneurship, courses designed to introduce students to the principles of business and management have tended to 'teach students how to become proficient employees instead of successful business persons' (Solomon, 1989). Since these statements were made, numerous entrepreneurship programmes have been introduced in many parts of the world (Brockhaus, et al., 2001; Interman, 1991; Vesper and Gartner, 1998). Often such programmes equate entrepreneurship with new venture creation or/and small business management and educate *about* entrepreneurship and enterprise rather than educating *for* entrepreneurship. Only rarely, it would seem, is the focus on developing in their students the skills, attributes and behaviour of the successful entrepreneur. For example, the comprehensive Interman Directory lists three types of entrepreneurship programme, namely:

- Entrepreneurship orientation and awareness programmes which focus on general information *about* entrepreneurship and encourage participants to think in terms of entrepreneurship as a career.
- New enterprise creation programmes designed to develop competences that lead to self-employment, economic self-sufficiency or employment generation.
- Programmes that focus on small business survival and growth.

In the space available here it is not possible to analyse each of the 205 listed programmes, but clearly it would seem from the category descriptors that the emphasis in these programmes is on learning *about* entrepreneurship and how to manage a small business. As has been argued earlier in this chapter, however, entrepreneurship is about possessing or acquiring a particular set of attributes, skills and behaviours.

Again, in his highly acclaimed *The Portable MBA in Entrepreneurship*, Bygrave (1994) purports to provide the reader with an insight into: 'how top business schools are preparing students to meet the challenges of the entrepreneurial-driven business climate of the 1990s and beyond'. In 14 chapters and 450 pages, the student learns about the entrepreneurial process, opportunity recognition, entry strategies, market opportunities and marketing, creating a successful business plan, financial projections, venture capital, debt and other forms of financing, external assistance for start-ups and small business, legal and tax issues, intellectual property, franchising, harvesting, entrepreneurship economics. Clearly it is important that business students understand such principles and practices, especially if they are to go on to create their own enterprises but, knowing about them will not, per se, equip the student 'to meet the challenges of the entrepreneurial business climate of the 1990s and beyond'. This is only one, relatively minor, element in the equation. As has been shown above, the successful entrepreneur has a set of personal skills, attributes and behaviours that go beyond the purely commercial. It is these attributes, this way of thinking and behaving, that needs to be developed in students if their entrepreneurial capabilities are to be enhanced and they are to be equipped to meet the challenges of the entrepreneurial climate of the twenty-first century. This means that both the content of courses and the process of learning need to change, and it is possible to agree with Gibb (2004a) that it is important to move away from 'the current narrow paradigm for entrepreneurship' that equates it with new venture creation and the tools to start and run a business.

Proposed Changes to the Content of Courses

As Ray (1997: 199), has suggested: 'the skills traditionally taught in business schools are essential but not sufficient to make a successful entrepreneur'. While students still need to develop their business skills and understanding, more attention needs to be paid to the development of their entrepreneurial skills, attributes and behaviours. This means introducing modules and courses specifically designed to develop in students the awareness and characteristics of the entrepreneur. According to Ray (1997), these need to include, among others:

- communication skills, especially persuasion
- creativity skills

- critical thinking and assessment skills
- leadership skills
- negotiation skills
- problem-solving skills
- social networking skills
- time management skills

In itself, this is not sufficient, however. To succeed it will be necessary to create a learning environment that changes the way students learn and reinforces the development of such skills.

Proposed Changes to the Process of Learning

From a neuropsychological perspective (Ornstein, 1986; Sperry, 1968), it would appear that the brain is divided into two hemispheres.

- The left side handles language, logic and symbols. It processes information in a step-by-step fashion. Left-brain thinking is narrowly focused and systematic, proceeding in a highly logical fashion from one point to the next.
- The right side takes care of the body's emotional, intuitive and spatial functions. It processes information intuitively, relying heavily on images. Right-brained thinking is lateral, unconventional, unsystematic and unstructured. It is this right-brained lateral thinking that is at the heart of the creative process.

According to Lewis (1987: 38–9):

while the left brain requires hard facts before reaching a conclusion, the right is happier dealing with uncertainties and elusive knowledge. It favours open-ended questions, problems for which there are many answers rather than a single, correct solution ... The left specializes in precise descriptions and exact explanations; the right enjoys analogies, similes and metaphors. The left demands structure and certainty; the right thrives on spontaneity and ambiguity.

Thus, those who have learned to develop their right-brained thinking skills tend to:

- ask if there is a better way of doing things
- challenge custom, routine and tradition
- be reflective – often deep in thought
- play mental games, trying to see an issue from a different perspective
- realize that there may be more than one 'right' answer

- see mistakes and failures as pit stops on the route to success
- relate seemingly unrelated ideas to a problem to generate a solution
- see an issue from a broader perspective, but have the ability to focus on an area in need of change.

Although the two halves normally complement each other, on occasions they compete or one half may choose not to participate. Importantly, also, most formal education systems since the time of the ancient Greeks have tended to develop in their students left-brain capabilities. As Lewis (*ibid.*: 41) has recognized

In class, students are expected to acquire knowledge one step at a time, adding methodically to their storehouse of facts until they have sufficient to pass an examination. This demands left-brain skills. The problems students are given to solve more often demand an analytical rather than an intuitive approach. This, too ... is a task for the left hemisphere. Written work, by which ability is chiefly evaluated, must be organized, well argued and logically structured ... all left-brain skills. The students considered most intelligent and successful are those who strive after academic goals, can control their emotions in class, follow instructions, do not ask awkward questions, are punctual and hand in class assignments on time. Goal-setting, emotional restraint, time-keeping and matching your behaviour to other people's expectations are all left-brain skills. Children are meant to learn by listening, keeping notes and reading books. All these, too, of course, are tasks in which the left hemisphere specializes.

Interestingly, preliminary research by Nieuwenhuizen and Groenwald (2004) in South Africa on the brain preference profiles of entrepreneurs appears to confirm the right-brain thinking preferences of successful entrepreneurs, which may well explain why so many are known not to have succeeded in the formal education system and are dyslexic (Kirby, 2003). It may also explain why Gibb (1987), apparently intuitively, has argued that to develop entrepreneurs or more enterprising individuals, the focus of the education system needs to be shifted away from the traditional to what he terms 'the entrepreneurial' (Table 3.2). Thus, the challenge is to develop a system of learning (and assessment) that complements the traditional and develops in its students the skills, attributes and behaviours characteristic of the enterprising or entrepreneurial individual.

As observed elsewhere (Kirby, 1992), of particular relevance here are the proposals of Olsen and Bosserman (1984: 53). They suggest that 'individuals will exhibit entrepreneurial behaviour when they possess a combination of three attributes', namely:

- role orientation – emphasizing effectiveness
- abilities – to think both intuitively and rationally
- motivation – the driving force behind action.

Table 3.2 The focus of learning

Traditional focus on	Entrepreneurial focus on
The past	The future
Critical analysis	Creativity
Knowledge	Insight
Passive understanding	Active understanding
Absolute detachment	Emotional involvement
Manipulation of symbols	Manipulation of events
Written communication and Neutrality	Personal communication and Influence
Concept	Problem or opportunity

Source: Gibb (1987).

To achieve these, it seems necessary to adopt an approach to learning that:

- gives students ownership of their learning, including negotiating with their tutor their own learning objectives, the resources, activities and processes required to meet these objectives and, importantly, the way in which it will be determined whether these objectives have been met (to stimulate motivation, reduce dependency and provide experience of role orientation).
- involves students in problem-solving in real-world situations, possibly in teams (to develop both intuitive and rational thinking, to recognize the multifaceted nature of problem and solution, and to encourage communication and co-operation)
- encourages students to formulate decisions on data that are immediate, incomplete, 'dubious' and, as appropriate, personally generated (to stimulate effectiveness and the ability to cope with uncertainty)
- provides students with role models who are involved in both the learning and assessment processes (to demonstrate role orientation, ability and motivation).

Of the attributes identified by Olsen and Bosserman, possibly the most difficult to develop from the perspective of the education system in general and business schools in particular is the ability to think both intuitively and rationally – to develop what may be termed the 'balanced brain'. As suggested already, most education systems tend to adopt left-brain approaches to learning. The emphasis has been on developing critical or vertical thinking. This is a function of the left brain – it is objective, analytical and logical, and results in one or, at

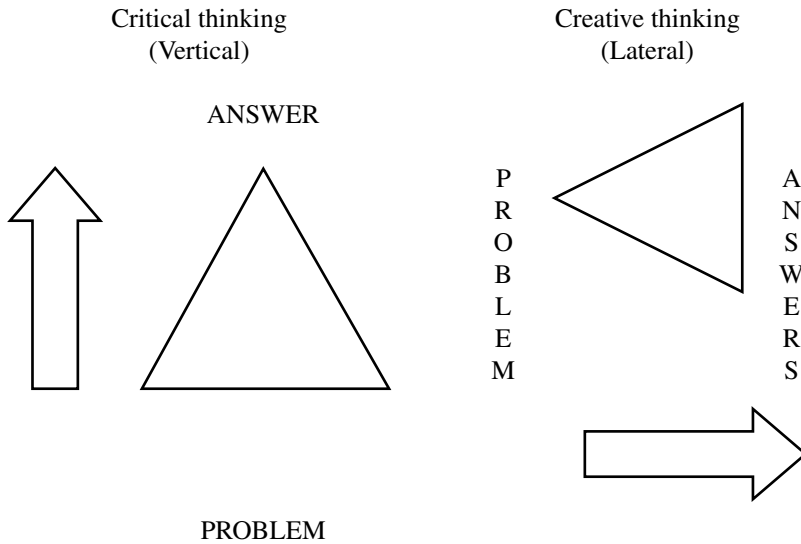


Figure 3.1 Critical and creative thinking

most, only a few answers. In contrast, creative thinking is lateral, imaginative and emotional resulting, through association, in more than one solution (de Bono, 1970). The two ways of thinking, summarized in Figure 3.1, are clearly complementary and it is apparent that in order to develop entrepreneurial capability, both critical and creative thinking are needed. If it is assumed that the brain is a computer that can be programmed, then presumably the right-brain functions can be developed. Hence, as with critical thinking, students can be trained to think creatively and to cope with ambiguity and uncertainty as these are right-brain functions, as has been pointed out. Indeed, there are many techniques for encouraging people to think laterally and to look at things in new ways, but perhaps the most important is to maintain at all times an open and enquiring mind. This should be the role of education but all too frequently it is not. As Lewis (1987: 240) has recognized: 'Under the domination of the present paradigm, schools teach *what* and *how* rather than *why*. Content is all-important, and the key to success lies in the acquisition of 'knowledge' and its accurate representation to teachers and examiners. Facts are true, truth is sacred and information lasts a lifetime.'

Sadly this situation pertains not just in schools but in most levels of education, and business schools are no exception. In an era of very rapid change, where the life of the existing body of understanding will become increasingly shorter, this situation is unlikely to continue indefinitely. Change is inevitable. However, if business schools are to lead the way in creating entrepreneurs, they will need

to change more rapidly than other sectors of the system. Indeed, it may be argued that the role of the academic entrepreneur is, in fact, to innovate and bring about this much needed change.

EXPERIMENT

To test the validity of the concepts put forward in this chapter the entrepreneurial tendencies of 76 full- and part-time Master of Business Administration (MBA) students at the University of Surrey, England, were tested before embarking on an entrepreneurship module that adopted the objectives and techniques espoused here and promulgated in Kirby (2003). The instrument used to test entrepreneurial tendencies of the students at the beginning and end of the experiment was the Durham University General Enterprising Tendency (GET) test, developed from the work of Johnson and Caird (1988) and based on the psychological trait theories outlined above. According to Cromie (2000) the GET test is one of the most useful, comprehensive, accessible and easy tests to administer and score. It is a 54-item questionnaire designed to assess five dimensions of personality – Need for Achievement (12 items), Autonomy (six items), Drive and Determination (12 items), Risk-taking (12 items) and Creativity (six items). Each item is a statement and participants are required either to agree or disagree with it. Each dimension receives a score of 0–12 (0–6 for the Autonomy dimension) with a composite score for the test of 0–54. The complete test takes about 10 minutes to complete and would appear to have ‘criterion and convergent validity and good internal consistency’ (ibid., 22). The test, which was administered prior to the students enrolling on a compulsory entrepreneurship module in the MBA, revealed that when compared with a similarly sized sample of business owners/managers (Caird, 1991), the students had lower performance scores on all of the measures, suggesting a somewhat lower propensity to be entrepreneurial. Indeed, their entrepreneurial tendencies were found to be even lower than those derived from an admittedly smaller and somewhat dated sample of lecturers and trainers (Table 3.3), though a more recent study, conducted at approximately the same time as the student survey, suggests that the students have a slightly higher enterprising tendency than the academics (Hay et al., 2003). Whatever, the findings indicate the challenge facing business schools if they are to create entrepreneurs as, increasingly, appears to be required. Assuming that the Surrey students are not atypical of the general MBA cohort, certainly in the UK, it would appear that MBA students, generally, are less, or only slightly more, entrepreneurial than the people responsible for teaching and training them. Given the corporate careers of many MBAs, and the conditioning that undoubtedly will have taken place both through the education system and in the workplace, perhaps this is

Table 3.3 The General Enterprising Tendencies of a sample of MBA students,¹ business owners/managers and lecturers/trainers compared² (mean scores)

Group	Need for achievement	Autonomy	Creativity	Calculated risk-taking	Locus of control	Total score
	max = 12	max = 6	max = 12	max = 12	max = 12	max = 54
Business students	9.00	3.4	8.2	8.3	8.5	37.6
Owners/managers	9.98	4.1	8.7	8.7	9.5	41.0
Lecturers/trainers	8.90	4.1	8.5	8.6	8.2	38.3

Notes:

1. Source: GET test.
2. Source: Caird (1991).

to be expected. However, it does suggest that the challenge facing UK business schools, at least, will not be easy. While MBA students appear, perhaps somewhat unsurprisingly, to possess a relatively high need for achievement, they underscore somewhat in terms of their need for autonomy, their belief that they control their own destinies, their creativity and their preparedness to take risks. If the arguments put forward in this chapter are accepted, then it must be assumed that all these characteristics or attributes can be developed in them, but not by using the more traditional, pedagogic teaching methods and styles nor by teaching the standard functional competences traditionally taught in business schools. Neither, it might be added, are they likely to be developed if their 'role models' are staff who, themselves, are not enterprising and do not adopt an entrepreneurial approach to their teaching.

Interestingly, when they were introduced to the content and process of learning proposed here, the entrepreneurial tendencies of the cohort improved. At the end of the module the students were re-tested and it was discovered that after a period of only 12 weeks of exposure to this different process of learning, and without reinforcement from other programmes that continued to adopt a more traditional pedagogic approach to teaching and learning, the General Enterprising Tendency of the 76 Surrey MBA students increased by almost 10 per cent, with individuals showing much higher (and lower) scores than this. Even more important, perhaps, students talked about the way the programme had changed the way they thought and behaved.

CONCLUSION

On the basis of this, admittedly limited, experiment it would seem that, by adopting the principles espoused here in the way students are educated for entrepreneurship, it is possible to increase their entrepreneurial tendencies, both as a cohort and as individuals. Clearly it is difficult to comment on the permanency of this change or to state categorically that it results from the changes introduced. To do this would require not just a longitudinal study with a wider range of students (both undergraduate and postgraduate) but a controlled experiment with two 'identical' cohorts, only one of which was exposed to the changed pedagogy. However, it would seem that if the education system is to meet the challenge of developing more entrepreneurial attitudes and behaviours in its students, then there does need to be a very significant transformation in not only what is taught but also how it is taught. Developing entrepreneurs in the classroom, it is contested, is about developing the enterprising environments and approaches to learning in which entrepreneurial aptitudes and capabilities can flourish, alongside business acumen and understanding. As Chia (1996: 426) has argued: 'The unique contribution university business schools can make to the business community is not through the vocationalizing of business/management education programmes. Rather it is through adopting a deliberate educational strategy which privileges the "weakening" of thought processes so as to encourage and stimulate the entrepreneurial imagination.'

At the same time, it must not be assumed that entrepreneurship education is solely about encouraging 'students' to set-up and run their own businesses. While there is some evidence that experience in a small firm can help the development of more enterprising individuals (Kirby and Mullen, 1990), entrepreneurship should not be equated solely with new venture creation nor with small business management. Rather, it is, as Kao (1997: 237–8) has recognized, about 'making a change' and: 'even those who relate entrepreneurship with business undertakings have noted that only those who innovate and develop new combinations are entrepreneurs'.

Entrepreneurs can occur in all walks of life and increasingly attention is being focused not just on business entrepreneurs, but on academic entrepreneurs, civic entrepreneurs, social entrepreneurs and technological entrepreneurs, among others. Thus, entrepreneurship education is no longer the sole province of the business school academic, as Welsch and Kickul (2001) have recognized. This is to be welcomed. However, if business schools are to maintain their leading role and business school educators are to assist and facilitate this new market and its support system, then there would appear to be a need for a more innovative and radical approach to entrepreneurship education than appears to have been evident to date, a point recognized by Gibb (2004b). There are signs of this occurring, as the essays by DeTienne and Chandler (2004), Honig (2004)

and Shepherd (2004) perhaps indicate. Also, through this publication and the annual publications of the IntEnt Conference proceedings (www.intent-conference.com) there appears to be a body of knowledge emerging that is capable, perhaps, of providing the beginnings of a theoretical framework for the teaching of entrepreneurship. Even so, 'very little is still known about effective teaching techniques for entrepreneurial educators' (Brockhaus et al., 2001: xiv) and research and knowledge about how to teach entrepreneurship remains relatively underdeveloped, despite the increasing demand, globally, for more entrepreneurially oriented graduates of business schools and universities. It is the intention that this chapter will provide some insights into how the educational process might need to change and develop, and will act as a catalyst for research that will progress the subject and ensure business schools retain their premier position in the creation of entrepreneurs.

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4. To support the emergence of academic entrepreneurs: the role of business plan competitions

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INTRODUCTION

Besides mainstream literature, this chapter builds on previous empirical researches implemented by some of the authors of this work (Capaldo et al., 1997; Capaldo and Fontes, 2001; Capaldo et al., 2002; Raffa and Zollo, 2000). In particular, the research presented in this chapter has been carried out following three different steps:

1. To present an overview of the main definitions of academic spin-off (AS) and analyse *barriers* preventing the creation of such spin-offs (the second and third sections). The label 'barrier' refers to legal, organizational, cultural and financial obstacles preventing research output from being transformed into business opportunities throughout the academic spin-off creation process (BenDaniel and Szafara, 1998).
2. To present an *overview of the most commonly used supports* for the creation of academic spin-off (the fourth and fifth sections). Previous researches have proved that the effective creation of such spin-offs is constrained if universities take advantage of a limited number of supports. Conversely, the creation of academic spin-offs benefits from a valuable combination of both formal and informal supports (Capaldo and Fontes, 2001).
3. To analyse the role played by academic spin-off support programmes in facilitating the emergence and the exploitation of new-business ideas within universities and research centres.

DIFFERENT DEFINITIONS OF ACADEMIC SPIN-OFF

Building on the academic spin-off's literature, this paragraph is aimed at describing the key features of academic entrepreneurs. In order to describe such features, it is necessary to identify a clear-cut definition of academic spin-off. In this respect, there is a vast literature providing a huge variety of different definitions. This phase is not aimed at identifying the best definition. On the contrary, this paragraph is targetted at showing that definitions proposed by the mainstream literature address many different academic spin-off related aspects. According to Gibson and Smilor (1991), the conceptual underpinning of academic spin-off relies on at least one of the following conditions:

1. The entrepreneur promoting the creation of an academic spin-off must be either an academic-staff member or a student who has almost completed his studies.
2. The new firm must take advantage of either a new idea or a cutting-age technology. Both should have been developed within university laboratories.

Similarly, the academic spin-off-definition of Stankiewicz (1986) encompasses every firm created either by students who have almost completed their studies or by people working for universities. Moreover, such definition includes firms promoted by people working for public founded research centres. A more general definition is provided by Formica (1993) who makes a distinction among three different types of academic spin-offs:

- spin-offs promoted by researchers working for universities, and both public and private research centres
- spin-offs promoted by students
- spin-offs promoted by people who work neither for universities nor for research centres, but want to take advantage of ideas developed within academic-related environments.

The definition carried out by Jones-Evans (1997) is primarily focused on the key features of entrepreneurs promoting academic spin-offs. More specifically, this author makes a distinction among four different types of entrepreneurs:

- the *research-technical entrepreneur*, who is characterized by relevant scientific and technological competencies, but inadequate managerial skills
- the *production-technical entrepreneur*, whose technical skills are coupled with managerial ones

- the *production-user technical entrepreneur*, whose competencies are primarily managerial ones
- the *opportunist-technical entrepreneur*, who is able to identify and exploit a huge variety of opportunities taking advantage of other people's competencies.

Contrary to Jones-Evans, Clarysse et al. (2000) focus their definition of academic spin-off on the key features of academic spin-off firms. In particular, they identify three different types of academic spin-offs:

1. *Technological small and medium enterprises* (SMEs), that are primarily focused on research and development (R&D) activities. Although such firms are short in financial resources they rely on highly qualified people who take advantage of an academic background in cutting-edge technologies.
2. *'Looking for gold' SMEs* that are primarily focused on identifying either products or services that can eventually guarantee high growth rates. These firms are usually created by academic-background people who are characterized by high networking capabilities. Such capabilities play a crucial role in finding financial resources.
3. *Venture-capital supported SMEs* that are able to finance their activities taking advantage of financial resources provided by venture capitalists. The first step in the creation of such firms is characterized by a so-called 'incubation period'. This period is crucial for testing the ability of potential academic spin-offs to deal with market forces.

In this chapter we take advantage of a rather broad definition of academic spin-off. More specifically, in our view the creation of academic spin-offs is not necessarily related to the exploitation of research-related ideas. Therefore, our definition of academic spin-off encompasses any firm based on ideas promoted by people working for both universities and research centres (that is, undergraduate, graduate and PhD students, professors, university-staff employees). Therefore, one of the key features of such spin-offs is related to a cultural environment which is not naturally biased towards entrepreneurship. Such definition includes a huge variety of people. Nevertheless, taking advantage of previous scientific publications, it is possible to identify some key features characterizing academic entrepreneurs (BenDaniel and Szafara, 1998; Capaldo et al., 2002).

The competence-based approach (Boyatzis, 1982; Capaldo et al., 2002; Spencer and Spencer, 1993) shows that the competence profile of the academic entrepreneur is usually characterized by a lack of skills that are strictly related to entrepreneurship. BenDaniel and Szafara (1998) point out that the cultural differences between entrepreneurs and academics seem to play a major role. Entrepreneurs are strongly business committed. Rather, people working for

academia are more focused on scientific tasks. Therefore, academic entrepreneurs are characterized by a cognitive profile made up by particular attitudes, values and beliefs. This cognitive profile is rather different from the one that usually characterizes entrepreneurs. It goes without saying that elements such as a lack of business awareness, low commitment, motivations driven by intellectual curiosity coupled with organizational, legal and financial barriers, may put a serious constraint on the growth of academic individuals willing to exploit their ideas on the market.

The key features mentioned above are mostly related to people involved in research activities. Nevertheless, being both risk adverse and not biased towards entrepreneurship are elements that usually characterize those people who work for universities and research centres.

BARRIERS HINDERING ACADEMIC SPIN-OFF CREATION

This paragraph is devoted to the analysis of barriers hindering the creation of academic spin-offs. BenDaniel and Szafara (1998) have focused their attention on the key features that characterize cultural backgrounds of 'technical professors'. Moreover, they have studied the way two strongly research-orientated universities (the Massachusetts Institute of Technology and Cornell) are structured. Both aspects are taken into account in order to identify factors influencing the creation of academic spin-offs. More specifically, the ethnographic study this chapter refers to, classifies such factors in four different typologies:

1. *Attitudes*. This aspect refers to the way 'technical professors' depict their jobs. According to such professors, their main task is disseminating knowledge. This element is in contrast with the way entrepreneurs picture their job. In fact, entrepreneurs are primarily focused on exploiting rather than disseminating knowledge.
2. *Organizational aspects*. This point refers to formal and informal rules that characterize universities. Moreover, this element encompasses organizational support for people implementing research-related activities who want to create a new venture.
3. *Motivation and de-motivations*. This aspect refers to the elements that could either encourage or discourage people implementing research-related activities from becoming entrepreneurs.
4. *Scientific paradigm*. According to some authors (Brown, 1985; Etzkowitz, 1989; McMillan et al., 2000), the so-called scientific paradigm is exclusively focused on the knowledge-increasing process. In this respect, research-related results are considered to be 'public goods' (Bok, 1990;

Callon, 1994; Etzkowitz, 1998; Geisler, 1993). On the contrary, according to the entrepreneurial view such results are not to be disclosed.

It is possible to identify a huge variety of barriers that prevent both the emergence and the exploitation of new business ideas within universities and research centres. The origin of such barriers could be related to cultural, organizational, financial and legal aspects. Whoever works for universities and research centres will be forced to face such barriers if he or she wants to implement an entrepreneurial activity. However, the impact of each barrier differs as regards the typology of the university-related actor involved in the creation of a new venture. The following list is devoted to the analysis of four different types of barriers.

1. *Cultural barriers.* This barrier represents a major obstacle in particular for professors. Such actors depict the business start-up process taking advantage of their cultural background. More specifically, they picture such a process as the way to produce and disseminate knowledge. Therefore, the great majority of professors see the creation of academic spin-offs creation as a continuation of their main task, that is, spreading knowledge and controlling their discoveries. More specifically, a professor is satisfied when he or she is able to provide the best explanation of an event, while an entrepreneur is satisfied when he or she achieves market-related success. In brief, professors are interested in the dissemination of their ideas, while entrepreneurs' concern is the retention of relevant knowledge. Last but not least, professors' time horizons are focused on long-term periods. Conversely, entrepreneurs' activities are focused on short term periods.
2. *Organizational barriers.* This aspect refers to the lack of structural and systematic support for business-orientated activities such as patent requests, incubation of new start-ups, and procedural support for business creation. Such barriers prevent any university actor (professors, PhD students, university staff members, and so on) from implementing entrepreneurial activities.
3. *Legal barriers.* Such barriers represent an obstacle for those who want to take advantage of research-related results for implementing entrepreneurial activities. More specifically, legal barriers refer to policies aimed at regulating activities of professors involved in business tasks. In particular such a barrier encompasses laws regulating intellectual property rights, patents, conflicts of interests, and so on.
4. *Financial barriers.* This aspect refers to difficulties in finding and managing financial resources. Whoever works for universities and research centres will be forced to face such barriers if he or she wants to implement an entrepreneurial activity.

In this list we have identified four different types of barriers that hinder the emergence of new business ideas and put a serious constraint on the creation of new academic spin-offs. Therefore, the existence of these obstacles makes it necessary to create supports aimed at facilitating the emergence of such spin-offs. The next section is devoted to the analysis of such supports.

SUPPORTS FOR THE CREATION OF ACADEMIC SPIN-OFFS

It is possible to make a distinction between research and entrepreneurial activities. More specifically, the former could be defined as an *exploration* process while the latter is considered an *exploitation* process (Chiesa and Piccaluga, 1996). In the lights of such distinction, the transformation process of research output into new firms is neither simple nor instantaneous. In fact, despite strong motivations, a huge variety of cultural, organizational, legal and financial barriers hinder such a transformation process. Besides people involved in research-related activities, such barriers may prevent whoever works for universities and research centres from creating a new venture. Therefore, a wide spectrum of both formal and informal supports aimed at overcoming such barriers is required. These supports stimulate the creation of new academic spin-offs (Van Alstè and Van der Sijde, 1998; Varaldo and Piccaluga, 1994). This paragraph focuses on the analysis of both formal and informal supports for the academic spin-off creation process.

To begin with, *formal supports* could be defined as institutional tools that provide academic spin-offs with infrastructure, financial resources, cultural, legal and organizational supports (Table 4.1). Direct financial contribution as well as indirect ones – tax incentives, favourable loans, and so on – are particularly important mechanisms in promoting entrepreneurship among young people with limited resources (that is, undergraduate students, graduate students, PhD students). Moreover, it is necessary to provide academic entrepreneurs with other financial supports that are geared to their needs. A case in point is represented by venture capital. According to Capaldo and Fontes (2001) academic entrepreneurs do not consider formal supports other than financial ones as crucial. This is due to the fact that most of the times such supports are not tailored to the needs of the business area academic entrepreneurs are dealing with.

Informal supports could be described as a network made up by different relationships each entrepreneur relies on (Table 4.2). Such a network plays a crucial role for entrepreneurs. It provides them with vital pieces of information and business-related opportunities. Academic entrepreneurs take advantage of such a network in order to compensate for their weaknesses. Informal supports are vital for overcoming difficulties that are ineffectively faced by formal supports.

Table 4.1 *Typology of formal support obtained by firms*

Typology of formal support

Financial subsidies for investments
 Financial contributions to R&D activities
 Financial contributions to operational costs
 Favourable loans
 Tax exemptions
 Training courses on business plan preparation
 Business training courses
 Management consultancy activities
 Access to database
 Information on new market opportunities
 Information on technological opportunities
 Assistance in the establishment of contacts with other firms for commercial purpose
 Equipment maintenance assistance

Source: Capaldo and Fontes (2001).

Table 4.2 *Typologies of informal support obtained by the firms*

Typology of formal support

Informal family support
 Informal support from academics and researchers
 Informal support from customers
 Informal support from consultants

Source: Capaldo and Fontes (2001).

In this respect, the support offered by relatives and friends together with informal relationships with customers can facilitate the early-stage activities of academic entrepreneurs. In fact, the support network represents the key link between such entrepreneurs and the market they operate in (Bellini et al., 1996; Capaldo et al., 1997; Johannisson, 1998; Monsted, 1998; Mustar, 1994). Moreover, it provides these entrepreneurs with vital competencies for successfully implementing their business ideas. Therefore, the presence of a network represents an always available support that can be exploited by academic entrepreneurs.

Formal and informal supports are complementary tools that facilitate the emergence of new business ideas and lay the foundation for the creation of new

Table 4.3 The impact of different supports on barriers hindering the creation of academic spin-offs

Barriers	Supports	Impact
Cultural	Formal: <ul style="list-style-type: none"> – Business plan preparation courses – Business training courses – Start-up and ‘business fertilization’ activities 	To develop entrepreneurial culture within universities
	Informal: <ul style="list-style-type: none"> – Participation in conferences and university seminars on entrepreneurship – Favourable academic culture biased towards entrepreneurship – Networks with local firms 	To support the transition from the exploration to the exploitation of scientific related topics To expand the knowledge of the scientific results that can be commercialized
Organizational	Formal: <ul style="list-style-type: none"> – Management consultancy activities – Information on new market opportunities – Information on technological opportunities – Support for the establishment of contacts with other firms for commercial purposes – Support for the equipment maintenance 	To provide new ventures with organizational tools and managerial competencies
	Informal: <ul style="list-style-type: none"> – Informal support from customers – Informal support from consultants – Informal family support 	
Legal	Formal: <ul style="list-style-type: none"> – To manage the patent application process – To deal with legal problems related to the compatibility of university-related activities and entrepreneurial-related activities 	To change rules regulating the business exploitation of research output
Financial	Formal: <ul style="list-style-type: none"> – Financial subsidies for investments – Financial contribution to R&D activities – Financial contribution to operational costs – Favourable-condition loans – Tax exemptions 	To provide new ventures with financial resources

ventures. Formal supports provide potential new ventures with standard tools. More specifically, such tools do not take into account the specific features of the firms utilizing them. In other words, formal supports are not tailored to the individual needs of new ventures. Therefore, it is necessary to integrate such supports with informal ones. The latter category provides start-up firms with a network of both direct and indirect relationships that are somehow related to the specific needs of new ventures (that is, vertical markets; sources of competencies).

To sum up, both supports are crucial in fostering the creation of new firms. On the one hand, formal supports facilitate the transformation of innovative ideas into business ideas that lay the foundation for the creation of new ventures. On the other hand, informal supports help potential new ventures bridge the gap with market-related agents (that is, customers, suppliers, and so on). Table 4.3 shows the impact of formal and informal supports on obstacles preventing the creation of academic spin-offs.

FORMAL AND INFORMAL SUPPORTS FACILITATING THE EMERGENCE OF ENTREPRENEURIAL BEHAVIOURS

In order to take full advantage of such supports it is not sufficient to evaluate the nature of the barriers mentioned previously in this chapter. The implementation of effective policies supporting the creation of academic spin-offs should take into account the key features of academic entrepreneurs. More specifically, it is necessary for such budding entrepreneurs to develop some specific behaviours that generally characterize entrepreneurs.

As regards academic entrepreneurs' characteristics, bridging the gap with the market they operate in means taking advantage of three different entrepreneurial behaviours that usually do not coexist in university-related actors. Such behaviours are rational, empirical and cognitive ones (Marchini, 1995). In order to achieve a predefined result, rational entrepreneurs analyse different pieces of information and take into account every possible alternative. Empirical entrepreneurs' behaviours are based on previous experiences and routines. Last but not least, cognitive entrepreneurs create new knowledge building on information and know-how resources they can incorporate by exploiting preferential links with universities and market forces.

To begin with, in order to transform an innovative idea into a business-exploitable one, it is necessary to strengthen the rational behaviour of academic entrepreneurs. On average, academic entrepreneurs are not short in the skills of gathering and analysing information. However, supports are needed in order to tailor such skills to the needs of the business community. In this phase, formal

Table 4.4 *Entrepreneurial behaviours and related supports*

	Decision-making style	Support-tools
Rational behaviours Simon, 1959; March and Simon, 1958	Information-based decision-making To gather and analyse information To evaluate every possible alternative To make a decision taking advantage of rational assumptions.	Traditional formal training facilitating <ul style="list-style-type: none"> ● Strategic analysis ● Cost/benefit analysis ● Business plan creation
Empirical behaviours Berger and Luckmann, 1966; Cohen and March, 1974; Nelson and Winter, 1982; Penrose, 1959	Experience-based decision-making To create and implement routines	Formal and informal supports facilitating <ul style="list-style-type: none"> ● Tacit knowledge transfer ● Imitation and analysis of best practices and case studies ● Learning by doing ● Previous entrepreneurial traditions ● Supports related to specific territorial contexts
Cognitive behaviours Argyris and Schon, 1978; Fransman, 1994; Porac et al. 1989; Schein, 1978; Walsh and Ungson, 1991; Weick, 1976	Expectation-based and vision-creating decision-making To implement 'sense making' activities. To elaborate entrepreneurial visions	Formal and informal supports facilitating <ul style="list-style-type: none"> ● Business and research community memberships ● Construction of entrepreneurial networks ● Dissemination of research results and information sharing ● Co-operation

supports such as business plans play a crucial role. Subsequently, it is necessary to build up academic entrepreneurs' empirical behaviours. Such behaviours are experienced based. It goes without saying that academic entrepreneurs are usually short on business experience and formal supports are not effective in filling this gap as in the previous case. Therefore, it is necessary to strengthen informal network-based supports that eventually help academic entrepreneurs create and implement routines throughout tacit knowledge transfer. Finally, academic entrepreneurs need to elaborate a safe and sound entrepreneurial vision throughout reinforcing their cognitive behaviour. Once again, the presence of a well-established network plays a crucial role.

Table 4.4 shows the relationships between different entrepreneurial styles and supports that could foster the development of the associated decision-making styles.

The analysis presented above shows that both the number and the quality of academic spin-offs could be increased by taking advantage of adequate support policies. More specifically, such policies should be aimed at overcoming cultural, organizational, legal and financial barriers preventing the creation of academic spin-offs. In this respect, universities seem to play a key role in getting around cultural barriers. In doing so, universities should take into account the key features of academic entrepreneurs. Therefore, support policies should be aimed at providing academic entrepreneurs with competencies they are usually short of. Moreover, universities play a vital role in strengthening the links between knowledge-producing centres and knowledge-exploiting centres. In doing so, they create a network that provides academic entrepreneurs with crucial informal supports.

Building on such assumptions, the next section is devoted to the analysis of the conceptual framework that is helping the University of Naples Federico II lay the foundation for the creation of a new academic spin-off-promotion programme.

THE ROLE OF UNIVERSITIES IN FACILITATING THE DEVELOPMENT OF ACADEMIC SPIN-OFFS: THE CASE OF THE UNIVERSITY OF NAPLES FEDERICO II

Ultimately the importance of European programmes promoting academic spin-offs has considerably increased. In this respect, universities play a key role in both overcoming cultural barriers and strengthening the links between knowledge-producing centres and knowledge-exploiting centres.

As regards the first aspect, professors and researchers usually do not recognize that scientific output contains valuable solutions for entrepreneurs. Moreover, most of the time they are not eager to exploit research results in order to create

academic spin-offs. Similarly, entrepreneurs do not recognize that their competitive weaknesses could be overcome taking advantage of scientific output.

Universities that want to promote academic spin-offs cannot operate efficiently by simply pushing professors and researchers towards the creation of new ventures. Rather, it is necessary to create a new organizational structure aimed at bridging cultural divides between universities and market forces. Such a structure should be aimed primarily at sowing the seeds for an entrepreneurial culture to emerge among university employees. In doing so, the key features of academic entrepreneurs should be taken into account.

Besides formal supports, this chapter has underlined the importance of informal supports. The latter could be described as a network made up of different relationships each entrepreneur relies on. Universities should take the lead in promoting such networks. More specifically, throughout the implementation of AS-promotion programmes they could eventually strengthen the links between knowledge-producing centres (universities, innovative large firms, research centres) and knowledge-exploiting entities (start-up firms, small and medium enterprises [SMEs], local public administrations). This is crucial for an area such as Southern Italy that suffers from feeble relationships between the business community and other key elements in the environment (Cappellin, 1996). More specifically, Southern Italy regions are characterized by weak links between knowledge-producing and knowledge-exploiting entities (Corti, 1997). The lack of these links puts a serious constraint on the development of innovative SMEs. In fact, as many authors point out (Oakey, 1984; OECD, 1982; Raffa and Zollo, 1994; Rothwell, 1984), the development of such firms depends on the possibility of exploiting local knowledge-producing centre resources.

The remaining part of this chapter focuses on the analysis of an academic spin-off promotion policy (Federico II Start Cup) implemented by the University of Naples Federico II. This policy is primarily focused on overcoming cultural barriers and strengthening the links between knowledge-producing centres and knowledge-exploiting centres.

As regards methodological aspects, the authors are implementing a longitudinal case study focused on the different phases of the academic spin-off creation process: that is, the emergence of business-related ideas; the transformation of such ideas into business plans; the exploitation of business plans in order to create new firms; the capability of new ventures to overcome the incubation phase. As Federico II Start Cup is a newly implemented policy, this work focuses only on the first two phases. Subsequently the case study will be completed taking a close look at the creation of new academic spin-offs and implementing a cost–benefit analysis of such policy.

Federico II Start Cup provides potential ‘academic entrepreneurs’ with supports aimed at overcoming cultural barriers. It positively affects the relationship between knowledge-producing centres and knowledge-exploiting entities as

well. In doing so, it sows the seeds for a *technological environment* (Staudenmaier, 1985) to emerge. Such environment plays a crucial role in sustaining innovative capabilities of SMEs (Meyer and Roberts, 1986; Raffa and Zollo, 1994).

To begin with, Federico II Start Cup is a competition involving all the employees of the University of Naples Federico II who have implemented an innovative idea. Federico II Start Cup provides university employees with supports aimed at overcoming cultural barriers preventing ground-breaking ideas from being transformed into business plans. Thereafter, the University of Naples Federico II takes the lead in bridging the gap with knowledge-exploiting entities that may eventually be interested in transforming business plans into ASs.

Table 4.5 Formal and informal supports provided by Federico II Start Cup

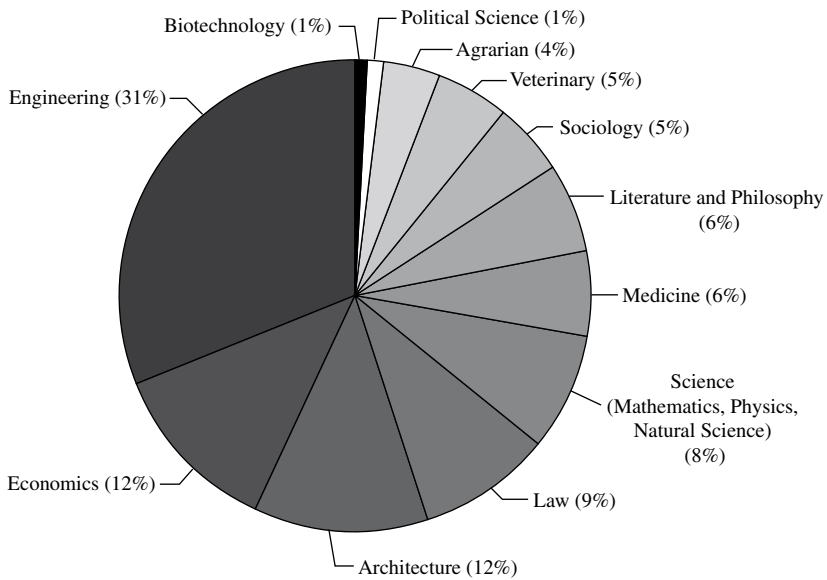
	The emergence of business-ideas	The development of business plans	The creation of start-ups
Formal supports	Early-stage consulting training	Business plan consulting training	Incubator's infrastructure
Informal supports	Mentoring Networking	Mentoring Networking	Mentoring Networking

As regards supports (Table 4.5), Federico II Start Cup helps participants build on their innovative ideas taking advantage of the so-called 'information-based decision-making tools' (strategic analysis; costs–benefits analysis; business plan). In doing so, participants are able to strengthen their rational behaviours that represent (together with empirical and cognitive ones) one of the key features of entrepreneurs. Moreover, Federico II Start Cup provides participants with informal supports as well. More specifically, taking advantage of market mentors, the competition help participants lay the foundation for empirical behaviours to emerge. In other words, building up on consultants' experience, Federico II Start Cup allows potential entrepreneurs to speed up the creation and implementation of firm-orientated organizational routines (tacit-knowledge transformation processes, imitation processes, learn by doing processes, and so on).

Taking advantage of a preliminary data analysis, it is possible to outline some key features of people participating in the competition:

Table 4.6 People participating in Federico II Start Cup 2003

Typology	Percentage of total
Professors	11
PhD students	12
Graduate students	26
Undergraduate students	47
University staff employees	4
Total	100



Source: University of Naples Federico II.

Figure 4.1 Participants' faculties in Federico II Start Cup 2003

1. Federico II Start Cup involves people who play different roles within the University of Naples (Table 4.6).
2. Participants belong to a huge variety of faculties (Figure 4.1).
3. Participants have developed business ideas in a wide spectrum of business fields (Table 4.7).

Table 4.7 Fields in which the participants have developed their business ideas

Business idea fields
Products and services for industrial-related activities
Products and services based on information and communication technologies
Food products
Organic products
Biomedical products
Fishing and farming related products
Services for both tourists and firms operating in such sector
Environment-related services
News-media related services
Energy-sector related services
Consultancy services for firms
Non-profit related activities

That 93 groups (300 people) are participating in such a competition demonstrates that within the University of Naples the interest in entrepreneurship is higher than expected. Moreover, such interest is not just related to faculties that are usually biased towards entrepreneurship. In fact, data shows that humanistic faculties are also participating in the competition (Figure 4.1).

Last but not least, the emergence of highly differentiated business ideas is a case in point for demonstrating that the creation of new ASs is not exclusively related to the exploitation of scientific research results (Table 4.7).

Besides providing potential ‘academic entrepreneurs’ with such supports, Federico II Start Cup also aims at bridging the gap with knowledge-exploiting entities that may eventually be interested in transforming business plans into academic spin-offs. In fact, those who win the competition can lay the foundation of a new firm taking advantage of an incubator located in Naples (Business Innovation Centre promoted by ‘Città della Scienza’). Besides providing infrastructure-based supports, such an environment strengthens the cognitive skills of potential entrepreneurs. More specifically, taking advantage of the business community gravitating around the Business Innovation Centre, university employees could build on their entrepreneurial vision. In conclusion, at the end of such a process, rational, empirical and cognitive behaviours of university employees will be strengthened. This in turn will ease cultural barriers that prevent such employees from becoming entrepreneurs. Moreover, for those who are interested in pushing further the transformation process of an innovative idea into a new firm, Federico II Start Cup makes it possible to take advantage of a

Neapolitan-based incubator. In doing so, not only does the programme provide potential entrepreneurs with an infrastructure, it also strengthens the relationship between knowledge-producing centres and knowledge-exploiting entities. Therefore, Federico II Start Cup sows the seeds for a *technological environment* to emerge.

CONCLUSIONS

Both the analysis of the literature and the early stage results of the AS strategy being implemented by the University of Naples Federico II make it possible to draw some preliminary findings as regards the academic spin-off support programmes. Such findings could eventually be taken into account in designing effective tools supporting the creation of ASs.

To begin with, there is widespread consensus over the role played by universities in promoting economic development. However, in particular with regard to areas that do not excel in transforming research output into business-exploitable ideas, such a role should not be overstretched. Therefore, at least initially, universities could operate effectively even if they limit their action to overcome cultural barriers preventing new business ideas from coming through. In doing so, universities sow the seeds for the emergence of entrepreneurial activities in environments that are not naturally biased towards entrepreneurship. However, through a combination of formal and informal supports, universities can extend their reach, laying the foundation for the emergence of new ventures. More specifically, such a combination makes it possible to overcome the remaining barriers that prevent the creation of ASs (that is, organizational, financial, legal barriers). Secondly, it is not necessary for AS support programmes to be narrowly focused on research-producing actors (professors, PhD students, and so on). Such programmes can encompass a huge variety of university-related actors. In doing so, they can demonstrate that even environments that are not naturally biased towards business activities can prove to be a ‘hidden source’ of entrepreneurship.

This chapter represents the first step of a wider research project. Further researches will be aimed at:

- developing a better understanding of the combined effect of formal and informal supports on extending the reach of universities in promoting ASs
- completing the longitudinal case study taking into account the creation of new ventures and their ability to gain market shares.

NOTE

1. Although the chapter is the result of the collaboration of all the authors, in this version, 'Barriers hindering academic spin-off creation' is by Luca Iandoli, 'Supports for the creation of academic spin-offs' by Lorella Cannavacciuolo, 'Formal and informal supports facilitating the emergence of entrepreneurial behaviour' by Guido Capaldo, 'The role of universities in facilitating the development of academic spin-offs: the case of the University of Naples Federico II' by Gianluca Esposito, and remaining sections are the fruit of collaborative work.

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5. Attitudes, intentions and behaviour: new approaches to evaluating entrepreneurship education

Alain Fayolle and Jean Michel Degeorge

INTRODUCTION

In recent years, entrepreneurship education has been developing steadily but unevenly in most countries. In the USA, for example, which has been a trail-blazer and leader in the field, the past decade has been described as an important era, with a significant increase in student interest (Fiet, 2001a). The figures tend to support this statement. In 1971, only 16 colleges and universities in the USA offered entrepreneurship education programmes, while today there are more than 800. More American students are showing an interest in venture creation and independent employment, and are seriously considering entrepreneurship as a career option. They are therefore looking for and choosing entrepreneurship programmes. In 1996, for example, roughly 45 per cent¹ of first-year students in Northwestern University's management programme said they wanted to specialize in entrepreneurship (Fiet, 2001a). During the same period, entrepreneurship teachers began to meet regularly at conferences to discuss recent developments and compare their educational practices and methods (Fiet, 2001b). In France, entrepreneurship education has spread considerably over the past few years, and is currently in a structural phase (Fayolle, 2000a; 2003). Two recent initiatives clearly illustrate the process: first, the creation in 1998 of the 'Academie de l'Entrepreneuriat', a French association of entrepreneurship teachers and trainers from the secondary and higher education levels; and second, the creation in 2001 of the 'Observatoire des Pratiques Pédagogiques en Entrepreneuriat', a joint initiative involving three government departments whose primary mission is to identify entrepreneurship teaching and training activities throughout France.

Although entrepreneurship education is flourishing, a large number of questions, some of them important, have yet to be answered or clarified. They include the question of evaluating entrepreneurship programmes and training (Bechard and Toulouse, 1998). This is certainly a difficult and complex issue. While the

impact of the programme or session on the trainees, students and other participants may be an acceptable evaluation criterion, the problem of how to measure it still remains. What indicators should be used, and how should they be measured? How can you measure a change in someone's state of mind or behaviour? How can the importance of the time factor be taken into account? And how can factors relating to education, teaching and training be separated from all the other factors that have an impact on the decision to choose a specific career path or profession?

It is not our intention here to try to answer all these questions. We will, however, attempt to show the potential utility of the theory of planned behaviour in addressing the complex problems encountered in the evaluation process. The next section of the chapter will identify some of the major issues affecting the evaluation of entrepreneurship education programmes, while the third section summarizes prior research on the evaluation and impact of entrepreneurship programmes, and the fourth presents models of intention and the theory of planned behaviour as they apply to entrepreneurship. A final section sets out our research approach and presents the overlying conceptual framework.

SOME QUESTIONS RELATING TO THE EVALUATION OF ENTREPRENEURSHIP EDUCATION

In a recent paper, Vesper and Gartner (1997) listed 18 criteria for evaluating entrepreneurship education programmes, ranked in order of importance by expert respondents. The top five criteria were:

- the number of courses offered
- publications by teachers
- impacts on the community
- venture creation by students and young graduates
- resulting innovations.

Two observations are in order here. First, the above classification was produced by academics, not by venture-creation professionals or economic and political decision-makers. Second, the paper does not say how the selected indicators can be measured. Measurement is often extremely difficult. As shown by Block and Stumpf (1992) and summarized in Table 5.1, indicators can often produce delayed effects. For example 'venture creation' cannot possibly be measured during or immediately after training, since the venture-creation process takes time – sometimes a great deal of time. And the more delayed the measurement, the harder it is to isolate the role played by a given factor from the potential impacts of other variables on the venture-creation act.

Table 5.1 Evaluation indicators and measurement times

Measurement period or time	Criteria
Same time as the courses	Number of students enrolled Number of courses General awareness of and/or interest in entrepreneurship
A short time after the courses end	Intention to act Acquisition of knowledge and know-how Development of entrepreneurial self-diagnosis abilities
Between 0 and 5 years after the courses	Number of ventures created Number of buyouts Number of entrepreneurial positions sought and obtained
Between 3 and 10 years after the courses	Sustainability and reputation of the firms Level of innovation and capacity for change exhibited by the firms
More than 10 years after the courses	Contribution to society and the economy Business performance Level of satisfaction with career

Source: based on Block and Stumpf (1992).

Educational institutions also offer a wide range of entrepreneurship awareness and training activities (Fayolle, 2003; Gartner and Vesper, 1994). Given that the goal of entrepreneurship education is not necessarily for all participants to launch businesses or for businesses to be launched immediately, the simplest and most obvious indicators are not generally the most appropriate. The worst-case scenario would be to evaluate a programme by counting only the number of businesses launched by trainees or the number of jobs generated. This is especially true because, given the inherent risks and difficulties of the venture-creation process, it is often unwise to push students too hard, or to take an evangelical approach. Students are young, easily influenced and often looking for models. Evaluation should always be adjusted to the educational level, the goals of the training and the target clientele, all of which need to be clearly identified (Bechard and Toulouse, 1998). The range of possible learning situations is clearly illustrated by Johannisson's (1991) taxonomical approach, which proposes five levels of learning designed to develop the attitudes, skills, tools and knowledge required for entrepreneurship.

Precisely what, then, should be evaluated? When should the evaluation take place? As with any educational programme, it is possible to evaluate the knowledge acquired and measure how well students have understood the key techniques and mechanisms. Student interest, awareness and intention can also be measured. Attendance rates, participation and student motivation are the classical criteria for measuring satisfaction, and evaluations or measurements taken during and shortly after the training are also important, in that they can help identify variations and progress in performance levels (project management, teamwork, creative capacity, and so on). For the purposes of this research, we have limited the analysis period or measurement time to the first two categories in Table 5.1.

THE EFFECTS AND IMPACTS OF ENTREPRENEURSHIP EDUCATION PROGRAMMES

Throughout the world, student interest in entrepreneurship as a career choice is growing (Brenner et al., 1991; Fleming, 1994; Hart and Harrison, 1992; Kolvareid, 1996a), while interest in traditional professional employment in big business is gradually declining (Kolvareid, 1996a). The orientations and behaviours of students and young graduates are influenced by a number of personal and environmental factors (Lüthje and Kranke, 2003). Empirical research has shown that the presence of entrepreneurship education programmes and a positive image of entrepreneurs within the university are both incentives for students to choose an entrepreneurial career. For example, Johannisson (1991) and Autio et al. (1997) underscored the positive impact of students' perceptions of entrepreneurship as a career choice, along with the role played by the resources and other support mechanisms available in the university environment. Other research has shown the importance of the social status of entrepreneurial activities and situations (Begley et al., 1997) and the statistical link between the level of entrepreneurial intention and the number of management courses taken by students enrolled in other programmes (Chen et al., 1998).

Entrepreneurship education and training influence both current behaviour and future intentions (Fayolle, 2002; Tkachev and Kolvareid, 1999; Kolvareid and Moen, 1997). In other words, there are significant differences between students who have taken entrepreneurship courses and those who have not. But can the causal relationship between the educational variables (course content, teaching methods, teacher profile, resources and support, and so on) and the direct intentional and/or behavioural antecedents (attitudes, values, knowledge, and so on) really be explained in detail? Some researchers have attempted to do this and their findings are summarized below, but we believe there is still a need for further conceptualization and testing.

Attempts have been made to compare the intentions and/or behaviours of students from different groups. For example, Varela and Jimenez (2001), in a longitudinal study, chose groups of students from five programmes in three universities in Columbia. They found that the highest entrepreneurship rates were achieved in the universities that had invested the most in entrepreneurship guidance and training for their students.

Noel (2001) looked specifically at the impact of entrepreneurship training on the development of entrepreneurial intention and the perception of self-efficacy. The students in the sample had all taken an entrepreneurship education programme and were graduates in entrepreneurship, management or another discipline. Noel's findings at least partially confirmed the assumption that the entrepreneurship graduates were more likely to launch businesses and had a higher level of intention and a more developed perception of self-efficacy than students in the other two groups.

Other researchers have tried to explain the relationship between entrepreneurship programmes and characteristics such as need for achievement and locus of control (Hansemark, 1998) or the perception of self-efficacy (Ehrlich et al., 2000). They found that entrepreneurship education had a positive impact, enhancing these characteristics and the likelihood of action at some point in the future.

However, less attention appears to have been paid to educational variables. Dilts and Fowler (1999) tried to show that certain teaching methods (traineeships and field learning) are more successful than others at preparing students for an entrepreneurial career, while Lüthje and Kranke (2003) mentioned the importance of certain contextual factors within the university environment in hindering or facilitating access by technical students to entrepreneurial behaviours. Their findings confirm those of Autio et al. (1997) and Fayolle (1996), obtained using similar samples.

THE THEORY OF PLANNED BEHAVIOUR AND ITS UTILITY IN THE FIELD OF ENTREPRENEURSHIP

The theory of planned behaviour is based on the theory of reasoned action (Ajzen and Fishbein, 1980). It was developed by Ajzen (1991) and has recently been reformulated (Ajzen, 2002). Basically, the concept of intention plays a central and overriding role in predicting and explaining a planned human behaviour that is controlled entirely by will and is not dependent on factors outside the control of the person concerned. This clearly limits the utility of the theory, since situations that satisfy all these conditions are rare. The limitation relates principally to the automatic nature of the relationship between intention and behaviour. Although in certain conditions intention is a good predictor of be-

haviour, it is by no means true that behaviour will automatically follow on from intention. It all depends on the type of behaviour. The examples cited by Ajzen (1991) are mostly behaviours that can be controlled by the individuals concerned, in which will plays a major role – for instance, the decision to stop smoking, short-term elective preferences or the choice of how to feed a baby (breast or bottle feeding). Although we are convinced of both the interest and the utility of the theory of planned behaviour in the field of entrepreneurship, we also believe entrepreneurial behaviour is more complex (and thus, perhaps, less easy to predict from intention) than the cases cited above.

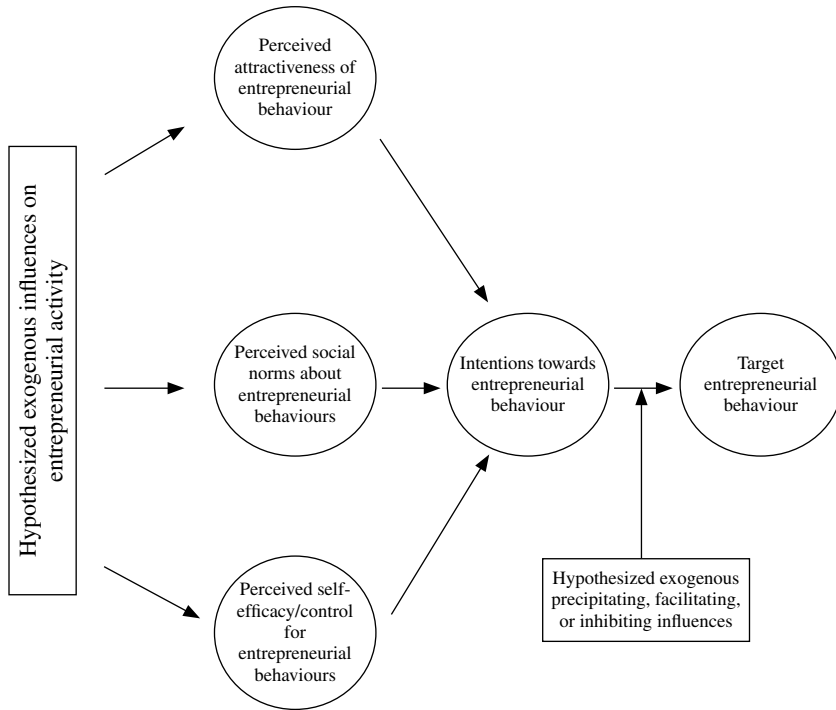
In the theory of planned behaviour, intentions are formed over time as a result of three principal factors whose relative importance depends on the specific case. The first of these is the attitude towards the behaviour, derived from perceptions of the behaviour's consequences and the value ascribed to those consequences. The second is awareness of social standards and pressure, resulting from a perception of what other people (of importance) think should be done and the reasons for submitting to their expectations. The third is the perception of behavioural control, determined first by the subject's perception of the opportunities and resources required to achieve the behaviour, and second by a belief that it will in fact be possible to obtain those resources. The underlying basis of intention and the determinants of behaviour are therefore perceptions, which are developed gradually from beliefs.

The theory of planned behaviour is part of the larger family of intentional models, created principally to try to explain the emergence of entrepreneurial behaviour. In the view of many authors (Autio et al., 1997; Bird, 1989; Krueger and Carsrud, 1993; Shapero and Sokol, 1982; Tkachev and Kolvereid, 1999), venture creation is a planned and hence an intentional behaviour. Intention therefore appears to be a better predictor of behaviour than attitudes, beliefs or other psychological or sociological variables (Krueger and Carsrud, 1993).

Krueger and Carsrud (1993) were the first to apply the theory of planned behaviour to the field of entrepreneurship by trying to make Ajzen's (1991) model compatible with other theoretical frameworks, especially that of Shapero and Sokol (1982). Their final model (Figure 5.1) is the result of this approach.

The three antecedents of intention in this model are:

1. *Perceived attractiveness of entrepreneurial behaviour.* This factor corresponds to the attitude towards the behaviour, and is dependent on beliefs relating to the behaviour's positive or negative impacts. It encompasses the notion of perceived desirability (or lack thereof), which is one of the components of Shapero and Sokol's model (1982).
2. *Perceived social norms about entrepreneurial behaviours.* This factor includes perceptions of what important people or groups (peer pressure, friends' wishes, family wishes, and so on) think of the target behaviour.



Source: Krueger and Carsrud (1993: 323).

Figure 5.1 *Intentions towards entrepreneurial behaviour: the theory of planned behaviour*

These perceptions are influenced by normative beliefs and are of less relevance for individuals with a strong internal locus of control (Ajzen, 1987) than for those with a strong action orientation (Bagozzi et al., 1992). The factor covers the notions of desirability and feasibility from Shapero and Sokol's model (1982).

3. *Perceived self-efficacy/control for entrepreneurial behaviours*. This factor is as important in this model as in that of Ajzen (1991). It relates to perceptions of the behaviour's feasibility, which are an essential predictor of the behaviour. Individuals usually elect to work towards behaviours they think they will be able to control and master. The *perceived behavioural control* factor in Ajzen's model (1991) is very similar to the *self-efficacy* notion constructed by Bandura (1986), which has been used in numerous studies of entrepreneurship, although not enough according to certain authors: 'Self-efficacy should be a particularly useful tool in the researcher's reper-

toire and entrepreneurship researchers seeking a psychological explanation for organizational emergence should examine the role of perceived self-efficacy' (Krueger and Carsrud, 1993: 325).

Their model remains open to the influence of exogenous variables that may play a role in the development of beliefs and attitudes. It also uses some of the conceptual contributions of Shapero and Sokol (1982), including the notion of an external trigger, to explain the shift from intention to behaviour.

The implications and applications of the theory of planned behaviour in the field of entrepreneurship are numerous and extremely promising. Some of the theory's implications are related to education and training. Since the early 1980s, researchers have been able to identify the role played by education and teaching variables in the development of perceptions about the desirability and feasibility of entrepreneurial behaviour (Shapero and Sokol, 1982). In other words, a training programme can have an impact on the antecedents of intention in the theory of planned behaviour (Krueger and Carsrud, 1993). As an example, Krueger and Carsrud (1993: 326) state that 'Perceived self-efficacy/control for entrepreneurial behaviours' is influenced by the acquisition of management tools and exposure to entrepreneurial situations. They go on to say, 'Teaching people about the realities of entrepreneurship may increase their entrepreneurial self-efficacy, but simultaneously decrease the perceived desirability of starting a business' (Krueger and Carsrud, 1993: 327).

In conclusion, and based upon the observations of Krueger and Carsrud, we will make a number of recommendations concerning the use of the theory of planned behaviour as an instrument for evaluating entrepreneurship education. With regard to the teaching aspect, it would, for example, be useful to try to understand the process by which entrepreneurial intentions are formed, to situate the respective roles of intentional antecedents and to explore the configurations that generate high, stable intentions in different entrepreneurial situations. Teachers could also try to use the model to improve their understanding of their students' motivations and intentions, and then adjust their programmes accordingly. With regard to research, the theory of planned behaviour could be used to analyse how and in what conditions a business plan preparation process within an educational programme affects entrepreneurial intentions.

PREPARING AN EVALUATION FRAMEWORK FOR ENTREPRENEURSHIP EDUCATION PROGRAMMES USING THE THEORY OF PLANNED BEHAVIOUR

As we saw in the second section, it is difficult to use the venture-creation act as the sole criterion for evaluating a programme's impact. However, it may be

easier and equally appropriate to use criteria related to entrepreneurial intention or change of attitude towards entrepreneurial behaviour. The likelihood of engaging in entrepreneurial behaviour, or entrepreneurial intention, could therefore be used to measure the impacts of a training programme, even though *intending* to launch a business is not the same as *actually doing so*.

The purpose of this section of the chapter is to construct a dynamic tool for evaluating awareness activities, training programmes and courses in the field of entrepreneurship. The tool should, to a certain extent, permit us to penetrate entrepreneurship education's 'black box' – in other words, to understand the impact of specific 'educational' variables on changes of attitude and the development of entrepreneurial intention. The instrument is inspired directly by the theory of planned behaviour, and is presented in diagram form in Figure 5.2.

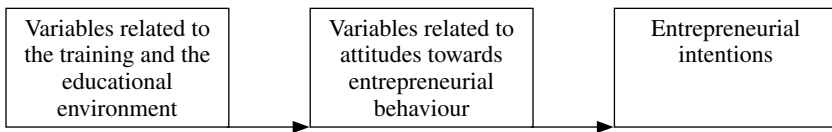


Figure 5.2 The general model underlying the evaluation tool

It now remains for us to define our concepts, the model's variables and a framework for their use. Our general framework is designed to evaluate awareness activities, training programmes and support programmes for students and other types of learners. It should be capable of being transformed into hypothetical/deductive models appropriate to the situations in which it is used. As we mentioned earlier, awareness activities and educational programmes differ widely in terms of their actions, teaching strategies and resources, duration and the types of people involved. In this chapter, we use the term 'entrepreneurship education programme' to refer to all awareness, teaching, training and support activities in the field of entrepreneurship, including their environment, content, teaching approaches, resources, teachers and other players. The measurement and analysis period begins slightly before the programme and ends a short time afterwards. We do have a strong interest in intentional stability, however, and may decide to extend the observation period at a later date. In such a case, the same indicators would be used.

The Model's Independent Variables

In our model, the variables relating to training and the educational environment are independent variables designed to explain the dependent variables (attitudes towards entrepreneurial behaviour and entrepreneurial intention).

In an entrepreneurship education programme, depending on its type and nature, students and learners must deal with one or more learning processes and an institutional environment that conveys a positive or negative image of entrepreneurship and offers variable amounts of resources. At first glance, these three families of variables (learning process, institutional environment and resources) appear to constitute a satisfactory point of departure. We will examine them individually, in more detail, below. Although the latter two have been identified and incorporated into the work of other researchers, the first does not appear to have been used very much.

Learning processes

Learning processes can be broken down into teaching objectives, types of students and disciplines, content, duration, intensity, frequency, teaching methods and approaches, and teacher numbers and profiles. Potentially, all these aspects could be independent variables with individual and collective impacts on attitudes and intentions. For example, a study by Fayolle (2000b) revealed the importance of the teaching objectives assigned to entrepreneurship education programmes. With regard to content, the balance and range of knowledge are important features of such programmes (Gasse, 1992; Ghosh and Block, 1993; Gibb, 1988; Wyckham, 1989). Johannisson (1991) identified five content levels for the development of entrepreneurial knowledge: the know-why (attitudes, values, motivations), the know-how (abilities), the know-who (short and long-term social skills), the know-when (intuition) and the know-what (knowledge).

Teaching approaches and methods can be divided into content strategies, relationship strategies and acquisition strategies (Develay, 1992). They may involve 'learning by doing', immersion in real-life situations, case studies and talks by entrepreneurs, or more didactical and conventional procedures. For example, would the fact of asking students to develop a business plan based on their own ideas and/or projects, have a different impact on their attitudes and intention than the fact of working on a case study or attending a traditional classroom lecture? The purpose of our study is to test all these possibilities, a task that may well involve incursions into the field of educational science.

Institutional environment

Not all educational institutions (universities, management schools, business schools and so on) offer the same political, social and cultural environments. Research in France has shown the important impact of the course or programme on the students' choice of career (Safavian-Martinon, 1998). An institutional environment that accepts and values entrepreneurial behaviour and employment in small and medium-sized enterprises may have an impact on the entrepreneurial intentions of students. Through its policies, incentives and behaviours, an institution can encourage its students to take the initiative and engage in

venture creation, and can also convey a positive image of entrepreneurship as a career choice (Autio et al., 1997).

Resources

Resources may be material, financial and intellectual in nature. Examples include the availability of funds to help finance venture creation projects by students, support networks for entrepreneurial initiatives (professionals and businesses), entrepreneurship centres, business incubators, a broad supply of entrepreneurship programmes, entrepreneurship institutes and specialized libraries.

The Model's Dependent Variables

Before addressing the dependent variables – attitudes and intention – we will first discuss what we mean by ‘entrepreneurial behaviour’ and how we have used the concept in our research. The term ‘entrepreneurial behaviour’ refers back to the definition of entrepreneurship itself, on which there is no real consensus. We therefore propose to replace this somewhat generic term by a series of more precise terms applicable to different entrepreneurial situations. These include ‘venture creation’ – although here again we would need to specify the type of creation (technological, innovative, craft, industrial, tertiary, agricultural, and so on). Individual buy-outs of problem firms could also be included, as could certain instances of corporate entrepreneurship (innovative activities within a large firm), provided they are clearly defined to avoid any possible ambiguities.

Attitudes

The various types of ‘entrepreneurial’ attitudes are derived directly from the theory of planned behaviour (Ajzen, 1991) applied to the field of entrepreneurship (Krueger and Carsrud, 1993). Kolvereid (1996b), in subsequent empirical research, proposed a series of indicators designed to operationalize the attitude variables (attitude towards action, subjective norms, perceived behavioural control).

Intention

Kolvereid (1996b) used a three-part indicator to measure an individual's intention to create a business.

The attitude and intention variables are measured using Likert-type scales as opposed to a binary system, so that they can be graded by intensity.

Measurements

The proposed evaluation tool is dynamic; in other words, the most important element is its development over time, rather than the value of a given variable at a given time. The goal is to capture changes of attitude and changes of intention. There is therefore a need for different measurements at different times – for example, at the beginning and end of the programme, with one or two intermediate measurements in the case of long-term programmes.

For the independent variables, the measurements can be binary in some cases (for example, ‘exists’ or ‘does not exist’ for resources), or they may estimate the interest or relevance of a given strategy or the progression of learning.

Given that we are concerned with intention and not with the behaviour itself, we may, to obtain a proper evaluation, need to try and measure intentional stability over time, and this may involve adding measurements one or two years after the end of the programme.

CONCLUSION

The evaluation of entrepreneurship education programmes is currently attracting a lot of interest from researchers. Numerous initiatives have been launched or are under way, and the social demand is always as strong with regard to venture creation, job creation and widespread development of the entrepreneurial spirit and associated behaviours. All this has triggered a need for evaluation, in that the governments, regional communities and socio-economic partners providing the funding need to know the results of their contributions. The information they want relates basically to venture creation and the creation of direct and indirect jobs, and these factors have therefore become the most important evaluation criteria. The most surprising element here is that this particular conception of the role and issues of entrepreneurship education has been taken up by the educational community in general, which also tends to use the venture-creation and job-creation indicators to prove the relevance, quality and effectiveness of its educational programmes. This raises a dual question. First, as we have shown in this chapter, these particular indicators produce significant delayed effects, so that it is difficult, if not impossible, to use and measure them objectively and reliably within an acceptable time frame. Second, the focus on these indicators to the exclusion of all others tends to minimize the existence and importance of other indicators. It would be equally relevant to examine pedagogical criteria such as knowledge acquisition and the relevance and effectiveness of a given teaching strategy, not to mention indicators such as awareness of an area of economic or social life or the development of an entrepreneurial mindset and entrepreneurial intention.

The basic contribution of our research is to show that the theory of planned behaviour and models of intention can be used to evaluate entrepreneurship education programmes. The development of and changes to entrepreneurial intention are therefore core elements in our approach. In the theory of planned behaviour, intention is a good predictor of certain types of human behaviour. Intention is developed as part of a process and is subject to changes of attitude. Three types of attitudes are relevant to entrepreneurial behaviour, namely, attitudes towards the behaviour, attitudes subject to social pressures and subjective norms, and attitudes towards the control and mastery of the behaviour. Our proposed evaluation framework includes a generic model comprising a number of independent variables related to the education programme and its environment, which influence the dependent variables (the three types of attitudes listed above, and entrepreneurial intention). The framework opens up a broad field of research covering the objectives, assumptions and independent variables to be included in the model. Hypothetical-deductive type research can be used to test the impacts of a wide range of variables and variable configurations. Another feature of the framework relates to the type of research. We feel it is extremely important to work longitudinally throughout the duration of a training process, and to take several measurements at different times both during the programme and afterwards.

We believe our work has many implications, primarily for researchers. The framework opens up numerous avenues for future research to understand the influence and impacts of entrepreneurship education programmes on student attitudes, intentions and mindsets. Ultimately, it could help improve knowledge of intentional models. It also has implications for teachers, trainers and political and economic decision-makers. For example, teachers and trainers may ultimately be able to adjust their programmes by reformulating and clarifying their objectives as a result of this study and future extensions of it. Political and economic decision-makers, for their part, may be able to reconsider their vision of the evaluation issue and reorient their policies and practices accordingly.

NOTE

1. This figure can be compared with others: 30 per cent in 1995, 12 per cent in 1994 and 7 per cent in 1993.

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PART TWO

About the Newness in Methodological Approaches to Teach Entrepreneurship

6. The continental and Anglo-American approaches to entrepreneurship education – differences and bridges

Paula Kyrö

The discussion between entrepreneurship and education has strengthened towards the end of the twentieth century. However, the discussion of the dynamics of learning entrepreneurship has taken only very preliminary steps. So far the focus has changed from the trait theories of biological heritage, that is, assuming that we are born to be entrepreneurs, towards the belief that we learn to be entrepreneurs and that we learn how to behave like entrepreneurs. This education-orientated focus has, however, generated studies and courses in the fields of business and engineering rather than attracted researchers and educators in educational disciplines and institutions. This study suggests that the lack of this contribution appears as an apparent shortage of advancing conceptual discussion of entrepreneurship education. Furthermore, it is argued that the confusion related to entrepreneurship education and its neighbouring concepts does not only reflect the current state of research, but also the cultural differences in the meanings of the basic educational concepts of pedagogy and didactics. In order to encourage the conceptual debate on entrepreneurship education as an interplay between education and entrepreneurship research, this study delineates the conceptual bases and elements for this interplay by employing a descriptive interpretative concept method.

INCREASING DEMAND FOR CONCEPTUAL UNDERSTANDING ON ENTREPRENEURSHIP EDUCATION¹

Entrepreneurship education has slightly less than a 30-year history in science (for example, Alberti, 1999). Three findings have stimulated its development since the 1970s. The first of these is the fact that small businesses and organizations, rather than large firms and institutions, created new work (Drucker, 1986). Second is the perception that entrepreneurship is more an educational than bio-

logical issue and, the third, that the growth in number of small businesses and entrepreneurial behaviour in organizations has deeper cultural roots than previously thought (Fayolle et al., 2005).

These findings have, however, generated studies in entrepreneurship, rather than attracted education researchers. The first scientific journal in this field, *Journal of Entrepreneurship Education*, published its first issue only in 1997. Perhaps this is due to the tendency to perceive entrepreneurship as an individual and business-orientated rather than an educational and social-orientated phenomenon (for example, Grant, 1998; Scott et al., 1998). Also, research on entrepreneurship education has focused more on curriculum and content questions than on the dynamics of learning. Only recently the need to combine educational studies with entrepreneurial processes has started to attract academics (for example, Gorman and Hanlon, 1997; Grant, 1998; Scott et al., 1998). Still, the problem is that the contribution of educators in this debate is marginal. Scott et al. (1998) suggest, though, that so far we have only gathered experiences of various case studies and now there is a need to focus on basic dimensions and concepts. The first PhD or licenciate level thesis on entrepreneurship education emerged only at the end of the 1990s. Among those we can identify is the Finnish contribution (Erkkilä, 2000; Kyrö, 1997; Leskinen, 1999; Nevanperä, 2003; Pihkala, 1998; Remes, 2003; Soininen, 2000). However, due to the language barrier, its contribution in the international arena is hard to identify. This might be the case also with other less well known languages.

Along with this development, the number of institutions offering entrepreneurship courses has risen in many Western countries (for example, Menzies and Gasse, 1999; Vesper and Gartner, 1999). Several international studies have reported an increase in the supply of university-level courses. For example, Vesper and Gartner's study from 1999 found that the number of universities offering entrepreneurship courses in the USA had increased from 85 in the 1970s to 383 by the end of the 1990s. Studies from Canada and France have reported similar trends (Fayolle, 2000; Menzies and Gasse, 1999). The content of the courses included such topics as new business foundation, business plans, small business management and project management. A similar study of Finnish universities revealed that in 1996/97 18 universities out of 21 offered entrepreneurship courses as a major, or part of a major, in management or engineering and as a minor or separate course also in other fields. The contents were similar to those in other countries. Considering this supply, we face the same problem as in research, namely, the marginal contribution of educational institutions and courses' contents. Also, a recently published report on entrepreneurship education in the European Union revealed that entrepreneurship education was primarily available in business disciplines (European Commission, 2002).

The report also indicated considerable differences between countries related to the position of entrepreneurship education in national educational systems

ending up to recommend that the importance of entrepreneurship teaching should be acknowledged in the national curriculum as well as in the curriculum for each level of the educational system (European Commission, 2002). This was also recommended as one of the key qualitative indicators for entrepreneurship education. In this respect, for example, only Finland has extensively included it in the curriculum of primary and secondary levels, as well as in initial vocational training. Yet 10 out of 16 member countries recognized considerable national policy commitment to promote entrepreneurship in education.

All three perspectives on entrepreneurship education – the development of the number and content of courses, the recent emergence of educational research and the current state in educational system – reflect an apparent consensus in the need to supply entrepreneurship education. However, on the one hand, its short history and, on the other hand, the marginal contribution of the science of education indicate that it is not possible to share mutual collective insights, understanding and knowledge on its basic elements and concepts. The European Commission's recent report also identified this as a difficulty in international co-operation and comparisons. The report concluded that most of the education related to entrepreneurship education had, in fact, taken place under some other title (European Commission, 2002). This perception summarizes the conceptual confusion that characterizes the current state of the debate on entrepreneurship education.

All these aspects encourage me to suggest that, in order to advance educational debate on entrepreneurship education, there is a need to address more attention to its basic elements and the dynamics between them. Thus, following Scott et al.'s (1998) recommendation, the aim of this chapter is, on the one hand, to delineate the basic conceptual elements of entrepreneurship education and, on the other hand, to approach their dynamics through two basic concepts of education, namely, pedagogy and didactics, assuming that this might advance the educational debate on conceptualizing entrepreneurship education and raise some expectations for future developments.

THE ROLE OF CONCEPTS IN UNDERSTANDING ENTREPRENEURSHIP EDUCATION

The understanding and further reflection of the concepts of pedagogy and didactics in entrepreneurship education is not possible unless we are able to understand their history and relationship to each other. As Richards (1995) expresses while introducing the core of Böhm's (1995) extensive study on 'theory and practice':

Educational concepts make presuppositions about the nature of reality and that which constitutes legitimate academic study. To understand these educational concepts

across different cultures requires more than a dictionary of educational terms. There needs to be a reaching out to participate in the international dialogue. By examining the differences in our basic concepts we can begin to ask what might be missing in our own perspective.

Furthermore, since most of the joint international discussion on entrepreneurship education takes place in the English language and in the field of entrepreneurship, the continental conceptual influence of education on this debate can be assumed to be minor. This challenges us to open up not only the concepts as such, but also the differences in conceptual understanding of pedagogy and didactics in the field of education and to reflect these differences in the ideas of entrepreneurship education. These points of departure guide the methodological choices of this study.

METHODOLOGICAL APPROACH

Methodologically, this study belongs to the field of interpretative concept research and, more specifically, it applies the descriptive interpretative method introduced by Lämsä and Takala (2001). Conceptual methodology consists of two basic branches – analytical and interpretative. Contextuality and theoretical thematization distinguish the interpretative branch from the analytical study, and justify it as a methodological alternative in human sciences. The interpretative branch aims to find meanings included in concepts and their definitions in order to expand the understanding of the concepts. The interpretation is linked with contextual factors. Contextuality in this study emerges in two respects: first, the elements of entrepreneurship are anchored to, and guided by, the entrepreneurship debate and, secondly, the concepts of pedagogy and didactics are anchored to their cultural and historical contexts.

Among its four categories, that is, heuristic, theory bounded, descriptive and critical, the descriptive method aims to increase the understanding of a concept by finding, describing and interpreting the entity of meanings and possible changed meanings while compiling a comprehensive overview of the concept (Lämsä and Takala, 2001). It emphasizes further development of the concepts and their definitions. Lämsä and Takala (2001) suggest that, at its best, descriptive conceptual study might provide ‘a fertile re-interpretation from a new completely a new perspective’. In this study, the focus is on searching for a new angle for conceptualizing problems of entrepreneurship education rather than providing a completely new perspective by employing educational pedagogy and didactics.

Lämsä and Takala (2001) argue that the validity of this method is analogous to the adopted assumption of reality at a particular time, since the use of the method always includes a set of commitments from the philosophy of science.

The concepts and their meanings must be seen as ever-changing, dynamic processes. They are ambiguous, changing, as well as socially and culturally constructed. Therefore, the interpretative study of concepts commits itself to basic assumptions at the very beginning, and always gives us information in limited frames. This is the guiding presumption of this study, suggesting that the concept of entrepreneurship education and the concepts of pedagogy and didactics are culturally constructed and changing phenomena.

Consequently, this study consists of five phases. Phase 1 identifies the elements of entrepreneurship education in entrepreneurship studies and phase 2 describes the concepts of pedagogy and didactics in their historical contexts. Phase 3 summarizes their essential features and differences, phase 4 compares these to the elements of entrepreneurship education and phase 5 reflects these findings to the aims of this study and to the future needs in the interplay between research on entrepreneurship and education.

ELEMENTS OF ENTREPRENEURSHIP EDUCATION

Identifying the elements of entrepreneurship education starts by looking at the terms used for it. A study conducted in 1989 by the Durham University Business School identified differences between terms in the USA, Canada, UK and other European countries. The term 'entrepreneurship education' was familiar in the USA and Canada whereas the term 'enterprise education' was used in the UK. In the UK, the focus was on 'an entrepreneur'. Also, Erkkilä's dissertation, *Entrepreneurial Education*, studying these concepts in the USA, the UK and Finland, revealed differences in terms (Erkkilä, 2000). In order to avoid conceptual confusion Erkkilä suggests that we should use a single concept of 'entrepreneurial education'. Allan Gibb poses that there is a substantial synonymy between entrepreneurial and enterprising behaviours. The only major distinction that can be made is that an entrepreneur actor is traditionally associated with business activity (Gibb, 1993). In his later writings Gibb (2001) has started to use these terms synonymously.

Thus, in identifying the elements of this phenomenon, we have to lean mostly on Anglo-American terminology that focuses on the terms 'entrepreneurship', 'enterprise', 'enterprising', 'entrepreneurial' and 'entrepreneur'.

Conceptually, it is easy to argue that these terms are not comparable, but rather focus on different elements of the phenomenon. Each of these poses a different question in education. The question of who is supposed to learn, gets the answer – an entrepreneur. The questions of what is the target of our learning, gives us the terms 'enterprise' or 'entrepreneurship', and what kind of a learner or learning we refer to, gives us the answer 'enterprising' or 'entrepreneurial'. Consequently, in defining our concept we have to choose between two terms

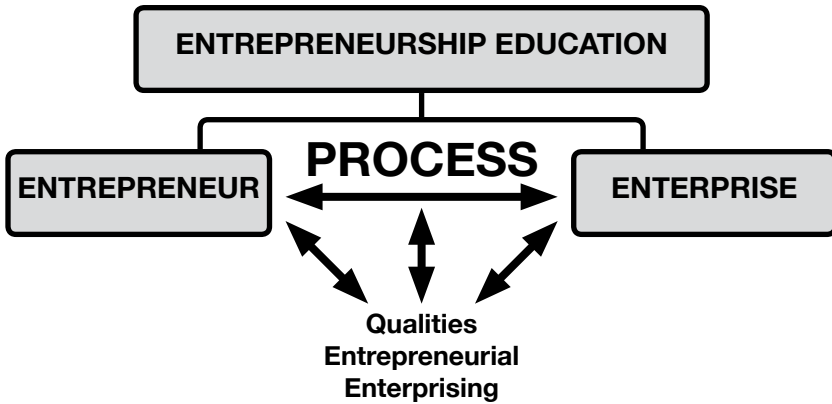


Figure 6.1 The framework for the elements of entrepreneurship education

for our phenomenon and two terms for the qualities of that phenomenon. Thus, we ask the question: is our phenomenon an enterprise or an entrepreneurship? In this respect, I believe there is a consensus that it is entrepreneurship rather than an enterprise (for example, Gartner, 1990). Thus, from the perspective of education, these questions have actually identified the basic elements and phenomenon. This is delineated in Figure 6.1.

Therefore, it is possible to suggest that entrepreneurship education concerns entrepreneurs, entrepreneurial/enterprising processes and, as an outcome, the enterprise of whatever context or conceptual content it relates to as well as the dynamics between them. Consequently, revising the terminology of entrepreneurship education from the perspective of education, it is possible to focus the debate on its core elements and identify its key dimensions as Scott et al. (1998) recommend. Taking the entrepreneur as a point of departure, the key dimensions concern the interplay between the actor, the process and the outcome. Considering what to learn refers to the substance of entrepreneurship education, that is, the whole phenomenon or some of its parts or aspects, including the process itself, and considering how to learn refers to the behavioural aspects of the actor, the entrepreneur and his or her experiences, that is, the actor learns about entrepreneurship through entrepreneurial processes. Thus, we can say that the key dimensions of entrepreneurship education refer to what to learn and how to learn, and the qualities of the three elements relate to the phenomena the field of entrepreneurship studies is gathered around. These focus on such phenomena as opportunity recognition, new venture creation, risk and acquisition, and allocation of resources in order to make things happen in different contexts, levels and perspectives (for example Brush, 1992; Carland and Carland, 1991; Davidson et al., 2002; Venkataraman, 1997).

Consequently, entrepreneurship education can be approached from each of these or from the dynamics between them. However, this does not mean that all have an equal or similar role in education. Next, I will briefly elaborate these roles in education and reflect them to the conceptual debate on entrepreneurship and entrepreneurship education.

THE ROLE OF THE HUMAN BEING AND ACTION IN THE ENTREPRENEURSHIP DEBATE

We can argue that both education and entrepreneurship are human sciences or fields of science and, thus, the human being, the entrepreneur and his or her behaviour, are the points of departure and the centre of the education. If we forget this, we lose our phenomenon and the whole debate on entrepreneurship education becomes useless. This is not, however, always obvious in the conceptual debate on entrepreneurship.

Considering human action, we can identify two different dialogues in the contemporary conceptual debate on entrepreneurship. On the one hand, the individual, entrepreneur-orientated discussion has left behind the biological interpretations and, through behavioural theories, has started to inquire into education as a discussion for supporting entrepreneurial behaviour (Gibb, 1993). Yet, a major part of the biological explanations focus on human features and qualifications. This indicates that human behaviour is at the core of entrepreneurship in both of these dialogues.

On the other hand, the dialogue between business and innovations has introduced the concept of new economic activity as a definition for the entrepreneurship (for example, Davidsson et al., 2002; Venkataraman, 1997). A point of departure and focus of this definition is activity, not the actor. Growth is often combined with the debate on newness or is taken as a measure for it (for example, Davidsson et al., 2002; Venkataraman, 1997). For example, Davidsson et al. (2002) pose the question whether entrepreneurship is growth or growth is entrepreneurship. They come to the conclusion that growth relates to entrepreneurship even though not all growth is entrepreneurial. Basically, the focus in this debate is on the dialogue between innovation, growth and business. Identifying new economic activities is emphasized and those creating them are less focused on. This view, however, has also been challenged by Carland and Carland (1991). They suggest that it is, indeed, difficult to define entrepreneurship without entrepreneurs.

The essential role of the human actor and his or her behaviour is also evident in Barreto's (1989) historical analyses of the writings of the early contributors on entrepreneurship research. Barreto claims that entrepreneurship disappeared from microeconomic theories by drawing lines between entrepreneurship re-

search and microeconomic theories through the disappearance of the role of an entrepreneur.

Also a cultural approach to the history of entrepreneurship reveals that the role of human beings has been essential. The scientific descriptions of entrepreneurship were born in France during the Enlightenment. At the end of the Middle Ages in France, two institutions, feudalism and the crafts system, were coming to an end. The roots of this broader approach to science can be found from the ideas of the French physiocrats during the eighteenth century. They opposed mercantilism, feudalism and the craft system. For them entrepreneurship referred to a farmer and farming in free circumstances (Hamilton, 1999). Instead of the hereditary system, privileges and institutions, citizens started to demand freedom for trade and industry: in general, freedom to decide how to earn their living (Dillard, 1967; Lindeqvist, 1905). Thus, the early contributors of entrepreneurship focused on the right and ability of free human beings to create their own welfare and living. This was supposed to be achieved through creative human action by combining resources in a novel way, applying new knowledge and taking risks in this process. This was often described as a special kind of management and ownership combined in the same entity. These early discussions were then addressed to different contexts. First, they were attached to the dynamics between an individual and society, then to small businesses and, finally, to larger organizations (Kyrö, 2000). As an outcome, these practices broke old systems and hierarchies and created new practices. The qualities used in these early discussions have also been used in the contemporary debate on the definitions in entrepreneurship. They are gathered around such phenomena as opportunity recognition, new venture creation, growth, risk and acquisition, and allocation of resources in order to make things happen (for example, Brush, 1992; Carland and Carland, 1991; Davidsson et al., 2002; Venkataraman, 1997). Consequently it is possible to argue that, in its current state, there are different forms or contexts of entrepreneurship referring to an individual, business and organization. We can include the whole of society as an organization. Thus, entrepreneurial activities can create different outcomes, that is, enterprises, be they entrepreneurial individuals, businesses, micro organizations or whole societies.

Differences in these conceptualizing efforts seem to fall on the essence and nature of the human actor, which from the perspective of education define the conceptions of learning and teaching. Yet, this ‘chicken and egg’ dialogue indicates that problematizing the nature and role of a human being is, and has been, an essential part of the entrepreneurship debate. On the other hand, the qualities related to the three elements of entrepreneurship education might get their content from the historical grounding of entrepreneurship.

The role of the process referring to action and its nature and dynamics, even though being a part of the entrepreneurship education research, varies consider-

ably between studies. For example, in Gibb's earlier and later articles it is one of the guiding themes, whereas Alberti (1999) divides studies according to their focus into three categories: course contents and their appropriateness; screening on possible course concepts and their usefulness; and the efficiency of pedagogical techniques and learning environments. Scott et al. (1998), on their behalf, divide research on entrepreneurship education into three categories: education about, through and for enterprise. The conclusion of the article studying the educational contribution on the debate of entrepreneurship education was that the dynamics of learning processes are understood as different techniques and models of learning rather than complex dynamics of the various elements in the learning process (Kyrö, 1999).

These perceptions of the central elements and their role in discourses of entrepreneurship and entrepreneurship education seem to indicate that, even though they are an essential part of that debate, a conceptual approach has not been found that would allow them to advance the discourses on the dynamics of these elements. Thus, employing educational concepts of pedagogy and didactics might give some new angles to that problem.

TWO DIFFERENT ROUTES FOR EDUCATIONAL CONCEPTS

In their early days, there was no difference between pedagogy and didactics but rather a holistic view to education linked with organic holism and *Naturphilosophie*. According to the Holistic school of science, man must be educated to see nature as a complete integrated, purposeful system with himself an integral part of it. Furthermore, this non-dualistic approach made no difference between the body and the mind (Bowen, 1981). Thus, considering the history of entrepreneurship we can see that both education and entrepreneurship have their roots in the same schools of science.

The very first meaning of *Didaktik* was about the same as the art of teaching or *Lehrkunst*. Kansanen (1995) identifies Wolfgang Ratke and Johan Amos Comenius (1592–1670) at the beginning of the seventeenth century as the founders of the German *Didaktik* (*didactica*). The idea was to develop a general teaching method compared to the logical method, which at that time was thought to be the best way to present the teaching content in order to bring about learning. The position of *Didaktik* with regard to pedagogics (*Pädagogik*) changed during the next centuries. *Die Didaktik* was gradually taken into more general use alongside *die Pädagogik* or *pedagogics*, but its use was limited to German-speaking countries or to countries having cultural relations with Germany.

The results of these early developments are evident in the contemporary use of the concepts of pedagogy and didactics. According to Kansanen, by nature,

die Didaktik in Germany has always been philosophical thinking, theorizing, and construction of theoretical models. *Didaktik* is nowadays in use in Central European and Scandinavian countries, but it is practically unknown in English or French-speaking countries in the field of education.

According to a well-known German example, within the three common basic problem areas of education, which are education in general, psychology of education and sociology of education, general education consists of pedagogics and didactics (*Pädagogik und Didaktik*), and the latter is usually seen as a subdiscipline concentrating on the questions of teaching (Röhrs, 1969). In German literature, *Didaktik* and educational psychology are clearly separate fields with different representatives. The situation in Great Britain and the USA is quite the contrary (Kansanen, 1995).

A hallmark of education as a discipline or as a field of science, as it is regarded in British educational literature, is the first independent chair of education at the University of Halle in 1779. The first professor of education, Ernst Christian Trapp's (1745–1818) idea in '*Versuch einer Pädagogik*' was to no longer base education on philosophy and theology but on the nature of man and on contemporary society. It took about 100 years before independent professorships were established in England, Scotland and the USA. By the end of the nineteenth century, American educational research had many contacts with German research, however, these soon ruptured. Accordingly, the conceptualization took different routes leading to quite different understandings of the basic concepts of education (Kansanen, 1995).

The differences between Anglo-American and continental approaches became evident in the interpretation and application of Herbartian thoughts. According to Bowen (1981: 366–74), Charles de Garmo brought German educational thought to America at the end of the nineteenth century and in the writings of McMurry these thoughts moulded into a new form. At that time, American educational research had many contacts with German research. These contacts suddenly ended at the beginning of the twentieth century. Bowen suggests that one can identify two fundamental differences between Herbart's ideas and their American adaptation.² Whereas Herbart's doctrine was 'conceived within the holist view that man is a part of nature and learns by organic interrelationship', McMurry, instead, accepted, without critical analysis, the separation of man and nature as well as mind and body. He also stated that 'all the forces and bounties of nature are to be made serviceable to man'. These ideas became the cornerstones of positivistic tradition of the educational psychology in the USA. Education became known as a science of instruction with pedagogy as its technology. It narrowed Herbartian pedagogy to a five-step teaching model deduced from five basic laws.

This made it unnecessary to have an own concept for focus on learning, its bases and processes. Hamilton (1999: 135) arrived at a similar conclusion in

his article 'The pedagogic paradox – why no didactics in England?'. He claims that due to an instructional change the focus turned to teaching rather than learning. Consequently, the European discourse on didactics became very close to the Anglo-American discourse on pedagogics. Pedagogy, on the other hand, was sometimes taken as a synonym for the science of education (for example, Moss, 2002).

This new 'scientific' pedagogy did not gain dominance without challenge. On the contrary, at the beginning of the twentieth century, progressive movements both in Europe and the USA tried to find solutions to the unsolved problem of dualism. In Europe, perhaps the most prominent representative was Maria Montessori, who, influenced by Pestalozzi, Froebel and Rousseau, created a holistic, child-centred pedagogy that was based on the European cultural tradition that assumed the goal of all educational procedures was a cultivated adult (Bowen, 1995: 397–407).

In the USA, pragmatism represented the progressive movement especially in the works of Charles S. Pierce (1839–1914), William James (1842–1910) and John Dewey (1859–1952). Their efforts were fundamentally different, compared with their European counterparts, in two respects. First, they were more influenced by the British empiricism and Francis Bacon than continental Naturphilosophers and, second, they contradicted Plato's definition of knowledge as a well-justified true belief assuming that truth is stable, independent of time, based on empiricism or rationalism. Instead of defining the subject, content and object of knowledge as the elements of a process, they focused on the process itself. They strove to understand reality through action. For them, truth was an acquired quality. For Dewey (1951), it is something that is happening to an idea while verifying it, while for James (1913), it is the same as a process of verification. At that time pragmatism did not gain a foothold in the dominating discussion, but was criticized from two directions. On the one hand, it was regarded as too eclectic and, on the other hand, its idea of 'usefulness as a criteria of truth' was critiqued.

The consequences of these developments emerged as the disappearance of the term 'didactics' in the American tradition. Kansanen (1995) noted that

in British, as well as in American, educational literature, the sub-area of Didaktik seems to be lacking. Much of its content belongs to educational psychology. In the American literature of research on teaching, the problems of teaching and learning in general are usually held together without any theoretical model building. Attention is paid to the methodological problems, and there the various background principles can be seen ... The predominant approach to the problems of teaching has been research on teacher and teaching effectiveness. Along these lines there has been a series of model building ... The purpose of this kind of thinking has been an attempt to find those teachers who could attain the best possible results and to determine those factors which are crucial in planning and acting in the teaching process. On the theoretical level, the development of theoretical models has concentrated on empirical research and on testing these in real situations. (Kansanen, 1995)

This might be one of the reasons for the dominant position of cases in studies of entrepreneurship education. Böhm (1995) suggests that returning to philosophical questions might be a solution to this problem.

The era of scientific positivism, as Bowen (1981: 529) describes it, which brought along ‘the concept of education as an investment and, human capital’, burgeoned in the early 1960s. It was followed by such ideas as, for example, that education is an industry enhancing economic growth (Bowen, 1981: 530–31). This era belongs to a larger modern time period, when entrepreneurship was not valued and its influence on the success of society was marginal (Kyrö, 2002). Towards the 1970s the situation changed in some respects. Bowen (1981: 543) claims that Illich’s *Deschooling Society*, published in 1971, was responsible for making educators in the early 1970s look more closely at their arguments about school and its practices and move towards improvement. Illich’s argument for ‘deschooling’ society deserves to be considered as a significant innovation in Western educational thought, even though we still lack any reasonable historical perspective in which to assess it. It is possible, though, to combine the idea of the deschooling society with the postmodern transition, when we have also experienced a re-emergence of entrepreneurship and the new phenomenon of entrepreneurship education.

Both education and entrepreneurship experienced fundamental changes during the Enlightenment and again during the current, postmodern transition. Between these transitions the Anglo-American and continental debates on education parted. Consequently, the core concepts have different, culture-bound meanings in contemporary debates even though they once used to have a close interplay with each other.

THE ANGLO-AMERICAN AND CONTINENTAL APPROACHES TO CONCEPTUALIZATION

Combining the different routes of educational concepts with the debate on entrepreneurship education provides two different approaches.

The concepts dealing with the philosophical bases are ontology, axiology and epistemology. Etymologically, ‘logos’ refers to ‘explanation’ or ‘the word by which the inward thought is expressed, the inward thought itself’ (Audi, 1995; McKechnie, 1977). In Greek philosophy, it took on the meaning of ‘reason, thought of as constituting the controlling principle of the universe and as being manifested by speech’ (McKechnie, 1977: 1250). The ‘-logy’ refers to a specific kind of speaking like a doctrine, science, theory of, and ‘onto-’ in Greek means existence or being. Ontology originally referred to the branch of metaphysics dealing with the nature of being and reality (for example, McKechnie, 1977). In short, ontology refers to our ideas of reality and how it is constituted.

Epistemology, in turn, is interested in how we can acquire knowledge about that reality. The Greek word, 'episteme', refers to knowledge (for example, McKechnie, 1977). Epistemologists try to identify the essential, defining components of knowledge (Audi, 1995). Thus, both of these provide bases for learning and teaching, and they appear in learning theories and/or, vice versa, what we understand by learning and teaching leads to ontological and epistemological assumptions.

Epistemology is sometimes discussed in entrepreneurship education context, but ontology as a concept is still rare. For example, Alberti (1999) considers knowledge creation to be a core of his concept of entrepreneurship education. An example of ontological consideration and its relationship to epistemology can be found in methodological discussion of entrepreneurship, from Hill and Wright's (2000) article, 'A qualitative research agenda for small to medium-sized enterprises'.

In addition to ontology and epistemology, there is a third concept of axiology that relates to value theories (Audi, 1995: 830–31). It considers the values related to both ontology and epistemology. In its broad sense in the context of ontology, it addresses questions such as what is considered valuable in our world and our existence in it. Further, in the context of epistemology, it addresses the question of what is valuable knowledge in that world and what means are valued in order to gain that knowledge. Thus, it brings the moral aspect to scientific discourse. Explicit axiological discussion is quite unknown in debates of entrepreneurship education. The situation is quite the opposite in educational debates. For example, Böhm (1995) points out that ethical questions are the very base of all educational discourses, be they theoretical or practical. Education is society's media for manifesting its ideas (Bowen, 1981). The ideas educational systems adopt reflect what society regards as valuable for its success and welfare.

Considering the two basic dimensions of how and what to learn (see 'Elements of entrepreneurship education' section), axiology and its interplay between ontology and epistemology offers a third dimension, which focuses on the question of why learn. This brings along the question of whether it is possible to advance the conceptual debate or debates unless we explicate our implicit assumptions underlying the elements of entrepreneurship education. In order to understand the concepts and their differences, we ultimately, implicitly or explicitly, turn to the interplay between ontology, axiology and epistemology.

This short review of the history of education revealed that the continental approach of education as a science focuses explicitly on the dynamics of this interplay and furthermore explicates in the context of pedagogy and didactics its contribution to learning and teaching. The Anglo-American approach, on the other hand, takes, as a point of departure, educational practices and, as Kansanen (1995) described it, at the theoretical level focuses on model construction, ef-

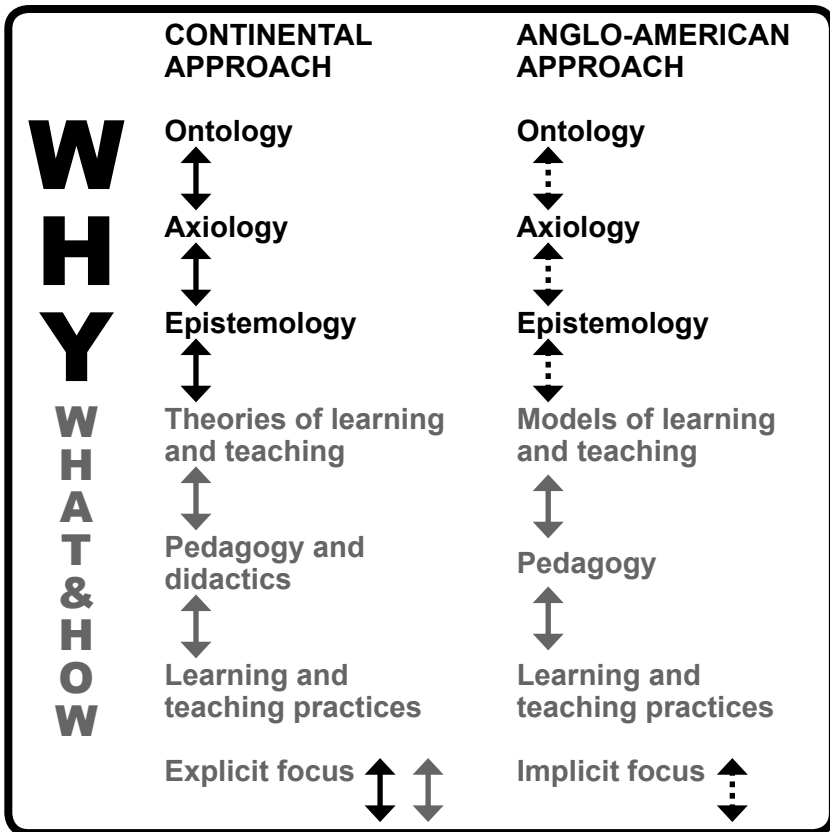


Figure 6.2 *The Anglo-American and the continental approaches to education*

fective teaching practices and consequently concentrates on empirical research and on testing these in real situations. Thus, the points of departure, the focus and the direction to proceed are different in these traditions. Consequently, the Anglo-American approach puts more stress on what and how questions, whereas the continental approach deduce its bases from why questions. These perceptions and conclusions are summarised in Figure 6.2.

These historical differences give a reason to suggest that the interplay between what, how and why questions might give some ideas for revising the concept of entrepreneurship education. It might also sow some seeds for reuniting the Anglo-American and the continental conceptual debates on entrepreneurship education, thus making a contribution to both fields of science – entrepreneurship and education.

SUMMARY AND CONCLUSIONS

The aim of this study was, on the one hand, to delineate the basic conceptual elements of entrepreneurship education and, on the other hand, to approach their dynamics through the concepts of pedagogy and didactics. This was assumed to advance the educational debate on conceptualizing entrepreneurship education and raise some expectations for future developments.

Identifying three basic elements of entrepreneurship education through its terminology organized the conceptual frame of the entrepreneur, the process and the enterprise, that further focused on two dimensions – what and how to learn. Reflecting these findings on the debates of entrepreneurship and entrepreneurship education indicated that it was hard to find a conceptual approach that would allow advancing the discourses on the dynamics of these elements.

Employing educational concepts revealed cultural differences between the Anglo-American and the continental debates and brought along a third dimension of entrepreneurship education, namely, the question of why learn, which offers some ideas for revising the concept of entrepreneurship education. Thus, the assumption that the interplay between two fields of science – entrepreneurship and education – would advance the conceptualization seems to be valid.

When evaluating the results of this study from a methodological perspective it is possible to argue that the adopted descriptive, interpretative concept method was valid as well, since its aim to further develop the concepts and their definitions turned out to be possible. Efforts to find a new angle for conceptualizing problems of entrepreneurship education provided insights to further developments of conceptualization in entrepreneurship education.

Even though this study succeeded in its basic tasks, it is a very preliminary effort and many of its aspects are disputable, waiting for further studies, which provides expectations for the future.

The brief historical overview left too many options in the shadows. In this respect there is a need to conduct more thorough studies in this field for really advancing the conceptual debate. Also, these might reveal interesting differences between countries and cultures.

Considering the educational discussion on entrepreneurship, the rough outline here is far too simplistic and narrow, and needs to be further studied and reflected on both theoretically and empirically. This requires a more careful and extensive study within existing literature on both entrepreneurship and entrepreneurship education than was possible in this study.

IMPLICATIONS AND SOME FUTURE EXPECTATIONS

The question of what kind of future expectations for conceptual development this study offers can be approached through its theoretical and practical implications.

The cultural differences in educational concepts invite us to study whether similar differences occur in the literature of entrepreneurship education. This would contribute to both fields of science – entrepreneurship and education. Assuming that conceptual differences appear in learning practices, this would also have practical implications.

Also, combining philosophical bases with conceptualization brings along the question of whether it is possible to advance the conceptual debate or debates unless we explicate our implicit assumptions underlying the concepts. It might also sow some seeds for reuniting the Anglo-American and the continental conceptual debates on education.

From a practical perspective this indicates how important it is in every study to explicate and reflect on the philosophical bases of the concepts that we use.

The history of education indicates how the conceptual debate has experienced fundamental changes that can be identified as a development before and after the positivistic, technology-orientated era as Bowen named it. During the transition towards this era, the continental and Anglo-American debates were not parted.

Considering the relationship between educational concepts and entrepreneurship education, we can notice that, at the moment, we are experiencing a new transition that is trying to unite educational and entrepreneurship debates.

The most promising expectation for the future concerns the interplay between different fields of science not only through books, but also through human beings and institutions. We can learn from history that when human chains between researchers separated, the scientific discussions separated as well. This modest conceptual study indicates that Richards's (1995) words were more than needed. We do need international dialogue, and by examining the differences in our basic concepts we can begin to ask what might be missing in our own perspective.

NOTES

1. I use the term 'entrepreneurship' as a general term being aware that it is disputable. Alberti (1999) solved a similar terminological problem by applying the term 'e-EDU' while defining it.
2. Johann Friedrich Herbart (1776–1841) was a German philosopher and educator at the University of Göttingen and is considered among the founders of modern scientific pedagogy.

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7. Mentoring for entrepreneurs as an education intervention

Asko Miettinen

INTRODUCTION

The roots of the mentoring programmes for entrepreneurs in Finland date back to 1993, when the country was recovering from the deep economic recession of the early 1990s. A year earlier the Prime Minister's Office published a report by a working group consisting of eminent industrialists for industrial investment, development and operational environment: 'Finland needs a programme for reindustrialization'. Based on this report, the mentor programme was launched to council entrepreneurial enterprises having growth potential (Järvinen, 1998). This programme started simultaneously in two regions: in the Greater Helsinki area, where the focus was on a selected group of small high-technology entrepreneurs into rapid global growth (www.innopoli.fi/english/mentor.htm) and in the Pirkanmaa region (about 100 miles north-west of Helsinki), where the selection criteria were less exclusive. This chapter explores the latter mentoring programme.

There is also a third effort organized by the Association of Finnish Local and Regional Authorities. This mentor programme started in 1996 and is based on tripartite principle (municipality, enterprise and mentor) and aims to promote the economic life of local communities. The mentor (often a senior or retired executive having roots or a summer cottage in the municipality) functions typically as a sparring partner, coach or adviser. The mentors form a network making it possible to benefit from the many-sided experience represented by the mentors. The focus is on the small and medium-sized enterprise (SME) sector. Improving regional and industry co-operation is one of the goals of this programme. It operates free of charge for the mentee enterprise and local business communities, as do the two other mentoring programmes mentioned above (www.kuntaliitto.fi/yrityskummit, in Finnish).

This programme became a registered association named 'Corporate Mentors' in 2001 to continue the activities already started. The new association has almost 400 mentors and more than a third of municipalities in Finland (totalling 442) and some institutional actors are its members.

In addition to the above three programmes there are several programmes in companies and a few initiated by professional organizations. Some of these are focused on a special group such as female managers or women entrepreneurs. At least one of them is operating across borders: the Nordic women entrepreneurs have started a mentoring programme for their colleagues in the Baltic countries (Estonia, Latvia and Lithuania).

THE MANY FACES OF MENTORING

Mentoring is generally defined as a developmentally orientated relationship between a senior and junior or peers that involves advising, role-modelling, sharing contacts and giving general support. Mentoring relationships always begin from the needs of a mentee and aims to develop him or her (Greer, 2001; Gómez-Mejía et al., 2001). The roots of mentoring are actually in ancient Greece, with Socrates and Plato as examples (Lindgren, 2000). Another well-known if mythical mentor–protégé relationship was between conjurer Merlin and young King Arthur (Savidge, 1993).

The medieval apprentice–master relationship and its modernized version in our apprenticeship training systems recommended by the European Union (EU) follow the same tradition. Within companies, senior mentoring programmes are supporting programmes in which senior managers identify promising employees (and women and minority employees underrepresented in managerial and executive ranks) and play an important role in nurturing their career progress and professional growth. Mentoring can be either voluntary or involuntary. Informal mentoring (close to informal giving and receiving help in one's job) is considered to be more effective than mentoring done solely as a formal responsibility, though there are situations in which a formal mentoring programme may be the better choice (Gómez-Mejía et al., 2001).

Wunsch (1994) and Kerry and Shelton Mayes (Shaw, 1995) have remarked that mentoring is used in various contexts. There are common elements, however, whether the term used is 'mentoring' or 'supervising' and used in business life, schools or social and health care. An essential working tool is a discussion between the mentor and mentee. Mentoring means a purposeful, flexible learning process and is usually a rewarding experience for both sides (Shaw, 1995). The fact that both individuals, the mentee and the mentor, can benefit from the relationship makes it vital and significant.

In contrast to expectations, mentoring activity tends to increase during times of enterprise stress, such as economic decline or downsizing. This is because, for the mentor, the activity provides a source of esteem perhaps not otherwise available owing to curtailed opportunities for advancement, and the like (Kram

and Hall, 1989). The situational determinants for using mentoring should be further explored.

A mentor relationship has the potential to enhance professional development and psychosocial development of both the mentee and the mentor. Through entrepreneurial career functions, including sponsorship, coaching, protection, exposure and visibility, and challenging business opportunities, an entrepreneur is assisted in learning the running of a business under competitive conditions. Through psychosocial functions including role-modelling, acceptance and confirmation, and counselling, an entrepreneur is supported in developing a better sense of competence, confidence and effectiveness in his or her entrepreneurial and managerial roles.

Kram (1983) has empirically built a model that illustrates how a mentor relationship moves through the phases of *initiation*, *cultivation*, *separation* and *redefinition*. Each phase, although not entirely distinct, is characterized by particular affective experiences, developmental functions, and interaction patterns that are shaped by individual's needs and surrounding organizational circumstances. During the initiation phase the relationship starts; in the cultivation phase the range of functions expand to maximum; in the separation phase the established nature of the relationship is substantially altered by structural changes in the enterprise or organizational context and/or by psychological changes within one or both individuals involved in the mentoring process. Last but not least, in the redefinition phase the relationship evolves a new form that is significantly different from the past, or the relationship ends entirely.

The initial organizing categories in the mentoring relationship are level of commitment, intensity of relationship, issues worked on and needs satisfied (Kram and Isabella, 1985). Among the primary functions of the relationship, information sharing, job-related feedback, emotional support and confirmation have been demonstrated to be important. On the other hand, mentoring relationship involves a one-way helping dynamic. Conventionally, mentors are most important in the early life of a new venture. Considerable shifts in some relationships may occur over time but there may be little change in others.

Mentors are supposed to be able to occupy multiple roles such as:

- catalyst
- visionary forecaster
- technology strategist
- expert in contract law
- expert in internationalization
- expert in financing
- marketing specialist
- expert in patenting
- developer of organization and organizational processes

- management developer
- human resource management expert
- attitude educator
- idea generator
- network builder
- coach
- councillor
- and so on.

Nobody can master all these multiple roles, and it may not be easy to achieve role clarity and role consensus. The relationship between mentor and mentee also changes during the process calling for role flexibility from both sides. Having more than one mentor, or having an opportunity to get a new mentor when the situation changes, provides more flexibility from the point of view of an enterprise with the mentor programme.

MENTORING AS INTERVENTION

Mentoring is a special kind of helping relationship. Like process consultation (Schein, 1999), the ultimate goal of mentoring is the establishment of an effective helping relationship. Generally, consultation and helping processes can be distinguished by analysing the tacit assumptions they make about the client, the nature of help, the role of the consultant and the nature of the ultimate reality in which the helping relationship operates. In the mentoring process, the mentor is supposed to choose from one moment to the next which role to be in or which model of helping to use.

Mentoring efforts are always interventions. To intervene means to enter into an ongoing system of relationships or objects for the purpose of helping. There is an implicit assumption in this definition: the system exists independently of the intervener (Argyris, 1983). Taking the situation and expectations into account, virtually everything the mentor does is an intervention. There is no such thing as pure diagnosis or business analysis. If diagnosis involves any contact with the client system, the intervention process has actually begun. Thus, how to go about diagnosis should be considered from the point of view of what possible consequences the diagnostic interventions conducted will have (Schein, 1999).

The interdependencies between the mentor and mentee should be acknowledged but at the same time should focus on how to maintain, or increase, the mentee's autonomy to take his or her own decisions; how to differentiate the boundaries between the client system and the intervener. This view values the client system as an ongoing, self-responsible unity that has an obligation to be

in control over its own destiny. Thus, an intervener tends to assist a system to become more effective in problem-solving, decision-making and decision implementation in such a way that the system can continue to be increasingly effective in these activities and actually have a decreasing need for the intervener.

According to Argyris (1983), there are some basic or necessary processes that must be fulfilled regardless of the substantive issues involved. One condition is the generation of *valid information*. Without valid information, it would be difficult for the mentee to learn and for the mentor to help. A second condition is that intervention activity should be so designed and executed that the client system can maintain its discreteness and autonomy. That is, *free, informed choice* is a vital process in effective intervention activity. Thirdly, the client's *commitment* to learning, choices and change to be made has to be more than temporary. Valid information, free choice and internal commitment are generic parts of any intervention activity, no matter what the substantive objectives worked on are. Argyris calls these processes 'the primary intervention tasks'.

In addition to these primary intervention tasks there is the question of the *depth of intervention*. Depth here means the extent to which the change target is the formal system (such as goals, procedures, structures, tasks, rules and policies), the informal system or the self. There is a continuum of intervention in terms of their depth based on accessibility and individuality. Accessibility means the degree to which the data are more or less public versus being hidden or private, and the ease with which the intervention skills can be learned. Individuality means the closeness to the person's perceptions of self and the degree to which the effects of an intervention are in the individual in contrast to being in the enterprise. It can be assumed that the closer one moves on this continuum to the sense of self, the more inherent processes have to do with emotions, values and hidden matters and, consequently, the more potent they are to do either good or harm. It requires careful consideration to determine that these interventions are appropriate and relevant. If they are inappropriate they may be destructive or, at a minimum, will be unacceptable to the client.

To minimize these kind of risks, Harrison (1983) has suggested two criteria for determining the appropriate depth of intervention. First, to intervene at a level no deeper than that required to produce enduring solutions to the problems at hand and, second, to intervene at a level no deeper than that at which the energy and resources of the client can be committed to problem-solving and to change. These criteria actually require that the interventionist proceeds no faster or deeper than the legitimization he or she obtains from the client system culture and that he or she stays at the level of consciously felt needs.

GOALS AND PRINCIPLES OF THE PIRKANMAA MENTORING PROGRAMME

The main goal of the Mentor Programme in the Pirkanmaa region is to help selected SMEs to grow and develop through a mentoring process (www.yrityskummit.net, in Finnish only). Enterprises involved in this programme are coached by experienced managers and experts *free of charge* for five to ten days each year. The participating enterprises pay a small annual fee of 500 euros to cover the administrative costs of the programme. The programme started in the Technology Centre Hermia (a technology centre in the city of Tampere), but later became an independent registered association.

The central organizing unit of this non-profit programme is a council selecting the mentor(s) for an enterprise after a screening procedure and monitoring the work of mentors now totalling about 90 – equal roughly to the member active firms attending the mentoring programme. The other responsibilities of the council are to select the mentor(s) for each participating firm, to follow up and evaluate the work of mentors, to take care that the knowledge and experience represented in the mentor network are available for each active mentor for the benefit of each participating enterprise, to deliver information to mentors and participating firms, and to look for new competent mentors.

The principles of the mentoring programme are as follows:

- The programme helps enterprises when they ask for mentoring.
- The programme offers an experienced ‘sparring partner’ to look for various options.
- Co-operation is based largely on reasoning and planning.
- The programme utilizes expertise and experience available in the Pirkanmaa region.

As ethical principles,

- the mentor tries to be objective and to present his or her view from the starting points of the mentee based on his or her best knowledge
- the work of the mentor takes place on enterprise’s conditions and absolutely confidentially
- the difference between mentoring and normal commercial consulting is kept clear.

Typical motives of firms joining the programme are, for example, clarifying their strategy and business concept, managing growth and going international. In some cases a mentoring relationship changes to become a formal agreement of membership on the board of the firm, which is another matter.

MENTOR PROGRAMME IN ACTION

The mentoring process starts with the screening phase. Potential mentee firms that have indicated their interest in participating in the programme contact the management of the programme. Then an event called 'an enterprise clinic' is organized. During the clinic three to five experienced mentors, selected according to the nature and background of the potential mentee, listen to the presentation of the candidate and interview him or her. Sometimes the management group of the candidate's enterprise is present. The clinic takes about two hours on average and after the clinic the decision is taken by the council. For the time being, a majority of the candidates are accepted to attend the mentor programme. The main reasons for rejections are that the business is still in too preliminary a phase or there is only a business idea so far, the business is without any development perspective or potential.

The council also decides who will be recommended to become the mentor or mentors. This is an important matching task, which has sometimes not worked for various reasons. The mentor's background, business experience and personal attributes are the main selection criteria. The mentee meets the mentor before the co-operation begins.

The mentor meets the mentee five to ten times a year, usually in the enterprise of the mentee. A typical session lasts from two to three hours. The mentee has prepared reports, memos, issues and questions which he or she has sent the mentor in advance. Often there is also a plan for a longer period (six months or one year), which is followed in a flexible way in order to be able to take unexpected events or incidents into account. Between the meetings, there are often email communications and phone calls.

The co-operation continues for as long as it benefits both parties. In some cases it has lasted only a few meetings, but the longest relationships have lasted several years. Another development has been that the mentor becomes a board member (meaning that the relationship changes) or a part-owner of the firm in the course of time. The board case is more common: some 10 per cent of mentors have become board members.

Mentoring activities occur in two basic forms: a single mentor in the field or several mentors making up an expert group. In some meetings, additional experts can be invited to join for specific issues (such as special technology, contract law or internationalization questions).

RESEARCH QUESTIONS AND METHODOLOGY

This chapter is an evaluation study of the results and outcomes of the programme at the end of the first decade of its existence (1993–2003). Multiple methods

have been used to explore the pros and cons of the programme: a survey sent to the mentors (in 2001), a critical incident-based survey (2003) to the mentees (managers in mentored enterprises) and participating observation (the author is an active mentor and a member of the council).

The samples are relatively small (45 responses in the 2001 postal survey from mentors; 20 personal or phone interviews in the 2003 study). This limits the use of statistical analysis and emphasizes the qualitative side of the results. Furthermore, they are two separate samples collected at two separate times making it, unfortunately, not possible to match the responses of the mentors and mentees.

In the 2001 survey sent only to the mentors, the motives of mentors, benefits to them, possible experienced disadvantages, orientation to mentoring, their learnings, transfer of their managerial experience over to the mentees' enterprises and overall satisfaction were explored. The questionnaire was sent to 78 mentors, of which 45 (58 per cent) replied. The age of the respondents varied from 45 to 70 with an average age of 60 years. Twenty-two respondents were retired and 23 were still working. They had been active mentors for from two months to seven years; three years on average. There was only one female mentor among the respondents (Tuuri, 2001).

The chairman of the Committee and the Executive Director of the association selected 20 enterprises for the 2003 study. Thirteen of these were still participating in the mentor programme and seven had left. A semi-structured interview questionnaire (there were a number of open questions) consisting of 30 items was presented in four interviews. The finalized questionnaire was sent in advance to the mentees (Maunula, 2003).

All interviewed entrepreneurs represented small and medium-sized enterprises. There were four information and communication technology (ICT) firms, one from the transportation industry, one from the environmental protection industry and the rest in the sample from the following industries: chemicals, machinery and equipment, food, electromechanical equipment, metals, furniture-making and other production. The firms employed from one to 60 with an average of 14 employees. The range of annual turnover varied from zero to 4.1 million euros. The mean turnover was 1.4 million euros (Maunula, 2003).

A good number of the enterprises in the sample had only been in business for a few years (Table 7.1). However, number of years participation in the mentor programme varied considerably from one year to almost 10 years. The average length of attendance was 5.4 years (Maunula, 2003).

Table 7.1 The age of the enterprises in the 2003 sample

Age of enterprise	N	%
0–4 years	6	30
5–9 years	4	20
10–14 years	6	30
15+ years	4	20
Total	20	100

RESULTS

The 2001 Survey (Mentors)

The first item in the survey was a question about the motivation to join the Pirkanmaa Mentor Programme. The answers to this open-ended question can be categorized in six groups:

- invitation (n = 25; 45.5 per cent)
- interest in mentoring (14; 25.5 per cent)
- will to help (7; 12.7 per cent)
- will to transfer own experience (4; 7.3 per cent)
- willing to learn new things (4; 7.3 per cent)
- engaged earlier in the Pirkanmaa Mentor Programme (1; 1.7 per cent).

The message for recruiting new mentors is clear: personal contacts in the business community together with personal interest in mentoring activity explain over 70 per cent of the total variance of the answers. This is important for the continuation of the mentoring programme, because half of the mentors are already retired and presumably no longer willing to go on for several years. There is also a risk of losing an intimate connection with the business world in the case of most senior mentors.

Respondents' attitudes towards the need for orientation to mentor activities and role was asked through three alternatives (I should not have needed orientation; it had been useful; and it could have been useful in my case). Sixty per cent of the respondents announced that they should not have needed this, presumably trusting their long experience in a managerial role. Twenty-two per cent answered that it had been useful and another 18 per cent that it could have been of use. In terms of content required in future orientation, the role and tasks of a mentor was most frequently mentioned (52.6 per cent), followed by a wish

to become acquainted with other mentors (21 per cent), problems of SMEs (16 per cent) and how the Tampere Technology Centre Hermia operates (the Mentor Programme started in connection with this technology centre).

The mentors had benefited personally in many ways from their mentoring. The most frequent answers to this item were: receiving new knowledge and perspectives (25 per cent); maintaining contact with the business world (22 per cent); contacts with other mentors' enterprises in the programme (17 per cent); pleasure from helping (15 per cent); experience of being personally important and mentally vigorous; and an opportunity to share one's experiences. The mentoring programme has clearly provided a socially acceptable and appreciated 'cooling off' opportunity for senior executives during the transition period from managerial lifestyle to senior citizenship. It seems to be a win-win opportunity as well, because the enterprises engaged in the programme have also benefited from the co-operation as the results of the 2003 survey to be reported later in this chapter clearly indicate. As a critical point, however, two mentors still actively working experienced that there was no point in being a mentor.

On the other side of the same issue, 62 per cent did not experience any harm or disadvantage from being a mentor. Some negative effects have occurred in the opinion of some mentors: problems in time management (eight replies), indirect loss of earnings (three replies), passiveness and lack of appreciation on the part of enterprises (two replies), feeling of inadequacy (one reply) and conflicts of interest (one reply). Mentoring is a special kind of a helping relationship, as noted before. About a third had experienced some unexpected or uneasy incidents in their mentoring activity. This may call for some orientation or exchange of experiences with other mentors before starting. Interestingly enough, the proportion of the mentors who encountered things mentioned above, equals the proportion of respondents who had benefited or thought could have benefited from organized orientation to mentoring activities.

The next item in the questionnaire surveyed the meaning of multiple mentor practice – whether it had been useful and rewarding or caused various kinds of problems. About one-fifth did not respond to this question and two of them did not like it because of lack of time and experienced problems in maintaining the trust in the mentee enterprise. Anyway, a majority had positive experiences such as broadening of perspectives (10 replies), benefits for the enterprise (six replies), an opportunity to help the firms (six replies), challenge (four replies), contacts with other mentors (three replies) and maintaining contact with the business world (two replies).

Mentoring is supposed to represent a potential transfer of experience from the mentor to the mentee enterprise. Seventeen respondents did not want to answer this question because of their short period as mentors. Four mentors presumed that it is better to ask the mentees. Anyway, a good third of the respondents (35.6 per cent) evaluated that the transfer had succeeded well, 15.6

per cent assessed it to have taken place in a satisfactory way and 8.9 per cent replied that it varied. A further 11.1 per cent had faced problems in this process.

Many mentors found it problematic to evaluate what they had learned from mentoring. Two said that they had learned nothing and another eight did not want to assess it, mainly because of the short period of their activity as mentors. The remaining 35 respondents gave five categories of answers, as follows:

- learning from industry and products (23 replies)
- learning in interaction (eight replies)
- contacts (four replies)
- recognizing the validity of 'old wisdom' (three replies)
- new ways of operating and new perspectives (three replies).

A further concluding item was the overall satisfaction with mentoring. The scale used in this item was from one to 10 (1 meaning 'I am very dissatisfied' and 10 'I am very satisfied'). Forty-one respondents scored 8.1 on average with a minimum of 1 and maximum of 10. The mode was 8 (17 replies)

Table 7.2 Motives for joining the mentoring programme

Motives to join the programme	Participating mentees; no. of answers	Mentees who left the programme; no. of answers
Utilization of experience	7 (31.8%)	1 (12.5%)
Need for an outside adviser	5 (22.7%)	—
Interesting idea	3 (13.6%)	1 (12.5%)
Help and advice in acquisitions and mergers	3 (13.6%)	—
Getting customers and co-operation partners	—	2 (15%)
Guidance for strategic planning	2 (9.1%)	—
Need for an outside board	1 (4.6%)	—
Need for a 'sparring partner'	1 (4.6%)	—
Lack of business know-how	—	1 (12.5%)
Others' positive experiences	—	1 (12.5%)
Need for a sparring partner for next generation	—	1 (12.5%)
Request from the mentors	—	1 (12.5%)
Total	22 (100%)	8 (100%)

The 2003 Interviews (Mentees)

The first few interview questions explored the motives of the mentees for joining the programme and their expectations of mentoring. Table 7.2 shows what kind of primary motives were found. The answers are given in two groups of mentees, those who still participate in it ($n = 13$) and those who have left the programme ($n = 7$). Each comment is included and percentages in relation to the total number of answers in each group are calculated. Because these results were obtained by semi-structured interviews classified by the researcher (Maunula, 2003), the number of observations varies in Tables 7.2–7.4.

Comparisons between the two sub-samples can only be indicative because of the small number of observations. There is quite a bit of variance, and maybe

Table 7.3 Anticipations of mentees towards mentoring

Anticipations	Participating mentees; no. of answers	Mentees who left the programme; no. of answers
Partner for discussions	5 (20.8%)	—
No clear anticipations	5 (20.8%)	—
Benefiting from the views of a more experienced person	3 (12.5%)	1 (10%)
Benefiting from mentor's network to get new customers and partners	—	4 (40%)
Help and support in important decisions	2 (8.3%)	1 (10%)
Widening one's perspective	2 (8.3%)	—
To get an outside and reliable board member	2 (8.3%)	—
Market and sales information	—	2 (20%)
Outsider's opinion to the next generation	—	1 (10%)
Clarifying strategy	1 (4.2%)	1 (10%)
Advice concerning general management	1 (4.2%)	—
'Sparring' help	1 (4.2%)	—
Help in idea generation	1 (4.2%)	—
Solving conflicts among owners	1 (4.2%)	—
Total	24 (100%)	10 (100%)

the only suggestive notion is the more general character or less specific nature of the motivations ('open mind' vs, for example, marketing help) shown in the case of still participating mentees. Same kind of notion ('not clear anticipations') occurs in Table 7.3.

Fulfilment of expectations was asked by using four alternatives: well, satisfying, badly and difficult to say. The first alternative was chosen in 62 per cent of cases; 15 per cent said satisfying; a few (8 per cent) answered badly and another 15 per cent 'difficult to say'. Thus, about 80 per cent were satisfied with co-operation with mentors. A clear difference can be seen, however, if those who still participate in the mentor programme are separated from those who left it (Table 7.4).

Table 7.4 Fulfilment of expectations

	Participating mentees	Those who left the programme
Well	8 (61.5%)	—
Satisfying	2 (15.4%)	1 (14.3%)
Badly	1 (7.7%)	6 (85.7%)
Difficult to say	2 (15.4%)	—
Total	13 (100%)	7 (100%)

One result was that it seems to be very hard to change the mentor and to admit that it would evidently work better with someone else. The feeling is the same on both sides indicating the sensitivity of this issue as some kind of losing face. The programme management could actually add the opportunity to change the mentor as a normal operating practice and emphasize that this matter is not any kind of failure.

A typical unsatisfying case was described as follows:

We got 'a sparring partner', but no concrete know-how or advice. One crucial point is that here are no IT specialists among the mentors. Mentors did not have much to give to the firm. General business know-how is not enough, but knowledge about the industry sector should have been a requirement. If the mentor does not have this know-how, that's it. Mentoring should be based on one's own solid experience and if there is none, co-operation cannot continue.

It is worth mentioning that information technology is a rapidly growing business area in the Pirkanmaa region. But it is also a brand new industry – poorly known to most senior mentors. As a more serious case there was a mentor who according to the mentee only tried to benefit from the mentee enterprise. This co-operation was quickly ended.

A partly overlapping question is what kind of benefits the mentees have experienced from the co-operation with their mentor. To summarize, 80 per cent (16) of the mentees had experienced it as useful and the remaining 20 per cent (4) not. Out of the four mentees who did not experience any use at all, three have left the programme and the fourth has just started a new promising mentoring relationship. More specifically, in the positive cases the benefits were as shown in Table 7.5.

Table 7.5 The benefits experienced by the mentees

Experienced benefits	No. of answers	%
Opinions and advice from an experienced senior	5	22.8
New contacts	4	18.3
Mental support	3	13.7
Support in decision-making	3	13.7
Improved board meetings	1	4.5
Computerization of production management	1	4.5
Successful implementation of generation change	1	4.5
Clarified strategy	1	4.5
Implementation of organization structure change	1	4.5
Improved financial reporting	1	4.5
Start-up of a new venture	1	4.5
Total	22	100.0

The most general topic according to the interviews has been strategy. About a half of the respondents mentioned this theme. Other general topics covered general management, organization design, marketing and sales. Internationalization, financing, training and education, production management, R&D and board issues were mentioned less frequently, only once each.

A great majority (80 per cent) of the interviewed entrepreneurs recommended mentoring to other similar enterprises, as shown in Table 7.6. This was seen as most important in the start-up and right after the start-up phase. Both those mentees who answered 'probably not' or 'absolutely not' had already left the programme.

The following were typical additional comments:

If the business channels well and finds proper people, mentoring can be very useful. It is really nice that know-how is utilized and shared. Seniors have a huge data bank from which others may benefit. A small country like Finland cannot afford to keep her vigorous seniors redundant. This also provides an opportunity for the mentors to remain active. Able seniors have something to do, because they just can't be idle.

Table 7.6 Would you recommend mentoring to a similar enterprise you are running?

	No. of answers	%
Absolutely	13	65
I suppose yes	3	15
Difficult to say	2	10
Probably not	1	5
Absolutely not	1	5
Total	20	100

It depends quite a bit on entrepreneur's own professional skills how much he or she can benefit from mentoring. Mentoring cannot worsen activities in an enterprise, but rather the opposite. Mentoring provides many opportunities. There should be a harmony between a mentor and a mentee for the benefit of the entrepreneur.

The entrepreneurs were also asked to describe, what kind of attributes they expect from a good mentor. The limitations of this approach have already been noticed in leadership studies over the past few decades, but some descriptive information was achieved. Generally, a good mentor was expected to be credible, active and motivated to mentoring. He or she was expected to have broad experience in general management in order to be able to help the entrepreneur in many ways. Former SME entrepreneurs were found to be good potential mentors. Specialists in narrow sectors it was suggested should concentrate on enterprise clinic activities and multiple-mentor situations to support the mentor in their own field in single problematic situations. Some interviewed entrepreneurs stated that it would be an asset if mentors were already retired, because then they have time for mentoring. Others found that mentors would be better coming from working life with their updated information and knowledge. Another source of disagreement was the question of whether the mentor should know the industry sector or come from outside it. Good social skills and adequate motivation were also mentioned as expected qualities.

The managing director of the programme employed in 1998 ($n = 43$) and 1999 ($n = 57$) a survey of the overall satisfaction of the mentees with the mentoring, using a numerical scale from 1 (very dissatisfied) to 10 (very satisfied). Only participating mentees were included in this survey. The average in 1998 was 8.4 and in 1999 8.5, respectively. To get further comparative data, the same item was presented for the participants in the 2003 survey as well. The mean was 8.3 for those who participated in the programme, but only 6.1 for those who had left the programme. The same question was presented to the mentors in the 2001 survey, giving the mean 8.1 ($n = 41$) (Tuuri, 2001). One can conclude that

the overall satisfaction of the mentees who have stayed in the mentor programme and that of the mentors have both been maintained at a relatively high level.

As to additional points in the 2003 interview-based survey, information about the mentoring programme was generally found insufficient, but well worth improvements. By mid-2003, an Internet-based catalogue representing the mentors and their experience and special know-how was launched. The physical distance between the residence of the mentor and enterprise was found to be a critical issue in terms of time and travelling costs. It was stated that the regional idea is a good one, but the mentoring idea could be extended to become nation-wide. Networking activities with the more well-known high-tech mentoring programme in the Greater Helsinki area was seen as a potentially valuable idea. A generous promise was also made: some mentees are willing to give a lecture about their experiences in local universities.

DISCUSSION

During its first decade the mentor programme has become established and achieved institutional status. Formal training and education includes structured and organized forms of learning provided by educational institutes. Those learning events that are provided by oneself or by others, but do not aim to achieve any formal degrees, belong to the area of non-formal training and education: there are no clear boundaries, because they include elements from informal and formal learning. Informal learning represents learning that takes place in various everyday situations, such as in one's own job. It is training that is not systematically planned nor organized.

Informal learning does not compensate but rather supplements formal training and education. The problem with most formal learning, from an entrepreneurial point of view, is that it is insufficient in that it is based mostly on, and aims to provide, generative, broad applications where 'thinking' tends to dominate over 'action'. Entrepreneurial work is mostly action orientated. It is also often so tightly bounded that opportunities to attend formal training and education are limited. Unlike formal training and education, an entrepreneur's own activity context tends to determine his or her learning needs, often relating to informal learning rather than being dependent on formal training. The problems the entrepreneur encounters require mostly immediate solutions. Thus, there is no time to wait for a proper course or other formal training to find the key to his or her problems.

In entrepreneurs' training and education, learning and work could be in a continuous interaction. On-the-job learning is based on interaction between the learner and his or her environment. Even 'useful' mistakes can be a source of learning. A strongly protective and non-experimental attitude can be a bad op-

tion in entrepreneurial life. Ellström (1996) has talked about ‘the learning potential of a task’ as a concept describing the qualities of task-promoted learning.

Mentoring belongs clearly to the category ‘informal training and education’ providing informal rather than formal learning. Informal learning is actually a variant of action learning, where learners seek meaning for things they have experienced. Entrepreneurs spend the majority of their time in ‘informal actions’.

Watkins and Marsick (1992) have presented a typology of learning depending on action orientation and reflection (Figure 7.1).

	<i>Reflection included</i>	<i>Reflection not included</i>
<i>Action included</i>	Informal learning	Occasional learning
<i>Action not included</i>	Formal learning	Non-learning

Figure 7.1 Different forms of learning

Occasional learning is totally unplanned, unintentional and takes place in addition to other activities. It can occur unconsciously and sometimes in the form of ‘serendipity’. The role of reflection is more difficult to evaluate than the formal–informal dimension in the model. When reflecting on one’s experiences, it is possible to become aware of what one learns. Reflection can be more effective by applying concepts to practice. Gerber et al. (1995) have emphasized that critical reflection is needed to discover hidden norms, values and assumptions guiding one’s behaviour. It is badly needed in situations deviating from ordinary routines.

Traditionally, however, the prevailing idea of rigorous professional knowledge has been based on technical rationality (Schön, 1991). Technical rationality holds that practitioners are instrumental problem-solvers who select technical means best suited to particular purposes. Most mentors share this background in terms of their managerial experience in larger companies. The interviews actually revealed rather little open and active reflection. This may stem from the fact that part of the interviews were administered by phone instead of in face-to-face interviews.

On the other hand, based on participating observation in the active mentoring process by the author, there was more reflection than indicated by the results of the interviews. This observation challenges the educational consciousness of the mentor emphasizing subjective experience as a base for learning. ‘Pure’

experience needs reflection in order to turn experience into learning. Reflection actually means conscious focus on one's own associations and thinking in the context of actual events. Thus, one of the primary tasks of the mentor is to support and advance the mentee to reflect and to explore the meanings he or she has given to various events and matters. It was Dewey (1951) who described reflection by such descriptions as 'searching for', 'asking', 'hunting' and 'finding material'. Reflection comes close to the traditional concept of introspection. 'Caring' could be added as a further description of the mentor-mentee relationship. Another notion worth more detailed investigation is to consider the mentoring process as a 'quality control' (Obholzer and Roberts, 1994).

Depending on one's disciplinary background, organizational role, past history, interests and political/economic perspectives, problematic situations are framed in different ways. Furthermore, a problematic situation presents itself as a unique case. Entrepreneurs in particular have a strong tendency to consider their problems unique, although there may be general rules to solve them. Some problematic situations are situations of conflict among values, as indicated in some reported lack of consensus between the mentor and the mentee. Mentors also face and experience the tension between knowing and not knowing what to do in a particular situation. This is owing to the fact that the very nature of entrepreneurial as well as managerial decision-making is that most decisions are taken under uncertain conditions.

The most common theme in the mentoring situations was strategy followed by marketing, general management and organization design issues. Lesser, but to some extent more personal, impressions were debated. In terms of the depth of interventions made by mentors, they tended to be more organizational and formal than educational and informal, although it is sometimes difficult to recognize any boundary between the two. This may be due to the often lacking pedagogical skills of the mentors feeling more familiar in their managerially orientated role. Yet most of the mentors agree with the principle that in a long-run learning concept emphasizing the autonomy and self-direction of the mentee is a much better developmental path than to increase his or her dependence on the mentor.

As indicated earlier, one cannot completely separate the stages of data-gathering and intervention. Both occur simultaneously: how one gathers data constitutes an intervention, and the kind of intervention one chooses will reveal new data derived from the reaction to the intervention. Broadly, three kinds of interventions were employed by the mentors: feedback of presented data, agenda-setting interventions (such as agenda review and testing procedures; conceptual inputs) and coaching or counselling of individuals.

A further interesting issue is timing of interventions, the challenge of 'organizational entry'. The initiative to start the co-operation always comes from the mentee. The general guidelines of the mentor programme (also communi-

cated to the possible participants of the programme) state that the focus is on relatively small, young firms willing to grow and more established small and medium-sized enterprises facing major problems. Large companies are outside the scope of the programme, because they usually have the resources to use other professional help. According to the mentees, early stages of a firm's development provide a natural arena for mentoring. Context of the development phase naturally determines the emphasis of the mentoring activity.

In parallel with the development phase of the enterprise, there are phases in the mentor relationship. In Kram's (1983) empirically built model, a mentor relationship moves through the phases of initiation, cultivation, separation and redefinition. A good start is a matter of a suitable matching process between the mentor and the mentee. The initiation phase seems to be a fragile one, where disappointments after an inspiring first contact may appear, particularly if the mentee had very specific 'functional' or industry-specific expectations. Another problem is that of separation: how to define when the mentor has given what he or she can provide and finish the relationship. Far too often the relationship seems to last too long and a change of mentor seems to be very difficult for both partners. Personal interdependence developed over the mentoring period appears to be strong, although there was no new opening in terms of business issues, making it difficult to finish the relationship. On the other hand, if the separation stage was well worked through, it could also be a fruitful basis for redefinition and a start for a new relationship sooner or later, or to stand much more independently than at the beginning of the mentoring process.

CONCLUDING REMARKS

Any entrepreneur who has started up a venture has likely encountered a variety of developmental tasks that involved concerns about running the business, or about self and family. A mentor relationship can significantly enhance development in the different life cycle phases by facilitating work on these tasks. The mentor can provide a variety of functions that support, guide and counsel the entrepreneur.

In the empirical part of this chapter, a great majority (some 80 per cent) of both mentors and mentees found the mentor relationship very beneficial and were ready to recommend it to other entrepreneurs and to be extended country-wide. Mentoring was defined as informal training and education based on learning in a work context, supplementing formal education. It called for trust and constructive feedback. Most mentees found the co-operation with an experienced senior very useful and mentors found it rewarding, although the helping activities were run free of charge. There were, however, some less successful cases, where the mentoring relationship ended for various reasons.

Owing to the relatively small samples in the two surveys (2001 and 2003) reported, the analysis was mainly descriptive with some further insights from interviews and participation observations employed. Mentoring was also considered an intervention activity requiring the generation of valid information, free informed choice and internal commitment to be successful. The nature of the mentoring relationship as a special kind of helping relationship is one that deserves further attention. It would be interesting, for example, to delineate how individual differences in developmental tasks, self-concepts and attitudes towards intimacy and authority, as well as other individual attributes, shape the nature of the mentoring relationship that is needed and maintained, through multiple qualitative case studies. The need for longitudinal studies is also inevitable.

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8. Can you teach entrepreneurs to write their business plan? An empirical evaluation of business plan competitions

Benoît Gailly

INTRODUCTION: THE RELEVANCE OF BUSINESS PLAN COMPETITIONS

A large diversity of private and public organizations have been put in place to help prospective entrepreneurs to design and launch new business ventures. Among those, business plan competitions focus on rewarding promising ventures identified through the evaluation of their initial business plans and providing expert advice and training services aimed at teaching them how to complete/improve those plans. However, there appears to be limited empirical evidence regarding the impact of business plan competitions.

In this context, the aim of this chapter is to discuss empirical evidence on the efficiency (do they help the right businesses) and effectiveness (do they provide relevant support) of business plan competitions as a way to teach entrepreneurs how to write their business plan, based on the empirical analysis of the case of '123Go', a business plan competition organized yearly since 2000 in four European countries.¹ In particular, we will discuss whether the two aspects of a business plan competition (selecting ventures based on an initial business plan and teaching them how to improve it) can actually be justified from an empirical point of view, that is, 'can you teach entrepreneurs to write their business plan?' and 'will that be of any help regarding the success of their venture?'

We will detail first in the next section from a theoretical perspective the issues of new venture evaluation, the target public of early-stage ventures and how a notion of success can be defined for those ventures. We will then present our hypotheses and methodology and, finally, discuss our results and their implications for practitioners and researchers.

NEW VENTURE EVALUATION

From a theoretical point of view the identification of the factors that can be linked to the emergence of new ventures and therefore that should be taken into account by entrepreneurship teaching programmes has generated a significant stream of research since entrepreneurship emerged as a relevant research field (Bull and Willard, 1993). Among those, many researchers have focused on the key issue of the characteristics of the entrepreneur and his or her team in terms of background, experience or profile. Specific characteristics that have been analysed include, for example, the entrepreneur's psychology and personality (Begley and Boyd, 1987; Hornaday and Wheattley, 1971; Kets de Vries, 1977; Sexton and Bowman, 1986); his motivation (Dubini, 1989; Durand and Shea, 1974; Smith and Miner, 1984); his risk-taking attitude (Brockhaus, 1980); his creativity (Bruyat, 1994; Fillion, 1991); his training and professional experience (Hebbar, 2001; Fayolle, 1994; Julien and Marchesnay, 1996; Schefczyk and Gerpott, 2000) and his personal abilities (Freeman et al., 1983; Timmons, 1999) in particular in relation with his environment (Aldrich, 1990; Guth, 1991; Van de Ven, 1984).

On the other hand, several researchers have analysed the decision criteria used by investors, business angels and/or venture capitalists to screen and/or evaluate potential investments (Hall and Hofer, 1993; Macmillan et al., 1985; Tyebjee and Bruno, 1984). Those researchers have highlighted that while the characteristics of the entrepreneur and his or her team are taken into account by early-stage investors, other factors also play a significant role. According to those investors the success of a potential new venture appears to be driven not only by the characteristics of the entrepreneur and/or his or her team but also by multiple factors linked to the perceived opportunity, including management, strategy and industrial context (Gartner, 1985). Understanding how the quality of the perceived opportunity, as can be described in a business plan, can be influenced by a business plan competition and how it affects the ulterior success of the venture therefore appears relevant.

Limited evidence is available concerning the link between the characteristics of the business opportunity, as identified by the venture team and presented in their business plan, and the success of the venture, in particular at the seed or start-up stages. Regarding more mature ventures (beyond start-up stage) several researches have been completed, mainly using qualitative and quantitative data through questionnaires. Gartner et al. (1999) have analysed whether the quality of a new venture as described in the popular press is a good predictor of its success. Covin and Slevin (1990) found a correlation for new ventures in emerging industries between performance and both strategic posture (conservative versus entrepreneurial) and structural form (organic versus mechanistic). Duchesneau and Gartner (1990), expanding initial papers from Van de Ven (1984),

Buzzel and Gale (1987), Sandberg and Hofer (1987) and Timmons (1999), looked at 26 fresh juice ventures in the USA. They identified as discriminant factors between successful and unsuccessful ventures, among others, a clear broad business idea, broad planning effort (although most firms did not have a formal business plan) and the use of outside help and advice. An extensive list of papers regarding the impact of those factors at the start-up stage can be found in Duchesneau and Gartner (1990).

Regarding the evaluation criteria used to assess the quality of a business plan, several researchers have, as mentioned above, looked at the decision criteria used by investors, business angels and/or venture capitalists to screen and/or evaluate potential investments. Those decision criteria can be grouped in the following categories (Muzyka et al., 1996):

1. Financials (expected returns, payback, break-even, exit options).
2. Product-market positioning (market growth and attractiveness, product uniqueness and fit to market).
3. Strategy and competitiveness issues (barriers to entry, competitive intensity).
4. Investment fund and deal requirements (fund constraints, strategy, location, deal stage and structure).
5. Management team skills and capabilities (composition, leadership, industry expertise and track record, functional capabilities).

Among those the most relevant criteria in the context of an early-stage business plan competition are those related to the categories of criteria 2 and 3, related respectively to the product-market positioning and to the strategy and competitiveness issues. Indeed, the fourth category (investment fund and deal requirements) relates to the strategy and positioning of the investor and not directly to the venture characteristics. Moreover, the fifth category relates to the management team itself, which is mostly assessed through interviews and not directly taken into account in most business plan competitions. Finally, regarding the first category (financials), those criteria are often of limited relevance at the seed stage. Indeed, at the seed or early stages ventures tend to have limited (if any) formal reporting or are often very reluctant to provide 'hard' performance data (Fiorito and LaForge, 1986). Moreover such 'hard' data on small firms tend to be difficult to interpret (Cooper, 1979).

Regarding how the notion of success can apply to early-stage ventures, we define, for the purpose of this research, 'success' as the creation of a viable commercial activity in the near future, without taking into account actual financial performance. This is obviously not a sufficient condition of success from the point of view of prospective investors. Investors will rather consider as successful only ventures whose financial returns are satisfying with regard to their

risk profile and which offer an attractive exit opportunity. However, this definition of 'success' can still be considered a satisfying measure for organizations interested in teaching entrepreneurship and is at least a necessary condition of success for investors.

Regarding the type of new ventures considered in the context of a business plan competition, early or seed stage can be defined as a distinct stage when the initial opportunity is developed and tested (Carrier, 2000; Fonrouge, 1999; Jeng and Wells, 2000). Companies at the seed stage are neither organized nor 'in business' (Bachher and Guild, 1996) and financing is needed to evaluate the perceived opportunity, for example, to prove a concept or develop a prototype. The key issue then for potential investors is to analyse the characteristics of the proposed venture in order to find ways to predict whether a given venture is worth supporting and/or investing in, as the seed stage is characterized by an absence of track record and financial history.

HYPOTHESES AND METHODOLOGY

Having defined the objectives and theoretical background of this research we define hereafter our research hypotheses, related to the efficiency and effectiveness of business plan competitions, and discuss how to test those hypotheses from an empirical point of view.

Hypothesis 1

The evaluation of the initial business plan of early-stage ventures along the criteria of (1) product-market positioning and (2) strategy and competitiveness are relevant with respect to the future success of those ventures.

Product-market positioning and strategy and competitiveness are the criteria that have been identified in our literature review as relevant in this context. The efficiency of the business plan competition implies a link between the evaluation criteria used by the competition and its objective – support the creation of viable businesses. This hypothesis tests whether the evaluation criteria used are relevant in the sense that the results of the evaluations of the perceived business opportunity are significantly correlated with the a posteriori emergence of a business. From a practical point of view it tests whether business plan competitions 'select the right potential ventures'.

As the support provided by business plan competitions focuses primarily on improving the quality of the business plans submitted by the entrepreneurs, our second hypothesis focuses on whether 'better' business plans actually lead to ventures that are more likely to be successful.

Hypothesis 2

The criteria of product-market positioning and strategy and competitiveness are valuable indicators of the quality of an early-stage business opportunity, that is, they can be used to increase significantly the probability to select successful ventures.

This hypothesis which is a refinement of Hypothesis 1 tests whether it is possible to actually estimate the likelihood of success of a venture based on the evaluation of its early-stage business plan. If this is the case then improving the (perceived) quality of a business plan along those criteria – as the support provided by business plan competition aims at – should increase the probability of success of an early-stage venture.

Having defined Hypotheses 1 and 2 regarding the link between the evaluation criteria related to the business opportunity and the likelihood of success, we present hereafter the sample, evaluation process and measurement of success that allowed us to collect and use empirical data in the context of this study. We then present the statistical approach used to test the hypotheses.

We used a sample of 119 business plans that were collected in the context of ‘123Go’, a business plan competition organized in France, Belgium, Germany and Luxembourg since 2000. All the business plans submitted in the 2000–01 edition of this competition by the voluntary participants were taken into account in our sample. The criteria for accepting business plans used by the organizers were the following:

- The project must originate from the local region (including Luxembourg and the neighbouring regions, that is, the North of France, the South of Belgium and the South-West of Germany).
- It must be innovative (that is, there is no similar business active in the considered region).
- It must not yet be financed by risk capital.
- It must be economically feasible (there should be a priori a potential market).

The criteria were first broadly evaluated by the organizers to eliminate fanciful projects. The business plans submitted described perceived new venture opportunities from the four countries considered and related to a broad range of sectors (see Table 8.1). We found no systematic bias in our sample between the sector, the country, the evaluations (detailed hereafter) or the success of the venture.

The business plans collected were text documents ranging from five to 25 pages where the participants were required by the organizers to describe their business model, the value to the prospective customers, the competitive differ-

Table 8.1 Number of business plans submitted

Sector	Belgium	France	Germany	Luxemburg	Total
Biotechnology	1	1			2
Construction	1		2	1	4
Environment	6	3	2	1	12
Finance		1	1	2	4
Food	2			1	3
Health care	3	1	1	1	6
Information technology	6	3	4	5	18
Manufacturing	1	6	3	2	12
Material sciences	1	1			2
Media	1	3	1	1	6
Services	12	7	5	11	35
Telecommunication	1		1		2
Not specified	6	5	1	1	13
Total	41	31	21	26	119

entiation versus existing offers, the target market and the potential competitors. No personal details about the venture team members were included in the plan.

Each business plan was sent by the organizers to experts for evaluation and feedback on a double-blind basis. At the end of this evaluation process the participants were given the results of the evaluations and invited to submit an improved version of their business plan which would again be evaluated. The whole process lasted from September 2000 to June 2001 and 63 participants chose to present a 'revised' version of their business plan based on the feedback they had received. These 'revised' versions were then evaluated following the same process. Hence the sample used for this research included 119 business plans initially submitted and 63 'revised' ones.

Regarding the evaluation process, the organizers of the business plan competition had gathered a list of about 250 experts, consultants, bankers, managers or academics, who volunteered to evaluate business plans relevant to their field of expertise. Based on the sector of activity of the venture, each plan was sent by the organizers as an electronic document to two (in the initial evaluation phase) or three (for the 'revised' versions of the plans) evaluators. The names and contact details of the entrepreneurs were not transmitted to the evaluators and the entrepreneurs did not know who would evaluate them. Each evaluator was required to fill electronically an evaluation form that included seven criteria and to give for each criteria an evaluation on an 11-point Likert scale ranging from

0 (worst) to 10 (best) and provide a short written comment. To avoid excessive bias from severe or generous evaluators and/or differences in discrimination about what is considered important, a short text indicating the meaning of each score was provided to the evaluators for each score and for each criterion. The seven criteria used by the organizers to evaluate each business plan were:

1. Exciting concept: does the business plan introduce an exciting concept for potential investors?
2. Key issues addressed: are all key issues of the venture addressed in the business plan?
3. Value to the customers: is the interest of the value proposition for the target customers demonstrated?
4. Competitive differentiation: is the value proposition clearly differentiated versus available offers?
5. Attractive market: is the target market attractive in terms of size and/or expected growth?
6. Competitive intensity: what is the current and expected level of competition in the target market?
7. Overall quality: what is the overall quality of the business plan?

While the criteria had been selected a priori by the organizers of the competition on the basis of their personal experience, we can note that criteria 3 to 6 correspond to the ‘business-opportunity’ criteria discussed in our literature review. In particular criteria 3 and 4 correspond to the categories of criteria related to the product-market positioning of the venture, and criteria 5 and 6 correspond to the categories of criteria related to its strategy and competitiveness. The aggregated data from the evaluation process for both the initial and revised samples of business plans as well as the absolute and relative differences between those two samples are presented in Table 8.2.

Finally the proxy for success used in the context of this research is the creation of an actual commercial activity. Among the potential ventures described in the business plans considered, ‘successful’ ventures were defined as those that had led to the creation of an actual commercial activity within the time frame of the analysis, that is, 30 months after the submission of the initial business plan. Those therefore considered as ‘unsuccessful’ were all the ventures that failed to lead to any actual business activity within the considered period. Using this criterion 20 ‘successful’ ventures were identified within the ‘initial’ sample of 119 business plans (17 per cent) and 18 within the 63 ventures of the ‘revised’ sample (29 per cent).

Table 8.2 *Evaluation data*

Criterion	Initial sample scores (0 to 10 scale)		Revised sample scores (0 to 10 scale)		Difference	
	Mean	Std dev.	Mean	Std dev.	Abs.	Rel.
1. Exciting concept	5.04	1.73	6.26	1.39	1.22	24%
2. Key issues covered	4.51	1.85	5.82	1.49	1.31	29%
3. Value to customers	4.88	2.11	6.50	1.39	1.62	33%
4. Competitive diff.	3.45	2.18	5.71	1.63	2.26	65%
5. Attractive market	5.61	1.88	6.63	1.21	1.02	18%
6. Competitive intensity	4.25	1.88	5.26	1.44	1.01	24%
7. Overall quality	4.85	2.07	6.21	1.44	1.35	28%

VALIDATION OF THE HYPOTHESES

To test Hypothesis 1 we used a discriminant univariate analysis comparing the mean value of the evaluation criteria across the two samples of successful versus unsuccessful ventures (Duchesneau and Gartner, 1990; Van de Ven 1984). We computed the 95 per cent confidence interval of the difference between the mean score of successful versus unsuccessful ventures for each criterion using the SPSS software package. A given criterion is deemed as relevant (hence Hypothesis 1 is validated for this criterion) if this confidence interval excludes the value zero.

To confirm those results we also computed the correlation between a binary 'success' variable (0 for unsuccessful ventures and 1 for successful ones) and the scores obtained according to each of the evaluation criteria. A given criterion is confirmed as relevant if the correlation is significant ($p < 0.05$). Indeed, an 'irrelevant' evaluation criteria would lead to scores that are on average not significantly different for successful versus unsuccessful ventures and that show no significant correlation with the binary 'success' variable.

To test Hypothesis 2 we computed a binary logistic regression linking the estimated probability of a given venture to be successful to the scores obtained according to the experts' evaluations. Given the limited size and heterogeneity of the samples considered we used a 'self-validating' approach² using a classification table to test the reliability of our findings rather than splitting the initial sample between two 'estimation' and 'validation' samples. After having checked any variable correlation and reliability effect we built a 'first choice' subset with

the ventures whose estimated probability of success was higher than a cut value. That value was chosen equal to the average success probability of the sample, 17 per cent. The evaluation is deemed as 'valuable' (hence Hypothesis 2 is validated) if the proportion of successful firms among the 'first choice' subset is significantly higher than the average for the whole sample. Indeed, a higher share of successful firms within the 'first choice' subset indicates that ventures that are perceived to be better by the evaluators of the competition are actually more likely to be successful.

We tested the validity of Hypotheses 1 and 2 on both the initial and revised samples of business plans in order to measure the effect of the evaluation and support process provided by the business plan competition.

RESULTS FROM THE BUSINESS PLAN COMPETITION ANALYSIS

The findings resulting from the validation of Hypotheses 1 and 2 are presented hereafter, both for the business plans initially submitted ('initial sample') and for those re-submitted after the venture teams had been taught how to improve their business plan ('revised sample'). Please note that in addition to the criteria analysed for the purpose of this research, the organizers of the competition also used other criteria (criteria 1, 2 and 7) that are mentioned as complementary information.

Validation of Hypothesis 1 for the Initial Sample

Regarding the validation of Hypothesis 1 for the initial sample Table 8.3 presents, among the business plans initially submitted and for each of the seven evaluation criteria considered, the difference between the average score for the two subsets of unsuccessful and successful ventures ('mean difference'). It then presents, either or not assuming that the score variances of the two samples are equal, the standard error and the confidence interval of this difference. According to those results all the evaluation criteria appear relevant except two, which both include the value zero in the confidence interval of the mean difference. Those are criteria 5 and 6 relative respectively to the attractiveness and the competitive intensity of the target market. In other words for those two evaluation criteria there was no significant difference between the initial experts' evaluation of 'successful' versus 'unsuccessful' ventures.

Table 8.4 presents the results of the correlation analysis for the initial sample of business plans. For each criterion the correlation between the success variable and the evaluation score is presented as well as the significance level. In this table if the significance level is very small ($p < 0.05$) this indicates that the two

Table 8.3 Mean comparison – initial sample

Criterion	Mean difference	Equal variance assumed	Std error difference	95% CI of the difference	
				Lower	Upper
1	-0.94	Yes	0.42	-1.77	-0.12
		No	0.37	-1.70	-0.18
2	-1.16	Yes	0.44	-2.03	-0.28
		No	0.40	-1.98	-0.33
3	-1.61	Yes	0.50	-2.60	-0.63
		No	0.40	-2.43	-0.80
4	-1.95	Yes	0.51	-2.95	-0.95
		No	0.51	-2.99	-0.91
5	-0.77	Yes	0.46	-1.67	0.13
		No	0.40	-1.58	0.03
6	-0.42	Yes	0.46	-1.34	0.49
		No	0.52	-1.49	0.64
7	-1.53	Yes	0.49	-2.50	-0.56
		No	0.46	-2.47	-0.59

Table 8.4 Correlation – initial sample

Criterion	1	2	3	4	5	6	7
Correlation	0.21	0.24	0.29	0.34	0.15	0.09	0.28
Significance	0.03	0.01	0.00	0.00	0.09	0.36	0.00

variables are significantly correlated. The analysis of the correlation confirms the mean comparison results, that is, that all criteria except criteria 5 and 6 are relevant as all but those two are significantly correlated with the success variable. In other words, for criteria 5 and 6 success is not linked with higher evaluation scores. Hence for the initial sample Hypothesis 1 is validated for two of the four criteria considered. ‘successful’ ventures obtain evaluation scores that are significantly better (higher) than ‘unsuccessful’ ones along the criteria of ‘value to the customer’ (criteria 3) and ‘competitive offer’ (criteria 4).

Validation of Hypothesis 1 for the Revised Sample

Regarding the validation of Hypothesis 1 for the revised sample, Table 8.5 presents the same information as Table 8.3 but this time considering the 'revised' business plans. According to those results none of the evaluation criteria appear relevant as all the confidence intervals for the mean differences include the zero value, which corresponds to an equal average score for successful and unsuccessful firms. Hence, contrary to the initial sample, for the business plans that were re-submitted after the entrepreneurs had been taught how better to write them, the successful firms did not obtain significantly higher scores than unsuccessful ones along any of the evaluation criteria. In other words, among the ventures that had received and integrated the support of the business plan competition, while the perceived quality of their business plan did actually improve (see Table 8.2), there was no longer a link between the perceived quality of their business plan and the ulterior success of those ventures.

Table 8.5 Mean comparison – revised sample

Criterion	Mean difference	Equal variance assumed	Std error difference	95% CI of the difference	
				Lower	Upper
1	-0.53	Yes	0.38	-1.30	0.24
		No	0.41	-1.38	0.32
2	-0.54	Yes	0.41	-1.36	0.29
		No	0.45	-1.45	0.38
3	-0.35	Yes	0.39	-1.13	0.43
		No	0.41	-1.20	0.50
4	-0.54	Yes	0.45	-1.44	0.36
		No	0.43	-1.42	0.34
5	-0.49	Yes	0.33	-1.16	0.18
		No	0.33	-1.15	0.17
6	-0.68	Yes	0.39	-1.47	0.11
		No	0.39	-1.48	0.12
7	-0.71	Yes	0.39	-1.50	0.08
		No	0.37	-1.46	0.04

Table 8.6 presents the results of the correlation analysis for the revised business plans. The analysis of the correlation confirms the mean comparison results, that is, that none of the evaluation criteria appear significantly correlated with the success variable. Hence, for the revised sample Hypothesis 1 cannot be

Table 8.6 Correlation – revised sample

Criterion	1	2	3	4	5	6	7
Correlation	0.17	0.16	0.12	0.15	0.18	0.22	0.23
Significance	0.18	0.20	0.37	0.24	0.15	0.09	0.08

validated as none of the evaluation criteria considered appears relevant for this sample. We will discuss in more detail in the following section the implications of that observation.

Validation of Hypothesis 2

As Hypothesis 1 has been rejected for the revised sample and Hypothesis 2 is a refinement of Hypothesis 1, we only tested Hypothesis 2 for the initial sample. The results of the first iteration of the logistic regression are presented in Table 8.7. Given the results of the validation of Hypothesis 1 for the initial sample that identified only criteria 1, 2, 3, 4 and 7 as potentially relevant, we computed the logistic regression using only the variables corresponding to those five criteria. In this table are included for each criterion and for the constant parameter, the value of the corresponding coefficient in the logistic regression ('coefficient'), its exponential ('expon. '), the standard error of the coefficient and the Wald statistic.³ For this regression, the Cox and Snell R-square and the Nagelkerke R-square values (which are proxies for the corresponding R-square measure used for linear regressions) are respectively 12.4 per cent and 20.8 per cent.

These first regression results highlight that the variables corresponding to criteria 3 and 4 are by a factor of more than 10 the most relevant ones. We therefore tested a second regression using only those variables. The results of

Table 8.7 First logistic regression (criteria 1, 2, 3, 4 and 7)

Criterion	Coefficient	Expon.	Standard error	Wald
1	-0.04	0.96	0.27	0.02
2	-0.04	0.96	0.27	0.02
3	0.31	1.37	0.24	1.73
4	0.40	1.49	0.22	3.47
7	-0.11	0.89	0.31	0.13
Const.	-3.96	0.02	1.03	14.84

Table 8.8 *Second logistic regression (criteria 3 and 4)*

Criterion	Coefficient	Expon.	Standard error	Wald
3	0.22	1.25	0.17	1.66
4	0.33	1.39	0.16	4.42
Const.	-4.18	0.02	0.94	19.78

this second logistic regression are presented in Table 8.8. The Cox and Snell R-square and the Nagelkerke R-square values for this second logistic regression are respectively 12.2 per cent and 20.4 per cent. The small variation of those two statistics compared with the first regression confirms that limited information was lost when removing the variables corresponding to criteria 1, 2 and 7 in the regression.

The results of the regression analysis show that an estimate of the probability of 'success' can be computed based on the results of the experts' evaluations along criteria 3 and 4. Using this regression formula we then computed the predicted probability of success of all the projects and produced a classification table using as cut-off value the average success probability of the whole sample (17 per cent). The results are presented in Table 8.9. This table reveals that a process selecting potential ventures based on a predicted probability of success computed using the experts' evaluation would select 46 ventures out of the 119 available. Of those, 14 or 30 per cent will actually lead to the creation of a business. This is nearly twice the success ratio of a random selection within the initial sample (17 per cent). Hence a selection process using the results of the evaluation by the experts of the business plans along criteria 3 and 4 would significantly increase its probability to pick successful ventures.

Table 8.9 *Classification table (cut-off 17 per cent)*

Observed	Predicted		
	Failure	Success	Total
Failure	67	32	99
Success	6	14	20
Total	73	46	119

INTERPRETATION OF THE RESULTS

Our analysis highlighted that for the set of 'initial' business plans there is a significant (positive) correlation between the experts' evaluations of the initial business plans and the measure of success considered (Hypothesis 1). In particular five of the seven evaluation criteria used (exciting concepts, key issues addressed, value to the customers, competitive differentiation and overall quality) were significantly correlated with the success variable, while the two remaining ones (attractive market and competitive intensity) were positively correlated but not significantly.

The relevance of the criteria regarding 'the idea', that is, exciting concepts, key issues addressed and overall quality, confirms that experts are relatively able to spot whether an idea 'makes sense' in a given sector. Indeed, let us remember that for each venture the evaluators were selected as experts in the sector of the proposed venture. This corroborates common industry practice by early-stage venture capitalists and business angels to invest in specific sectors (Murray and Marriott, 1998) or geographical areas rather than 'across the board' (Gorman and Sahlman, 1989). In those sectors or geographical areas they have or can develop market expertise (Bygrave and Timmons, 1992) allowing them to reduce the cost of informational asymmetries and monitoring (Amit et al., 1998; Lerner, 1995). This observation is also particularly relevant for business plan competitions organized within corporations, where the projects and the evaluators will often come from the same sectors.

The relevance of the criteria regarding 'product' issues, that is, the value to the customers and the competitive differentiation, confirms earlier findings that successful entrepreneurs must above all understand their customers and competitors (Gartner et al., 1999). It also confirms earlier findings that early-stage investors tend to attach more importance to product uniqueness than later-stage ones (Elango et al., 1995). It is also a reminder of the importance of a basic rule of management: that a key success factor for a new business idea is not necessarily to be original or creative but to correspond to (or generate) an unfulfilled market demand.

Finally, the fact that the criteria regarding 'market issues', that is, attractive market and competitive intensity, are not significantly relevant seems to contradict common industry practice, previous studies having identified high-growth markets as a key decision criteria for early-stage investors (Elango et al., 1995). One possible explanation is that the absence of significant market research performed by most of the venture teams at this early stage meant that they provided limited information about their potential target markets. Hence this limited information did not allow the evaluators to discriminate ventures with small and large or high-growth potential markets. In contrast, the other product- and competitor-related features were by nature better de-

scribed in the business plans and therefore probably easier for the evaluators to assess.

Overall those findings provide an empirical basis for the practice of business plan competition to select the ventures they support through an evaluation of their initial business plan. Our preliminary conclusions are therefore that the business plan competition approach to select potential ventures based only on their business plan (excluding interviews with the entrepreneur) appears relatively efficient in the sense that this process helps to select the right business to support. Moreover it would suggest that teaching entrepreneurs how to improve their business plans along the evaluation criteria considered would increase their probability of success.

Our analysis of the revised sample addresses this point. It highlights some of the effects of the support that was provided by the business plan competition to the participants. While improving the overall 'quality' of the plans in terms of the evaluation criteria (see Table 8.2) this support had the effect of actually rendering those evaluations *irrelevant* from the point of view of the future success of the venture. Successful ventures became unrecognizable from unsuccessful ones by the evaluators. In other words, the business plans appear to have become 'better' (according to the evaluation criteria) but the ventures with a 'better' plan are no more likely to be successful. This may indicate that when venture teams are aware of the evaluation criteria used, such as in the case of a business plan competition, it can have perverse effects. The teams might focus on improving their business plan in a way that is consistent with the evaluation criteria, but that does not necessarily improve the probability of success of their business.

As a consequence, our findings indicate that the support provided by the business plan competition (expert support and training) to the entrepreneurs to teach them to better design their business plan appears *not to be effective* in the sense that it does not significantly increase the probability of success of the venture. In other words, with some training many people could probably write a credible business plan, although (obviously) only a few could probably build a business. This result also confirms why, as mentioned in our literature review, business plan-related criteria only come second to management team-related criteria in the typical due diligence process of early-stage investors. As industry insiders like to say, 'I would rather invest in an excellent team with an average idea than in an average team with an excellent idea'. Moreover, this potential perverse effect of teaching the entrepreneurs how to write their initial business plan confirms industry practice where venture capitalists focus on supporting the entrepreneur in 'running' the business once launched (Barney et al., 1996; Gorman and Sahlman, 1989) rather than evaluating and planning it extensively upfront. These investors support the venture in, among others, getting access to a strategic network and developing the management team (Davila et al., 2000;

Elango et al., 1995; Gulati et al., 2000; Sapienza and Timmons, 1989) rather than fine-tuning the initial plans.

Finally, regarding the link between business opportunity and 'success', our analysis highlighted that, at least for the first set of 'initial' business plans, the evaluation of the opportunity could be used to estimate the success probability of a venture and hence help to pick a priori successful ventures (Hypothesis 2). More precisely, using those evaluations could nearly double the probability of picking a venture that will lead to a 'successful' business among a similar set of potential investments. However, the results also indicate that the predictive power of the initial business plan evaluations remains relatively weak, with about 32 per cent (32 + 6 out of 119) ventures being 'mis-classified' in our sample (see Table 8.9). Moreover in a real-life setting one would only have access a priori to an estimate of the link between success probability and evaluation scores, based on historic data from comparable ventures. This would decrease further the predictive power of estimations based on business plan evaluations (as in our case the regression was computed a posteriori). The reliability of the business plan evaluation as a predictor of venture success is therefore as one would expect, real but limited. This and the potential perverse effects of 'business plan coaching', highlighted above, confirms observed industry practice that the evaluation of the business plan should only be a small part of the due diligence process of early-stage ventures. It must be completed by other factors such as an evaluation of the management team or a test of the quality of the product and/or technology proposed (Gorman and Sahlman, 1989).

LIMITATIONS AND IMPLICATIONS

In this chapter we discussed empirical data regarding the efficiency and effectiveness of business plan competitions. We considered the evaluations by experts of two subsets of early-stage venture business plans along business plan-related criteria such as product-market positioning as well as strategy and competitiveness issues. We analysed whether there was a significant relationship between those evaluations and the a posteriori success of the ventures, defined as the existence of an actual business activity 30 months after the initial submission of the business plan.

The first subset of initial business plans contained the description of 119 perceived business opportunities which were submitted voluntarily and evaluated on a double-blind basis by independent experts. Some of the teams that had submitted a plan received feedback and some coaching and chose to re-submit a revised, more complete, version of their business plan. This second iteration led to a second set of 63 'revised' business plans that were again evaluated and whose evaluation scores were analysed in a similar way.

For the initial sample of business plans, two of the four business plan evaluation criteria considered were significantly correlated with 'success' and a success probability estimate was computed using a logistic regression. A selection process using this estimate on a similar sample of potential ventures could nearly double the probability of selecting a priori a 'successful' investment. This indicates that a business plan competition's approach of selecting ventures based on an evaluation of their initial business plan is a relatively efficient process.

However, for the revised sample of business plans, those which had received support from the business plan competition and were hence taught how better to write their business plan, we found different results. While overall the business plans received better evaluations, none of the evaluation criteria were correlated with success. One possible explanation is that the teams had actually learnt better to 'fit' their business plan along the evaluation criteria rather than to improve the quality of the venture itself. As a consequence, business plans with better evaluation scores were not significantly more likely to correspond to 'successful' businesses.

Those results should be considered in the light of the study's inherent limitations, in particular regarding the data sample and the evaluation process. Regarding the sample of business plans, we were not able to test whether this sample could be considered representative of the population of early-stage ventures at the national or international level. Indeed, while our sample size was relatively large compared with similar researches and represented a wide array of sectors and four different countries, it cannot necessarily be directly generalized to any set of early-stage ventures. In particular, there may be a problem with response bias, which could not be tested because of the unavailability of data regarding the characteristics of non-participant ventures. Moreover, the success rate of our sample (17 per cent) is quite high compared with typical projects submitted to venture capitalists, who tend to invest in 1 per cent of the projects submitted to them (Gifford, 1997). However, this comparison must be considered with caution. Indeed, the success criterion considered here – the initial business plan led to the creation of an actual business within 30 months – is much less restrictive than those used by early-stage investors and therefore should lead to a higher success rate. Early-stage investors obviously expect not only the 'birth and survival' of the business they invest in, but also a significant rate of return for their investments through exit options (Mason and Harrison, 2002).

Regarding the evaluation process, there could be a bias emerging from the fact that the specific context of the evaluation – a regional business plan competition – is not the same as the due diligence processes performed in the context of entrepreneurship teaching programmes. While no systematic bias was observed among evaluators (each plan was evaluated by two or three evaluators and each evaluator evaluated no more than three business plans), there might

be an overall bias of giving generous evaluations due to the voluntary dimension of the evaluation. However, this should affect randomly both successful and unsuccessful firms and therefore not influence our conclusions. Moreover it is clear that the evaluators' perspective might be different from teachers' or trainers', as they come from a different background and have different implications for the projects.

We still believe that, although those limitations are significant and should not be disregarded, this study led to interesting results relative to the efficiency and effectiveness of business plan competitions, and to the design of business plan teaching programmes in particular. The results therefore have some implications for entrepreneurship support programmes, seed investors and researchers.

For the sponsors of entrepreneurship support programmes such as business plan competition or incubators the results have several implications. First, they validate common practice to select the ventures that will benefit from their support based on preliminary business plan evaluations, as this analysis confirmed a significant relationship between such evaluations and the *a posteriori* 'success' of the venture. Such an approach appears therefore to be efficient. However, it also highlighted that the support provided to early-stage ventures can have perverse effects, in particular regarding the elaboration of their business plan. Our research highlighted that while improving the apparent quality of the plan, the coaching provided to the venture could actually be ineffective.

While this was not the focus of our research, extensive anecdotal evidence gathered from participants during our research indicates that the business plan competition is very effective in providing support to the entrepreneur in terms of networking, in particular through contacts with other prospective entrepreneurs and with the experts involved in the process. This opens future research questions regarding the design, role and effectiveness of teaching programmes aimed at supporting entrepreneurship.

For investors those results have several implications. First, it confirms industry practice to include the assessment of initial business plans as part – but only as a small part – of the due diligence process for early-stage venture. Moreover it provides some indications of the relative value, in terms of contribution to success rate, of the information that can be extracted from those evaluations. It can therefore contribute to the inherent problems of balancing the opportunity cost of due diligence versus the 'limited attention' that can be provided by investors for existing investments (Gifford, 1997) and to consider the risk of overconfidence arising from the availability of this information (Zacharakis and Shepherd, 2001).

CONCLUSIONS

The main contribution of this research has been to provide some empirical evidence on the efficiency and effectiveness of business plan competitions, through a case study based on a competition organized since 2000 in four European countries. While the business plan evaluation criteria used in those competitions appear similar to those known to be taken into account by seed investors, they have received limited empirical validations, in particular by comparison to management team-related criteria that have been extensively analysed.

Three of the limitations of this research are the potential bias of the sample of venture analysed versus the population of early-stage ventures, the success criteria used (survival) and the proxy of the due diligence process adopted (regional business plan competition). Further research leading to some generalization of the findings outlined here could allow not only validating business-plan approaches to entrepreneurship support programmes, but also potentially improving them. Among other research avenues, the exploitation of the available data about business plan evaluations through multivariable approaches such as bootstrapping models could be used as a decision aid (Shepherd and Zacharakis, 2002) for intermediary organizations facing similar types of early-stage ventures.

While there is still a long way before we completely understand the process of emergence of early-stage venture from perceived opportunities and how to best support it, the author hopes to have contributed, through this discussion, a small step in the right direction.

NOTES

1. The author would like to thank 'Business Initiative', the organizers of this competition, for their help and support and access to their primary data.
2. Meaning that the regression formula is estimated and tested on the same sample.
3. The Wald statistic is the ratio of the coefficient to the standard error squared; it is a measure of the usefulness of the coefficient.

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9. Skills demonstrations: a possibility for meaningful co-operation with work-life in internationalizing vocational education

Seija Mahlamäki-Kultanen

INTRODUCTION

Three succeeding Finnish governments, the governments of Lipponen, Jäättemäki and Vanhanen, have decided to implement national skills demonstrations in initial vocational secondary level education after pilot projects and careful examination of the possible system. Based on a common agreement on the main principles, 59 development projects have been conducted, the first of them starting in 2000. National material for the skills demonstrations is produced in co-operation with vocational institutions, teacher education polytechnics, labour unions and educational authorities under the governance of the National Board of Education in Finland. They have been funded by the European Social Fund and the Finnish Ministry of Education. A lot of information about the initiative and the projects on it can be found on the Internet page of the National Board of Education (Ammatilliset ESR-projektit. Näytöt, 2005).

The educational administration authorities and politicians have agreed on the Act on Skills Demonstrations, mainly because of differing opinions about the share of duties and the funding of the system. After much experience from the pilot projects it can be concluded that students, business owners and other representatives of working life and educational institutions find the system very useful, but also demanding (Nyyssölä, 2002; 2003). This chapter is based on the mid-term reports of the development projects and one case example, in which skills demonstrations were tested and material for national purposes was developed. Three reports about the projects have already been published (Nyyssölä, 2002; 2003; Suursalmi, 2003). The author is now responsible for fourth and fifth reports on the skills demonstration projects going on during 2004; reports by Hakala and Nyyssölä are still in progress. The report by Nyyssölä analyses the results of the pilot projects and the report by Hakala

analyses how the skills demonstrations will change learning and teaching methods in vocational institutions.

The experiences and exemplar material will hopefully illustrate the ways by which small and medium-sized entrepreneurial ventures can work co-operatively with educational institutions despite significant differences in their perspectives. To put the system into a real-life context, both the process and experiences of material development and some illustrative material and insights into an entrepreneurial culture in one, fairly new, entrepreneurial field (home economics) are presented.

WHY SKILLS DEMONSTRATIONS?

'Skills demonstrations' has been adopted as the official English translation for the Finnish word 'näyttö'. The emphasis in assessing is on the practical skills required by work-life and business owners. The purpose of the new concept is to make a difference between adult education (competence-based assessment) and the education of young people (skills demonstrations). In skills demonstrations, the emphasis is on the assessment of both the process and results of learning, while in competence-based assessment it is more on the learning results.

The targets of the new accountability system – skills demonstrations – are based on the Copenhagen Declaration convened by the European ministers of Vocational Education and Training. The declaration calls for a more European dimension, transparency, comparability, recognition of competences and/or qualifications, and quality assurance in vocational education (Copenhagen Declaration, 2002). Demonstrating vocational skills in working life before getting the diploma from vocational institutions can be regarded as a natural extension of the recent trend towards more workplace learning and regular co-operation between vocational institutions and small and medium-sized entrepreneurial ventures. In Finland, where vocational education has previously been largely institutionalized and has included only a few weeks of on-the-job training, this is a challenge. The change is not an easy task anywhere else either. In an attempt to compare the systems of England and Holland, Van de Stege (2003) suggests that England has a fairly complicated system of qualifications and related methods of accreditation, assessment and verification, which foreigners especially find difficult to understand. It is difficult to increase the mobility of a workforce without a transparent, common competence system. Marja-Liisa Stenström and European colleagues are now searching for a coherent analysis of the systems to assess learning outcomes and the quality of work-based learning in Europe in a Leonardo da Vinci project (QUAL PRAXIS, 2005).

More accountability for vocational education has been sought in the USA and Australia. For example, an American school district developed a system, in which an entrepreneur can, without any cost, send an employee back to the vocational institution to study more if she or he is not performing according to the vocational diploma from the skills tests (Husain, 1998).

DIFFERENT INTERESTS HAVE TO MEET IN VOCATIONAL EDUCATION

The educational core values of our country reflect humanism. Every individual with her or his specific needs is provided with a vocational secondary level education and given the necessary support. It is necessary to take into account individual learning styles and students with special needs. At the same time, each vocational degree should provide the prerequisites for independent business-ownership (Vocational Education Act and Decree 630/98, 1998). The development principles established for the skills demonstration material given by the National Board of Education state that the students' skills have to be demonstrated as large work-processes in authentic work environments and not as separate skills. Every student must also demonstrate the necessary skills for entrepreneurship before receiving a diploma. The skills to be demonstrated should include only the critical competence areas, which should and have been defined by representatives of work-life (Ammatilliset ESR-projektit. Näytöt, 2005). For an individual vocational institution and teacher, skills demonstrations are a challenge because they force the system to meet all these specifications and still speak the language of entrepreneurs.

The pilot projects have discovered that the perspectives of entrepreneurs, students, teachers and administration staff in vocational institutions and national educational authorities are, and will remain, rather different (Nyyssölä, 2002; 2003). Even the entrepreneurs themselves do not all share the same point of view. There are also differences between business sectors, and entrepreneurs do not share common attitudes and opinions about students and vocational education (Mahlamäki-Kultanen, 2005).

The assessment should be carried out as a tripartite co-work between the employee, employer and the vocational educational institution (Figure 9.1) The student should also contribute to the assessment and make his or her own self-evaluation.

The leading principle behind the tripartite assessment in vocational education is seen as only partially fulfilling (Suursalmi, 2003). When it comes to a typical Finnish entrepreneur or a small business owner as a partner and participant in the students' learning and skills demonstration environment, her or his reality is sometimes quite different from the educational plans. A typical situation is

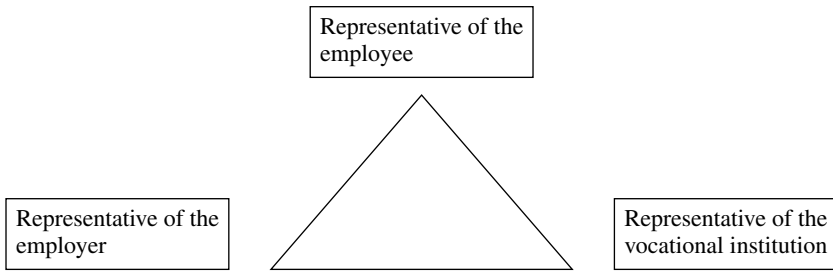


Figure 9.1 Tripartite assessment

that the entrepreneur is the one and only busy person, who is both the employer and employee trying to find a profitable market segment in a sector of low prestige and low profit. That is why the entrepreneur in practice is often both the tutor of the student and the assessor of the competence gained. The responsibility of the student to be a self-evaluator of her or his own competence should be partially supplementing for the missing third partner, especially where a field demanding self-supportiveness and self-criticism is concerned. There is no room for an objective committee in a small enterprise.

360-DEGREE ASSESSMENT ALLOWS FOR DIFFERENT PERSPECTIVES

Because of the somewhat differing perspectives of entrepreneurs, developers in the field, educators, authorities and vocational students, a 360-degree assessment methodology was adopted for our development pilot, the case briefly presented in this chapter. The 360-degree assessment is based on the idea of differences as a fruitful ground for future development. The 360-degree assessment has been used in business life, typically in performance appraisal and staff development (Wilson, 1997). In the skills demonstration procedure we recommend it to facilitate objective evaluation, but also to enhance the student's vocational and personal growth and to guide the growth process throughout her or his studies (cf. Armstrong et al., 2000; Brown, 1997; Fletcher, 1997; Funderburg and Levy, 1997).

The advantage of the 360-degree assessment is that it is possible to evaluate a person or a process and use several targets, criteria and evaluators in it. This increases the reliability of the evaluation (Wilson, 1997). To identify your own competence and development needs it is crucial to know how others view you (Milliman and Zawacki, 1994; Ward, 1995). It is necessary to instruct the students to ask for feedback and to make use of it (Funderburg and Levy, 1997).

This competence area is also emphasized in the vocational degree (Opetushallitus, 2000). In the customer and service-orientated sectors the evaluation and concepts are always highly personal. The 360-degree assessment makes the evaluation of abstract and personal issues more coherent (Antonioni, 1996). It is necessary to remind the evaluators about the importance of critical feedback, because otherwise it can be left out (Goode, 2000: 2). In testing the material, the workplace tutors were happy with the ready-made verbal expressions of poor performance, which they felt made their task easier.

The scientific concepts of inner entrepreneurship proved to be particularly difficult to express in everyday language and to define the practical criteria for different competence levels. However, a reasonable number of evaluators, clear roles and transparent concepts and criteria are essential to guaranteeing the validity of evaluation (Milliman and Zawacki, 1994). A compact format, brief texts with simple illustrations and the opportunity to briefly describe and justify the numerical ratings were appreciated by the entrepreneurs interviewed in our project, as well as by Milliman and Zawacki (1994).

SKILLS DEMONSTRATIONS IN THE FIELD OF HOUSEHOLD AND CONSUMER SERVICES

As a practical case I present some examples from the national skills demonstration material created for the Vocational Qualification in Household and Consumers Services; the certificate being Household Services Entrepreneur. Entrepreneurship in the field of home economics is fairly new. It emerges from the service needs of modern busy people and from the restructuring of what were previously mainly public welfare services. The field is growing rapidly in Finland and elsewhere in Europe, and there are many possibilities for segmentation. In Finland, this kind of entrepreneurship is now supported by the state, with many initiatives and a tax reduction system for the customers who buy services under certain conditions.

The entrepreneurs in this field have not organized themselves into any permanent union, although various networks have been created in an effort to enhance this kind of entrepreneurship. The national core curriculum was published in 2000 (Opetushallitus, 2000). The first students received their certificates in the spring of 2003. The Certificate of Household Services Entrepreneur indicates that graduating students have the ability to market, plan and sell household services. The Certificate of Consumer Adviser indicates that graduating students are able to plan and organize information and presentation events for customers in accordance with a company's business plan and to present and sell consumer goods. The study programme includes 90 credits of vocational studies, of which 20 credits are in on-the-job learning, 20 credits are in core subjects and 10 credits

are in elective studies. The upper secondary vocational qualification falls within level 3 of the European Commission classification.

The entrepreneurs in home economics, according to an earlier study, generally do not hold common values, as some of them nurture efficiency and economy as first priorities at the same time and many of them share too humble an attitude to business. The study on entrepreneurial culture showed that there is an entrepreneurial cultural transformation going on and also remarkable diversity in the opinions of entrepreneurs. There is a diversity of opinions about the ability of young vocational students to become entrepreneurs in this field at all, and also a lot of hesitation; they are only expecting efficient practical skills (Mahlamäki-Kultanen, 2005.)

PRODUCTION OF THE MATERIAL

Projects in all subject areas and also the case of the Vocational Qualification in Household and Consumers Services started their work based on common development principles and a common general structure for the materials, as required by the National Board of Education (Ammatilliset ESR-projektit. Näytöt, 2005). The targets evaluated in skills demonstrations are the same in every degree:

1. Command of working methods, tools and material.
2. Command of work processes (includes planning, performing, evaluating and developing the work).
3. Command of the knowledge that forms the foundation for work.
4. Occupational safety.
5. Core competence (one or more of the following, depending on the module of the programme: learning skills, problem-solving skills, interaction and communication skills, co-operation skills, ethical, aesthetic and emotional skills).
6. Common emphasis (one or more of the following, depending on the module of the programme: internationality, promotion of sustainable development, utilization of technology and information technology, entrepreneurship, high-quality and customer-focused activity, consumer skills, management of occupational health and safety).

The targets have to be defined and demonstrated in a context- and subject-specific way after consultation and negotiation with representatives of working life and entrepreneurs.

The process for the production of the material is presented in the Figure 9.2 and further clarified in the following section.

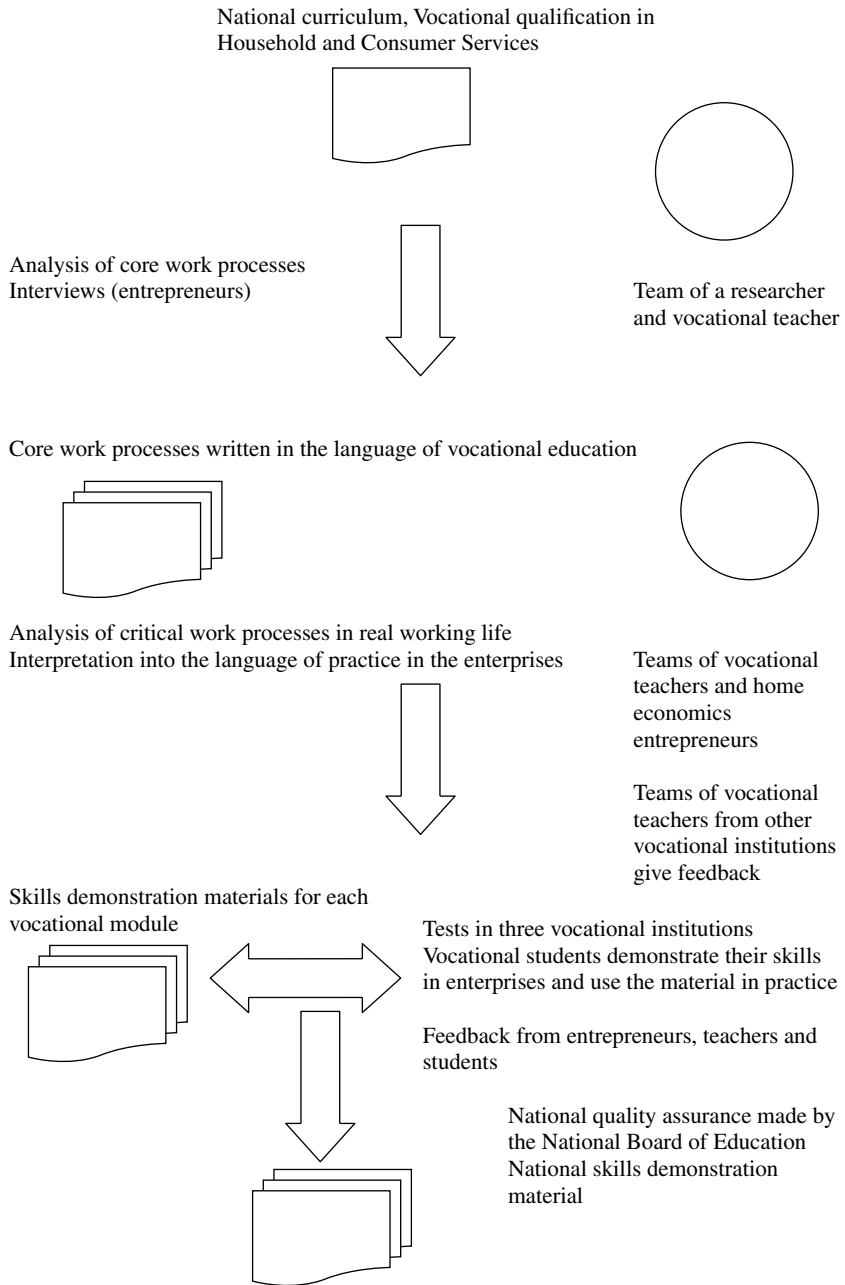


Figure 9.2 The process of skills demonstration material production

The individual projects have been allowed to organize their work as they wish but transparency, quality systems, testing the material in two independent vocational institutions, and internal and external evaluation of the project were required in all cases. All the plans, transcribed interviews with the entrepreneurs, analysis of the modules of the national curriculum, manuscripts from each phase of the production, memos from meetings and seminars, completed testing questionnaires and other feedback from the production and testing process had to be documented. The data concerning the process of material production have been exposed twice to internal and to external auditing. The Vocational Teacher Education College of the Häme Polytechnic is responsible for the auditing. All the parts of the material have been tested in three vocational institutions with three student groups. Two of the colleges are independent. Feedback has been requested from workplace tutors and entrepreneurs, students and teachers. Irrespective of the material, the biggest challenge has been the language; that is, how to write understandable yet technically precise texts that fulfil the needs of all parties?

Because of our earlier experience with busy entrepreneurs, the project was organized to minimize their time and effort and to focus on the most important issues. The project was organized as four teams of two or three teachers and two to four consulting entrepreneurs for each vocational subject area. The author, with a project worker, co-ordinated the work, edited the texts, wrote the general guidelines, and was responsible for the fulfilment of the common principles.

As a starting point for production of the materials, three teachers interviewed nine entrepreneurs using a fairly open, qualitative methodology to clarify competence needs, entrepreneurial culture and expectations for the future. The national vocational curriculum was also presented to them and they were asked for their opinions about the core work and entrepreneurial processes in it. The results were then provided to teachers from 28 other vocational institutions, in which entrepreneurs in home economics were educated, with a request for their comments on how the data should inform the skills demonstration material production process.

The work processes of the vocational curriculum were then analysed once again. The processes were presented to selected entrepreneurs without any comment or quality grading. The purpose was to ask for their translation of the processes into practical working language and the reality of their enterprises. After the meetings, the teachers' memos were edited for the first drafts of the skills demonstration material. They included descriptions of work environments and practical procedures in skills demonstrations, the quality criteria for the arrangements, the targets and criteria for assessment for the modules of the vocational curriculum. The materials were tested in skills demonstrations at enterprises and other workplace learning environments. The students', teachers'

and entrepreneurs' opinions of these materials were asked before and after testing. The materials were developed using the feedback from all the stakeholders, including educational authorities. The materials are delivered freely to other vocational institutions via the Internet (Ammatilliset ESR-projektit. Näytöt, 2005).

EXAMPLES OF SKILLS DEMONSTRATION MATERIAL

To make the differing perspectives of the entrepreneurs, work colleagues, teachers and students visible a 360-degree assessment circle was introduced and tested in all the skills demonstrations. An example is presented in Figure 9.3.

To make the evaluation feasible and the 360-degree evaluation process visible, the same visual model is used for all skills demonstrations. The form is completed by marking the relevant scores of each evaluator, and drawing a line connecting them if desired. The differences between the scores of each evaluator should form the starting point for developing a feedback discussion and not be a question of only averaging the means. The model has received very favourable feedback from workplace tutors, entrepreneurs, students and teachers because of its clarity and ease of use.

A big challenge in implementing a new evaluation system, the national skills demonstrations is to educate and initiate the entrepreneurs and solve the problem of sharing duties and responsibilities locally. The illustrative division of labour between teachers from the vocational institutions and workplace tutors tested in our project is presented in Table 9.1. It was negotiated with a number of representatives from both parties to match the needs and realities of vocational institutions and entrepreneurs. The principles behind this division of duties and tasks are to stress the objective and individual treatment of each student as well as to meet the demands and possibilities of individual enterprises.

FINAL REMARKS

Because of the somewhat mixed political situation, results and final conclusions about the new system cannot be presented and the discussion is far more tentative. Thus, all the material presented is preliminary, reflecting the experiences and result from the projects to date.

Although we are still witnessing a period of development and waiting for the actual implementation of skills tests, it is already clear that skills demonstrations will not be 'only' an assessment system. They will also bring a remarkable cultural change into the co-operation between work-life and vocational education. They will definitely make it more meaningful and add to the

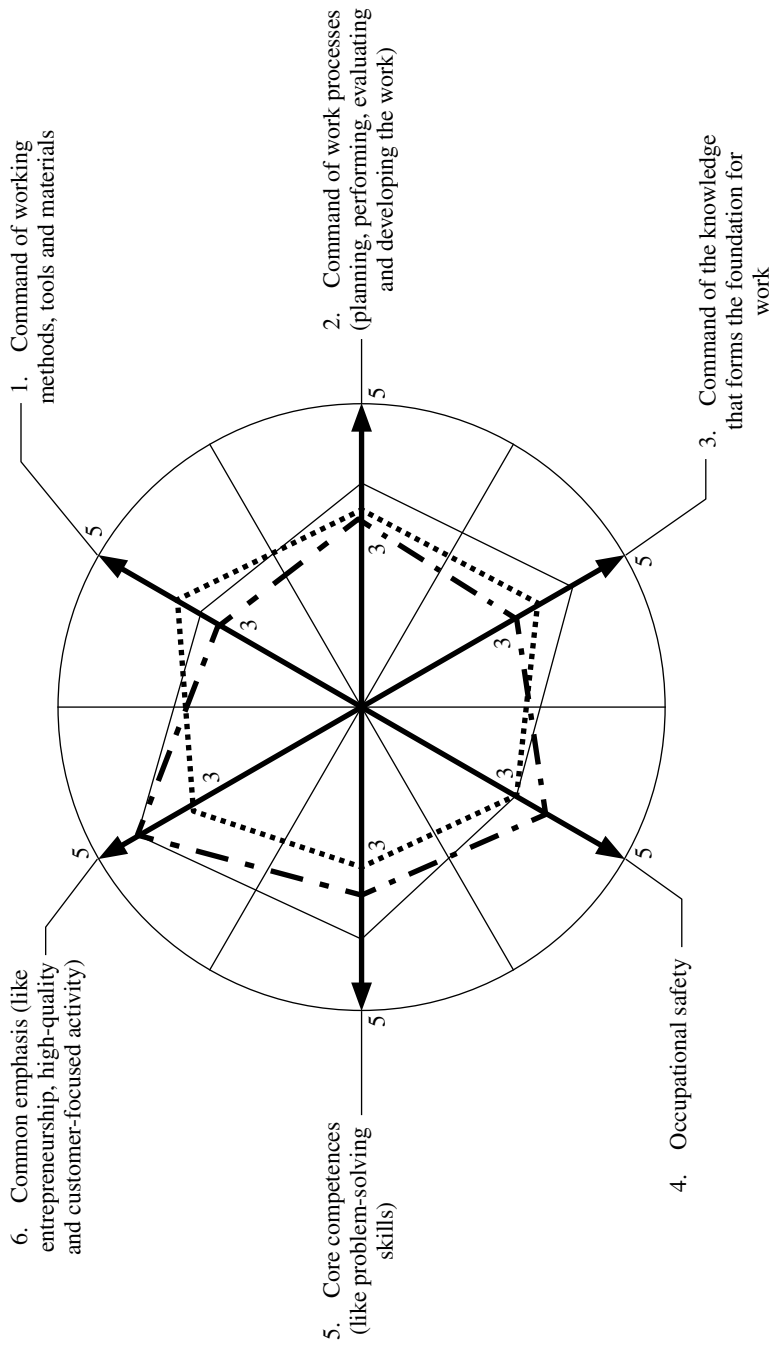


Figure 9.3 A 360-degree assessment tool

Table 9.1 The duties of the teacher responsible for skills demonstrations and the workplace tutor

Duties of the vocational teacher	Duties of the workplace tutor in enterprises
To master the skills demonstration plan officially approved by the tripartite committee for each student group	To deliver the information necessary about the skills demonstration procedures to the other people (staff, customers) at the workplace
To plan the individual skills demonstration tasks according to the national material	To master the individual skills demonstration material (description of the possible environments and tasks, the forms to record observations), to mark the final ratings and to give feedback, the evaluation criteria on each competence level
To initiate the students before the skills demonstration and to tutor them after	To provide the student with the relevant tasks for each skills demonstration
To approve each student's individual skills demonstration plan and to decide whether she or he is competent enough to go further in the procedure and to apply the plan in the workplace	To guarantee the occupational health issues for the individual workplace
To organize skills demonstration environments for each student in enterprises, or in the vocational institution in some relevant cases	To approve each student's final skills demonstration plan, to check that it fits the conditions in the workplace and is realistic, and to guide the student to complement it if necessary
To master the occupational safety issues and arrangements	To document and evaluate the skills demonstration procedure for each student
To organize the revised skills demonstration when necessary	To follow the student in the course of the skills demonstration and to guide him or her if necessary and document the guidance given.
To initiate the workplace tutors into their duties and tasks	To interrupt the procedure if necessary, when the safety of the student, customer or staff in the workplace cannot be guaranteed or when it is self-evident that the student will not be able to perform the skills demonstration
To make the drafts for documents used in the skills demonstrations based on the national material	To provide each student with numerical and verbal remarks and oral feedback in the evaluation discussion between the student, responsible teacher and tutor in the workplace after the skills demonstration.
To organize the assessment as a cooperative process between the student, workplace tutor and teacher	
To collect and analyse feedback from students, workplace tutors, other teachers and the tripartite committee	
To develop skills demonstrations, curriculum and teaching based on the analysed feedback	
To make drafts for the students' skills demonstration diplomas.	

value already obtained from workplace learning. The positive qualitative feedback and increased motivation of students show that there is no reason for vocational institutions to be afraid of opening the doors for more co-operation with entrepreneurs (Nyyssölä, 2002; 2003). The 360-degree assessment model makes it possible to solve the problem of differing priorities, but it is not a quick fix. There can sometimes be cases where the teacher from the vocational institution is more entrepreneurial than the business owner who is the workplace tutor in this field. The testing of material has shown that one of the real challenges for the educational system in future co-operation is deceptively simple: the teachers need to learn to use language that is more understandable and appealing to entrepreneurs.

The targets of the Copenhagen Declaration, especially transparency of vocational competence, will also become more meaningful year by year. The mobility of Finnish vocational students and its labour force is very limited. Only 2.8 per cent of vocational students, altogether around 4000 students, annually train abroad for a short period. At the same time, around 2000 students come to Finland to study. The number of Finnish students training abroad has been about the same during the years 1999–2003, while the number of foreign students coming to Finland to study is growing slightly every year. The internationalizing process is progressing in all vocational institutions (Mahlamäki-Kultanen, 2003; Virtanen and Janhola, 2004). Still, taking part in the common European initiative will inevitably mean us Finns also achieving meaningful development and an improvement in the quality of vocational education.

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10. Pathways to new business opportunities: innovations and strategies for the entrepreneurial classroom

Jill Kickul

At the forefront of adaptation and growth of new markets, entrepreneurship has always been a vibrant force in the global economy. The current business environment is continually searching for new innovative models that deal with firm organization, production and overall market institutions. To prepare for future opportunities and technological advancements, entrepreneurs need fully to understand their business and operating environment in order to develop and capitalize on emerging ideas and opportunities.

The overall purpose of this chapter is to highlight a new entrepreneurship course, 'Contemporary entrepreneurial opportunities'. This course focuses on new opportunity initiation and creation along with the critical factors involved in the conception and development of new business ventures. The introduction and framework of the course is based on the belief that entrepreneurship is more than a set of tools and techniques for starting and growing a business: it is a mindset, a way of looking at things that is opportunity focused and creative. In addition to discussing and profiling this course, we also begin to examine why this type of entrepreneurship course is essential to building the skills and abilities, specifically the self-efficacy, of future entrepreneurs.

More specifically, within the development and framework of this course, we wanted to explore the role that entrepreneurial self-efficacy and alertness have on a student's ability to conceive, initiate and develop ideas and innovations for a new venture. Many entrepreneurial models describing the contexts of entrepreneurial intentionality can be revised and strengthened by including the concept of self-efficacy as a means of explaining both the development of entrepreneurial intentions and the conditions under which these intentions may be translated into actions. That is, the individual who has identified key efficacy perceptions about starting a business may set higher personal goals and may be

more persistent in overcoming entrepreneurial challenges and obstacles, particularly early on in the launch of the venture.

THE BEGINNINGS OF A NEW COURSE: CONTEMPORARY ENTREPRENEURIAL OPPORTUNITIES

Some of the topics covered within this new entrepreneurship course include: (1) identifying new ideas and innovations, (2) market potential analysis for products and/or services, and (3) initial financing and organizing of the business opportunity. Figure 10.1 displays the ‘Contemporary entrepreneurial opportunities’ model that emphasizes both the recognition and evaluation of new opportunities and innovations.

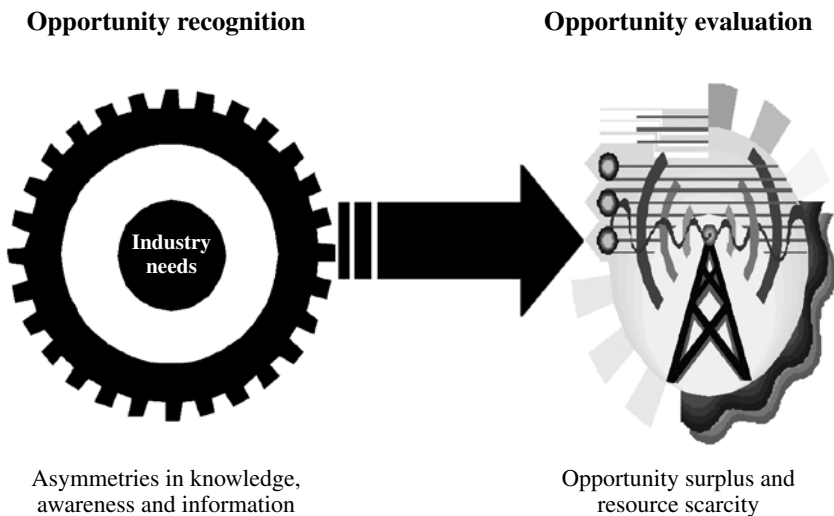
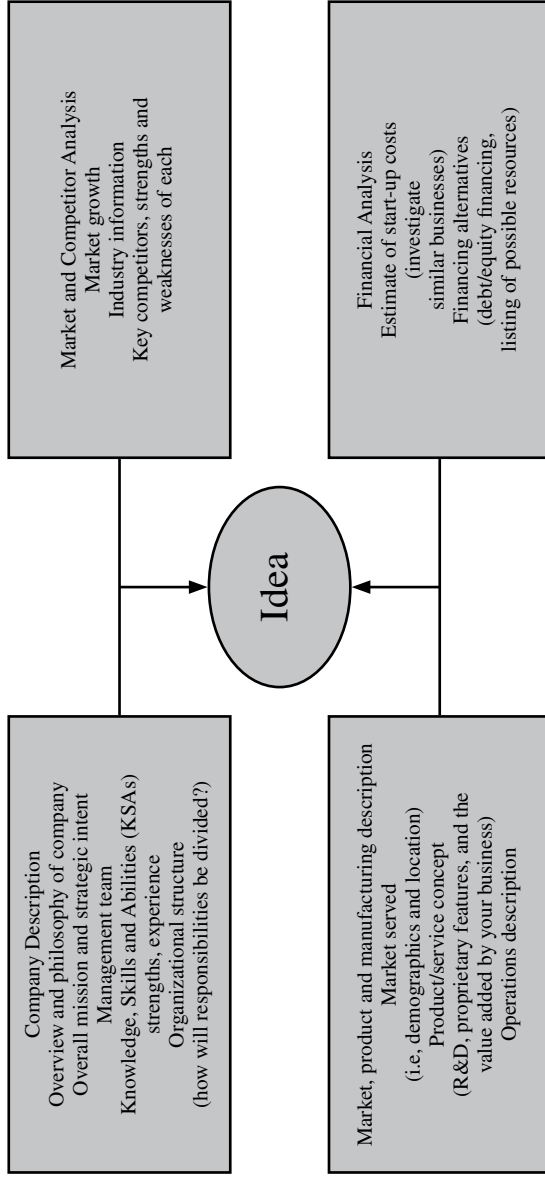


Figure 10.1 Contemporary entrepreneurial opportunities model

During the duration of the course, students conduct a knowledge of industry check (KIC) that allows them to examine and understand a chosen industry (for example, students review an industry’s recent performance, its current status and the outlook for the future).

When their KIC is completed, students then develop an opportunity organizational proposal (OOPs) that specifies how they will exploit an opportunity uncovered after they have analysed their industry. Students discuss their organizational description (the management team, key roles), market and competitor analysis (which stems from the KIC), market, product, manufacturing descrip-

OOPs ... determining the feasibility



Resources and Guides on Blackboard, feasibility overview, evaluation (pdf file)

Figure 10.2 Feasibility analysis

tion and financial analysis (for example, start-up costs; possible financing alternatives). All components of this course are designed to assist new and future entrepreneurs in finding creative ways to explore and discover new opportunities as they introduce and continually redesign their products, services and processes for their respective industries (see Figure 10.2).

For a description of the entire process, see the following outline:

From KIC to OOPS ...

1. From your knowledge of the industry (KIC), list your strengths (S), weaknesses (W), opportunities (O), and threats inside the matrix.
2. Develop a tactical IDEA package around your SO, WO, ST, WT strategies (your tactical package).

	<u>Strengths (S)</u>	<u>Weaknesses (W)</u>
	<u>S1</u> <u>S2</u> <u>S3</u> <u>S4</u> <u>S5</u>	<u>W1</u> <u>W2</u> <u>W3</u> <u>W4</u> <u>W5</u>
<u>Opportunities</u>	<u>SO STRATEGIES</u>	<u>WO STRATEGIES</u>
<u>O1</u> <u>O2</u> <u>O3</u> <u>O4</u> <u>O5</u>		
<u>Threats</u>	<u>ST STRATEGIES</u>	<u>WT STRATEGIES</u>
<u>T1</u> <u>T2</u> <u>T3</u> <u>T4</u> <u>T5</u>		

3. Arrive at 4–5 possible IDEAS from SO, ST, etc. strategies.
4. On to OOPS, actual evaluation of IDEAS ...

Each OOPs should contain (at the minimum):

1. Executive summary
2. Company description (the management team, key roles)
3. Market and competitor analysis (stems from the KIC)
4. Market, product, and manufacturing description
5. Financial analysis (for example, start-up costs; possible financing alternatives)

An Example (and its components)

- Executive summary: overview of all areas below including final recommendation on the feasibility of the venture
- Company description
- Overview and philosophy of company
 - Overall mission and strategic intent
- Management team
 - Knowledge, Skills and Abilities (KSAs), strengths, experience
- Organizational structure (how will responsibilities be divided?)
- Market and competitor analysis
- Market growth (investigate trends in industry, customer needs)
- Industry information (social, economic, technological trends)
- Key competitors (listing of top strengths and weaknesses of each)
- Market, product, and manufacturing description
- Market served (that is, demographics and location)
- Product/service concept (description of products and/or services, R&D, proprietary features, and the value added by your business)
- Operations description (especially relevant, of course, if manufacturing products)
- Financial analysis
- Estimate of start-up costs (investigate similar businesses), financing alternatives (debt/equity financing, listing of possible resources)

THE NEED FOR THIS COURSE IN THE ENTREPRENEURSHIP CURRICULUM

Many entrepreneurship courses focus on commonly identified entrepreneurial management and planning skills, but often ignore entrepreneurial skills such as innovation and risk-taking. The teaching of entrepreneurial skills tends to be technical, with insufficient attention paid to the cognition and belief systems of

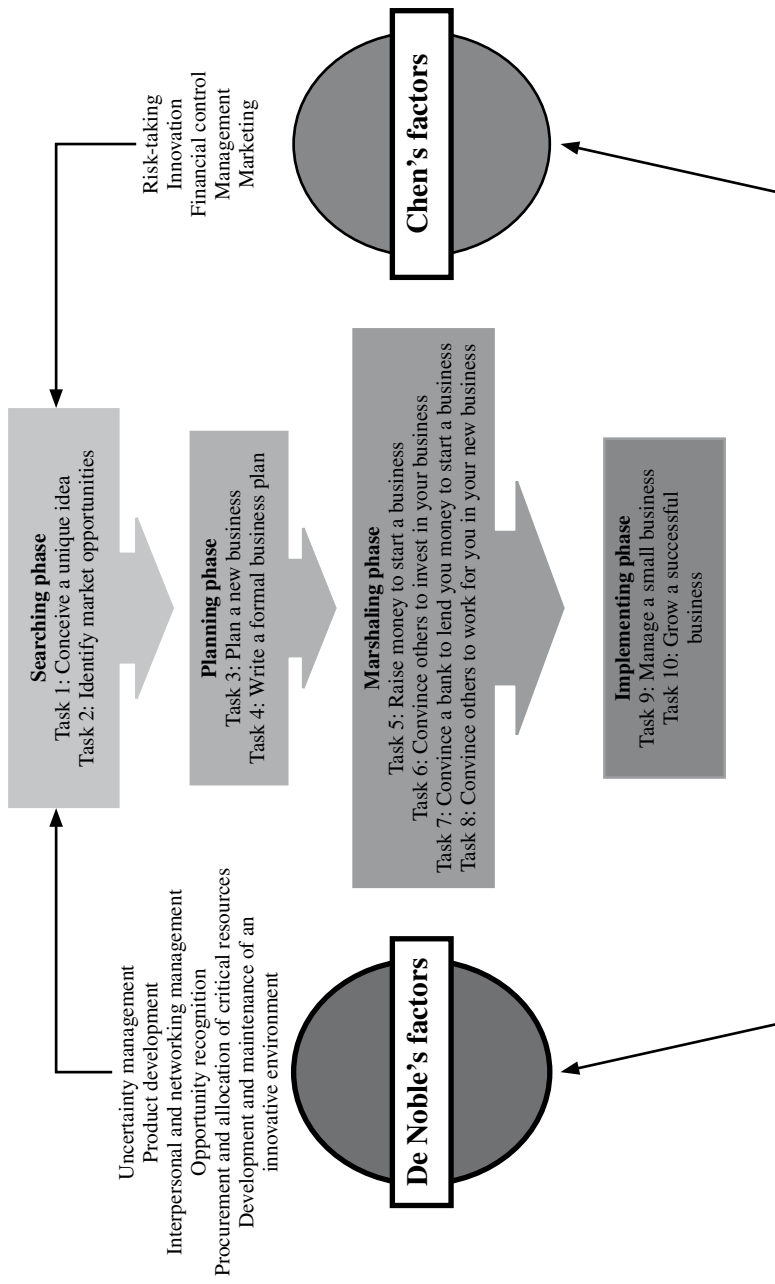


Figure 10.3 Building entrepreneurial self-efficacy

the entrepreneur. Educators should take into account entrepreneurial attitudes and perceptions when designing or assessing their entrepreneurship programmes and course objectives.

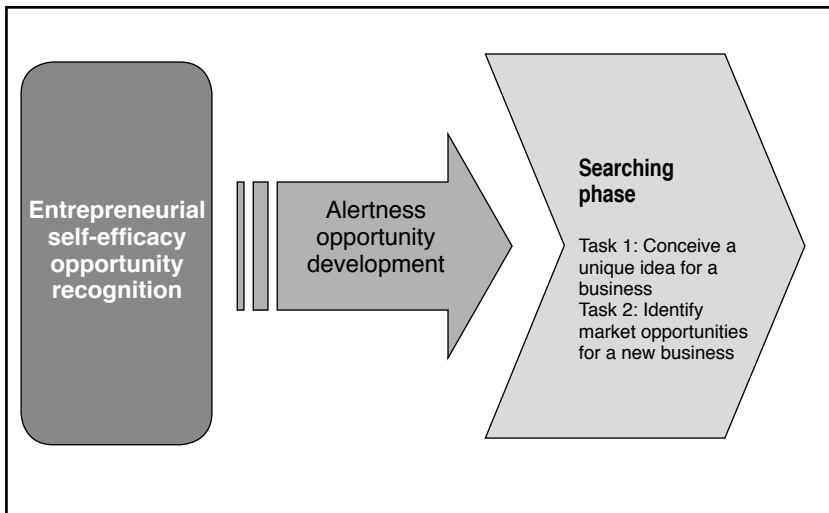
One of the ways to understand the new venture creation process that can assist educators in the design of an entrepreneurship curriculum is to examine the role of entrepreneurial self-efficacy. Self-efficacy may play an important role in uncovering the essential skill set needed throughout the various stages of the entrepreneurial life cycle, from the searching to the implementing phase of the business (see Figure 10.3). The following section discusses the various components of entrepreneurial self-efficacy within the entrepreneurship literature.

ENTREPRENEURIAL SELF-EFFICACY

The construct of self-efficacy has been widely applied in psychology as an individual difference variable. Self-efficacy is believed to be related to one's choice of activities, one's effort and persistence, thought processes, and emotional reactions when confronted by obstacles (Bandura, 1997; Lent et al., 1994). Self-efficacy is defined by Bandura (1997) as people's judgements of their capabilities to organize and execute courses of actions required to attain designated types of performances. It is concerned not with the skills one has but with the judgements of what one can do with whatever skills one possesses. Self-efficacy is acquired gradually through the development of complex cognitive, social, linguistic and/or physical skills that are obtained through experience (Bandura, 1982; Gist, 1987). Thus, the acquisition of skills through past achievements reinforces self-efficacy and contributes to higher aspirations and future performance (Herron and Sapienza, 1992). Research examining self-efficacy and knowledge gain, or similar outcomes, has found that pre-training self-efficacy measures positively predict learning (for example, Gist et al., 1989; Martocchio and Webster, 1992).

Self-efficacy has a number of practical and theoretical implications for entrepreneurial success since initiating a new venture requires unique skills and mindset. In the entrepreneurial self-efficacy research by De Noble et al. (1999), they identified the following six theoretical dimensions of entrepreneurial self-efficacy, including:

- risk and uncertainty management skills
- innovation and product development skills
- interpersonal and networking management skills
- opportunity recognition
- procurement and allocation of critical resource
- development and maintenance of an innovative environment.



The Role of Entrepreneurial Self-Efficacy and Alertness on Business Planning

Figure 10.4 Early stages of the entrepreneurial life cycle

Many of these factors may be associated with many of the critical tasks/roles that have been identified within the entrepreneurial life cycle. In particular, innovation and product development skills as well as opportunity recognition skills may play a key role in the early stages of the life cycle. Because the 'Contemporary entrepreneurial opportunities' course focuses on opportunity development and innovation, we examined and assessed the students' abilities and awareness on several of these skill areas and the early stages of entrepreneurial life cycle (for example, the searching phase; see Figure 10.4).

METHOD AND ASSESSMENT

Overview

Undergraduate students who were enrolled in the contemporary entrepreneurial opportunities course over Winter 2003 participated in the assessment study. All students were given a questionnaire at the end of the course, asking them to provide their beliefs and attitudes regarding entrepreneurial ventures as well as their perceived skills in performing entrepreneurial roles and tasks.

Measures

Entrepreneurial self-efficacy

We used De Noble et al.'s (1999) self-efficacy measure to assess their opportunity recognition and development skills. The following is a list of the items used:

- I can originate new ideas and products.
- I can see new market opportunities for new products and services.
- I can discover new ways to improve existing products.
- I can identify new areas for potential growth.
- I can react quickly to take advantage of business opportunities.
- I can create products that fulfil customers' unmet needs.
- I can formulate a set of actions in pursuit of opportunities.

Students rated themselves on how capable they believe they are in performing each task using a 7-point Likert scale where 1 represents 'strongly disagree' and 7 represents 'strongly agree'.

Entrepreneurial alertness

We assessed the students perceived entrepreneurial alertness (towards opportunities) using Hills et al.'s measure (1995; 5 items) of self-perceived entrepreneurial alertness. Sample items include, 'I have a special alertness or sensitivity toward opportunities' and 'I enjoy just thinking about and/or looking for new business opportunities'. For each statement, students rated themselves using a 7-point Likert scale where 1 represents 'strongly disagree' and 7 represents 'strongly agree'.

Entrepreneurial life cycle tasks and roles

Cox et al.'s (2002) scale was used to measure the participants' perceptions of their ability to perform many of the instrumental tasks/functions within each stage of the entrepreneurial life cycle (please refer to their tasks in Figure 10.3). Participants were asked to think about the process of starting a new business venture. For each statement within the searching phase (task 1 and task 2), they rated their level of confidence on a 7-point Likert scale (1 = 'not confident'; 7 = 'completely confident').

INITIAL ASSESSMENT: EXAMINING THE RELATIONSHIPS

To examine the relationship between opportunity recognition self-efficacy, alertness, and entrepreneurial tasks, we conducted correlational analyses. Table 10.1 shows the descriptive statistics and zero-order correlations.

Table 10.1 (a) Descriptive statistics. (b) Correlations

(a) Descriptive statistics

	Mean	Std. Deviation
Efficacy: opportunity recognition	5.5854	.9150
Entrepreneurial alertness towards opportunities	4.7877	.7515
Searching-task 1	5.1205	1.5333
Searching-task 2	5.4699	1.3555

(b) Correlations

	Efficacy: Opportunity Recognition	Alertness Towards Opportunities	Searching- task1	Searching- task2
Efficacy: opportunity recognition	1.000			
Entrepreneurial alertness towards opportunities	.583**	1.000		
Searching-task 1	.410**	.587**	1.000	
Searching-task 2	.470**	.589**	.806**	1.000

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Our results revealed that self-efficacy was associated with entrepreneurial alertness. Both entrepreneurial self-efficacy (opportunity recognition) and entrepreneurial alertness were related to both tasks involved in the searching for new ideas, innovations for a new venture. From our correlational analyses, we also examined how the building of entrepreneurial self-efficacy 'adds' to entrepreneurial alertness in a student's ability to perform the tasks involved in the

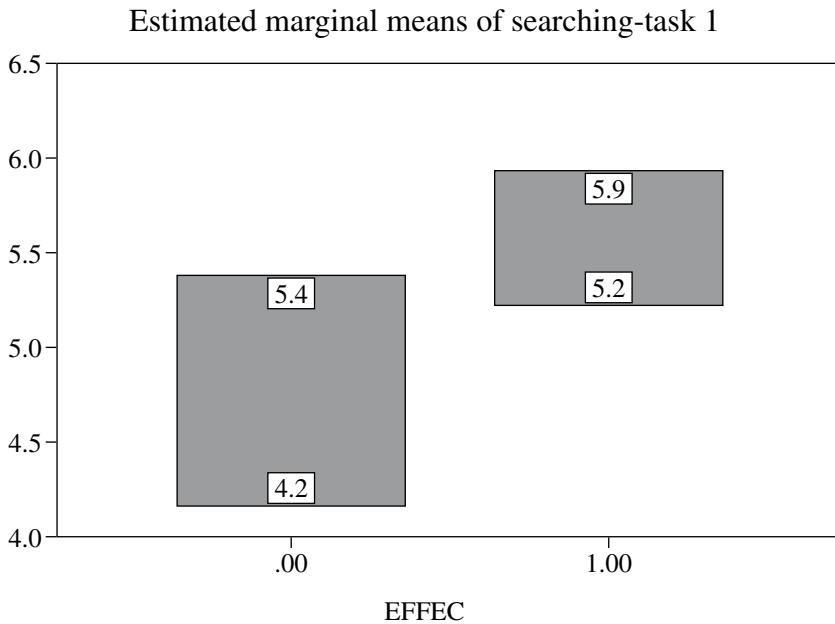


Figure 10.5 Perceived ability in finding unique idea for the business

searching phase of the life cycle. Figures 10.5 and 10.6 display the incremental influence self-efficacy has on these tasks beyond entrepreneurial alertness. When entrepreneurial self-efficacy is high (for example, EFFEC = 1), students have higher perceived abilities in finding unique ideas for the business (searching phase, task 1) and identifying market opportunities for a new business (searching phase, task 2).

DISCUSSION

The opportunity recognition process itself has been described as multidimensional, incorporating the search process for new ideas as well as the recognition of feasible business opportunities. While some entrepreneurs start ventures prior to identifying opportunities, beyond start-up this process becomes vital to the venture's growth capability as it confronts environmental changes and seeks new innovations for the business (Zietsma, 1999). This chapter takes a first step in outlining a new opportunity recognition course that focuses on building the skills and abilities of future entrepreneurs, particularly as they become involved in the planning and launch of their venture.

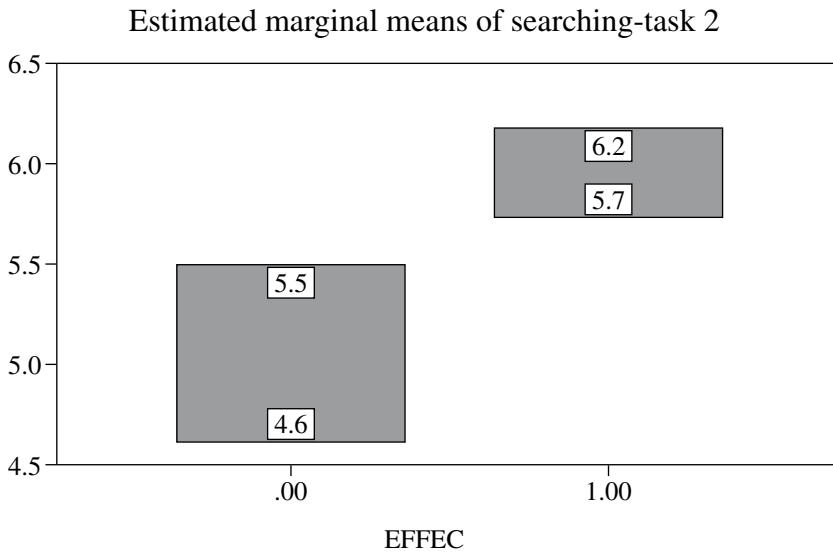


Figure 10.6 Perceived ability in identifying market opportunities for a new business

Considering the relationship between the entrepreneurial self-efficacy and entrepreneurial life-cycle tasks, one can expect to enhance their ability to perform these tasks by putting systematic and continuous emphasis on entrepreneurial self-efficacy. As mentioned earlier, many entrepreneurship courses focus on commonly identified entrepreneurial management and planning skills, but often ignore entrepreneurial skills, such as innovation and risk-taking. Inadequate attention is given to the cognition and belief systems of the entrepreneur, and skill development tends to be very technical. Entrepreneurship educators should take into account entrepreneurial attitudes and perceptions when designing or assessing their entrepreneurship programmes and curriculum.

In order to increase a student's entrepreneurial self-efficacy, educators should also work on an environment that allows potential and actual entrepreneurs to share, debate and assess the feasibility of their business ideas. An environment perceived to be more supportive will also increase entrepreneurial self-efficacy because individuals assess their entrepreneurial capacities in reference to perceived resources, opportunities and obstacles existing in the environment (see Figure 10.7).

In addition to building a supportive environment, educators should consider the role that others have in influencing entrepreneurial self-efficacy. Social learning theory (SLT) proposes that one way learning can occur is vicariously,

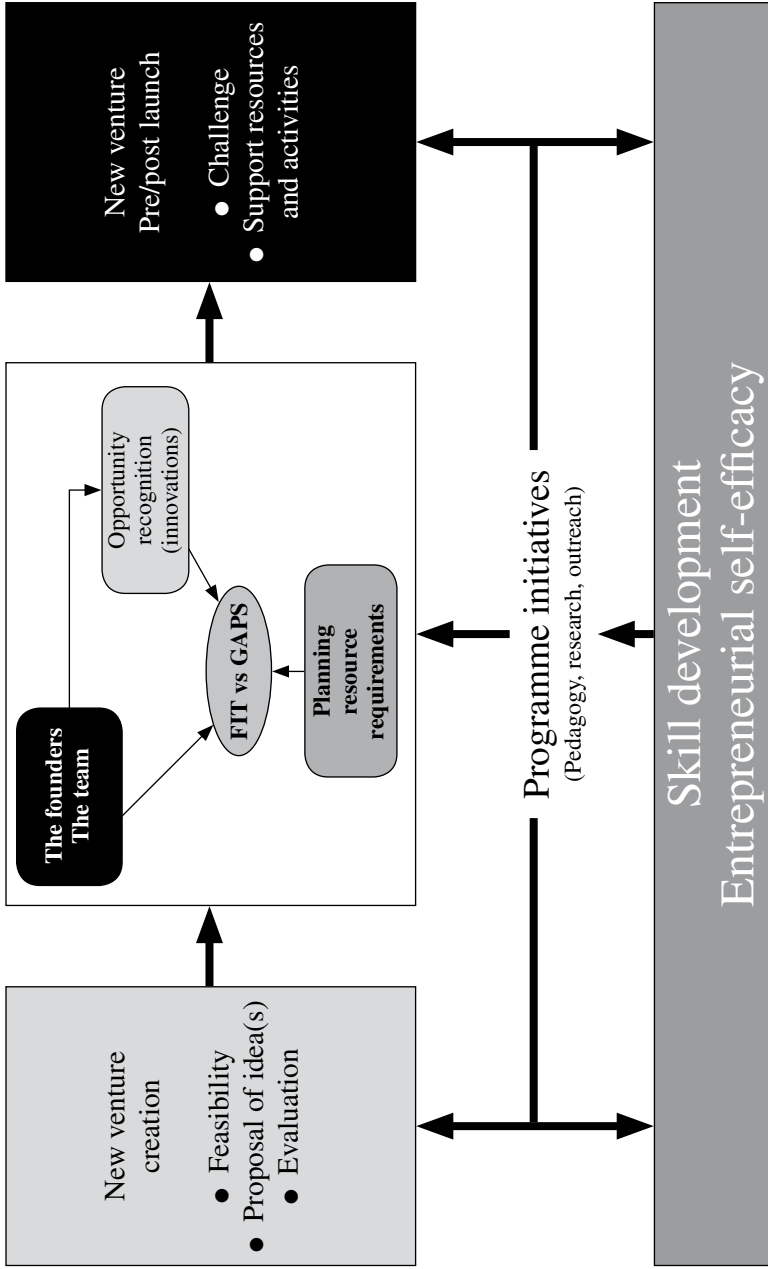


Figure 10.7 Conceptual framework

through the observation of behaviors in others, referred to as role models (Bandura, 1977). Adapting the principles of SLT to entrepreneurial role models in the form of mentors would indicate that individuals having greater exposure to other entrepreneurs are more likely to engage in entrepreneurial ventures and activities (Schaver and Scott, 1991). Entrepreneurial mentors may appear in the form of family members, employers, teachers or anyone whom the individual has had an opportunity to observe (Sexton and Smilor, 1986). Over time and using a longitudinal approach, it would be interesting to examine how these relationships evolve and influence an aspiring and future entrepreneur so that they launch and grow their own ventures. Programme initiatives can be designed which allow students to evaluate their opportunities, build an effective management team and garner the necessary resources to start the new business. Setting up a supportive environment and opportunities to incorporate entrepreneurial role models (Figure 10.8), beginning in our classrooms, that focus on essential skills, tasks and abilities, may give future entrepreneurs the necessary competencies and confidence needed to launch and grow their businesses within a marketplace that demands agility and continual innovation.

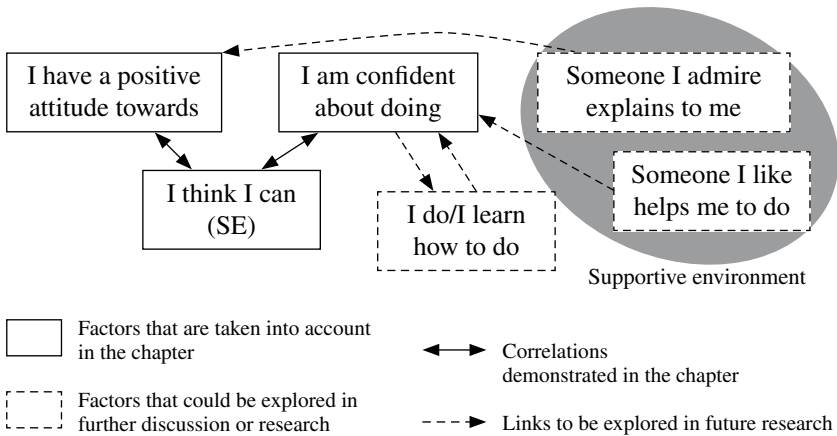


Figure 10.8 Entrepreneurial role models

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APPENDIX: CONTEMPORARY ENTREPRENEURIAL OPPORTUNITIES

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Course Description

Entrepreneurship is more than a set of tools and techniques for starting and growing a business. It is a mindset, a way of looking at things that is *opportunity* focused and creative. It is about passion – doing what you love. It is about creating wealth in all its forms: money, independence, power and innovation. It is about challenge and persistence. And it is about creativity and writing new execution strategies for the way things are done.

Entrepreneurship is not for the faint of heart, the timid, those who hate ambiguity and those who want everything in black and white. It is for those who are self-motivated, independent, persistent, have a sense of humour, can learn and bounce back from failure and are willing to take and manage calculated risks.

This course focuses on new opportunity initiation and the preparation of an opportunity study that can be used to begin operations in a new business enterprise. It examines the critical factors involved in the conception, initiation, and development of new business ventures. The topics covered include:

- Identification of characteristics of prospective entrepreneurs.
- Identifying innovations.
- Market potential analysis for new products or services.
- Initial financing, organizing, and operating a new business.

The course objectives are:

- To provide training and education regarding the *feasibility, planning, and implementation* of a new business idea and venture.
- To improve your managerial and organizational skills through application of theories to real entrepreneurial problems.
- To develop a basic understanding and appreciation of entrepreneurs as a vital part of the American society.

Course Requirements

Idea journal

Every week, students will have the opportunity to write/document their entrepreneurial ideas (at least one per week). Ideas can come from multiple sources, at any time, and anywhere (it may be handy to have pen/paper/scratch paper/palm (real and electronic) nearby. Check out: www.creativitypool.com/.

Also, to get you jump-started, consider the following questions, from Osborne (1963):

- | | |
|---------------------------|---|
| <i>Put to other uses?</i> | New ways to use as is?
Other uses if modified? |
| <i>Adapt?</i> | What else is like this?
What other idea does this suggest?
Does the past offer parallel?
What could I copy?
Whom could I emulate? |
| <i>Modify?</i> | New twist?
Change meaning, colour, motion, sound, odour, form, shape?
Other shapes? |
| <i>Magnify?</i> | What to add?
More time?
Greater frequency?
Stronger?
Higher?
Longer?
Thicker?
Extra value?
Plus ingredient?
Duplicate?
Multiply?
Exaggerate? |
| <i>Minify?</i> | What to subtract?
Smaller?
Condensed?
Miniature?
Lower? |

Shorter?
Lighter?
Omit?
Streamline?
Split up?
Understate?

Substitute? Who else instead?
What else instead?
Other ingredient?
Other material?
Other process?
Other power?
Other place?
Other approach?
Other tone of voice?

Rearrange? Interchange components?
Other pattern?
Other layout?
Other sequence?
Transpose cause and effect?
Change pace?
Change schedule?

Reverse? Transpose positive and negative?
How about opposites?
Turn it backward?
Turn it upside down?
Reverse roles?
Change shoes?
Turn tables?
Turn other cheek?

Combine? How about a blend, an alloy, an assortment, an ensemble?
Combine units?
Combine purposes?
Combine appeals?
Combine ideas?

Knowledge of industry check (KIC): your beginning to understanding the industry and the ideas within them

A complete industrial analysis usually includes a review of an industry's recent performance, its current status, and the outlook for the future. Many analyses include a combination of text and statistical data.

There are *many sources of industry analysis*: investment firms, business and trade periodicals, trade associations, and government agencies. To conduct a thorough industry analysis, include a variety of sources (resources to get you started).

- *MultexNET*. Provides real-time and full-text investment, corporate and industry reports supplied by over 700 brokerage firms, investment banks and independent research providers. Examples include Merrill Lynch, Morgan Stanley, and Salomon Smith Barney. You can limit searches to 'industry reports only' and use the pull-down menu for industry types, or enter keywords. The advanced search page provides additional options. Most of the reports are in PDF format. For emerging market reports, see also *ISI Emerging Markets*.
- *Standard & Poor's Industry Surveys*
- *U.S. Industry and Trade Outlook*
- *Hoover's Industry Group Snapshots*
- *Internet Intelligence Index*. Created by the Fuld & Company Library, this site provides 'links to nearly 600 intelligence-related Internet sites, covering everything from macro-economic data to individual patent and stock quote information'. Notice the sections on 'Industry-Specific Internet Resources' and 'International Internet Resources' further down the page. Fuld & Company offers management consulting in competitive intelligence.
- *Business.com*. Covers over 28 industries, from accounting to utilities. Business.com provides a directory of industry websites.

Opportunity organizational proposal (OOPs!)

If you plan to start a business, every business professional and investor you meet – lawyers, bankers, accountants, other entrepreneurs, business 'angels' of all types – will ask the same thing, 'Is it feasible?' The OOPs and a business plan define the essence of entrepreneurship or small business as taught in America's business schools today. Thus, a central component of this course is the opportunity for the students to develop a venture OOPs which will be presented for evaluation. Each OOPs should contain (at the minimum):

1. Executive summary
2. Company description (the management team, key roles)
3. Market and competitor analysis (stems from the KIC)

4. Market, product, and manufacturing description
5. Financial analysis (for example, start-up costs; possible financing alternatives).

Presentations of KIC and OOPs

Many studies indicate that presentations that combine words with graphics help to get the points across better and faster, assist groups to reach consensus sooner and help individuals remember key points longer. Students should develop professional text and graph charts for the presentation material. It is recommended that the team conduct the presentation in as professional a manner as possible. It is also recommended that a creative, innovative, multi-method presentation be made (for example, graphics, handouts, statistics, and so on).

Small group and class participation

The success of this course depends not only on your attendance, but also on your participation. The more you participate, the more fun and valuable the course will be for all of us. For every class, students are expected to read the supplemental readings and cases. Participation is measured using several criteria. These include actively participating individually during the 'discussion' part of our sessions, in small group meetings, and in group presentations.

The instructor's evaluation of your participation is worth 10 per cent towards your final course grade, and will be evaluated using these criteria:

- When questions or cases were presented to the class, how *active* (as opposed to inactive) was your participation?
- When you answered questions or commented on reading-related or discussion-related material in class, how *accurately* (as opposed to inaccurately) did you use concepts previously discussed?
- When you asked questions or commented on reading-related or discussion-related material in class, how *creative* (as opposed to redundant or repetitive) was your thinking?
- When you were asked to answer case questions to solve organizational problems (a career as an organizational consultant offers big bucks by the way), how *specific, hence implementable* (as opposed to vague, hence useless), were your suggested remedies to problems raised in class?
- When you criticized others' ideas (including the instructor's), how *constructively* (as opposed to destructively) did you state your criticism?
- How many times were you *absent* when your small group was working on in-class and live case (so that your group missed your contributions)? One group absence may not adversely affect your participation grade; more class absences will lower your final grade.

Breakdown of Course Requirements

Idea journal	15%
KIC	25%
KIC presentation	10%
OPPs	25%
OPPs presentation	15%
Class participation	10%
Total	100%

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PART THREE

Diffusing and Promoting Entrepreneurial Culture and Developing Entrepreneurial Potential

11. Developing an entrepreneurial spirit among engineering college students: what are the educational factors?

Caroline Verzat and Rémi Bachelet

Although engineers are often associated with innovation, they tend to create far fewer businesses than business schools graduates (Fayolle, 2001). Most noticeably, the career model for French engineers has for a long time been orientated towards technical or managerial functions within large companies (Bouffartigue, 1994).

Considering the importance of innovative business creation in the economy, the North Region in France initiated a research programme to study entrepreneurship education for engineers. Our research is carried out within the framework called 'Pôle Régional de Recherche sur l'Entrepreneuriat' set up by Conseil Régional du Nord Pas de Calais. The initial question was to find out how to promote an entrepreneurial spirit among new engineers and find the factors that can be influential.

Arguably, the most widely recognized factor favouring entrepreneurship is family background, but this is typically a factor that cannot be influenced by education. Another advanced approach is based on the identification of entrepreneurial fitness and skills (Carter et al., 1995; Gartner, 1988; Lorrain et al., 1998), but this approach does not make it possible to predict the occurrence of the phenomenon or to detect entrepreneurs. More interestingly for us, a number of authors emphasize the part to be played by the educational system in the promotion of an 'entrepreneurial spirit' prior to the intention to set up a business (Albert and Marion, 1997; Fayolle, 2000).

Our own experience of teaching grande école engineers at Ecole Centrale de Lille shows that very few students choose to join the Entrepreneurship Master Course, which requires applicants to have a personal business project (about 2 per cent of students), and when they do, it is not on impulse but the result of a process over a period of time (Verzat et al., 2002). Within this process, which we call, as Fayolle does, the 'awakening of an entrepreneurial spirit', a major part is played, by a hands-on project management experience during the two first years of their curriculum.

The purpose of this chapter is to further what can be called the 'entrepreneurial spirit'. Indeed these words, although widely used, have not yet been properly defined in the literature as to how it is created, and what precise aspects can be enhanced through teaching activities. It is a matter of suggesting hypotheses in order to build up a model of how an entrepreneurial spirit is engendered among newly trained engineers.

Our chapter is divided into four sections. The first deals with the question of the definition of the entrepreneurial spirit: how does it arise prior to the decision to set up a business? How can the components of an entrepreneurial spirit be defined? We suggest a dynamic model. The second section deals with the factors leading to an entrepreneurial spirit among young engineers: what is the relevance of the educational background? What are the possible teaching method variables within engineering college training? The third section presents methodological features of our research. The fourth section presents some early results about the projective dimensions of our model of engineering students in 2004. As a conclusion, we present theoretical and practical implications of our research.

ENTREPRENEURIAL SPIRIT: A SUGGESTED DYNAMIC MODEL TO EXPLORE THE BEGINNINGS OF THE ENTREPRENEURIAL PROCESS

How should entrepreneurial spirit or entrepreneurial spirit be defined? Although this notion has been widely used, it has still to be properly defined. We believe this could very much help in understanding what happens prior to the declared intention of creating a business. In that regard, this is a new insight into the beginnings of the entrepreneurial process.

The Unknown Beginnings of the Entrepreneurial Process

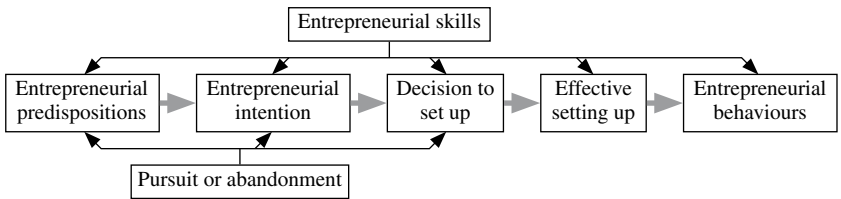
For a few years, researchers in entrepreneurship have suggested the idea that setting up a business can be understood as a process (Gartner, 1985; 1988, Stevenson and Jarillo, 1990). Fayolle (2002) shows that this vision of entrepreneurship is first justified by the fact that entrepreneurship is a rather complex phenomenon. Indeed, it includes psychological, social, economic and organizational dimensions. Secondly there is a large diversity of entrepreneurial situations, because entrepreneurs and their projects differ greatly.

This vision of entrepreneurship as a process is important because it allows research in entrepreneurship to go ahead of a dual conception of entrepreneurship. On one side is the functional approach of economists (Baumol, 1993) where the entrepreneur is described as an innovator, an organizer and a risk-

taker. On the other is the psychological approach where the entrepreneur is defined by his or her personality, motivations and behaviours, looking for an entrepreneurial personality type.

Our research is based on the idea that becoming an entrepreneur is more about how a person builds up a vision of what he or she is capable of and what he or she wants to become in relation to an environment that will confirm this project or not. It is much more a process than a predetermination.

Talking about an entrepreneurial process is nevertheless a very large subject, because it can take many steps and years from the first idea to the effective setting up of the firm. Tounès 2003 suggests a representation of the entrepreneurial process in five stages (see Figure 11.1). Our choice is to explore the uphill stages of this process prior to the decision of setting up.



Source: Tounès (2003)

Figure 11.1 Representation of the entrepreneurial process by Tounès

Many authors have already explored the first stages of the process around the notion of intention. Most research is based either on Ajzen’s theory of planned behaviour (Ajzen, 1991; 2002) applied to the intention to create a business or on the theory of the predictability of the entrepreneurial event by Shapero and Sokol (1982). According to Ajzen, any behaviour finds expression in an intention to adopt this behaviour. This intention springs from positive attitudes as regards this behaviour, normative beliefs and a feeling of control from this behaviour, which results in a ‘control locus’ on the one hand, and in the perception of a ‘self-efficacy’ (Bandura, 1982) on the other. This is the way, for instance, he analyses the intention to give up smoking. According to Shapero and Sokol, the entrepreneurial intention derives from the perceptions of its desirability and its feasibility. Krueger and Carsrud (1993), Autio et al. (1997), Wang et al. (2001), Peterman and Kennedy (2003) and Tounès (2003) try to explain the intention to set up a business.

Our position is that this model is very important but not sufficient to approach the early stages of the entrepreneurial process, because in many cases awareness of this intention occurs very late. We already know from Fayolle (1994) that many engineers become entrepreneurs late in their careers. We also know from

Wang et al. (2001) that students in Singapore, who have declared their intention to set up a business do not do it when the economic environment offers better job opportunities. We also believe that deeper or earlier influences may exist. For instance, Fayolle (2001) notes that many engineers setting up a business had taken responsible positions in associations when at school. As far as we are concerned, we noted in our exploratory research that most newly trained engineers embarking on setting up a business had been in a decisive leadership position for two years within their innovation project team (Verzat et al., 2002).

We can thus hypothesize that the stages before the business setting-up decision refer to something that can be named an 'entrepreneurial spirit'. But how can we define it?

According to Albert and Marion (1997): 'the entrepreneurial spirit consists – for business as well as for all human activities – in identifying opportunities, in gathering resources of various natures, in order to create a wealth that meets a solvable demand'. Other authors define the entrepreneurial spirit as a set of positive attitudes as regards the notion of 'enterprise' or of 'starting a business', or as regards the entrepreneurial spirit, which involves taking initiatives and action (Léger-Jarniou, 2001). The entrepreneurial spirit also defines the basic characteristics of an entrepreneur, who is different from the manager or the inventor (Fayolle, 2002), regarding the activation of mental images allowing an organization to develop (Fonrouge, 2002). A set of personality features, of abilities, values and attitudes which reveal entrepreneurial behaviours are to be found in these models.

So there is no clear consensus as to the definition of an 'entrepreneurial spirit', and the definitions that can be found in the literature seem to be closer to the consequences of an 'entrepreneurial spirit' than to the concept itself. Our approach is to understand the dynamics that contribute to building up such a 'spirit'. When students arrive at the engineering college, very few know about their future career or their specific abilities. The three years they spend in college help them to develop professional competence and to build up their professional identity. So our main hypothesis about the entrepreneurial spirit is that it is progressively built up through a dual elaboration of professional identity and of specific attitudes, behaviours and competence feelings. Our model tries to encompass these two dimensions in a dynamic process of elaboration.

Suggestion of a Dynamic Model

The model of the entrepreneurial spirit we propose can be roughly drawn in a diagram (Figure 11.2).

Through academic and pre-professional experiences (internships, activities in associations) the young student will progressively understand what he or she

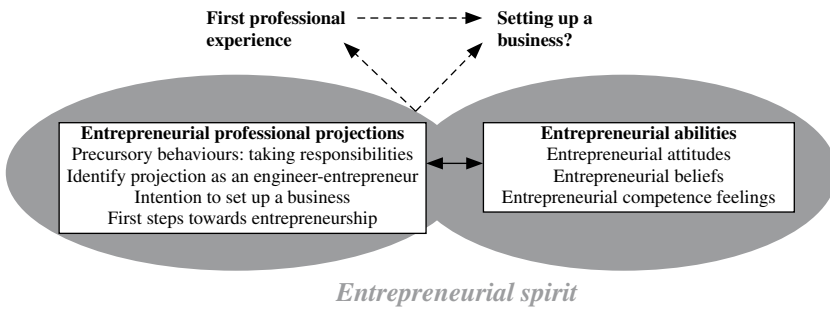


Figure 11.2 Model of the entrepreneurial spirit

is capable of and what are his or her values or beliefs towards what is good for him or her. That will help him to choose orientations for the future and progressively summarize his professional project. At each step, we postulate that some features can be identified as entrepreneurial. Let us summarize all those features as regards professional projections and abilities in a broad sense.

Building Up Entrepreneurial Professional Projections

We have noted, through our exploratory interviews, the importance of a projection of an identity and/or professional type which shows through some assertions, such as: ‘I have known for a long time that I have an entrepreneur profile’ or ‘I don’t feel myself as a classical technology or large business minded engineer’ or else ‘there are many business creators in my family, and I am interested in it too’. How can we give an account of those implicit professional models?

All the more so as, for some authors such as Gottfredson (1981 [1996]) (quoted by Guichard and Huteau, 2001), the professional and career choices are, first, an attempt for the person to realize a ‘social self’ and, secondarily, the realization of a ‘psychological self’. Using the related story of life, Rae and Carswell, 2000) reveal the importance of building up a meaning for oneself in front of other people in the entrepreneur’s learning process: becoming an entrepreneur is building up values/incentives with precise objectives, so, once they have been achieved, the successful realizations feed a self-confidence and the ability to be successful, which is close to Bandura’s ‘self efficacy’ concept.

Becoming an entrepreneur may be approached on the basis of the double transaction identity-building theory (Dubar, 1991). In fact, we can identify here:

1. On the one hand, a biographic transaction in which the engineering college student sees a possible future continuing or breaking up with his or her

former experience (family experiences, the choice for an engineering college, activities with associations, projects, and so on).

2. On the other hand, a relational transaction in which the engineering college student has the legitimacy of his or her aspirations (career and life projects) recognized by a favourable environment (parents, relatives, friends, other students ready to get involved, outside potential partners, lecturers helping to build up a business plan or confirming the feasibility of a creation idea) among which the college's culture plays an important part.

For many of the students, the professional projects build up slowly, through explorations and trial and error where some encouragement can occur to explore the trail, and then confirmation of the feasibility of a business setting-up project by the lecturers.

In that respect, the way some career guidance psychologists analyse the building up of a professional project is interesting. For Ginzberg et al. (1951, quoted by Guichard and Huteau, 2001) building up one's professional project is a process including 'realistic choices'. This process goes through three stages: an exploratory phase, along which first-year students carry out an active search for information, taking part in discussions with well-informed people such as lecturers or career advisers in order to elaborate on a professional choice. The second phase is a crystallization phase, in which students – generally fourth-year students – crystallize their choices and experience, which then enable them to draw up a hierarchy of their choices and to identify their tendencies. The last phase of the process is called 'specification' and corresponds to the expression of the 'professional tendency'; final-year students choose a profession and devote many hours of work to the project they are interested in.

To sum up, several hypotheses can be set out about the way to define the projections of an entrepreneurial spirit prior to the decision to set up a business:

- H1. An entrepreneurial spirit expresses itself through an intention to set up a business.
- H2. An entrepreneurial spirit expresses itself, during study at college, through precursory behaviours such as taking responsibilities in associations or taking the leadership of a project team.
- H3. An entrepreneurial spirit expresses itself through an identity projection which can be spotted through claims to other people of what one is or wants to be, as opposed to the technology-minded engineer model.
- H4. An entrepreneurial spirit expresses itself through a professional project gradually built up around the setting up of a business: with first-year students, it expresses itself in an information search exploratory phase. With second-year students, it finds expression in a search for opportunities,

advice and training related to the project. As soon as they get to the third year, the students have roughly completed their project work (contacts have been established with banks or partners; they have turned towards the Business-setting up Master Course.

Building up entrepreneurial abilities

An important literature deals with the psychological profile of the entrepreneur or his or her necessary competence. All authors using Ajzen's theory describe various components of the intention to be an entrepreneur: (1) favourable attitudes as regards entrepreneurship; (2) internalized social standards related to an entrepreneurial behaviour; (3) the feeling of having entrepreneurial skills, self-control and the ability to become successful.

We tried to take all these dimensions into account, and ended up with three features of a potential entrepreneur:

- specific attitudes, which refer to internal predispositions to act in certain ways and account mainly for specific personality traits
- normative beliefs as regards entrepreneurship
- feeling of having entrepreneurial skills (self-efficacy).

Tables 11.1 and 11.2 show details of these three features.

Entrepreneurial attitudes In order to estimate someone's attitude as regards an entrepreneurial behaviour, we have selected eight attitudes in the relevant literature so as to be able to work out the students' attitudes regarding entrepreneurial behaviour (Table 11.1).

For each attitude, a series of questions are asked, evoking precise situations, on the basis of the biodata technique (Mael, 1991), which makes it possible to ask factual questions about real issues, involving opinions, attitudes and values in a historical perspective.

Normative beliefs towards entrepreneurship The normative beliefs concept in Ajzen's intention model refers to the person's internalized values, which are confirmed by his or her social models and referents. The person's 'relevant others' are the people who are important to the person as regards career and professional projections, but also to a favourable environment supporting the person in his or her project.

The questions we ask in our questionnaire aim to identify the professional reference models and the favourable environment towards the student's building-up of a project (parents, relatives, close friends, lecturers, former students, banks, school friends) on the one hand and, on the other, finding out whether these reference models support the student's entrepreneurial project.

Table 11.1 Entrepreneurial skill estimating variables

Attitude estimating variables	References	A few situations evoked in the questionnaire
Autonomy	Craid (1990), Cromie (1987)	Working on one's own or with a group, preferring to be 'framed' when working on a project
Need for fulfilment	McClelland (1961), Koh (1996)	Setting up personal challenges, working more than required to
Dynamism	Craid (1990)	Extra curricular activities, with associations
Risk-taking	Koh (1996)	Aversion or not to risk
Initiative-taking	Cromie (2000)	Initiatives within a class, a group, the family
Responsibility	McClelland (1961)	Responsibilities within an association, class representative functions
Innovation	Koh (1996), Craid (1991)	Favourable to changes, to new working methods
Will, determination	Cromie (2000)	Achieving one's objectives at all costs

The feeling of having entrepreneurial skills The estimation of this aspect goes through two sub-aspects:

1. *Self-efficacy*: within the scope of our study, we have defined self-efficacy in relation to entrepreneurs' key skills as identified in the relevant literature (Table 11.2). Our purpose is to identify the potential existence of those entrepreneurial skills among students, through our questionnaire.
2. *The locus of control*: this notion refers to the feeling of controlling the causes and running of an event, or taking them for granted (Braukhaus, 1982; Rotter, 1966). The purpose of our questionnaire is to test these aspects on two levels:
 - (a) The internal locus of control: this aspect is tested through questions helping to find out whether the person takes his or her own control of some events (his or her ability, efforts).

Table 11.2 Self-efficacy estimating variables

Entrepreneurs' skills	References	A few situations evoked in the questionnaire
Seizing and making up opportunities	Herron (1990), Vesper (1990), Baum (1995)	Opportunity of a placement or employment, vacancy opportunity
Working with a team	Chandler and Jansen (1992), Lorrain et al. (1998)	Working on one's own or with a team, dealing with tensions within a group
Developing and maintaining a network	Aldrich et al. (1987), Herron (1990)	Relationships with friends, school friends; developing further acquaintances
Technological skills	Baum (1995), Herron (1990), Chandler and Jansen (1992)	Solving technical problems (computers)
Working intensely	Chandler and Jansen (1992)	Working so as to comply with deadlines, physical efforts
Organizational skills	Lorrain et al. (1998), Deeks (1976)	Organizing events at school or with a group of friends
Self projection into the future	Hambrik and Crozier (1985), Milton (1989)	Having a personal idea of a professional project after college, anticipating difficulties pertaining to the project activity
Making decisions	Deeks (1976), Hoffer and Sandberg (1987)	Making a decision with little information

(b) The external locus of control: the questions asked to estimate this aspect help to find out whether the person sees the running of some events as due to external causes (chance, luck, omnipotence of others).

So our hypothesis is that the entrepreneurial spirit builds up through different entrepreneurial features related revealed or confirmed through entrepreneurial projections. But this does not explain why such a spirit can arise. So the second part of this model is to investigate the possible causes and especially to identify what factors can be acted on during the engineering college curriculum.

ENTREPRENEURIAL SPIRIT INFLUENTIAL FACTORS

Two main factors can be found: the personal past of the person and the pedagogical factors during college. We have to look carefully at both to weight the role of teaching methods and other features at college.

The Identity-building Past

In Ajzen's intention model, the identity and dynamics only partly appears through the normative beliefs aspect. With the model we suggest, the identity-building dynamics are to be considered at two levels. On the one hand is the identity displayed (self-definition, particularly as a would-be engineer, and projections into the future), which builds up interactively with other people (see above). On the other hand is the identity-building past, which is related to legacy and identification models drawn from the social and family backgrounds: parents being – or not – entrepreneurs, parents' career as experienced by themselves and their child, entrepreneurial – or not – social background.

These aspects are spotted as model entry variables: they may have an influence upon entrepreneurial spirit, but we do not see them as determining factors. Our hypothesis is that, with some students, the past may constitute a kind of predisposition which will develop during their studies. With others, there may be a deliberate break with the past, which may also be seen as some sort of determination. With others, we admit the hypothesis that university education can provide the opportunity to develop an entrepreneurial spirit in a student who has not had an entrepreneurial spirit background. This hypothesis is supported by a few examples of paths followed by students we have met in the course of the qualitative phase of our research.

Now let us see how university education can be of some influence upon this starting point, whether it be favourable or not, in relation to the development of an entrepreneurial spirit.

The Influence of Training

There is a rich literature about the construction of an educational and entrepreneurial paradigm (Leitch and Harrison, 1999; MacMullan and Long, 1983;

Sexton and Bowman, 1984). There are also a great deal of reports, syntheses and evaluations of educational experiments in the field of university entrepreneurial training (Garavan and O'Conneide, 1994; Gorman et al., 1997). It is remarkable that the reported experiments mainly concern management training at a university level, even though an awareness of entrepreneurial attitudes involving initiative-taking and an approach to changes can – and should – be addressed very early (Neunreuther, 1979).

As regards entrepreneurship teaching objectives, many authors insist on the necessity of avoiding any mechanistic type of teaching that would bring entrepreneurship down to a set of techniques and ignore the students' incentives (Hynes, 1996). With Gibb (1993), teaching methods should not just transfer knowledge, but develop the building-up of skills and attitudes in favour of entrepreneurship. They are different from other career objectives because they are multiple and because of a necessary pluridisciplinarity. They represent a specific challenge, particularly for engineering college students whom we are dealing with, as the point is to forget risk-aversion attitudes induced by analytic approaches and approaches consisting of searching for a unique solution to cope with a well-defined problem. In fact, we have noticed, in the course of our qualitative study, that the students interested in entrepreneurship are less focused on technology and more open to a selection of the courses they wish to attend.

In the relevant literature, learning entrepreneurial skills and attitudes can be carried out through a teaching method that puts the student in a real problem-solving position. Numerous empirical researches show that certain types of teaching are more favourable than others in the training of entrepreneurs: 'action learning', 'learning by doing', learning through experience, learning from one's own mistakes, learning from other people (Garavan and O'Conneide, 1994; Hartshorn and Hannon, 2002; Leitch and Harrison, 1999). Reviewing various works about learning styles, Gibb (1993) suggests seeing entrepreneurs as characterized by a learning style that would rather be focused on real-life experience and either on action (pragmatic/intuitive mode) or thinking (reflexive/intuitive mode). In their life-story telling approach, Rae and Carswell (2000) mention that the entrepreneurs interviewed are typically fond of learning, and quick and keen on applying the knowledge and skills acquired. They even build up their own theory about the way to learn and to make their own decisions.

Our first qualitative research has enabled us to identify the actual links between an active teaching method and the training to achieve an entrepreneurial spirit. The project activity at EC Lille is a central activity in the curriculum (300 hours per student). The students' interviews have shown that this teaching method, which applies to groups, was seen by the students as the best to encourage an entrepreneurial spirit. The intention to become an entrepreneur, when the time has come for the person to make that decision, has appeared to be influenced by two major experiences: (1) in the course of the project activity the

student discovers his or her ability to lead a group, which is an essential asset for a would-be entrepreneur; (2) through the project activity the student discovers product, market and customer opportunities which drive him or her to reveal – and confirm to him or herself – his or her ability to create, decide and develop a social network.

In the light of these theoretical elements and of our first qualitative research, we produce several hypotheses regarding the selection of courses and the learning style which are typical for the students with an entrepreneurial spirit.

- H5. The students with an entrepreneurial spirit reveal more varied choices regarding the available courses than others. They prefer non-technological courses.
- H6. The students choose active teaching activities, such as project or placements, as opposed to lectures.

Beyond the learning styles which rely on variables of a socio-cognitive type, Gibb (1993) supposes that an entrepreneurial spirit builds up within a specific environment. More precisely, he evokes a culture with which all actors (lecturers, students, career advisers, various partners) support the setting-up of businesses and entrepreneurs. Likewise, in his study about entrepreneurial engineers, Fayolle (2001) also mentions that the college's own culture is a factor to be taken into account when considering the decision to set up a business. A study carried out among Quebec management college students estimates the impact of the choice of courses (business plan or field study) on the desirability and feasibility of an entrepreneurial career (Audet, 2002). In our preliminary research, the students who have decided to join the Business Setting-up Master Course appear to see the college's culture as rather favourable to entrepreneurship.

In a similar field, Curran and Stanworth (1989) put forward an aspect which we feel to be of some importance in the training leading to the choice of a career: the 'affective socialization element' conditioning 'the inculcation of attitudes, values, psychological mind sets and strategies necessary for the subsequent taking on of the occupational role in question'. In our qualitative research, we have been able to observe the influence of a group on the decision to go into the business setting-up process. Some students who had not revealed any predisposition at first sight, eventually turned towards the setting-up of a business, following the leader of their project work team.

Relying on these two results and of our first research, we provide several hypotheses regarding the part played by the students' environments in the building-up of an entrepreneurial spirit:

- H7. The students with an entrepreneurial spirit see the college's culture as favourable to entrepreneurship.

H8. The students with an entrepreneurial spirit belong to a group of close friends who are favourable to entrepreneurship.

Thus, the part played by teaching methods is an action variable which our questionnaire will test at two levels:

1. On the one hand, it will test the students’ perception of the interest and contribution of the various teaching methods provided by the college.
2. On the other hand, the updating of the questionnaire every three years will make it possible to identify the impact of the various types of teaching provided by the college as regards entrepreneurial projections, skills and attitudes. It is then possible to put forward the hypothesis of an evolution of the management of the college curriculum that would be more or less favourable to the development of an entrepreneurial model internalized by students.

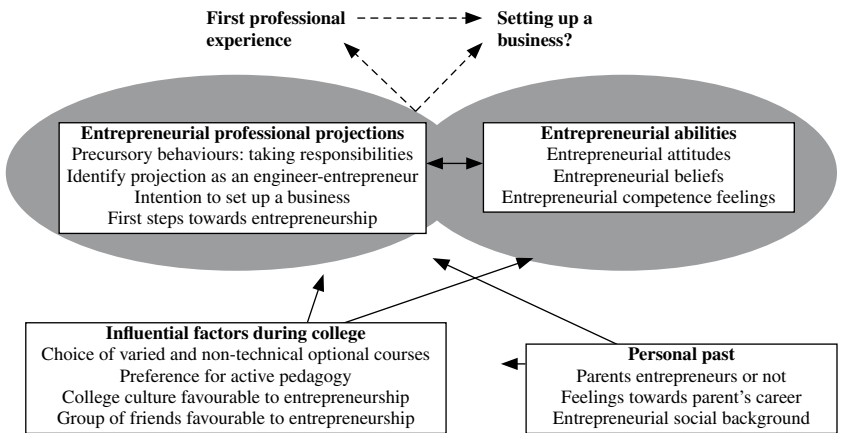


Figure 11.3 Exploratory model of the entrepreneurial spirit

To sum up, Figure 11.3 presents the different factors that can influence the building-up of an entrepreneurial spirit.

The model in Figure 11.3 is an exploratory model that points out the different elements that interact in the building up of the entrepreneurial spirit. The way it can be tested and how it can lead to more precise explanation models needs some methodological explanations.

METHODOLOGICAL ISSUES

In the methodological issues, there are four different levels:

1. The balance between quantitative data and qualitative data.
2. The creation of a questionnaire that can encompass reliable quantitative data on the relevant dimensions in the context of students' life.
3. The administration of the questionnaire to obtain reliable longitudinal data.
4. The different steps and statistical procedures we are using to test the links between a tremendous amount of variables.

A Balance between Qualitative and Quantitative Data

The first approach of our research was qualitative (Verzat et al., 2002; Frugier et al., 2003). We wanted to explore the students' attitudes, representations and beliefs towards entrepreneurship and their links with the family-social and educational trajectory of the students.

We did two hours, semi-directive interviews with 11 engineering students at different stages in our curriculum. Some of them had been taking the entrepreneurial course and others had not. These gave us two major results (Bachelet et al., 2004):

1. A first modelling of the building up of the professional project of our engineering students, showing three major dimensions: the professional projection related to specific values and beliefs, on the one hand, and knowledge and skills on the other. All these dimensions were gradually internalized and confirmed through significant experiences at four stages of the student's path: influence of his or her family environment, secondary school, 'classe preparatoire' stage (= two first years of college in France before taking the elitist 'concours'), and college years at the French High School.
2. The identification of three different types of attitudes and projections towards entrepreneurship:
 - (a) Type 1: the determined entrepreneur = older students who have chosen to take the entrepreneurial course in their third year to prepare setting up their business after school. Their intention to create had been awakened during the project experience at school, where they took a leading role, and stems from deep values inherited from their family environment; but the parents or close family are not necessarily entrepreneurs themselves.
 - (b) Type 2: the potential entrepreneur = young students who declare their intention to set up a business at some time but have not taken any step

in that direction so far. For the time being they do not see themselves in a project leader's position but they are ready to take on risks in an associate's position. They reveal entrepreneurial abilities (autonomy, taking initiatives) but need either an opportunity to go forward or more information on business creation.

- (c) Type 3: the students (at any stage of the curriculum) who are not interested in entrepreneurship: they declare no intention to create a business, they consider it too complicated and risky. They seek security for their future career.

These data were very interesting but could not decide on the cause-effect relationships between factors and the diversity of trajectories could not be combined in clear actionable paths. This is the reason why we launched a large study of full intakes of students to obtain quantitative longitudinal data so as to explore more systematically these complex relationships between factors and trajectories.

When we drew conclusions about types of spirits or trajectories, we also planned to come back to interview 'typical' students to complete our understanding. Indeed, our questionnaire involves a question at the end to ask the student if he or she will take part in a future interview.

Another major issue is to go beyond the vision that entrepreneurial spirit is a result of an individual process. As matter of fact, the experiences of several engineering students of our school really setting up businesses show a major influence of group dynamics within students' project teams. To study this lead, we chose specific methodological options:

- For quantitative data, we added specific questions in our questionnaire about how teamwork was carried out (roles and attitudes in the group, motivation and satisfaction). But we also included the means to analyse questionnaire data at group level, not just at individual level.
- As to qualitative data collection, individual interviews are not the best way to study a group process. Instead we need to use another methodology, namely, focus groups (Morgan, 1998; Stewart and Shamdasani, 1990).

The Creation of the Questionnaire

Different types of data needed to be gathered, as we have seen in the exploratory model. How were they transformed into a valid questionnaire? We followed the classical procedure (Churchill, 1979):

1. Definition of the concept (entrepreneurial spirit), its dimensions and actionable factors (intention, projections, attitudes, self-efficacy, social

background, pedagogy and so on) based on the literature and the related hypotheses.

2. Definition of each variable and of indicators for each variable.
3. Choice of number and nature of questions related to each construct (see below for details) and elaboration of questions for each variable. This was done in teamwork with two students and three researchers in entrepreneurship and psychology. The student's help was important to imagine the kind of situations that were relevant in the students' life.
4. Test of those questions on paper with 50 students: observation of students filling in the form and discussion afterwards between the researchers and the students who had taken part about the questions that had not been understood.
5. Conclusions on the version of the questionnaire to be launched for the complete intake (200 students).

A specific problem we had to face concerned the type and nature of questions to investigate such personal and social factors.

On a large number of constructs, we decided to associate self-evaluation questions on opinions (answers on a Likert scale) and biodata questions to investigate historical, objective and verifiable features (Mael, 1991). The following example of the self-efficacy 'capacity to build on opportunities' explains the different kinds of questions using the two techniques. These are some of the questions we asked:

- If somebody offers me an unexpected but attractive project, I take the opportunity immediately and think it over afterwards, I:
 - totally agree
 - slightly agree
 - slightly disagree
 - totally disagree.
- One of my father's friends came to dinner at home in the last six months. His activity branch interests me for a potential traineeship.
 - I seized the opportunity to talk about my traineeship and make an appointment.
 - The next day I asked my father to talk to him about my traineeship.
 - I waited for another occasion to meet him.

The Administration of the Questionnaire

The 180 questions-long questionnaire has been launched through Computer Assisted Web Interviewing (CAWI) for first-, second- and third-year students at Ecole Centrale de Lille (200–250 students per year), for first-year students at ITEEM (Institut Technologique Européen d'Entrepreneuriat et de Management) (50 students) and at Ecole Centrale de Paris (450 first-year students).

The same questions (except those not expected to change, like the person's past for example) are asked of the same students during each year of their curriculum so as to explore what has evolved or not. After three years of completing this questionnaire at the different stages of the curriculum, we will be able to analyse the individual and collective evolutions and link them to factors at college.

The Statistical Procedures

At first, we used classical correlation analysis and data mining to single out variables which were linked. To try to build a typology of students or of their evolution, factorial component analysis was implemented on selected items.

In the near future, more sophisticated techniques will be used:

- odd-ratios and log-linear analysis to separate the impact of different variables (and eliminate the effect of factors education cannot act upon, like family background)
- structural equations to try to confirm or disconfirm more complex models, like Ajzen's.

PRELIMINARY RESULTS

In this section, we show preliminary results that were obtained in 2003–04 for the three then current intakes at Ecole Centrale de Lille:

- 197 first-year students (= third year of higher education because French students take an examination to enter the Grandes Ecoles after two years of *classes préparatoires*), who represent 81 per cent of the intake.
- 200 second year students (= fourth year of higher education) who represent 81 per cent of the intake.
- 125 third year students (= fifth year of higher education). who represent 73 per cent of the present intake (since many students go abroad for this last year of their curriculum).

At this stage, the results we can show cover only the projective dimensions of the students' representation of the engineer, the professional activities envisioned by engineering students, the kind of career they imagine and their intention to set up a business. The main conclusions we can draw at this stage are detailed below.

The Student's Vision of the French Engineer is a Manager with a Privileged Status, the Technical Dimension is Dominant but Not Necessary

Unsurprisingly, the identity projection of French engineering students of Grandes Ecoles is linked to the historical figure of the engineer as a member of the elite. For most students, the engineer evokes a privileged status (87–90 per cent in the different intakes). Among all other questions about what being an engineer evokes, this is the dominant feature.

Table 11.3 Students' vision of the engineer

First-year students' vision of the engineer	Third-year students' vision of the engineer
Mastering technical knowledge only = 15%	Mastering technical knowledge only = 12%
Mastering technical knowledge + management role = 68%	Mastering technical knowledge + management role = 58%
Management role only = 17%	Management role only = 24%

The mastering of technical knowledge is also a very important feature, but, as Table 11.3 shows, it is not as important as the management role, although it usually goes together. It seems that the managerial aspect of the engineer increases each year (this will be confirmed in the longitudinal analysis with the same students).

Asked about the kind of role they would prefer for their future job, the students detail what they understand by the managerial dimension: project management, gains as opposed to the classical hierarchical role of the manager, popularity during the studies. We suggest that this may be influenced by their

Table 11.4 Students' preferences for their professional role

First-year students' preferences for their professional role	Third-year students' preferences for their professional role
Team manager (hierarchical role) = 41%	Team manager (hierarchical role) = 30%
Project manager = 35%	Project manager = 48%
Technical expert = 24%	Technical expert = 21%

experience of project activity during the first two years of the curriculum at Ecole Centrale de Lille. Most of them love this experience of teamwork, which gives them a clearer vision of daily work in design engineering. Compare this with other colleges/universities where there is no such pedagogy (Table 11.4).

But these visions are built up very progressively. Indeed, the building up of the professional project is a lengthy process.

The Elaboration of the Engineer’s Professional Project is a Long Process

Few students have a precise project when entering college. Sixty-seven per cent declare they have no precise idea about their future job. In the third year, 34 per cent still remain in this position, even though they will have to choose a job a few months later. We believe this is partly due to the specificity of generalist engineering studies. In Ecole Centrale de Lille, the students have the opportunity to acquire technical knowledge in all fields of engineering disciplines (from electronics to mechanics, automatics, chemical engineering, civil engineering and so on) and this leads to many possible jobs. The students who choose that kind of Grandes Ecoles do so mainly because in France it offers more prestige and broader job opportunities, but also because it delays the choice of a professional speciality. As such they choose to make no choice yet and thus keep all opportunities open.

However, as they advance in the curriculum, student’s choice of career becomes progressively more precise. Table 11.5 shows the progression in what the students think of doing when the time comes to leave college.

Most students want to occupy managerial positions in technical fields. Another group will choose to become management executives in non-technical

Table 11.5 Expected occupation after leaving college

What first-year students think they will probably do when leaving college	What third-year students think they will probably do when leaving college
R&D executive = 23%	R&D executive = 22%
Technical executive = 15%	Technical executive = 25%
Business or finance executive = 11%	Business or finance executive = 10%
Sales or marketing executive = 6%	Sales or marketing executive = 4%
Entrepreneur = 8%	Entrepreneur = 5%
Other studies = 11%	Other studies = 20%
No idea = 26%	No idea = 14%

fields, and many students want to go into further studies, which can be interpreted in two ways: either as a way of delaying a choice of profession a bit longer or to acquire more knowledge in specific fields (often in management), which is often appreciated in French engineers' curricula.

Some students still have no idea, which means they rely very much on opportunities in their job search. But what is more striking for our subject is the case of potential entrepreneurs.

Entrepreneurship is the Minority's Choice but it can be Influenced by College Experience

Entrepreneurship might appear as a potentially attractive job opportunity for a few first-year students (8 per cent), but this is less the case for third-year students (5 per cent).

The standard career model of French engineers is still to stay in the same firm: 55 per cent for first-year students and 53 per cent of third-year students envisage such a career. In the first year the remaining students either think of changing regularly (21 per cent) or build up their own evolution by setting up a business or being independent (24 per cent). But in the third year only 14 per cent still envisage building up their evolution, whereas 32 per cent think of changing regularly.

In fact, when we ask further questions about what they think of doing after a few years in their first job, the majority (46 per cent) give an opportunistic answer ('I will see later'). The other more precise answers ('I envisage staying in the same firm'/'I think of going into another firm'/'I think of setting up my own business') are much less attractive. The last possibility (setting up a business) attracts only 7.5 per cent of first-year students and 6.4 per cent of third-year students.

All these figures tend to confirm many studies about potential entrepreneurs: the longer the studies, the less attractive entrepreneurship appears because many other and less risky job opportunities show up. This hypothesis needs confirmation with longitudinal analysis for the same students.

However, it could also indicate a 'generation effect' between the two intakes, suggesting that entrepreneurship is more popular now than it used to be two years ago. Indeed, since a majority of students do not know very much about their future job when entering college, they can be influenced to a certain extent by opportunities in the curriculum that offers more and more choices. In fact, the creation of a third-year option in entrepreneurship in 2002 might have modified the perception of the attractiveness of entrepreneurship for actual first-year students.

However, the main figures confirm that engineering students have a low level of entrepreneurial intentions, and these intentions seem to decline between the

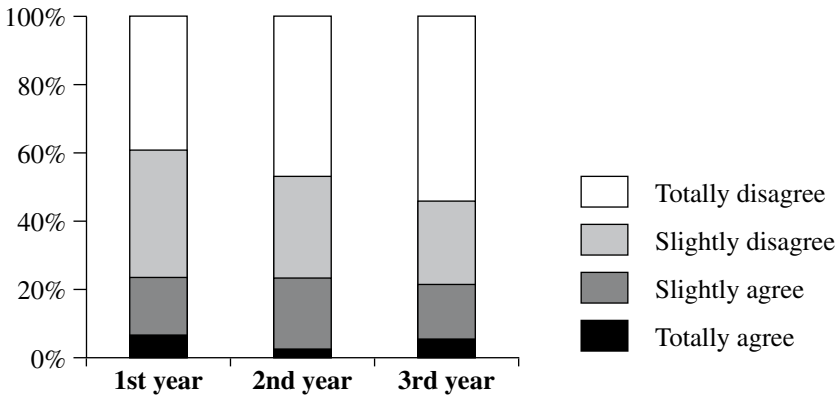


Figure 11.4 Engineering students' intentions to set up a business

different intakes. Figure 11.4 shows the intentions to set up a business (at any time during their career) for the three intakes.

Again, the results must be interpreted with prudence since a generation effect might be present. This needs further examination using longitudinal data from the same students. Apart from the very small proportion of 'totally agree', two dimensions are striking in Figure 11.4. First, is the clear progression of 'totally disagree', which coincides with the progressive precision of the professional project. Second, is the stable proportion of 'slightly agree' which can reveal a potential for entrepreneurs in the long term. In fact, very few engineers in France create a business just after graduation. France is known to specialize in older entrepreneurs (Fayolle, 2004).

So effective intentions are really low, but another interesting figure concerns the question on the intention to start a business with a partner. Compared with the pessimistic vision shown above, this question paints a very different picture, as Figure 11.5 shows.

At this stage of analysis the surprising result in Figure 11.5 is difficult to interpret with certainty. But we formulate the hypothesis that project work experience during engineering studies has an influence on student's perception of their future career and jobs attractiveness. Qualitative interviews with students' teams show that when this project work experience is successful, many students of the same group choose the same job or curriculum orientation, or engage on management responsibilities in students' societies. And, in our experience, among students who effectively set up businesses at the end of their curriculum at college, a significant share did it in teams that originated in the project activity at Centrale. A further exploration of more precise intentions of common groups of students will be proposed in the near future, to test this hypothesis.

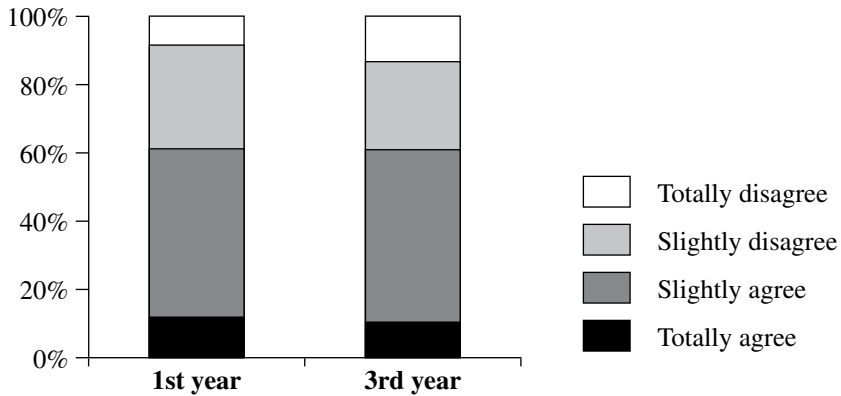


Figure 11.5 Engineering students' intentions to set up a business with somebody they trust: 'if somebody I trust proposes me, I am ready to start up a business with him'

CONCLUSIONS

A number of papers study the intention of setting up a business. The choice we made in this research was to find out what happens before this intention, during undergraduate and postgraduate engineering studies. Indeed, the genesis of the entrepreneurial spirit starts very early in life, but we posit that the university years are decisive. We also posit two other things:

1. There is more to entrepreneurship than business creation since this can occur late in a career. Entrepreneurial spirit and behaviour can show up early in other ways, like taking initiatives in students' unions and simply having certain attitudes towards studies and students' life.
2. Beyond well-explored factors like the personality of the entrepreneur, business opportunities, and so on, other variables must be studied: college/university culture, professional identity as an engineer, attraction for certain courses of pedagogies within the curriculum and so on.

That is why we decided to define and explore the concept of entrepreneurial spirit, studying how university years affect the individual.

Our preliminary results about the projections students make about their career and professional identity unsurprisingly show that entrepreneurial orientation is weak in engineering students in the French context of Grandes Ecoles. But we also see that the professional identity is progressively built up and there

might be some ways to influence this progression towards entrepreneurship. The choices the students make in the curriculum and the experience they gain from teamwork could influence them a great deal.

This has some practical implications for entrepreneurship education:

1. We point out the importance of group dynamics during the curriculum. This is an issue we will explore in the future. Setting up these project activities is probably a major factor for developing entrepreneurial spirit. But we need to know precisely under which conditions such a dynamic can appear. As far as we have seen on a qualitative basis, stimulating characteristics of such projects could be innovation objectives, real stakes (market and customer) and significant weight in the curriculum in terms of available resources (time, consultant teachers and so on).
2. Another important practical implication for entrepreneurship education concerns the evaluation of pre-entrepreneurship education. The current tendency in entrepreneurship education evaluation is to measure differences in students' intentions to set up a business. Other actionable dimensions, like choices in the curriculum could be also measured. The longitudinal analysis of our questionnaire will probably help us to define such interesting variables that occur before the intention to set up a business.

On the methodological level our research offers new perspectives in entrepreneurship education research:

1. To measure more than a difference in intentions, specific methodologies must be used: questionnaires with a wide range of dimensions tested, association of opinion/self-evaluation and biodata questions, longitudinal studies to follow the life path of students.
2. We also see that entrepreneurial spirit is not only to be studied at the individual level, nor at the cultural level, but also in the group dynamic. This needs a specific statistical analysis of the questionnaires (group analysis), and qualitative focus groups methodologies might also be of use to refine our results.

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12. Undergraduate students as a source of potential entrepreneurs: a comparative study between Italy and Argentina

**Sergio Postigo, Donato Iacobucci and
María Fernanda Tamborini**

INTRODUCTION

Business creation and the encouragement of an entrepreneurial culture have become fundamental topics on the agenda of politicians, economists and academics in all countries. This interest is based on existing evidence that new businesses contribute to job creation, political and social stability, innovation and economic development (OECD, 1998; Reynolds et al., 2000; 2002; Schumpeter, 1934; Wennekers and Thurik, 1999: 27).

Different samples including Organisation for Economic Co-operation and Development (OECD) countries over different time periods have attained consistent results; increases in entrepreneurial activity tend to result in subsequent higher growth rates and in a reduction of unemployment (Audretsch and Thurik, 2001).

However the sources of economic growth in today's world are very different from those of the past (OECD, 2000). In this context, where innovation and knowledge are the main sources for growth and economic development, new firms play a critical role as generators of innovation. There is also a growing consensus that in the knowledge and information society education is one of the key variables for the emergence of new ventures and their development prospects (Kantis et al., 2002b).

The relationship between education and entrepreneurship has been examined at length in different studies.¹ Some of these have found a positive relationship between individuals' educational level and their probability of becoming entrepreneurs (Cowling and Taylor, 2001: 167; Delmar and Davidsson, 2000: 1; Gill, 1988: 229; Karcher, 1998; Lafuente and Salas, 1989: 17; Rees and Shah, 1986; Robinson and Sexton, 1994: 141).²

Another group of studies analyses types of entrepreneurs such as those who are technology based and have a relatively high level of education (Colombo

and Delmastro, 2001: 177; Litvak and Maule, 1976: 31). There are also several surveys designed to evaluate the impact of entrepreneurial university courses and the characteristics of the businesses started up by graduate entrepreneurs (Charney and Libecap, 2000; Clark et al., 1984: 26; Kolvereid and Moen, 1997: 154; Levie et al., 2001; Lüthje and Franke, 2002; Tackey et al., 1999; Upton et al., 1995).

The increasing interest in the relationship between entrepreneurs' education, their businesses and their prospects of success is evidence of the growing importance of graduates and undergraduates as a source of potential entrepreneurs, especially in the emergence of new knowledge and technology-based firms. Veciana (2002), states that education will be increasingly needed for the creation of new ventures and emphasizes that empirical evidence shows a positive relationship between formal education and venture success.³

Veciana also explains that the failure rate for new firms started up by individuals with low levels of education is almost 80 per cent, while the failure rate for ventures started up by graduates is well under 20 per cent. In addition he points out that there is an imminent need for entrepreneurship programmes as an independent field of teaching and researching, and a requirement for promoting entrepreneurial culture inside academic institutions.

Other authors, such as Kourilsky (1995), state that the economic growth of countries will hinge on the ability to create new jobs through entrepreneurship. Effective initiatives in entrepreneurship education will be increasingly critical for expanding the flow of potential entrepreneurs from the educational system.

According to Laukkanen (2000), the introduction of entrepreneurial education at an undergraduate level can be thought of as the strategic response of universities and business schools to the recent more demanding environment and the ongoing evolution of societies that make entrepreneurial capabilities and action increasingly useful, even necessary.

In this context many universities have recognized the significance of this phenomenon and have included in their curricula contents initiatives to promote entrepreneurship as a legitimate career option and to encourage closer relationships with the productive sector.

Several authors have analysed the extraordinary increase in the quantity and importance of entrepreneurship programmes over the past 25 years (Fayolle, 1998; Finkle and Deeds, 2001; Kolvereid and Moen, 1997; Lüthje and Franke, 2002; Vesper and Gartner, 1997).⁴ In recent years even some governments have been developing programmes and initiatives orientated to promoting entrepreneurship potential through universities and research institutes.⁵

Business creation by university graduates is particularly crucial in emerging countries like Argentina because the industrial structure is based on traditional firms with relatively low or moderate technological content. Such firms do not

play a significant role as 'incubators' for dynamic new entrepreneurs (Kantis et al., 2002b).

A recent study of business creation in Latin America has shown that 50 per cent of the most dynamic firms were created by university graduates (Kantis et al., 2002a). Therefore there exists a need for significant changes in the education system in order to produce a change in the culture and values necessary to stimulate entrepreneurship (Postigo and Tamborini, 2002; 2003).

Traditionally the Argentinian educational system did not promote or motivate the skills necessary for developing entrepreneurs. Students were not shaped with an entrepreneurial attitude because education and social aspiration were mainly orientated to working in large corporations. In the past decade this trend has started to reverse, presenting changes in the university education system. One sign is the increased interest in entrepreneurship within the educational system and society in general. Moreover in the context of high unemployment and economic recession, individuals and institutions consider encouraging entrepreneurship as a vital answer to the crisis.⁶

In the past ten years there has been a progressive increase in courses, chairs, incubators and other activities orientated to promoting entrepreneurship in the USA. Currently, in Argentina, around 33 per cent of public institutions and 25 per cent of private ones are engaged in some kind of activity concerning this subject, but these initiatives are still geographically concentrated. The major obstacles to these initiatives are rigid curricula, lack of funding and difficulty in finding academics specializing in this field (Postigo and Tamborini, 2003).

A characteristic feature of the Argentina case is that the emergence of entrepreneurship programmes within universities is not a response to a specific government policy. Although general economic conditions in Italy are quite different from those in Argentina, Italy faces similar problems concerning entrepreneurship development and education. According to several surveys, Italy has one of the highest firm birth rates in European countries (Reynolds et al., 2000).

Since small and medium-sized firms (SMEs) play an important role as incubators of new firms, this is partly the result of the large presence of SMEs in the Italian economy. Indeed, entrepreneurial rates are particularly high in the North-Eastern and Central (NEC) regions that are dominated by the presence of SMEs organized in industrial districts (Garofoli, 1992: 101).

Despite the high birth rate of new firms, entrepreneurial activity in Italy faces several problems. The majority of new firms are started by former employees, most of whom have a technical background. These new entrepreneurs typically show good skills in managing the production process but a low level of formal education and little ability in other key management functions (like marketing or finance). This is one of the reasons why new firms, and SMEs in general, have little aspiration and ability to grow (Accornero, 1999).

The lack of managerial competence in SMEs is partly compensated by their belonging to networks of firms or industrial districts. These districts are mostly concentrated in traditional sectors (like textiles and clothing, footwear, furniture, ceramics and so on). As the majority of new firms develop from existing ones, they normally belong to the same sector of activity. Adding to this, there is growing concern in Italy that firms in these sectors will experience increasing competitive pressure from emerging countries.

It is widely acknowledged, therefore, that in order to improve the development prospects of SMEs it is necessary to stimulate the creation of new firms in other sectors of activity, mainly those associated with new technologies. In this case, entrepreneurs spinning out from universities and research centres are expected to play a greater role than entrepreneurs spinning out from existing companies do (Postigo and Tamborini, 2003).

Despite acknowledging the potential impact of graduate entrepreneurs, very little has been done in Italy to favour entrepreneurial education within universities and just a few attempts have been made to create infrastructures (like incubators) to support university spin-offs.

In the field of entrepreneurial education the situation in Italy is rather anomalous when compared with that of North American countries and even with that of other European countries. In the past 25 years there has been an explosion of interest in the USA for the entrepreneurship field which has resulted in the institution of courses, research centres and degrees at undergraduate and graduate levels (Katz, 2003; Solomon et al., 2002; Vesper and Gartner, 1997).

In 1997 there were 160 permanent entrepreneurship chairs in the USA, a clear indication of the fact that it was considered a separate discipline. The majority of European countries have followed the same trend, though with some delay. Entrepreneurship courses have grown in the last decades in all the main industrialized countries. Moreover, a larger presence of entrepreneurial courses within the curricula of business and engineering students has been supported by several academic and governmental studies (Beranger et al. 1998; Department of Trade and Industry, 1998).

In a comparison made in 1996 of the number of entrepreneurship chairs in the main European countries, Italy, along with Denmark and Hungary, was not far from the top of the list, with the UK holding more than 12 chairs, and France and Finland 11. Moreover, while in most European countries the development of entrepreneurial courses has continued to grow in the past few years, the Italian situation has remained practically unchanged.

Given this situation there is plenty of scope in Italy for introducing entrepreneurial courses into university curricula. Since the main aim is to foster new firm creation in the high-tech sector, engineering and science schools should be the ones to primarily encourage these courses.

The main objective of this study is to analyse the opinions and attitudes of undergraduate students concerning entrepreneurship in Argentina and Italy. Specifically the chapter aims at analysing the influence of different contexts – developed and developing countries – on:

1. The attitude towards entrepreneurship (whether and why students consider creating their own business desirable) and the influence of social background.
2. The perception of the impact of the social and economic environment (positive or negative factors) on business creation.
3. The image students hold about entrepreneurs.

Considering the student populations and demographic characteristics, two groups of students, one from San Andrés University (Argentina) and the other one from Università Politecnica delle Marche (Italy) were analysed. The information was obtained from a survey carried out between March and May 2003 on 260 students from both countries. Students from different courses, levels of education, gender and ages were surveyed.

This chapter is organized as follows. In the next section we review the literature on the influence of education, demographic factors, culture and role models in influencing perception and attitudes concerning entrepreneurship. In the third section we describe the methodology used to collect and analyse the data. In the fourth section we present the results of the survey and in the fifth section we draw the main conclusions of the study.

LITERATURE REVIEW

The Role of Universities in Promoting an Entrepreneurial Culture

The creation of a business is a complex process. Within the large number of variables that can be considered, at least, three conditions are required for the conception of a new venture: the existence of entrepreneurs, an entrepreneurial culture and an adequate environment. Education has a fundamental role in the first two (Postigo and Tamborini, 2002).

Universities should promote entrepreneurial activities in partnership with their students and the business community with the aim of encouraging self-employment as a career path as well as giving young people the basic competencies, skills and knowledge required for the creation of a new venture. All students are potential entrepreneurs who need a university environment to foster their growth and development. A university fulfils its duty to society and to its students by providing a rich entrepreneurial learning experience (Ussman and Postigo, 2000).

Labour market structures are currently changing; finishing college is no longer a guarantee of employment. Currently, young people have to face the uncertainty and complexities of the labour market. Universities can help reduce unemployment by developing entrepreneurs.

In brief, entrepreneurship education can be a way to (1) legitimize entrepreneurship and develop an entrepreneurial culture with the purpose of fostering economic growth, (2) develop and stimulate entrepreneurial skills, and (3) prepare students for a dynamic labour market.

Culture

Hofstede (1980; 2001) defines culture as a set of shared values, beliefs and expected behaviour. An entrepreneurial culture implies a society with a high entrepreneurial birth rate and with an important degree of acceptance of entrepreneurs. The cultural aspect is relevant, especially because some cultures produce more entrepreneurs than others. Authors like Mueller and Thomas (2000) see a relationship between values, beliefs and behaviour, and point out that differences in culture may influence the decision of whether or not to become an entrepreneur.

Institutions are another relevant factor. They are made up of formal (laws and regulations) and informal (behavioural rules) limitations. Institutions, according to North (1994, 112), are 'the humanly devised constraints that structure human interaction'. Family, education, and political and economic systems are the institutions that define the incentive structure for society as a whole.

Finally, the social recognition of the business career is an essential part of culture. According to Wilken (1979), the degree of approval or disapproval of business activity will influence its emergence and characteristics, being favoured by those environments in which entrepreneurs enjoy greater legitimacy. Nevertheless this does not imply that norms and values alone are enough to cause or to inhibit the rise of entrepreneurship, but their influence should be considered and integrated in the context of other non-economic factors.

Role Models

Minniti and Bygrave (1999) explain that as it occurs with other human decisions, the individual choice to become an entrepreneur is determined by the information available to the individual. Such individuals or 'economic agents' are heterogeneous and have different information, and therefore have different perceptions about the uncertainty and costs of becoming an entrepreneur.

Randomly each individual is endowed with an initial set of characteristics (biological and sociological). These characteristics, as well as social circumstances such as prospects of employment and education, influence the attitude

of people towards entrepreneurship. Moreover role models play a fundamental part in the determination of entrepreneurial choices. Role models can originate from society, family, friends and other social networks.

The reasoning is as follows: those who have higher possibilities and opportunities to observe entrepreneurs directly are more likely to become entrepreneurs, given that the perception and opportunity cost of the business activity decreases. This is a consequence of two main factors. The first is related to networking and tends to decrease transaction costs. The second is that the presence of role models increases the probability that new entrepreneurs will appear.

When an individual does not have entrepreneurial role models in his or her family, universities via courses and teaching methods can promote an entrepreneurial culture.

Motivation

Gibb and Ritchie (1982) make a distinction between three critical aspects of entrepreneurship: motivation, influences on the decision to become an entrepreneur, and identification and validation of the business idea. Acquisition of motivation is the result of influences stemming from social background, family, education, career, and so on.

Shapiro (1984) presents a model that indicates the following necessary conditions for the creation of a business: displacement, disposition to act, credibility and availability of resources. Displacement means that each business action originates from some type of displacement or change in the course of life.

It is a fact that this situation impacts on a prior condition of stability and leads to action. The factors that cause these changes can be categorized into positive, like a need for achievement, or negative, such as unemployment. The disposition to act depends on certain personal characteristics of the entrepreneur, the presence of role models and of a positive environment.

In conclusion the main factors to be analysed concerning university students' attitude towards entrepreneurship are the role of universities in fostering entrepreneurship, the culture, the role models and motivation.

DATA AND METHODOLOGY

Data were collected through a direct interview survey conducted between March and May 2003 on a sample of students from Universidad de San Andrés (Argentina) and from the Università Politecnica delle Marche (Italy).

The Argentina sample is made up of 100 students at the Business and Economics Schools from San Andrés University. The students mainly come from the province of Buenos Aires where more than 30 per cent of the total popula-

Table 12.1 Students by country and age (percentage)

	Argentina	Italy	Total	%
17–19	47	47	94	35.9
20–22	51	87	138	52.7
23–25	2	28	30	11.4
Total	100	162	262	100.0

Table 12.2 Students by country and gender

	Argentina		Italy	
	Number	%	Number	%
Male	57	57.0	139	85.8
Female	43	43.0	23	14.2
Total	100	100.0	162	100.0

tion of the country lives. It is the most prosperous region with a great deal of industrial activity. Most students surveyed from Argentina are less than 22 years old (Table 12.1) with a slight prevalence of males over females (Table 12.2).

The Italian sample is made up of 162 students from the School of Engineering, Ancona University. The students mainly come from the Marche region (of which Ancona is the capital). The Marche region is a small, highly industrialized region in central Italy. It belongs to the set of north-east-central (NEC) Italian regions which, following the Second World War, experienced an intensive process of industrialization mostly based on small firms concentrated in industrial districts. Like the other NEC regions, the Marche specializes in 'traditional' industries (clothing, footwear, furniture).

The Italian sample is basically divided into two groups: the first group is made up of first-year students on the Mechanical Engineering course. They are mostly 19 or 20 years old. The second group consists of students from several engineering courses (Mechanics, Electronics), aged between 23 and 25 (Table 12.1). Male students dominate the Italian sample because engineering courses in Italy are still mainly undertaken by males rather than females (Table 12.2).

Besides the differences in courses being taken by age and gender, another important difference between the Argentinian and the Italian samples is the students' social background. In the Argentinian sample there is a prevalence of students whose parents are entrepreneurs, professionals or executives, while in

Table 12.3 Father's occupation (percentage)

	Argentina	Italy	Total
Professional	15.3	16.7	16.1
Entrepreneur	37.8	7.7	19.3
Executive	24.5	15.4	18.9
Manual worker	0	12.2	7.5
Office worker	5.1	26.3	18.1
Civil servant	4	5.1	4.7
Other*	13.3	16.7	15.4
Total	100.0	100.0	100.0

Note: * Includes retired people.

Table 12.4 Mother's occupation (percentage)

	Argentina	Italy	Total
Professional	24.0	5.7	12.6
Entrepreneur	10.4	2.5	5.5
Executive	8.3	4.5	5.9
Manual worker	1.0	10.8	7.1
Office worker	3.1	25.5	17.0
Civil servant	4.2	14.6	10.7
Other*	49.0	36.3	41.1
Total	100.0	100.0	100.0

Note: * Includes retired people and housewives.

the Italian sample there is a prevalence of students whose parents are office or manual workers (Tables 12.3 and 12.4). The Italian distribution of parents' occupation is similar to the average in the population, while the Argentinian sample is biased towards the higher income classes.

The survey questionnaire was organized in three sections. The first section collected general information about the student: age, gender, courses being taken, work experience, parents' occupation, and so on. The second section was dedicated to analysing the career prospects of students, with specific emphasis on their intention to become entrepreneurs, that is, to start up their own firm. In this section questions were also asked concerning the perceptions students hold of entrepreneurs and of the obstacles and possible reasons for becoming entrepreneurs. The third section was intended to obtain information on how students

understand the general environment with regard to facilitating or hindering entrepreneurship.

Data analysis is based on descriptive statistics and on mean comparisons between sub-groups of students. We were specifically interested in analysing the role of some demographic variables in the attitudes towards entrepreneurship, and in studying the differences between Argentinian and Italian students.

RESULTS

The discussion of results is organized in three parts: (1) career aspiration and propensity to starting up a firm; (2) perceptions of entrepreneurs and reasons for starting (or not starting) an entrepreneurial career; (3) environmental factors that facilitate or hinder entrepreneurship.

Career Aspiration and Propensity to Starting up a Firm

Argentinian and Italian students show both similarities and differences when asked about their prospective careers.

The similarities are in their possibility of becoming employees, in large as well as in small firms or in the civil service. One-third want to enter a large firm, while only a small percentage considers entering the public sector or a small firm (the higher percentage of Italian students considering entering a small firm can be explained by the large presence of SMEs in the Marche region). Students from both countries also agree that firms no longer guarantee lifelong occupation and so everyone should be prepared to work for more than one firm (Table 12.5).

Differences between the Italian and the Argentinian students can be observed regarding three aspects:

- intention to do a Master's after graduation
- propensity to work abroad for a period (true for 85 per cent of Argentinians and only for 55 per cent of Italians)
- propensity to starting up a firm.

The low percentage of Italian students intending to do a Master's after graduation is explained by two factors: the first is that Italian universities did not offer Master's degrees until the last year of a student's academic career; the second is the good prospects for engineering students of getting a job soon after graduation. The latter aspect can probably also explain the lower percentage of Italian students interested in working abroad. The answer to this question is apparently more dependent on the country than on the students' social background.⁷

Table 12.5 Students who agree on the following statements about their future career (percentage)

	Argentina	Italy
Master or PhD	83.0	31.6
Clear idea about future job	18.2	30.2
Enter a large firm	34.0	34.8
Enter an SME	3.1	9.6
Enter the public sector	9.2	10.1
Work for more than one firm	65.0	53.2
Work abroad for a period	85.0	53.1
No plan for my career	10.2	38.8
Start up a firm soon after graduation	13.3	3.1
Start up a firm in a few years	34.3	3.8
Start up a firm after a few years of work	43.4	16.9
Start up a firm if opportunity arises	63.6	31.6
No interest in starting up a firm	0.0	11.3
Firms do not guarantee lifelong occupation	35.1	32.1
Work will not require all my intellectual capacities	28.9	40.1

The Argentinian students show a remarkably higher propensity to start up a firm than do Italian students. The difference is particularly high in the case of creating a new firm some years after graduation or if the opportunity arises. It seems that Argentinian students are more eager to enter an entrepreneurial career (although as future entrepreneurs) and more prepared to take on this opportunity.

There are two possible reasons for this result. First, is that the high unemployment rate in Argentina has reduced the opportunity cost of self-employment. Second, the educational system in Argentina does not provide work experience. As a result students prefer to gain some experience in the labour market before starting their own businesses (Table 12.6).

The high propensity of Argentinian students starting up their own firm also emerges from the answer to whether they have ever taken into consideration the idea of starting up a firm. While in both samples almost half of the students have only vaguely thought about the matter, 47 per cent of Argentinian students declare they have 'serious' intentions to do so, compared with 17 per cent of Italian students. Among the Italian students there is also one-third who have never thought about this possibility (Table 12.7).

The propensity to start up a firm shows a clear relationship with the social background of students (Table 12.8). The percentage seriously thinking about

Table 12.6 Firm start up (percentage of students who agree with the following statement)

	Argentina	Italy
Start up a firm soon after graduation	13.3	3.1
Start up a firm in a few years	34.3	3.8
Start up a firm after a few years	43.4	16.9
Start up a firm if opportunity arises	63.6	31.6

Table 12.7 Interest in starting up a new firm (percentage)

	Argentina	Italy	Total
No, never	8.0	29.2	20.6
Yes, a little	45.0	53.7	50.2
Yes, seriously	32.0	8.2	17.8
Yes, I plan to create my own firm	15.0	8.8	11.4
Total	100.0	100.0	100.0

Table 12.8 Interest in starting up a firm considering father's occupation (percentage)⁸

	No, never	Yes, a little	Yes*	Total
Professional	17.1	53.7	29.3	100
Entrepreneur	16.3	46.9	36.7	100
Executive	11.4	52.3	36.4	100
Manual worker	35.3	58.8	5.9	100
Office worker	31.7	43.9	24.4	100
Civil servant	30.0	50.0	20.0	100
Other	16.2	56.8	27.0	100
Total	20.1	51.0	28.9	100

Note: * Seriously thinking of creating a business or have already planned it.

it or who have already planned this career path is significantly higher for students whose parents are entrepreneurs or executives, compared with students whose parents are manual or office workers.

If we analyse the social background of students (parents' occupation) much of the country difference disappears. Unfortunately, this analysis can only be done for students whose parents are entrepreneurs or executives, because we have just a few Argentinian students whose parents' occupation is manual or office work (Table 12.9).

Table 12.9 Students whose fathers are entrepreneurs or executives by country and interest in starting up a firm (percentage)

	Argentina	Italy	Total
No	9.8	21.9*	14.0
Yes, a little	50.8	46.9	49.5
Yes	39.3	31.3	36.6
Total	100.0	100.0	100.0

Note: * Includes students who do not think of starting up their own firm but who plan to enter the family business.

Overall family background seems to play a more important role in the entrepreneurial attitude of students than general cultural variables associated with the country. At the same time it is interesting to note that even after controlling for social background Argentinian students show a slightly higher propensity to start up their own firm than do their Italian counterparts.

Society's Perception of Entrepreneurs and Reasons for Becoming Entrepreneurs

Concerning the issue of the perception they have of entrepreneurs, Italian and Argentinian students show similarities and differences. Overall the image of entrepreneurs' personal attributes is similar in both countries: students agree that entrepreneurs are skilful people (they are dynamic, able to tolerate risks, have good entrepreneurial vision) but have a low sense of social justice and honesty (Table 12.10).

Students seem to think of entrepreneurs as clever people who use their skills and abilities in ways that are not always, or completely, socially acceptable. This homogeneity is remarkable given that the majority of Argentinian students have entrepreneurs as parents while the majority of Italian students have employees as parents.

With regard to the differences between Argentinian and Italian students, two issues are worth mentioning. The first is the social and economic role of entrepreneurs: a larger percentage of Italian students, compared with Argentinian

Table 12.10 Students who agree with the following statements (percentage)

	Argentina	Italy
Entrepreneurs are dynamic	95.7	95.9
Entrepreneurs have good entrepreneurial vision	79.7	93.0
Entrepreneurs are honest	41.4	31.3
Entrepreneurs have a clear sense of social justice	29.1	19.7
Entrepreneurs talk with their employees	69.9	43.4
Entrepreneurs are able to tolerate risks	88.3	86.3
Entrepreneurs are innovative	81.7	66.9
Entrepreneurs know organizations	81.9	72.9
Entrepreneurs have financial and management skills	70.4	74.3
Entrepreneurs are financial investors	75.3	98.0
Entrepreneurs are professional	55.9	46.5
Entrepreneurs earn a lot of money	40.5	86.4
Entrepreneurs contribute to economic development	80.7	91.4
Entrepreneurs create jobs	77.2	88.7

students, think that entrepreneurs create jobs and contribute to the country's economic development. Perhaps this difference can be attributed to the different economic conditions in Argentina and Italy.

A higher percentage of Italian students agree that entrepreneurs earn a lot of money. This seems to contrast with their low interest towards pursuing an entrepreneurial career compared with Argentinian students. This paradox is only apparent because earning money does not represent the main reason for becoming an entrepreneur.

Indeed, both Argentinian and Italian students indicate non-economic reasons as the most important ones for starting up their own firm. It is remarkable that the first three reasons rank in the same order in both countries and are all related to personal rather than economic attainment (Table 12.11).

At the same time it is worth noting that the Italian students assign more importance to economic reasons than do Argentinian students. In the case of difficulties in starting up their own firm the differences between Argentinian and Italian students are more evident. Among the first five difficulties, they agree on three items: the perception of too much risk, the lack of initial funding and the presence of too much competition (Table 12.12).

Following these problems the Italian students also indicate the fear of being unsuccessful and of fiscal pressure, while the Argentinian students put forward doubts about their entrepreneurial abilities and the bad prospects after retirement. The differences in the importance of fiscal pressure or the prospects after

Table 12.11 *Reasons for starting up a firm (percentage of students indicating the reasons as important or very important)*

	Argentina		Italy*	
	%	Rank	%	Rank
To put into practice own ideas	86.0	1	71.6	1
Personal independence	80.0	2	66.0	2
To create something of one's own	76.0	3	64.8	3
To be the head of an organization	57.0	4	34.6	6
Economic independence	47.0	5	34.7	7
To earn more than an employee	39.0	6	55.6	4
To accumulate a personal fortune	33.0	7	38.9	5
Difficulty in getting a satisfying job	32.0	8	24.7	10
Not satisfied with current job	25.0	9	14.8	12
To get a salary that corresponds to abilities	22.0	10	34.0	8
Social status	20.0	11	29.6	9
Family tradition	15.0	12	7.4	13
To invest family assets	15.0	13	15.4	11
Other	11	14	3.7	14

Note: * Answers were limited to five items.

retirement could be attributed to differences in the institutional situations in the two countries. The other two items are connected to a certain extent considering that the fear of being unsuccessful is linked with a lack of confidence in personal capabilities.

Obstacles and Incentives for Starting up a New Firm

In both countries the majority of students think that it is more difficult to start up a firm now than it was in the past (Table 12.13).

The percentage that believes this is higher for Italian students. Even in this case the difference depends on the lower percentage of Italian students coming from entrepreneurial families (Table 12.14). Indeed, if we consider only the students whose parents are entrepreneurs, the difference between the two countries disappears (Table 12.15). It is worth noting that, even in this case, two-thirds of the students think that creating a firm at present is more difficult than it was in the past.

Except for the case of excessive competition, the obstacles perceived by students for the start-up phase of new firms are very different in the two countries.

Table 12.12 *Obstacles for starting up a firm (percentage of students indicating the obstacles as important or very important)*

	Argentina		Italy*	
	%	Rank	%	Rank
Too much risk	64.0	1	77.2	2
Lack of initial funding	60.0	2	83.3	1
Too much competition	50.0	3	59.9	4
I doubt my entrepreneurial abilities	49.0	4	30.2	6
Bad prospects after retirement	26.0	5	4.9	13
Lack of minimum salary	23.0	6	27.1	8
Good career prospects as an employee	21.0	7	12.3	11
Fear of being unsuccessful	21.0	8	70.4	3
Too much work	19.0	9	25.9	9
Negative image attached to entrepreneurship	17.0	10	8.6	12
Fiscal pressure	16.0	11	50.0	5
No regular income from entrepreneurial activity	16.0	12	27.2	7
Problems with employees	12.0	13	16.0	10
Other	8.0	14	1.9	14

Note: * Answers were limited to five items.

Table 12.13 *Difficulty in starting up a firm compared with the past (percentage)*

	Argentina	Italy	Total
Easier	38.5	23.2	29.1
More difficult	61.5	76.8	70.9
Total	100.0	100.0	100.0

Argentinian students point out general economic factors like globalization, the presence of uncertainty and the difficulties in penetrating markets (market concentration and market saturation).

Italian students point out more specific factors like fiscal pressure, difficulty in raising adequate funding for the start-up phase, competition from large firms and bureaucracy (Table 12.16). These differences can be clearly explained by the differences in the general economic conditions in the two countries.

Table 12.14 Difficulty in starting up a firm compared with the past segmented by father's occupation (percentage)

	Easier	More difficult
Entrepreneur	35.4	64.6
Professional	35.0	65.0
Executive	30.4	69.6
Office worker	22.7	77.3
Manual worker	21.1	78.9
Civil servant	18.2	81.8
Other	27.8	72.2
Total	29.1	70.9

Table 12.15 Difficulty in starting up a firm compared with the past (percentage values for students whose parents are entrepreneurs)

	Argentina	Italy	Total
Easier	36.1	33.3	35.4
More difficult	63.9	66.7	64.6
Total	100.0	100.0	100.0

In neither of the two countries is lack of education considered to be one of the main obstacles for entrepreneurial activity. This seems coherent with the image of entrepreneurs as people with special personal attributes but without specific education and training.

CONCLUSIONS

This chapter is a preliminary study of the factors influencing how undergraduate students perceive entrepreneurship and of their attitude to starting an entrepreneurial career. It is also intended to assess how country differences influence these perceptions and attitudes. The main conclusions can be summarized as follows.

The social background of students (specifically, parents' occupation) plays a crucial role in the attitude of students towards becoming entrepreneurs, while country specificity has little impact on it.

Table 12.16 *Obstacles for starting up a firm*

	Argentina		Italy	
	%	Rank	%	Rank
Globalization	64.0	1	13.6	15
Competition	44.0	2	43.8	1
Lack of planning skills	36.0	3	14.2	14
Economic trend	31.0	4	30.2	9
Uncertainty	29.0	5	32.7	8
Market concentration	24.0	6	6.2	18
Market saturation	22.0	7	30.2	9
Risk aversion	20.0	8	29.0	11
Entry barriers	19.0	9	22.8	13
Other	17.0	10	0.6	19
Legislation	14.0	11	13.0	16
Lack of information	13.0	12	6.8	17
Lack of education	13.0	12	25.9	12
Problems in raising funds	8.0	14	34.6	7
Lack of experience	8.0	14	35.2	6
Fiscal pressure	6.0	16	42.0	2
Bureaucracy	5.0	17	36.4	5
Large firms	3.0	18	37.7	4
Insufficient funding at start-up	3.0	18	39.5	3

On the contrary, social background has less impact on the image of entrepreneurs. This image shows remarkable similarities in both countries: entrepreneurs are seen as people with specific personal attributes who use their skills and abilities in ways that are not always, or completely, socially acceptable (lack of honesty or sense of social justice).

The different country environments influence the image of the economic role of entrepreneurs in creating jobs and fostering economic development: a role that is more recognized by Italian than Argentinian students.

Remarkable similarities between the two groups of students are also observed in the reasons for creating their own firm. Both groups stress personal attainment – that is, putting their own ideas into practice, personal independence, creating something of their own – rather than economic reasons (earning or accumulating money). The latter reasons are considered important by a larger percentage of Italian than Argentinian students.

The perceived obstacles in starting up their own firm are also similar: both Argentinian and Italian students emphasize the risk associated with venture creation combined with the lack of initial funding. Among the main obstacles they also consider fear of being unsuccessful (Italian students) and doubts about their entrepreneurial skills (Argentinian students).

Overall in both countries students emphasize reasons related to their personal status or to the characteristics of the ventures they are going to start up rather than variables related to the general environment (only in the case of Italian students is fiscal pressure indicated as an important obstacle).

More than two-thirds of the students believe that it is more difficult to create a firm at present than it was in the past. The result is highly dependent on the social background of students and not on the country in which they live. Students coming from entrepreneurial, professional and executive families seem more confident about the possibility of starting up their own firm than students coming from other social backgrounds. On this point it is interesting to note that even the former two-thirds of students perceive the present situation as more difficult than in the past.

The major differences between the two countries emerge with reference to the obstacles to entrepreneurial activity in general. Argentinian students point out general economic factors – for example, the effect of globalization and the presence of uncertainty – while Italian students point out more specific factors like fiscal pressure, difficulty in raising adequate funding at start-up and competition from large firms.

Overall the results of the study show that there are more similarities than differences between Argentinian and Italian students in their perception of entrepreneurship and in their attitude towards starting up their own firms. The differences concerning these aspects can be mainly attributed to the social background of the students – specifically to their parents' occupation – rather than to the country. This has two important consequences.

The first consequence is similarities between the two countries allow the design and experimentation of similar university programmes for entrepreneurship development. The second, and most important, consequence is that the problems and attitudes shown by students concerning their prospective career as entrepreneurs seem to give a considerable scope for entrepreneurship programmes and several interesting indications about the aims and contents of these programmes.

The importance of family background on the propensity to take up an entrepreneurial career strongly supports the importance of university courses designed not only to develop specific entrepreneurial skills, but also to give students the opportunity to obtain a general knowledge of entrepreneurship and to interact directly with entrepreneurs by promoting role models.

With regard to entrepreneurial skills, courses on entrepreneurship should address the following topics:

1. Improvement of personal capabilities and confidence in managing the risks associated with the creation of new ventures.
2. Information about the possibilities and instruments for raising external funds for new ventures.
3. Development of a business plan with specific regard to the evaluation and control of entrepreneurial risks.
4. Socio-cultural aspects of entrepreneurship and the forces encouraging or inhibiting it.

This study has several limitations that indicate areas for further development both at a theoretical and an empirical level. At an empirical level the main limitation concerns the sample size and the lack of variability for some demographic aspects. In order to overcome this limitation we intend to enlarge the sample to include a larger typology of students in terms of university curricula, social background and countries.

At a theoretical level more data is needed to identify the different factors (demographic, cultural, personal) influencing perceptions and attitudes towards entrepreneurship and the mechanisms through which they operate.

NOTES

1. We adopt the following definition of entrepreneurship: 'the perception and creation of new economic opportunities' combined with 'decision-making on the location, form and use of resources' (Wennekers and Thurik, 1999: 27).
2. According to Baumol (1968; 1993), entrepreneurs are people who identify new ideas and set them in motion. They are the people who lead and are the source of inspiration in the development of a new business. Finally, Bygrave (1997) defines an entrepreneur as someone who perceives an opportunity and creates an organization to exploit it.
3. In Kantis et al. (2002a) *Entrepreneurship in Emerging Economies: The Creation and Development of New Firms in Latin America and East Asia*, Inter-American Development Bank.
4. In a study on nine countries, Vesper and Gartner (1997) show that the number of universities with entrepreneurship courses grew from 16 in 1970 to 400 in 1995.
5. Examples of such schemes are the German EXIST Programme, the Business Birth Rate Strategy in Scotland, Brasil Empreende, IG in Italy.
6. Unemployment started to grow in the 1990s. In 1990 the rate was set around 8.6 per cent, in 1993 9.9 per cent, reaching 18.4 per cent two years later. In 2002 it reached 21.5 per cent, with 18.6 per cent of sub-employment (INDEC, 2002). In addition to the problem of unemployment, gross domestic product (GDP) has been declining since 1999. The available information indicates that its decrease was 3.4 per cent in 1999, approximately 1 per cent in 2000, 4.4 per cent in 2001 and 11.2 per cent in 2002 (IMF, 2002).
7. Anyway in both countries students from high-income families (entrepreneurs, executives and professionals) show a higher propensity to working abroad for a period of time.

8. Given the high level of correlation between father's and mother's occupation and the fact that a high percentage of mothers do not work, we have used the father's occupation to analyse the social background.

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13. Entrepreneurship education among students at a Canadian university: an extensive empirical study of students' entrepreneurial preferences and intentions

Yvon Gasse and Maripier Tremblay

INTRODUCTION

Though certain studies have determined the entrepreneurial potential in the general population (Reynolds, 1997), few have concentrated on university settings. This fact is all the more noteworthy in the context of a knowledge economy in which university students increasingly see entrepreneurship as a valid career choice. Laval University, which has a student population of close to 36 000, already provides services for student entrepreneurs, but the entrepreneurial potential of this population is, as of yet, not that well known. The goal of the present study was thus to compare the entrepreneurial potential of Laval University students with that of the general population and to verify the students' specific interests, expectations, intentions, prevalence and needs. We likewise attempted to see how the students' values, attitudes and behaviour, that is, their entrepreneurial potential, could predispose them to founding a company, creating their own job or having the intention to do so. Consequently, we also tried to better understand what learning methods could stimulate the entrepreneurial approach and what type of support and follow-up would be likely to interest the students.

MODEL OF THE ENTREPRENEURIAL PROCESS

New companies are created and developed by entrepreneurs, that is, those who bring together and manage human and physical resources with the goal of creating, developing and implementing solutions that help to meet people's needs (Cooper et al., 1990). Entrepreneurs harness and organize these resources to start up and then develop the companies that will respond to these needs.

Several studies have shown that company founders have certain particular characteristics (Gasse and D'Amours, 2000); however, upon closer analysis, these attributes can vary according to the type of entrepreneur (Krueger, 2000). Moreover, we must also recognize that these entrepreneurial predispositions are influenced by the environment in which the person works (Reynolds, 1995).

The act of founding a company results from a decision made by an entrepreneur (Bhidé, 2000). The various influences that bear on this decision are to be found in three crucial aspects, namely:

- desirability
- feasibility
- creation.

Figure 13.1 is an attempt to represent the main elements of the model of the entrepreneurial process. The interest of this figure lies in the light it sheds on a very complex and dynamic reality. The different levels of analysis not only bring out the numerous links and causalities but also the constant interpenetration of individual and social problems. A model, even a descriptive one, is only a partial and simplified representation of reality, its only goal being to help people better understand the phenomenon in question. Real life teaches us that each person, situation and environment has its own particularities. Even though these particularities cannot be generalized, they can serve as illustrations of general concepts.

Our objective in this study is to verify the role played by certain, specifically chosen variables in the entrepreneurial process of university students. The other elements presented in Figure 13.1 are only shown to give an overall view of the phenomenon's complexity.

Desirability (Values)

Since entrepreneurship is above all a matter of individuals, and people are largely shaped by the environment in which they evolve, it is important to better determine the factors of the surrounding environment that can influence the attractiveness and even the desirability of entrepreneurship. Social and cultural factors directly affect the perceived desirability of a given behaviour or action (OECD, 1998). When entrepreneurship is promoted in a community, such as that of the university, the people who make up this community then tend to have a positive perception of this activity (Davidsson and Honig, 2003). There are two dimensions to this desirability: first, the perception that the benefits of an entrepreneurial behaviour will be personally desirable and, second, the perception that they will also be socially desirable (Shapero and Sokol, 1982). In a university context, we can see how faculties, programmes, courses, pedagogical

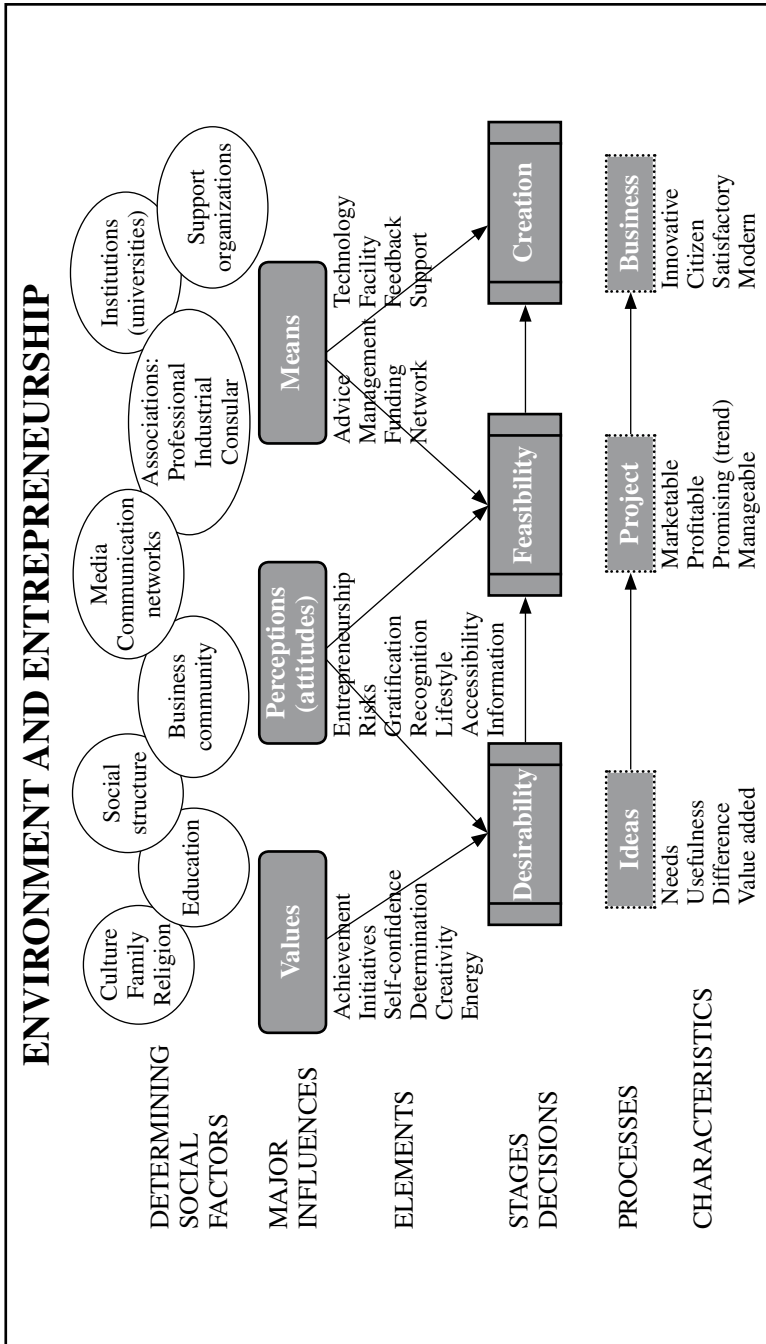


Figure 13.1 Entrepreneurial process model

methods and extra-curricular activities can influence this desirability. It is likewise important to take into account certain antecedents such as age, gender, work experience – especially experience related to entrepreneurship and SMEs – as well as the level and field of study.

Feasibility (Perceptions)

Several external factors that are outside of a person's control influence entrepreneurship. It is clear that the interaction between these factors can foster or hinder business creation (Fortin, 2002). An entrepreneur must not only perceive the desirability of the entrepreneurial act, this act must also be reasonably feasible. Feasibility depends on whether or not the means and resources needed to create a business are seen to be readily accessible. Though some of these means can be related to an entrepreneur's abilities, many stem from the surrounding environment. Accordingly, feasibility should be reflected in entrepreneurial intentions (Krueger and Carsrud, 1993). In a university context, the probability of owning one's own company, the factors facilitating entrepreneurship and the perceived obstacles to creating a business are examples of entrepreneurial intentions.

Creation (Means)

Desirability and feasibility are necessary but not sufficient conditions for creating companies. To take action, potential entrepreneurs must bring together the relevant means and resources at the right time and in the right place. These resources can be human, financial, material and informational (Filion, 2002). Environments in which these resources are reasonably available have a clear advantage in terms of company creation (Carter et al., 1996). In a university context, the university and its components can play a determining role for entrepreneurs. We do not only wish to know how students perceive their university or what they expect from it, we also want to determine the entrepreneurial incidence rate. Accordingly, it would be worthwhile to compare the entrepreneurial intensity of the students on campus to that of the general population.

ENTREPRENEURSHIP AND UNIVERSITIES

Studies are regularly conducted to determine how university programmes, courses and specializations in entrepreneurship are evolving (Fayolle, 2000). In the USA, for example, Vesper and Gartner (2001) showed that more than 100 universities offer entrepreneurial programmes, but that as many as 800 universities and colleges offer courses on this subject. In Canada, a study by Menzies (2000) indicated that all universities and colleges offered either entrepreneurial

courses or programmes. In France, universities, business and administration schools, specialized schools and the 'grandes écoles' have been offering more and more programmes and courses in entrepreneurship in the past ten years (Fayolle, 2003). Moreover, Europe has developed the most innovative pedagogical initiatives of the last few years, as Albert et al. (1999), Goujet and Marion (1999) and Obrecht (1998) have reported. In North America, it would seem that the traditional pedagogical methods are still predominant, such as the writing up of a business plan, case studies, lectures and guest entrepreneurs (Fiet, 2001a; Katz, 2003; Solomon et al., 2002). Furthermore, few studies have examined what students actually learn in courses on entrepreneurship in terms of entrepreneurial behaviour, suitable attitudes and acquired abilities (see, for example, Bechard and Toulouse, 1998; Chen et al., 1998; Cox et al., 2003; Ehrlich et al., 2000; Gorman et al., 1998). It would seem, nonetheless, that students who take entrepreneurial courses show a better acquisition of certain entrepreneurial characteristics than those who do not take these courses. For example, there is a significant relationship between taking entrepreneurial courses and displaying entrepreneurial intentions (Fayolle, 2002; Kolvereid, 1996a). Likewise, Noel (2001) found a relationship between entrepreneurial teaching, entrepreneurial intentions and the perception of 'self-efficacy'. Finally, Hansemark (1998) attempted to associate the need for accomplishment and an internal locus of control with entrepreneurial courses.

A certain number of studies have shown rather interesting entrepreneurial intention rates in Canada and elsewhere. For instance, Filion et al. (2002) showed that 57.7 per cent of the students at a French-speaking Québec university intended to start their own business. Furthermore, Audet (2001) found that only 8 per cent of the students at an English-speaking Québec university intended to create their own business in the short term, but that 45 per cent of these students estimated their chances of one day starting up their own business at 75 per cent. This data is similar to that for student clientele in Russia and Norway (Kolvereid, 1996b; Tkachev and Kolvereid, 1999).

APPROACH AND METHODOLOGY

The students were selected randomly from a complete list of the Laval University students enrolled in the 2002 winter session. The data were collected by the professional polling firm SOM Surveys, Opinion Polls and Marketing.

Target Population and Sample

The target population for this research was all of the students enrolled at Laval University for the 2002 winter session. The sample was determined using files

provided by Laval University. So as to conserve the confidentiality of the students' telephone number, the Registrar Service at Laval University randomly picked the students in the study by means of a computer.

Questionnaire¹

The first draft of this questionnaire was developed by the authors. The SOM Surveys, Opinion Polls and Marketing company then proceeded with a technical revision and a pre-test of the questionnaire.

Data Collection and Treatment

A total of 600 interviews were conducted. The response rate was estimated at 69.2 per cent of the valid phone numbers that were supplied. A total of 20.5 per cent of the people for whom we had a valid phone number could not be contacted during the survey period and 10.4 per cent refused to participate. The detailed results of the calls and the calculation of the response rate are presented in Tables 13.1 and 13.2.

The statistical data analysis was conducted by the researchers. The data file was transmitted by SOM in an SPSS software format. The maximum error margin in the sample results for the 600 respondents is, at most, 4 per cent with a confidence level of 95 per cent.

Table 13.1 Sample data

A.	Initial sample	962
B.	Never reached during the data collection period	146
C.	None in service or discontinued	55
D.	Business numbers	7
E.	Lines out of order	1
F.	Non-eligible	8
G.	Out of stratum	0
H.	Disabilities/foreign languages	8
I.	Not at home	46
J.	Uncompleted	1
K.	Household refusals	2
L.	Respondent refusals	88
M.	Completed interviews	600

Table 13.2 Main response rates

N.	Numbers not reached (B+E)	147
O.	Numbers reached (A-(N+G))	815
P.	Non-usable numbers among reached (C+D+H)	70
Q.	Usable numbers among reached (O-P)	745
R.	Estimate of usable numbers not reached (NQ/O)	134
S.	Estimated total of usable numbers (Q+R)	879
	Estimated non-response (R+I/S)	20.5%
	Refusal (J+K+L)/S	10.4%
	Estimated response rate ((M+F)/S)	69.2%

RESULTS

Prevalence of Emerging Entrepreneurs and the Others' Intentions

The data collected were used to determine the prevalence rate of emerging entrepreneurs on the campus. Of the 600 respondents, 3.2 per cent said they were actively trying to start up a business.

Nonetheless, to compare the prevalence rate on the campus to that of the National Study on the Entrepreneurial Process and Firms' Birth,² two other conditions had to be taken into account. The respondent had to, in addition to being actively involved in a business start-up:

- have undertaken concrete endeavours to start up a business in the last 12 months
- be the owner or co-owner of the start-up business.

More than 73.7 per cent of the students who were actively trying to start up a business had undertaken concrete endeavours in the last 12 months; 36.8 per cent were sole owners as opposed to 63.2 per cent who were part owners.

Of the 600 students who were interviewed, 2.3 per cent met all the conditions. The prevalence rate at Laval University was therefore 28 per cent higher than that of the Canadian population, which was 1.8 per cent.

Entrepreneur: A Choice Considered by Many

The students who were not involved in starting up a business³ were also polled in order to know if they had already thought of starting up a business or one day

being self-employed. The results show that 32.5 per cent of them had already considered it.

Of this number, 42.9 per cent thought they would do it in the long term, 31.2 per cent in the three to five years following their studies and 14.8 per cent in the two years after their studies. Only 7.9 per cent thought they would start the business or become self-employed during their studies. Finally, 3.2 per cent did not respond to this question.

Concept of Entrepreneurship

Entrepreneurship is a concept that can refer to several things. Moreover, the respondents identified several elements referring to this term; Table 13.3 shows the frequency of the main traditional concepts of entrepreneurship.

Table 13.3 Various concepts of entrepreneurship (percentage)

New business creation	19.0
Purchase of an existing business	0.2
New product development	0.7
Creation of a not-for-profit organization	0.2
New project start-up	1.8
Business ownership	11.5
Other	57.0

As might be expected, it is above all the notions of business creation and ownership that dominated. However, an analysis of the entrepreneurship concept category 'Other' brought forward fairly diverse elements, as can be seen in Table 13.4.

Table 13.4 Other concepts of entrepreneurship (percentage)

Freedom, autonomy, and independence	26.6
Linked to business concept	20.7
Required qualities	10.8
Loss and requirement	9.4
Innovation, creation	8.2
Required skills	5.9
Status/job	4.1
Personal achievement	4.1
Linked to environment factors, social role (job creation)	3.4

Many of these 'other' concepts refer to values, abilities, attitudes, lifestyles and ways of being that indicate that people have or would like to have an increasingly wider view of entrepreneurship.

Awareness of Entrepreneurship: Knowledge of the Services

Laval University offers certain entrepreneurial services for its students through, among others, *Entrepreneuriat Laval*, a support organization for student entrepreneurs. This section of the survey focused primarily on evaluating what the students knew about these services and how they perceived and used them. Among the entrepreneurship support services available for Laval University students, those that stood out were primarily linked to learning, awareness and follow-up. For example:

- 13.7 per cent of the respondents said they had already taken a course in entrepreneurship
- 25.8 per cent had been informed about the career possibilities in entrepreneurship
- 42.5 per cent of the polled students had acquired some knowledge about the business world during their studies
- 40.7 per cent had heard of entrepreneurship at Laval University
- 21.7 per cent knew *Entrepreneuriat Laval*; of these, 33.1 per cent knew where the organization's offices were
- 6.5 per cent of the respondents knew of REEL, an association of student entrepreneurs at Laval University that promotes entrepreneurship among students.

Perceptions of the University's Role

Since entrepreneurship is increasingly seen by the university student population as a valid career choice, it was important to determine what role the students felt the university should play in its development and stimulation. The survey showed us that:

- 55.3 per cent of the respondents agreed that the university acknowledged innovation, initiative and business creation. However, 96 per cent stated that the university should formally acknowledge the students' initiatives to create their own business, for example, by providing course credits for entrepreneurial activities
- 94.7 per cent stated that it is important to inform students about entrepreneurship.

Probability of Owning a Business

As concerns the probability of one day owning their business, the student survey gave the results presented in Table 13.5.

Table 13.5 Probability of owning their own business (percentage)

High	15.3
Medium	30.3
Poor	32.2
None	21.8

These perceptions about the probability of one day owning their own business were similar to those obtained in previous studies of the Laval University student population, as can be seen below.

Factors Involved in Owning a Business

As with any other human activity, entrepreneurship can be better developed under certain facilitating conditions. Though several of these conditions were identified, only a few seemed quite significant.

Among the main factors mentioned, only one stood out, that is, financing, with 24.2 per cent. Among the secondary factors that were mentioned, the most notable ones were financing with 20.3 per cent and get the required knowledge with 13.7 per cent.

These results are not surprising, given the importance that the media and financial, public and para-public institutions attribute to financing business creation.

Obstacles to Owning a Business

The factors that facilitate owning a business can often act as obstacles if they are not sufficiently present. This study observed the same phenomenon, as can be seen by the main obstacles: funding at 45.3 per cent and lack of interest at 6.7 per cent. Secondary factors that were mentioned included funding at 13.7 per cent, time (9.6 per cent) and competition (8.2 per cent).

Once again, the availability of funds was seen as a major obstacle and was mentioned by close to half the respondents. Moreover, most of the new businesses were created with very limited personal funds.

Main Motivations for Creating a Business

The main motivations for creating one's own business and becoming self-employed are few in number and often the same. This study population was not really an exception to this rule. The respondents' principal motivations are mentioned in Table 13.6.

Table 13.6 Motivations for creating a business (percentage)

Being one's own boss	29.7
Independence and autonomy	13.8
Making money	7.2

Being one's own boss seemed to be the main reason. This concept can nonetheless include several aspects, such as the need for achievement, which is often identified as the dominant motivation for business creators in the classic studies of entrepreneurship. The selected definitions would seem to have several similarities. Table 13.7 presents the secondary motivations for creating a business.

Table 13.7 Secondary motivations for creating a business (percentage)

Being one's own boss	14.3
Making money	13.7
Get power and control	11.9

Activities that Could Develop Entrepreneurship

It was seen above that the students felt the university had a role to play in stimulating and developing entrepreneurship. Realistically speaking, the respondents were asked what activities and methods Laval University should put in place to promote entrepreneurship. Table 13.8 shows the respondents' support for various entrepreneurship development activities that Laval University could provide.

The most strongly supported activities revolved around practical business initiatives such as access to a business network, work terms with business owners, counselling, mentoring and financial aid.

Table 13.8 Entrepreneurship development activities that Laval University should support (percentage)

More training	84.3
Official recognition of entrepreneurial initiatives	93.2
Counselling	96.8
Offering space for students' businesses	90.0
Business incubator	83.2
Help student entrepreneur to find funds	95.5
Networking	98.2
Work terms with entrepreneurs	96.7
Course credits for business projects	80.3
Mentoring programme	95.0

Methods and Academic and Extra-academic Activities that Foster the Development of Entrepreneurship

At university, several academic activities can help develop entrepreneurship. It is nonetheless worthwhile to know the students' interest in these activities. Table 13.9 summarizes this interest.

Table 13.9 Academic activities helping the development of entrepreneurship

Academic activities	1st selection (%)	2nd selection (%)
Case studies in business start-ups	19.5	13.1
Visits of business enterprises	6.2	12.7
Conferences on business start-up	9.0	16.2
Meeting with practitioner	8.3	19.9
Work terms with entrepreneurs	42.5	17.1
Simulation of business enterprises	8.0	9.9

Once again, it was the activities that allowed the students to experience real business conditions that aroused the most interest, as was the case with work terms and case studies. As concerns extra-academic activities that helped develop entrepreneurship, Table 13.10 shows how the students perceived some of these activities. Here as well, the practical aspect dominated, with counselling services and business plan competitions.

Table 13.10 Para-academic activities helping the development of entrepreneurship

Para-academic activities	1st selection (%)	2nd selection (%)
Business plan competition	26.7	25.6
Participation in a student association	12.2	15.7
Student entrepreneurs association	19.2	26.3
Small business counselling services offering students	41.0	30.8

Profile and Past History of the Respondents

Most studies of entrepreneurship pay special attention to entrepreneurs' profiles and past history, this information primarily comprising age, education level, areas of competence and relevant experience. Thus, in the Laval University student population:

- 17.8 per cent of the respondents were self-employed
- 66 per cent of the respondents were studying full-time.

The students' education level is presented in Table 13.11. The percentages are fairly representative of the Laval University student population. Table 13.12 presents the areas of study in the sample. As can be seen in Table 13.13, more than 70 per cent of the students were from 20 to 29 years of age.

Table 13.11 Education level (percentage)

Level of education	%
Bachelor	62.7
Master	13.3
Doctorate	4.8
Diploma	0.5
Certificate	11.5
Non-credited courses	3.2

Table 13.12 Areas of study (percentage)

Letters	11.7
Administration	17.0
Education	11.0
Engineering	17.7
Social sciences	11.8

Table 13.13 Age categories (percentage)

Less than 20 years old	3.8
20–23 years old	45.7
24–29 years old	25.2
30 years old and more	25.3

ANALYSIS AND INTERPRETATION

Prevalence Rate of Emerging Entrepreneurs

One of the goals of this research was to determine the prevalence rate of emerging entrepreneurs among Laval University students, and to compare this rate with that of the Canadian population. This comparison was possible because the same methodology and the same eligibility criteria were used for a general study of Nascent Canadian Entrepreneurs (Menzies et al., 2002). As was mentioned above, the prevalence rate on the campus was 28 per cent higher than that of the Canadian general population, that is, 2.3 per cent versus 1.8 per cent respectively. Nonetheless, given the fact that, when their studies are finished, students often accept a job in their field and drop their business project, it is possible that several students who were actively involved in starting up a business during their studies did so for monetary reasons and as a temporary solution. This hypothesis could be tested with a longitudinal study.

Intentions to Start up a Business

The results concerning the Laval University students' intentions to start up a business can be compared to those obtained in a study conducted in 1995 by the Groupe de recherche sur la PME⁴ and in another study conducted in 2000⁵ by Geneviève Tremblay for the same research group (see Table 13.14).

The differences between these results can be explained by the sample choice. Indeed, in previous studies, the faculties and disciplines included in

Table 13.14 Comparison of students' start-up intentions at three different times

	2002* (%)	2000 (%)	1995 (%)	
Has ever thought to start a business	32.5	42	59	
During schooling	7.9	n/a	Short term	4
2 years after schooling	14.8	n/a	Medium term	22
3 to 5 years after schooling	31.2	n/a	Long term	33
In the longer term	42.9	n/a		
Don't know	3.02	n/a		

Note: The labelling of the question in this study included both the intention to start a business and to become self-employed.

the sample were limited to those that showed the greatest inclination towards entrepreneurship. The main characteristic of the present study is its overall representativeness, the sample being randomly chosen from the official list of all Laval University students from all the different programmes, disciplines and faculties.

The results show that a high percentage of the students were considering starting up a business, thereby illustrating the fact that students saw entrepreneurship as a potential career choice. However, it should be understood that it is intentions that are being discussed here, and that the gap in percentage terms between those who were considering eventually creating their business and those who actually did, was quite substantial. Indeed, as was previously shown, the percentage of students who were actively trying to start a business was 3.2 per cent whereas as the percentage of those who had already thought about starting a business or becoming self-employed was 32.5 per cent. Moreover, most of them thought they would start a business three or more years after finishing their studies. Considering that Laval University has a student population of 36 000, this would mean that approximately 1152 students are presently involved in starting up a business and 11 700 have already thought about eventually starting a business or one day being self-employed. It bears repeating that 7.9 per cent or 925 of these students have the intention to start up a business during their studies.

Intentions According to Faculties

It would seem that the majority of the student entrepreneurs came from the administrative sciences (21 per cent), sciences and engineering (15.8 per cent),

and social sciences (21 per cent) faculties. These three faculties also had the greatest percentage of students who had already thought about starting a business.

Other faculties also had high percentages of students who had already thought about starting a business, with numbers ranging from 66.7 per cent in dentistry to 64.7 per cent in urban planning, architecture and visual arts, and 44.4 per cent in pharmacy.

Some of these data are supported by data gathered in a previous study by the small business research group, which came to the conclusion that the faculties with the highest rate of intention were agriculture and food sciences (31 per cent), sciences and engineering (23 per cent), administrative sciences (13 per cent) and forestry (12 per cent).

Intentions for Women

Women were also well represented in the potential entrepreneurs category. The study conducted in 2000 by the same Research Group showed that 39 per cent of the women were potential entrepreneurs. In the present study, among the 3.2 per cent of the students who were actively trying to start a business, close to 37 per cent were women, as can be seen in Table 13.15.

Table 13.15 Start-up effort according to the gender

	Male (%)	Female (%)
Is actively trying to start a business	63	37
Has ever thought to start a business	55	45

Moreover, of the 32.5 per cent of students who had already thought of starting a business or becoming self-employed, close to 45 per cent were women. These results demonstrate the growing presence of women in entrepreneurship. As they are increasingly likely to go to university – women account for 52 per cent of the students at Laval University – this increase is not surprising.

Awareness of Services

The results presented in Table 13.16 would seem to indicate that few students at Laval University were aware of the entrepreneurial services on the campus. As was mentioned above, Laval University has two main services for the stimu-

Table 13.16 Awareness of services comparison according to start-up efforts

	Knows Entrepreneuriat Laval (%)	Knows REEL (%)
All respondents	21.7	6.5
Is actively trying to start a business	26.3	0
Has ever thought to start a business or become self-employed	29.1	11.6

lation and development of entrepreneurship, namely, Entrepreneuriat Laval and REEL (Regroupement des Étudiants Entrepreneurs de Laval – Laval student entrepreneurs group).

It is noteworthy that these services are self-financed and that their advertising and promotion budget is quite limited; moreover, students often confused them with other services offered on campus. Nevertheless, these authors are a bit surprised by the relatively low percentages (between 21 per cent and 29 per cent) of awareness shown by the students.

Further research will be needed to evaluate the effectiveness of the various awareness programmes and services available on the campus. It seems that students are not attracted by programmes or activities targeted at entrepreneurship, unless they are seriously considering entrepreneurship for themselves; for those actively involved in entrepreneurial activities, they may even perceive these services to be not well adapted to their needs.

Intentions Concerning Entrepreneurial Training

For several years now, Laval University has offered various courses and programmes in entrepreneurship, especially in the Faculty of Administrative Sciences. They are for the most part credit courses that can be taken by all the students on campus.

The intentions concerning entrepreneurial training were quite high among the respondents. Indeed, 40.8 per cent of the respondents were interested in taking credited courses. This figure climbs to 75.5 per cent among respondents who had already considered starting a business or becoming self-employed, as can be seen in Table 13.17.

The learning style advocated by the respondents focused primarily on experimentation and field activities. As was seen above, work terms were by far the most popular (42.5 per cent),⁶ followed by case studies of business start-ups

Table 13.17 Intention concerning entrepreneurial training according to start-up efforts

	Interested in taking credited courses (%)	Not interested in taking credited courses (%)
Is actively trying to start a business	57.9	42.1
Is not actively trying to start a business	40.3	59.7
Has ever thought to start a business or become self-employed	75.5	27.5
Has never thought to start a business or become self-employed	24.7	75.3

(19.5 per cent). Respondents who were also actively trying to start up a business also preferred work terms (36.8 per cent) and case studies (21.1 per cent).

These results are consistent with those of the 2000 study in which the students showed a preference for workshops, simulations, company visits and meetings with entrepreneurs. Potential entrepreneurs thus seemed to prefer practical methods rather than theory and lecture courses.

Extra-academic Activities

The extra-academic activities preferred by students from the faculties⁷ that had the highest rates of interest in entrepreneurship were essentially the same. Table 13.18 presents the three most preferred activity categories by faculty.

Moreover, the choice of extra-academic activities according to the respondents' motivation to start up a business is presented in Table 13.19.

It would seem that there were unanimous opinions concerning the relevance of three activities (SME counselling services, business plan competitions and student entrepreneur clubs) with regard to their contribution to entrepreneurship.

CONCLUSION

This exploratory study is far from being exhaustive. Nonetheless, it gives a good idea of the entrepreneurial potential of Laval University students, especially if an 'Entrepreneurship Profile' is set up on the campus (The 'Entrepreneurial Profile' is intended to be a series of credited courses and projects which can be taken by any student on the campus; the label 'Entre-

Table 13.18 Preferred extra-academic activities according to the area of study

	Small business counselling services (%)	Business plan competition (%)	Student entrepreneurs association (%)
Administration	48.0	24.5	14.7
Engineering	42.5	26.4	18.9
Social sciences	35.2	32.4	16.9
Urban planning, architecture and arts	42.1	36.8	10.5

Table 13.19 Preferred extra-academic activities according to start-up efforts

	Small business counselling services (%)	Business plan competition (%)	Student entrepreneurs association (%)
Is actively trying to start a business	47.4	21.1	21.1
Is not actively trying to start a business	40.8	26.9	19.1

preneurial Profile' will then be written on the Diploma of the students involved in the 'Profile'). It also provides an overall picture of entrepreneurship among the students of a university campus. This university campus has a long experience of entrepreneurial training, research and services; it is presented here as an illustration of what can be done in a particular setting, and does not pretend to be representative of what should be done elsewhere. Entrepreneurship, as we have shown in Figure 13.1, is influenced by many environmental and social factors; an entrepreneurial culture will emerge and evolve within a specific surrounding, and at a rate which is consistent with these dimensions. At Laval University, for example, as was seen above, the prevalence rate of emerging student entrepreneurs was 28 per cent greater than that of the general Canadian population,⁸ a sizeable portion of the students being actively involved in business start-up or pre-start-up. Likewise, more than 32 per cent of the interviewed

students had already considered starting up a business or one day being self-employed.

The main idea that emerged from this study was that Laval University students would like academic and extra-academic support that is based on experiential and practical methods. They would also like Laval University to become more committed in its support for business start-up. Mentoring and support programmes, work terms, financing and business networks are methods that would seem to respond to the students' needs. Finally, respondents knew little or nothing about the entrepreneurship support organizations at Laval University.

It bears repeating that the entrepreneurial potential of environments, be they universities or not, can change over time. This potential can grow through various initiatives and environmental changes that foster the emergence of entrepreneurial talent or make more effective use of existing talent.

Displaying a positive attitude towards entrepreneurship, expressing approval in university programmes and the media, presenting entrepreneurship as a lifestyle, promoting successful entrepreneurship through social recognition and honours, reinforcing aptitudes, watching out for opportunities, and including discovery, inventions and risk in pedagogical content, are all factors that will help to promote entrepreneurship and increase our use of the creative capacities that are already part of the university environment, because, ultimately, the evolution of entrepreneurship depends on the interaction between individual characteristics and socio-environmental factors.

NOTES

1. A copy of this questionnaire is available at the Centre d'Entrepreneuriat et de PME.
2. National Study on the Entrepreneurial Process and Firms' Birth, Québec City, Centre d'Entrepreneuriat et de PME, 2000.
3. 581 respondents were in this category.
4. Centre d'Entrepreneuriat et de PME, Laval University, Enquête pour la mise en place d'un programme en entrepreneuriat technologique, November 1995.
5. Tremblay (2000).
6. The results correspond to the first response choice of the respondents.
7. The faculties in question are administrative sciences, sciences and engineering, social sciences, urban planning, architecture and visual arts.
8. According to the National Study on the Entrepreneurial Process and Firms' Birth, conducted by the Centre d'Entrepreneuriat et de PME in 2000.

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14. Motivations and drawbacks concerning entrepreneurial action: a study of French PhD students

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Over the last few years the number of hours dedicated to the entrepreneurial awareness of students in schools and universities has greatly increased. It is true that France was responsible for a certain delay in this domain (see, for example, action run in Quebec; Menzies, 2002), especially as during the last 10 years the number of new ventures has declined or is stabilized (270 000 new ventures by year). It is important to remember that the number of creation was over 304 000 in 1990 and over 280 000 in 1995. The French statistical institute (INSEE) includes new ventures from scratch, re-creations and takeovers in the global figures. The number of creations from scratch is increasing (178 000 in 2002, 200 000 in 2003). The latter (200 000) represents the known goal of the French government with the Dutreil Law (2003). This good score can be influenced by this law or can be explained as a response of the economic recession: creating one's own firm is the way to create one's own job. Due to this fact, the French state has tried to implement measures (economic and financial) aimed at stimulating and motivating the entrepreneurial mind and at stimulating innovation and research.

The sixth measure of the Department of Industry and Research's innovation plan (2002) highlights the need to develop an entrepreneurial course aimed at encouraging the entrepreneurial mind. One type of action involves the creation of entrepreneurial centres on French university campuses. Grenoble is an experimental site with the creation of an entrepreneurial centre in 2002. Different performance indicators are going to be used in this study, some of which show how students' entrepreneurial intentions have evolved. Databases will be constructed using this information, thus offering a wider range of data for researchers, in particular CERAG (the management laboratory of Grenoble, specializing in entrepreneurship). At the time of the proposition concerning a prototype of the entrepreneurial centres (Boissin, 2003) and in continuation of research by Fayolle (1999; 2001) and Verstraete (2000), a questionnaire was

distributed to 74 PhD students concerning their entrepreneurial intentions and their perception of entrepreneurial awareness. This chapter analyses these data in more depth by trying to class these PhD students by 'type' depending on their perceived motivations and perceived drawbacks to start a business. These PhD students are tomorrow's researchers and represent those of the French population targeted by the ministerial innovation plan. Knowing how PhD students of the pure sciences view new ventures can help to provide better information and to help make future students aware of this field.

The first section of this chapter details the theoretical and practical aspects of the work carried out. There follows a description of the methods used, an analysis of the results obtained and a discussion of potential future action to be taken concerning students.

THEORETICAL AND PRACTICAL AIMS

Starting a business is a process in which incentives is the most important (Bird, 1988; Katz and Gartner, 1988). Incentives models such as those of planned behaviour (Ajzen, 1987; 1991) seems consistent, simple and robust to understand start-up processes (Krueger, 1993). This theory has recently been used in several studies (Emin, 2003; Fayolle, 2004; Tounès, 2003). Anyway, this work is a first step as to state of minds of the students and the representation about new businesses of the PhDs. Incentives models will be used in further researches. The aims of this work are important for many different reasons. In order to undertake suitable action, students' opinions concerning start-ups need to be known. Contact with entrepreneurship can take place in three different ways: pure awareness, specialization and experimentation (Albert and Marion, 1998). However, these three levels of intervention depend also upon how students view entrepreneurial action. Entrepreneurial intentions are most notably expressed in diverse ways depending on a student's level of study (degree, master's, PhD, and so on). At the moment in Grenoble, awareness methods differ throughout the learning process.

An analysis of entrepreneurial typologies (Daval et al., 2002) shows that a favourable attitude towards entrepreneurial action is closely linked to a person's background. This includes individuals intrinsic features (age, gender) as well as values linked with their past (education, professional experience) and relational elements which could also have influenced the individual's choices (Lorrain and Dussault, 1998). An individual's past conditions his or her entrepreneurial capacity. His or her specific attitude regarding entrepreneurial action is closely linked to his or her experience, education and upbringing (Lafuente and Salas, 1989; Laufer, 1975). The students' current environment thus seems to have an influence on their willingness to engage

themselves in an entrepreneurial action and also on their initial reaction to entrepreneurial action. Students' current environment is represented by their university, their studies and by their extra-curricular activities. It is possible to take action in order to orientate a student's environment towards entrepreneurial action. To do this, it is essential to understand how the student views new ventures in order to detect elements susceptible to reducing the student's wish to embark on entrepreneurial action and in order to detect elements susceptible to increasing this wish. This is a way to propose devices adapted to individuals' needs. Each entrepreneur and thus each future entrepreneur comes from a different background and is motivated by different factors (Woo et al., 1988).

Several factors come into play during entrepreneurial action, internal and external, and negative (dissatisfaction at work, unwanted moves, technical and creative frustrations) and positive (financial offers, offers of partnership) (Baronet, 1996). These factors provide reasons both for and against entrepreneurial action. This chapter thus identifies and analyses the motivations of the PhD students questioned and the drawbacks they perceive to starting a business. Incentives have been researched a lot these past few years, particularly in the field of marketing the incentives of purchasing. We have seen that some recent works have applied these theoretical models to entrepreneurship, notably the incentives for creating (see Emin, 2004). This survey is a test for a larger analysis of all the students in Grenoble who follow courses in entrepreneurship. The aim of this larger analysis is not to study the gap between intention and action for several reasons. First, it seems impossible to trace the students post-university; such a work would implicate personal involvement to gain information that cannot be generalized. Second, some students follow courses integrated in their whole curriculum. They have no choice but to study this discipline, but some of them have no intention of starting a business. Third, the success of training cannot be evaluated by the number of new ventures just after this training. The curriculum can consolidate the building of a favourable field that could be exploited 10 years later. Thus this new creation as it might be in 10 years' time could not be taken into consideration here.

METHODOLOGY

A questionnaire was sent to PhD students in 2003 attending university in Grenoble. Seventy-four PhD students filled out this questionnaire. Their profiles are very different: 65 per cent male, 35 per cent female. Of these 60.8 per cent are currently studying pure sciences, 32.4 per cent are at the Engineering School. Those studying social sciences and literature are few, 5.4 per cent and 1.4 per

cent respectively. Two-thirds of the sample is in the second year, the rest in the final stages of their thesis. Our sample is quite heterogeneous, but regardless of their education the students have in common that they have chosen the PhD seminar in management.

The questionnaire was aimed at collecting information rapidly and on a larger scale than that allowed by carrying out qualitative interviews concerning PhD students' perceptions of start-ups and educational actions aimed at increasing students' knowledge of entrepreneurial action. Different precautions were taken in order to guarantee the robustness of the methodology used and the understanding of the questions asked: the questionnaire was read by several experts before being distributed to students (university lecturers, entrepreneurial representatives). The questionnaire includes closed, dichotomics and multichotomics questions. The answers from the completed questionnaires have been coded using SPSS (Statistical Package for the Social Sciences) version 10.0. The multichotomic questions have been phrased using a 7-point Likert scale and are aimed at transforming qualitative information into quantitative information (Lambin, 1994). These questions concern precise points, for example, entrepreneurial motivations and drawbacks of start-ups. They allow a multivariate statistical analysis in order to define student typologies.

The choices for a best statistical configuration take into account all factors and groups retained for this study. This chapter details the statistical analysis sequences for all questions related to students' motivations. The same procedure has been used in relation to drawbacks perceived by students.

In factor analysis, the number of observations must be superior, from 30 to 50, to the number of variables (Donada and Mbengue, 1999). This study comprised 74 observations for 19 variables. The Barlett test indicates a rejection of the hypothesis of equality of interrelationship and identity matrices, and the test of Kaiser Meyer and Olkin, minimum threshold equal to 0.5, is judged sufficient (KMO: 0.525). The number of factors is determined using the Kaiser rule (matrix identity values greater than one). Analysis of Cattell's scree test has confirmed this number. Six factors have been retained explaining the 66.4 per cent variance. All variables have a representation quality greater than 0.5 (a minimum requirement). The interpretation of all factors is carried out after rotation of these factors according to the Varimax method.

For the typological analysis, following the analysis of the dendrogram by Ward's hierarchical procedure and a dynamic multitude, five groups remain (Table 14.1).

The Fisher test (permitting the testing of the validity of the typology) and the analysis of the variance also cause us to keep this number of groups, as the significance of the factors is below 0.050. The fourth group contains more persons than the others. The distribution of PhD students' motivations is thus not ho-

Table 14.1 Typology of students' motivations

Final clusters	Classe				
	1	2	3	4	5
REGR factor score					
1 for analysis 1	2.03899	.07566	.28160	-.26662	-.34819
REGR factor score					
2 for analysis 1	1.64990	-.17164	.22529	-.58821	.45584
REGR factor score					
3 for analysis 1	-1.24083	.04081	1.19383	-.22208	-.60520
REGR factor score					
4 for analysis 1	-.36240	.20824	-.72047	.30203	.18964
REGR factor score					
5 for analysis 1	1.27904	-.31721	.09264	.56494	-1.05056
REGR factor score					
6 for analysis 1	.69319	1.83593	-.26165	-.35450	-.51006

mogenous. The interpretation of the different groups is thus delicate and requires the complement of discriminative analysis.

In order to do a valid multiple discriminative analysis, the variable to be explained must be nominal (this is the case as we are dealing with quick cluster as determined by the software during the factorial analysis) and the explanatory variables measured on interval scales. Two statistical tests should be used. The Bartlett test (result correct) and the Box test (compliant in so far as it rejects the equality of the matrices). The highest identity values are associated with the most discriminative functions. Our results show four mains axes (Table 14.2), the first two being the most discriminative: they explain 42 per cent and 28 per cent respectively of the variance.

The factors 6, 3, 5 and 1 are the most discriminative in the construction of the four axes.

RESULTS/DISCUSSION

The statistical analysis of the questionnaires determines the features of the type of PhD student most likely to start a business. In order to complete these results, multivariate analysis is used.

Table 14.2 Axes determined by the discriminative analysis (structure matrix)

	Function			
	1	2	3	4
REGR factor score 6 for analysis 1	.601*	-.504	.197	-.513
REGR factor score 3 for analysis 1	.194	.584*	-.119	-.532
REGR factor score 4 for analysis 1	-.136	-.234*	.220	-.025
REGR factor score 5 for analysis 1	.193	.259	.637*	.473
REGR factor score 2 for analysis 1	.136	-.074	-.535*	.341
REGR factor score 1 for analysis 1	.295	.030	-.106	.368*

A Strong Link between Awareness and Intention to Create a Venture

We work on an enlarged definition of entrepreneurship including a broad diversity of entrepreneurial situations and forms, which is far from the traditional view of the entrepreneur. However, this broad view of entrepreneurial action also has its limits as far as the study of PhD students' entrepreneurial intentions is concerned. Indeed, no less than 75 per cent have entrepreneurial intentions but only one-third concern the creation of a new business. It is therefore difficult to construct links between different variables (gender, sensitization) and entrepreneurial intention, even if several interesting results appear concerning the intention to create an enterprise.

Gender and entrepreneurial intention are closely linked. Men are more open to start-up projects. In other words, drawbacks to entrepreneurial action as perceived by women are an influence early on, before the domestic role (pregnancy, motherhood, for example) becomes an issue or these variables are anticipated.

In the same way, educational awareness of entrepreneurship is closely linked to intention to create a business. This result is encouraging for entrepreneurial awareness which also seems to be linked to a greater knowledge of the assistance (incubators) and causes for people wishing to start an enterprise. However, education and courses concerning start-ups do not seem to have much influence

on entrepreneurial action. In other words, the action of awareness must aim at informing people regarding the creation or takeover of a firm. For the remainder, young people have perhaps less need to be informed. For instance, the actions of the entrepreneurial centres should use the experiences of collective projects as a means of awareness rather than treating them as an aim. Information programmes are much more frequent in engineering schools and in social science courses at university than in pure science courses.

The Image/Perception of Motivations and Drawbacks to Enterprise Creation

The main motivations are:

- the development of a project, a technique or an ability
- team spirit, group dynamics
- search for independence
- the idea of a challenge.

Other motivations proposed were less 'favourable':

- individualism, recognition, power
- financial gain, maximization of profitability
- risk.

The main drawbacks are:

- the risk
- the financial requirement and the lack of capital
- a lack of awareness during the education
- the administrative procedures.

The following drawbacks are quantitatively less important: French culture, the appeal of a steady income, taking on new responsibilities and a lack of inspiration for a new business.

Construction of a Typology of PhD Students According to their Perception of Motivations and Drawbacks to Start-ups

A multivariate analysis identifies five groups of motivations. These groups are interpreted following the determination of six factors. Factor 1 re-groups motivations concerned with a search for independence, autonomy, the absence of a superior and a wish to control his or her professional environment. This factor

correlates negatively with the variable 'maximize profitability'. This factor is linked to motivations generally identified with start-ups and a wish for independence. These motivations are found in different entrepreneurial typologies (Casson, 1991; Cooper and Artz, 1993; Dunkelberg and Cooper, 1982; Fillion, 1997; Julien and Marchesnay, 1996; Lafuente and Salas, 1989; Laufer, 1975; Siu, 1995; Woo et al., 1991).

Factor 2 is linked to financial and material aspects: maximization of wealth and profitability, a search for financial gain and a motivation to create one's own job. To the authors mentioned for factor 1, one can add Miner (1997). The first two factors are much used in scientific literature linked with entrepreneurial actions.

Factor 3 concerns collective dynamics, team spirit and project development. This factor is interesting in so far as it appears very little in literature.

Factor 4 is linked to two variables: a research for recognition and power (the majority of authors agree on the choice of these two motivating factors).

Factor 5 includes variables concerned with the individual character of entrepreneurial action: taking decisions alone, individualism, risk, the challenge (less so as this variable is only weakly correlated – 0.493). These variables are linked to a 'locus of control', particularly present in works by Bird (1986), Davidsson (1988), Ray (1993), Deakins (1996) and Miner (1997).

Factor 6 comprises two variables: creation in order to exploit one's knowledge and for pleasure.

The identification of these factors enables us to interpret the five groups of PhD students concerning their motivations for enterprise creation (see Table 14.1).

The first group only includes three people who judge that the motivations for entrepreneurial action only concern *gain, research of power and a control over individual destiny*. Factors 1, 2 and 4 are representative of this group, which also manifests a negative score for Factor 3. For these students entrepreneurial action is decidedly individual. This interpretation is confirmed by a discriminant analysis as this group is negative on axis 2 which relates to team spirit. This perception of entrepreneurship is brought by media which focus the entrepreneur's testimony on profit and control of others.

The nine PhD students in group 2 consider motivations to create as being *a search for pleasure and the exploitation of personal knowledge*. The relationship between this group and factor 6 is strong. The discriminative analysis completes this interpretation: the group is negative on the axis 4 which represents independence. The entrepreneurial action therefore corresponds to an adventure where the project initiator gains pleasure; independence is not a primary factor of importance.

Typological and discriminative analyses converge for the interpretation of the results for this group of 14 students, which are largely correlated with factor

3. Entrepreneurial action is seen as being *a collective adventure*. It is interesting to notice that over half the members of this group have declared an entrepreneurial intention. The creation of an activity within an existing organization is coherent with the idea that these students think about motivations to business creation.

Twenty-two PhD students consider that motivations that push an individual to undertake entrepreneurial action concern *a search for an individual risk*. Discriminative analysis shows that this group is negative on axis 1, which is concerned with a search for pleasure, this axis is the most discriminative. Two-thirds of this group of students are not involved with an association. For them, entrepreneurial action is motivated by risk that they, for the moment, are not willing to take. Thirty-five per cent of students who have already received information concerning entrepreneurial action are in this group.

The last group contains 14 students for whom entrepreneurial action is motivated by a search for *wealth and power but without risk*. Scores are strongly negative for factor 5, less so for factor 3. Factor 2 is weakly correlated (<0.5). Discriminative analysis also shows slightly negative scores on the 'search for pleasure', 'team adventure' and 'alone and not for money' axes. Seventy per cent of students in this group are interested in undertaking an entrepreneurial action deemed to be without risk but lucrative. Forty per cent of students wishing to undertake an entrepreneurial action are in this group.

The major group (in which the number of students is the biggest) is motivated by the individual adventure: following one's idea, getting the result of one's own decision, being free to decide, being one's own boss. A χ^2 analysis shows a strong link between motivations and an intention to undertake entrepreneurial action. The members of group 5 are more attracted by this than those of groups 3 and 4, potentially the least motivated. It is interesting to notice that the literature students are in group 4, this means that for them the major motivating factor is the assumption of risk, alone. Social science students are in groups 2 and 5, and associate entrepreneurial action to a search for pleasure and a gain of power, without risk. Members of an association are found in equal proportions in groups 3, 4 and 5. Forty-one per cent of non-members are found in group 4.

The different motivations are perceived as being quantitatively limited by PhD students. The same type of analysis has been carried out concerning their views on the drawbacks of entrepreneurial action. Five groups of drawbacks (Table 14.3) based on the interpretation of factors which explain 66.7 per cent of the variance.

The first group contains 10 PhD students who consider the main drawbacks to be linked to the *appeal of a regular income, to a refusal to commit personally, to the lack of a new idea and to French culture*. These elements are the opposite of what Shapero (1984) calls 'the displacement', that is, the drawbacks are rela-

Table 14.3 Student typology for perceived drawbacks

Final clusters	Classe				
	1	2	3	4	5
REGR factor score					
1 for analysis 1	.08932	.51037	-.48905	1.22617	-.45055
REGR factor score					
2 for analysis 1	-.81259	1.62421	-.24449	-.25998	.11705
REGR factor score					
3 for analysis 1	.73107	.76279	.41469	.85246	-.82533
REGR factor score					
4 for analysis 1	.96961	.36619	-.46107	.08999	-.32102
REGR factor score					
5 for analysis 1	.84401	.08658	-.64817	-.96456	.70096

tive to a situation of status quo: the individual remains wage-earner, he or she does not commit. This group included as many men as women.

The eight students of group 2 identify the *microeconomic environment*, which they consider to offer little incentive, as a major drawback. This factor includes the lack of help, the lack of financial capital and the long administrative process. Gnyawali and Fogel (1994) consider these elements to be fundamental for entrepreneurial action and to be complementary to relational networks. Ninety per cent of this group are not members of an association.

Group 3 comprises 18 PhD students for whom *French ideology and the absence of awareness at university* are major drawbacks. Education and courses are of primary importance here.

Group 4 contains 9 students who see *responsibility, risk and the necessary dedication of time and energy* as being the main drawbacks. Personal engagement is the major drawback here. A χ^2 analysis shows an important link with entrepreneurial intention: 71 per cent of PhD students state an intention to undertake entrepreneurial action within an existing structure.

The last group contains 16 students who consider the macroeconomic environment (ideology, awareness, French culture) to be favourable for entrepreneurial action but for whom the *lack of ideas* is a major drawback.

The comparison of motivation and drawbacks is interesting: all students motivated by an individual adventure express major drawback as being the difficulty of leaving their present situation. Individual character is thus reinforced by this analysis. Half of the students motivated by the collective adventure regret the absence of courses on the subject of entrepreneurial action. Finally, 57 per

cent, who identify personal involvement as being a major drawback, are motivated by a search for risk, and wish to work alone. For them, once the obstacle has been cleared, it is best to obtain results alone.

Approximately two-thirds of groups 1 and 2 state an intention to undertake entrepreneurial action, whereas two-thirds of groups 3, 4 and 5 do not. One can deduce that the absence of courses, the fact that major personal involvement is required and the global environment are the major drawbacks associated with entrepreneurial action. It is thus important to act on these elements. Literature students and social science students are located in group 3.

This is another element on which it is possible to act as they consider drawbacks to be ideological. It is thus important to target communication to this subject and make entrepreneurial action accessible to all.

CONCLUSION

These results show that PhD students are not to be stereotyped. Start-ups and entrepreneurial action are not reduced to individual value maximization, in particular relative to the actor's personal wealth. Entrepreneurial action is conceived in a modern way by PhD students and involves team dynamics (important for innovation in scientific laboratories¹), risk-taking, a search for personal satisfaction or independence.

Drawbacks to entrepreneurial action can be overcome through awareness (present action begun by entrepreneurial centres aimed at generalizing different initiatives undertaken by higher education establishments) or financial support (development of financial aids via local investment initiatives, new laws, and so on). It is regrettable, however, that administrative procedures are seen as a drawback by people who have not yet been confronted by this problem. Progress already made in this domain needs to be better integrated by actors and we should endeavour to avoid communicating certain stereotypes.

Our results need to be taken in moderation as our methods do have limits, in particular the uncertain representativeness of our results considering the reduced size of our sample.

Also, our results have been interpreted by researchers, even if they are based on demarcated statistical treatments. However, these results are a work in progress: they represent the first step of a wider survey about motivations to entrepreneurship based on all students in Grenoble who follow entrepreneurship courses. This larger analysis is based on an intentions models with more sophisticated statistical analyses.

NOTE

1. Element observed for young biotechnology companies (Boissin and Trommetter, 2003).

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15. Entrepreneurship education for the African informal sector

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INTRODUCTION

This chapter assesses the role of the informal sector in Africa, the need to foster entrepreneurship education and also proposes a new approach to entrepreneurship education for the informal sector. The concept of the 'informal sector' or 'informal economy' itself originated from Africa. An International Labour Organization (ILO) employment mission to Kenya in 1972 concluded that rural–urban migration contributed to higher urban unemployment (ILO, 1972: 5–6). As urban unemployment increases, a high proportion of newly arrived migrants and urban dwellers have become engaged in small-scale production and distribution of goods and services as an alternative means of livelihood. Until recently this segment of the economy has been largely unregulated and has often been ignored in employment-related studies and in national income accounting exercises. However, in recent decades, as a result of recognizing its potential significance, the ILO has implemented many action programmes to improve the functioning of the informal sector in numerous different countries.

Although perhaps explicit recognition of the potential significance of the informal sector first occurred in urban areas, it is also important to note the significance of the informal sector in rural areas as well. Given the small-scale nature of agriculture in most African countries, the informal sector in rural areas can be viewed as consisting of both farming and non-farming activities. Naturally in such areas farming usually provides the 'catalyst' for economic growth and employment, while the non-farm sector provides opportunities for activities relating to agriculture (for example, distributing inputs, marketing products, value-adding occupations) and other occupations relating to household production activities. The positive correlation in rural areas between agricultural and off-farm activities has been recognized for some time (Carols and Thorbecke, 1988: 131). Inevitably, over time structural change will take place involving the agriculture sector becoming less important both in terms of employment (Bryceson, 1997: 241) and its contribution to national income. However, for most

African countries this structural transformation process still has a long way to go, because of the small size and limited absorptive capacity of the non-agricultural sector. In any case, it is likely that the formal sector in urban areas will be unable to absorb much of the increased labour force and, consequently, the informal sector in urban areas is likely to continue to be a major employer of people. The informal sector in urban areas also acts as a residual employer for those who lose their jobs in the formal sector. Finally, in both rural and urban areas it also plays a seasonal/cyclical role in being a residual employer during periods of underemployment in agriculture and unemployment in the formal sector.

It is unfortunate that the characteristics of the informal sector itself suppress its significance in the economy. Many of the firms in the informal sector are one-person firms and lack a proper organizational structure. The informal sector operates in the 'grey area of the economy' and hence is not recognized and/or is overlooked by authorities and policy-makers. The majority of the transactions are based largely on trust and verbal interaction. Basic business norms and practices are not followed and hence are not amenable to regulation.

Until recently, economists did not view the informal sector as an important component of community/rural development, but today it can be considered as important as the formal sector. Hayami (1998: 309) has noted 'the contributions of these small rural-based enterprises to the national economy were no less significant than those of large, modern corporations developed by urban entrepreneurs'. Historically, as an economy evolves from lower to higher per capita income levels, significant growth is observed in the formal sector and literature indicates that the small and medium enterprises in the informal sector increase (Martin, 2000: 13). It is unfortunate that the role of the informal sector and the contribution that it makes to the economic development/transformation process has received little attention.

Before proceeding further we wish to address two issues. The first issue is that individuals in the informal or traditional sector have often been considered to be 'unskilled, unorganised, unproductive and unenterprising' (Birkbeck, 1978: 1173). This implies that this sector is less important from a development perspective. On the other hand, others argue that it is the most important sector in developing economies (Yamada, 1996: 308). In this chapter we regard the informal sector as important as the formal sector, particularly in the current African context. We base our conviction on the fact that between 1990 and 2002 in Latin America and the Caribbean much of the new employment came from the informal sector (Robinson, 2002: 581). In another study, Haggblade and Hazell (1989: 360) reported that in Africa the informal sector accounted for 14 per cent of full-time employment, while Liedholm (2002: 228), based on a study in both Africa and Latin America, stated that it ranged from 17 to 27 per cent. In one of the most recent studies it was reported that the informal

sector accounts for 80 per cent of non-agricultural employment in Africa (Chen, 2001: 71).

The second issue is that the nature of employment in the informal sector has been debated extensively and as yet no consensus has been reached as to whether the self-employed are entrepreneurs or not. The informal sector consists of workers who work for a daily wage, one-person firms and small firms with employers and employees (Pisani and Patrick, 2002: 106). Often it is not easy to distinguish between the different groups. Morris et al. (1997: 88) found that tavern owners in black townships in South Africa started their business operations to fill a business opportunity or market niche created after the dismantling of apartheid. For the purposes of this chapter we consider the informal sector consisting of entrepreneurs and potential entrepreneurs.

It was reported in *ANC Today* (ANC, 2002: 1) that: 'the informal sector of our economy (South Africa) is out of sight of many statisticians and public commentators'. Accordingly, many among these discount this area of economic activity. They work on the assumption that those involved in this sector should be counted among those outside measurable economic activity, simply because they do not operate within the ambit of what is described as 'the formal economy'. Yet, as is true of many developing countries, the informal sector is an important part of the economy. In reality it is in this sector that we find the greater majority of small enterprises.

Literature on the importance of the informal sector in economic development and in supporting the livelihood of millions of people around the world is growing and voluminous. A growing body of literature examines the issue of entrepreneurship in the informal sector. Pisani and Patrick (2002: 95) note that the informal sector can be a valuable outlet for entrepreneurial energy and a source of innovation. A similar conclusion was reached by Marquez (1994: 164) in examining the impact of public policies on firm formation and expansion in Latin America. Pisani and Pagan (2003: 593) suggest that promoting informal activities of the self-employed or entrepreneurs in the informal sector would likely accelerate a country's socio-economic development.

ENTREPRENEURSHIP VACUUM IN AFRICA

The need for entrepreneurship in Africa was identified more than a decade ago, in a World Bank published report in 1989, which stated:

Africa needs its entrepreneurs. Achieving sustainable economic growth will depend on the capacity of people from all levels of African society to respond flexibly as new market and technical opportunities emerge. Africa's entrepreneurs must create these jobs and only their initiative can ensure that the long-term demand for low-cost products and services will be met. (World Bank, 1989: 155).

The development of large-scale industrialization in Africa appears to be a remote possibility at least in the short to intermediate run. However, small and medium-size enterprises (SMEs) have been successfully established throughout Africa. An African entrepreneurial vacuum exists today because of changing economic activities and particularly because of the need to meet social needs.

Commenting on the New Partnership for Africa's Development (NEPAD, 2002), Conway (2003: 4) has noted: 'if African agriculture does not function, Africa does not function and little development can occur in Africa without the development of the agricultural sector. Even if the agricultural sector develops, it would still be hard to sustain development because of inherent weaknesses in entrepreneurship and the private sector'. The positive impact of technological progress cannot be maximized without entrepreneurship. One of the recommendations by NEPAD (2002: 54) is: 'to undertake measures for enhancing the entrepreneurial, managerial and technical capacities of the private sector by supporting technology acquisition, production improvements, and training and skills development'.

It is unrealistic to expect, and indeed it would not be relevant for, African entrepreneurs to choose high-tech industries as the best way to generate wealth. Entrepreneurs are generally not restricted to sectors or regions. Entrepreneurs need to implement activities that are relevant and attuned to the opportunities and the characteristics in the region where they are operating. In the African context, Bauer (1984: 31) observed that producing cash crops and related trading and transport operations expanded the market horizon and created new opportunities, which reflect entrepreneurial activities. Though there is some evidence for the presence of entrepreneurship in Africa, relevant to its resource endowments, the need for economic growth indicates lack of entrepreneurship rather than the presence of it.

ENTREPRENEURSHIP FOR AFRICAN DEVELOPMENT

Entrepreneurship is now considered to be a critical component in development strategies, particularly in the promotion of small enterprises. It would be hard to find a development programme without it. In rural areas people and their socio-economic environments are closely interwoven. The immediate socio-economic environment is not the criterion for new business formation and success but, rather, is part of the process. Entrepreneurship and communities are interdependent and they are complementary. Prosperity of one reinforces the other. Survival of the community depends on mobilizing local resources, adopting appropriate technologies and being responsive to a constantly changing environment. Thus a supportive interface between business and community is crucial for the entrepreneur, the firm and the rural community.

Low educational levels, limited quantities and poor quality of resources, agricultural-based economies and/or a high dependency on international aid programmes, distinguish Africa from other continents. In the past two to three decades, Africa as a continent experienced a slower economic growth rate than any other continent. Poor governance, natural disasters and continuing civil wars and strife have often created unfavourable economic conditions, which have inhibited local and foreign investment. Natural and human-made resources remain under-exploited. A major impediment to African development is the continuing dependence on agriculture, which performs poorly. Recent reports indicate that about 60 per cent of the populations of many countries depend either directly or indirectly on agriculture, and agriculture is the backbone of many economies. Development of agriculture undoubtedly needs to play a pivotal role in the economic development of many countries on the continent.

Poverty and poor economic conditions provide opportunities for the entrepreneurial process, because threats to survival release the ingenuity of people in searching for ways to survive. This is analogous to explanations relating to population ecological theory, which suggest that the survival of organizations can be explained to a great extent by environmental factors (Amit et al., 1993: 823). The strength of ecological theory is the integration of environmental factors in the process, while most other theories are developed based solely on individual characteristics. The theory also predicts that individuals and organizations that fail to adapt to the environment will disappear from the system (Aldrich, 1990: 9). Unfortunately the theory fails to suggest how to sustain an organization or prevent an individual becoming extinct from its environment.

The most distinctive characteristic of entrepreneurship is that it has consistently been shown to contribute positively to economic growth. It is needed when economies are growing and it is the reinforcing force aiding survival when economies are failing. Therefore there is a great need for entrepreneurship in all developing economies, but particularly in Africa. The United Nations Social Commission for Asia and Pacific (United Nations, 2002: 73) did a study on the impact of the Asian economic crisis. A development strategy was drawn up with the title of *Protecting Marginalized Groups during Economic Downturns: Lessons from the Asian Experience*. The role of the informal/rural sector was seen to be one of 'absorbing' employment, particularly during times of crisis. The contribution of small and medium enterprises in terms of employment generation was highlighted and, in order to overcome crises, the need for entrepreneurship development was considered a priority.

There are lessons Africa can learn from Japan, particularly with reference to entrepreneurship. As the Japanese economy grew, many small-scale family-owned enterprises survived and even became stronger. Hayami (1998: 310) has emphasized that the advantage of SMEs are that they provide important incentives for entrepreneurs and provide flexibility in the form of producing small

amounts of differentiated products. Dynamism and diversity of African economies reflect their flexibility; what is needed is entrepreneurship. The path to sustainable development in Africa broadly depends on revolutionizing the traditional economic systems, utilizing the scarce resources efficiently and effectively, tapping latent skills and knowledge, and doing it within the local socio-economic framework. This is only possible through fostering entrepreneurship in all sectors, but particularly in the informal sector. As Van Daalen (1989: 22) notes 'development in our sense is a distinct phenomenon, entirely foreign to what may be observed in the circular flow of tendency towards equilibrium. It is spontaneous and discontinuous change in the channels of flow, disturbance of equilibrium, which forever alters and displaces the equilibrium state previously existing.'

CHALLENGES AND THE REALITY OF PROMOTING ENTREPRENEURSHIP EDUCATION

In high-income countries, entrepreneurship education has been recognized as an important subject area in many colleges and universities. It is included as part of the curricula with the expectation that this could help to promote entrepreneurship. The main focus of such courses is to teach students what entrepreneurship is, how to be entrepreneurial, the qualities of an entrepreneur and what type of environment encourages entrepreneurship. These courses are designed to meet increasing demands of youth, who wish to pursue livelihoods requiring entrepreneurial skills.

In most universities, management departments offer entrepreneurship courses as a branch of management. In an academic context, management and entrepreneurship are not the same, thus leading to some controversy. Plaschka and Welsch (1990: 56) quote Vesper to explain that in the late 1970s entrepreneurship was a 'tangential activity, academically "flaky" and lacking a scholarly body of knowledge. This was because there was little research being undertaken on entrepreneurship and consequently the literature on the subject was thin.' In recent years greater efforts have been made to install more of an academic spirit in the field of entrepreneurship, in which entrepreneurship has become increasingly recognized as a discipline and a career.

Those interested in an entrepreneurial education are a very diverse group, most of whom presumably are interested in starting a new business or in developing an existing business for themselves. In reality, it is unclear as to the extent that individuals, who have succeeded in their careers as entrepreneurs, have gone through an academic course relating to entrepreneurship. How many have benefited from such academic programmes and in what way they have benefited would be an interesting investigation. Most academic institutions involved in

entrepreneurship training are unlikely to have much in the way of records of its alumni who have become entrepreneurs during their lifetimes.

McCarthy et al. (1997: 2) argue that business education in new venture creation and subsequent performance beyond its start-up stage has largely been based on reports from successful alumni. The evidence to support the claim that the programmes are successful in preparing their graduates to deal with post-start-up problems is very sketchy. On the other hand if we assumed that only those who have been exposed to an academic-related programme relating to entrepreneurship have in fact become entrepreneurs, then the world today would be quite different from what it is. It is evident that in higher-income countries higher education on entrepreneurship has not contributed as much to the formation of enterprises as it sometimes is claimed to have done. A similar assertion can be made in the African context.

No one can dispute the entrepreneurial and business skills needed for Africa to overcome the vicious cycle of poor economic growth. After examining the status of business education on the African continent, Thomas (2004: 1) commented that 'the business training is a vital part of creating a broader African prosperity. How do we learn if we want to make our classrooms relevant?' Further, the author also questions the relevance, cost and benefits of MBA programmes in the African context. The latest South African Global Entrepreneurship Monitor (GEM) study, by Hancock and Fitzsimons (2004: 46), found that the most important factor that inhibits entrepreneurship in the South African population is the lack of entrepreneurial capacity, which is primarily the result of weaknesses in the education system.

A constantly changing business environment and society demand that education and training programmes be flexible enough to meet the current needs. Billett and Seddon (2004: 52) observed in the industrialized countries that institutions of education and training cannot adequately accommodate these demands. Unfortunately, rigid curricula, unstable political systems and centrally regulated governments hinder such changes in Africa. There are two possible options available to reduce this problem, namely: (1) academic institutions actively collaborating and partnering with industry and having flexible curricula; and (2) providing an opportunity for individuals to learn through action orientated programmes. The former is less likely to be the better option for the informal sector in Africa, while the latter can be altered to accommodate community-based learning (O'Donoghue, 2001: 13) and through having 'new' social partners. Billett and Seddon (2004: 52) reported that, 'there is evidence to suggest that these new social partnerships are supporting relatively innovative approaches to support learning opportunities through localised decision-making'. In Africa, for those who are inside and outside the formal education system, the source for learning and opportunity for individuals to build entrepreneurial skills is found within communities.

TEACHING ENTREPRENEURSHIP AND LEARNING TO BE ENTREPRENEURIAL

The requirements for effective entrepreneurship education that can have a lasting impact on the individual and on society at large have been researched in depth. In high-income countries formal education is considered to be a key factor in developing entrepreneurial skills of potential entrepreneurs. In formal education, the entrepreneurship curriculum primarily focuses on structured course materials that are designed to prepare the students to be able to identify, understand and be aware of the entrepreneurship skills that can be applied in real-life circumstances. Entrepreneurship courses are defined as a 'set of classes taught as theories, which focus on entrepreneurship, new venture management or starting new businesses' (Levie, 1999: 7). The African continent has lagged behind in identifying entrepreneurship needs and in incorporating entrepreneurship into curricula. For example Brockhaus (2001: 14) noted that the first course in entrepreneurship was offered at the Harvard Business School in 1947, while the first entrepreneurship course in South Africa was offered as part of business management at the beginning of the 1990s (Kroon, 1997: 172).

Entrepreneurship education can be obtained formally or informally. The critics of formal entrepreneurship education argue that the formality in class learning is likely to weaken the critical thinking process, while entrepreneurs tend to think in 'non-conventional ways, to challenge existing assumptions and to be flexible and adaptable in their problem solving' (Kirby, 2004: 515). Some early studies show that 'formal academic training dulls the cutting edge of commerce' (Bartlett, 1988: 26). Unfortunately, in Africa neither formal education nor informal education systems have been designed to make a considerable change in peoples' living. In a recent study by the International Labour Organization, Hann (2001: 4) found that public sector formal education training suffers from outdated, inflexible and inappropriate curricula. Hann (2001: 3) also reported that 'training for the informal sector in the past 15 years has deteriorated rather than improved'.

According to Stevenson (2002: 1):

the basic tenets of the entrepreneurship teaching approach are three fold: first, entrepreneurship has been taught as a process not as a person; second, is creating the belief within students that they can become entrepreneurs; and the third element is the belief that entrepreneurial management is not simply inspiration but a lot of perspiration.

Students of entrepreneurship are guided to develop entrepreneurial traits through a learned process that involves acquiring insights, knowledge, skills and techniques. After conducting a series of studies in Tanzania, Uganda, Zambia, Zimbabwe and South Africa, Frese (2000: 162) concluded that psychological variables such as personal initiative, innovativeness, entrepreneurial orientation

and autonomy were found to be important for successful entrepreneurship in Africa. According to Virtanen (1997: 4) traits and characteristics are inter-mediating variables that explain and predict entrepreneurial activity and behaviour.

Thus entrepreneurial traits cannot be developed during a formal academic study programme, because entrepreneurship courses are 'taught in the traditional manner through lectures, textbooks and essays and assessed in an end of course written exam' (Levie, 1999: 4). Commenting on teaching entrepreneurship Farrell (1984: 63) reported that: 'I can't teach students the personality traits necessary to take risks, but I can teach them to analyze those risks, to be analytical about their choices and to learn from mistakes made in the past.' In addition, Hancock and Fitzsimons (2004: 47), reported that in South Africa, contrary to enhancing entrepreneurial characteristics, the formal education system potentially suppresses the development of entrepreneurial characteristics and have recommended a need for reorientating the formal entrepreneurship education system to inculcate an enterprise culture.

One of the important findings in the Global Entrepreneurship Monitoring Study (Reynolds et al., 2000: 11) was that the majority of those who start businesses are in the age range from 25 to 44, while Begley et al. (2005: 43) found that typical entrepreneurs start their businesses in their thirties. The educational levels of nascent entrepreneurs and new business owners were 12.6 per cent, 23.6 per cent and 32.2 per cent for those with some postgraduate, college graduate and some college education, respectively. In reality many new entrepreneurs are older individuals with lower educational characteristics, which contradicts the conventional view that one can become an entrepreneur only after a college education. A great proportion of nascent entrepreneurs (63.8 per cent) have an educational level below college graduate level (Reynolds et al., 2000: 11). According to a World Bank assisted survey in Africa, less than 50 per cent of all entrepreneurs had completed high school in all countries, except Tanzania, and the proportion of entrepreneurs having university education ranged between 15.7 per cent (Zambia) to 26.1 per cent (Zimbabwe) (Ramachandran and Shah, 1999: 1). Therefore it is obvious that they have learned/acquired entrepreneurial traits outside the formal (college graduate) educational system. It would also be reasonable to assume that the vast majority of those working in the informal sector are unlikely to have had much in the way of a formal education.

Learning is a complex process. In a classroom some students learn more than others and every individual has his or her way of learning. An individual's learning style describes the way in which he or she acquires information and uses information in a more efficient manner to identify opportunities. Entrepreneurship teaching and learning cannot be compared with any other classroom subject. In other related and unrelated disciplines it is generally possible to evaluate the suitability of a candidate for a specific programme based on the

knowledge and skills that he or she possesses. In entrepreneurship, although it is taught in the classroom, there is still no general theory to guide entrepreneurs in dealing with the uncertainties which surround any new business creation. And even if there were, the real test is performance over time under actual real-world conditions (Block and Stumpf, 1992: 20). According to Deakins and Freel (1998: 145), 'little is known about entrepreneurial learning and knowledge of the entrepreneurship process remains something of a black box'. Rather, the individual learns to be entrepreneurial as he or she applies the knowledge and experience to overcome constraints imposed by the environment. There are many theories that explain entrepreneurial learning in a variety of contexts. In this chapter we consider learning by experience or doing is most important, in which entrepreneurs are able to modify their behavioural patterns and actions in response to specific environmental events and the people surrounding them.

Therefore a new approach to entrepreneurship education is necessary, not only because of problems relating to the entrepreneurial traits discussed above, but also because of the fact that entrepreneurs are adults and the majority in most parts of the world, particularly in Africa, have no opportunity of a college education. Training in entrepreneurship under such circumstances is likely to be a challenge because of the need to work with adults, the need for it be done in a more informal manner and need for the people to receive such training on the job, because of their low incomes.

MENTORING: AN ALTERNATIVE ENTREPRENEURSHIP EDUCATION APPROACH

Africa is highly diverse and complex, and there is great variation between the countries and communities within a country. Given its characteristics, it would be very difficult to propose and implement one entrepreneurship educational strategy for all the countries. One approach may be applicable in one context but not in another. Given the nature and questionable success of formal entrepreneurship education, there is a need for an alternative approach to entrepreneurship education for Africa. The proposed alternative approach focuses on the basic tenets of rural institutions, entrepreneurs and individuals associated with them, who, while pursuing their livelihood goals, engage in mentoring other individuals to be entrepreneurial.

The foundation for rural development requires a sound socio-economic institutional setting, which is basic to any form of social interaction. Unfortunately, the importance of such institutions is not usually recognized, except when changes in them are proposed or when they are not performing satisfactorily (Shaffer, 1989: 35). The institutional environment plays a major role in all de-

velopmental activities. The institutional environment is important in input supply, marketing and expansion of businesses. According to Davis and North (1971: 6), 'The institutional environment is the set of political and legal rules that establishes the basis for production and govern the use of community's resources, exchange and the distribution of rewards.' In the traditional entrepreneurship literature the institutional setting has been ignored, while it plays the role of buffer for internal and external interventions. Ruttan (1984: 549) suggests that institutions have the capacity to perceive and accommodate change.

Thus the mode of intervention in our proposed approach is through existing institutions including social units, such as local individuals, who are preferred to outsiders. Local entrepreneurs are better equipped to create values and take advantage of untapped resources, including human capital, and can act as role models for potential entrepreneurs.

In our methodology we use the term 'mentoring' in the way defined by Bolton (1980: 198), as: 'the process in which an experienced person who provides guidance and support in a variety of ways to the developing novice – by being a role model, guide, tutor, coach or confidante'.

Individuals need to be identified as active key players and are recognized as the nucleus of the proposed approach. The entrepreneurial process begins with individuals. A recent study by the Harvard Business School reveals that, of the Fortune 200 companies, which are considered to be the largest in the USA, almost all were started by individuals, including Ford and General Electric (Purrrington and Bettcher, 2001: 2). After examining past literature on the personality traits and behaviour of entrepreneurs, Gartner (1988: 63) concluded that entrepreneurship 'is a role that individuals undertake to create organizations' and suggests that entrepreneurship should be viewed from an individual and behavioural perspective in the process of creating an organization. Identified entrepreneurs are the role models and educators promote entrepreneurship partly through networking and working as a group. The entrepreneur develops horizontal and vertical networks, with both loose and strong ties. This helps in developing business relationships between the mentor and potential entrepreneurs. As this process continues, it helps in the formation of groups to have the entrepreneur in the centre as the 'external' locus of control.

In the informal sector, social networks are important for start-ups and for the survival of firms. In the entrepreneurship literature there usually appears to be a strong relationship among start-up business owners, family background and prior experience. Ties with family and friends help to mobilize the capital requirement that is necessary for business start-ups (Blanchflower and Oswald, 1998: 44). Trust is one of the main bonding sources either among family members or friends. Nurturing relationships also eventually help in the formation of entrepreneurial activities. Reynolds (1991: 64) suggests that 'potential entre-

preneurs find it more comfortable to take the risks of starting new firms when the major dangers are associated with the marketplace, not the risk that a friend or associate will attempt to take advantage of them at a very vulnerable time'. We find that the potential entrepreneur is more protected and there is a greater ability to accept the risk and be successful if he or she has a friend or associate who is also a mentor. Entrepreneurs as mentors can reap 'satisfaction and fulfilment from nurturing the professional and personal development' (Ragins and Scandura, 1994: 959) of a potential entrepreneur and the authors found that the mentors also gain status among their peers for their mentoring activities.

The entrepreneur's involvement in social networks results from some form of group processing and formation where his or her success greatly depends on the strength of ties and the co-operativeness of the group. This is because: 'successful entrepreneurship is most often not an isolated occurrence, but happens within the social context of a community. This is true not only in terms of the marketing of products but in the complex interrelationships that develop between the entrepreneur and her/his environment' (MacKenzie, 1992: 39).

Lanier and Little (1986: 528) argue 'prospective and practicing teachers can indeed "learn new tricks," and master all sorts of subject matter knowledge and skills of the trade'. In reality the entrepreneurs are practising teachers and making use of them as being the best source of trainers, would be very appropriate. Mentoring can be effective in the co-operative learning process, where the entrepreneur offers guidance and assistance for new entrepreneurs, particularly when they are facing difficulties and challenges in embarking on an entrepreneurial process or in the establishment of a new firm. The entrepreneurs selected to promote entrepreneurship would continue pursuing their own livelihood goals, but would spend some time helping others to develop skills and attitudes that are necessary to start a business venture. This learning process involves adaptive learning in order to cope with change and, as a result, survive. It also embodies the capacity to create and incorporate experience (Sullivan, 2000: 162).

Gompers et al. (2005: 612) present a brief summary of entrepreneurship externalities, where the authors point out that 'breeding grounds for entrepreneurial firms are more likely to be other entrepreneurial firms', which is possible because a new venture creates new opportunities for other new ventures and the act of entrepreneurship is a favourable example for others to follow. This aspect of entrepreneurship fits well with our approach of using an entrepreneur as a mentor who can promote others to be entrepreneurial. This approach is also well supported by the principles of adult learning, where adults learn from their peers.

Mentoring alone is insufficient in encouraging entrepreneurship. A supportive socio-economic environment is also necessary to foster entrepreneurship in the informal sector. The necessary resources and enabling environment will in turn

be transformed into supportive basic services. While stressing the need to have mentors, it is also equally important to have some basic services. The lack of such services that are essential for start-up businesses could inhibit the promotion of entrepreneurship. Hann (2001: 44) reported that the most severe constraints faced by the African urban informal sector small and medium enterprise owners were interference from authorities (80.8 per cent), lack of work site (77.7 per cent), markets and competition (61.5 per cent) and lack of credit (56.3 per cent).

The external environment can significantly impact the success of entrepreneurship initiatives. The external environment includes a variety of factors that are known and unknown to the entrepreneur. The known factors are less of a problem compared with unknown ones. The unknown environmental factors could be a threat or encourage the entrepreneurs to minimize their risk or to expand the operation. Hann (2001: 34) report that about 50 per cent of the new businesses started in Africa fail within the first three years of start-up. One of the major elements is the availability of reliable information that can be used to create and/or to expand opportunities. New information can result in new market opportunities, diversify the portfolio and reduce the risk of operating in a stagnant market. This will not only facilitate/promote entrepreneurship, but also help entrepreneurs to continue to be successful. Hann (2001: 2) reports that markets in the informal sector are often saturated, and information is necessary for informal sector entrepreneurs to diversify production and enter new market niches to overcome the problem of saturation. Parker (1996: 30) finds that the most pressing problem for Zambian entrepreneurs was marketing their produce, because the existing markets had few customers for some products, but for others the competition was intense among producers.

Sufficient capital is an important element for entrepreneurship development. Entrepreneurs should be able to purchase the raw materials or products that they need, add value or even adjust technology that can be used in the value-adding process. In most small and medium enterprise development programmes one particularly valuable component is access to credit. Unfortunately the record for giving and repayment of credit has often not been very good, but in the context of this chapter, the decision as to whether or not to give funding should be based on project worthiness. Financing is different from provision of credit. In financing, project worthiness and repayment capacities are evaluated before undertaking financing. Adoption of such criteria should enhance the potential for successful financing and functioning of enterprises. The majority of informal sector enterprises in Africa have less than 10 employees. For such businesses, savings are less likely to be available to support investment needs and collateral requirements for financing are usually not present.

An efficient, effective, client-orientated and less bureaucratic financing system is necessary for creating a favourable entrepreneurial environment. Short-term

financial support and long-term investment needs are often cited as a major constraint in firm growth and entrepreneurial initiatives. Obstacles for borrowing coupled with lack of other sources of financing have an impact on the cost of borrowing.

Infrastructure is an important component in helping promote entrepreneurship and enterprise development programmes. Good transport systems would facilitate free mobility of goods particularly on the African continent, because many countries share borders with each other. Entrepreneurs not only need to discover low-cost inputs and new markets for their products, but also need to be able to transport those commodities. Such freedom of movement would be beneficial for entrepreneurs, businesses and society as a whole. In this information technology era, Africa is lagging behind in use of information technology in the socio-economic development process. Hanna (2002: 1) quoting the words of Segun Agbaje (Director at Guaranty Trust Bank) reported that 'less than 2 per cent of the population in Africa has access to telephone lines'. Currently, limited Internet facilities are found mostly in capital cities, and rural areas are largely cut off from the outside world. Unfortunately, given the poor state of most African economies, the development of adequate physical infrastructure is likely to be a problem for some time to come.

Innovative enterprise creation is directly related to knowledge and competencies possessed by the communities. Knowledge spillovers benefit other members in the community. The collective body of knowledge is a vital resource for the community and can be viewed as social capital. In a constantly changing socio-economic environment the social capital needs to be upgraded regularly. Human capital is the hub of social capital and it needs to be constantly developed via both formal and informal means. Based on previous studies Yamada (2004: 308) indicates

there are two hypotheses on the causal relationship between a knowledge community and social capital related to successful entrepreneurship. One hypothesis is that superior entrepreneurial knowledge communities are created from certain heterogeneous entities of social capital. The other is that the driving force of superior knowledge communities creates social capital. This potentially reciprocal relationship shows that entrepreneurs make endless efforts to carefully seek new differences and meanings among entities. This is the source of vitality in entrepreneurial networking, and entrepreneurs' commitment to such activities based on their spontaneous motives is the most important factor.

Though information, physical infrastructure, financing and human resources development are necessary for entrepreneurship formation and development, each element alone is not sufficient. Most of the theories in entrepreneurship have focused on individual elements and failed to take account of a composite view. According to Yamada (2004: 309) the 'multidimensional view of entre-

preneurship can be used to describe both phenomena, new knowledge creation development (new products and service creation) and knowledge community development. These two phenomena cannot be divided in understanding the multidimensional view of entrepreneurship.'

Entrepreneurship is a social phenomenon and occurs in a dynamic, complex environment. Each element, such as information, physical infrastructure, financing and human resources development, reinforces the other and, most importantly, the trainers or the education providers need to understand the synergy in the entrepreneurship education process, particularly in the informal sector. Informal sector entrepreneurs are considered to be a very mobile group and the sector itself is very disaggregated. After identifying the key elements that are needed to foster entrepreneurship education in the mentoring process, the model is diagrammatically presented (Figure 15.1) for entrepreneurial training in the informal sector in Africa.

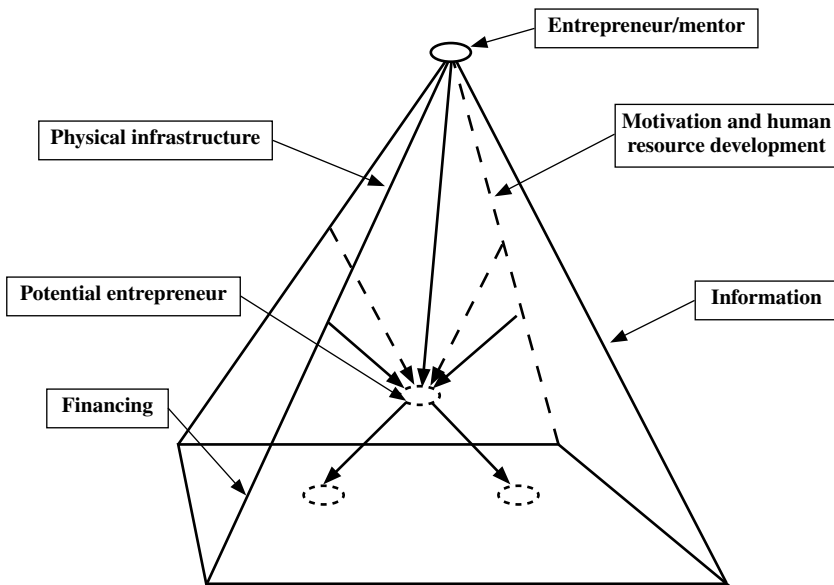


Figure 15.1 Entrepreneurship mentoring pyramid

CONCLUSION AND POLICY IMPLICATION

Poor socio-economic conditions and low educational opportunities are major stumbling blocks to the development of Africa. Emphasizing the development of entrepreneurship could stimulate socio-economic development, particularly

in the informal sector. Entrepreneurs could act as mentors to potential entrepreneurs. Thus entrepreneurship would breed entrepreneurship. Potential entrepreneurs are adult and the majority of them have to learn outside the formal education system. Mentoring could be a practical approach. This aspect has been ignored in entrepreneurial orientated rural/economic development programmes. One of the main tasks of the implementing agency would be to ensure that the entrepreneurs do not exploit the group members with which they are associated.

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