

Entrepreneurship Training for Regional Growth and Innovation: A Swedish Case Study and Ten Year Retrospective

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ABSTRACT

This paper examines the underlying assumptions that have led to the development and institutionalisation of entrepreneurship training in universities and will seek to assess the benefits of this development over the last ten years in the context of those assumptions. In this paper we will take a brief look at entrepreneurship training in its recent historical context. We will also consider what current researchers are defining as the characteristics of entrepreneurs and what correlations may or may not exist between the theoretical and psychological aspects of entrepreneurship and the actual training of individuals. It is our hope that this ten-year retrospective on the ENP programme will contribute new suggestions and recommendations for entrepreneurship training and demonstrate its ability to impact regional growth through both skills development and innovation catalysis.

INTRODUCTION

As interest in the study and practice of entrepreneurship continues to grow, definitions of the entrepreneur are probably less defensible than ever. Ray Smilor in his book, *Daring Visionaries*, notes the remarkable diversity of entrepreneurs and says that the attempt “to predict who will be a successful entrepreneur has proved to be a generally frustrating and unsuccessful endeavor” (Smilor, 2001, 20). Smilor has identified one characteristic that all entrepreneurs share however. “Every entrepreneur believes his or her company will succeed” (Smilor, 2001, 21). It is perhaps this very optimism that forms the foundation of an entrepreneur’s character. And, it may also be this optimism and unfailing positivism that attracts many of us to study and to teach in the arena of entrepreneurs.

In Sweden today, entrepreneurship training initiatives that were initiated in the last decade have been replicated throughout the country as the demand for this training continues to increase. One of these initiatives, developed within the Centre for Innovation and Entrepreneurship at Linköping University¹ is the Entrepreneurship and New Business

¹The Centre for Innovation and Entrepreneurship (CIE) was founded in 1994 and is a centre within commissioned R&D at Linköping University. The basis of the enterprise is different activities and programmes whose aim is to stimulate growth and development in young and expanding technology-based firms. The intention, moreover, is to integrate this enterprise with research and teaching in entrepreneurship and new business development. SMIL stands for Business Development in Linköping and is a member organization for technique- and knowledge-intensive firms. SMIL’s purpose is to stimulate business development in these firms. It was founded in 1984 and currently has 200 member firms, from one-man firms to large firms. Common for these firms is that most of them come from Linköping University. SMIL and CIE have a very close collaboration with each other. Linköping University is located in Linköping, Sweden 200km southwest of Stockholm. Its 25000+ undergraduate and graduate students follow a breadth

Development Programme (ENP). This programme, begun in 1994 in cooperation with a private network of enterprises, has catalysed the formation of more than 400 new firms, 75% of them still in existence today. What's more, 20% of these companies now employ more than five people.

While it is impossible for business development schemes to demonstrate that companies under their tutelage would not have evolved without their support, it is possible to demonstrate and suggest that more companies are catalyzed today and indeed thrive as the result of start-up support. Statistics supported through studies done by the National Business Incubation Association (NBIA) in the United States, as well as by the UK Business Incubation (UKBI), show that between 75 and 80% of start-ups supported by incubators or business support are still in existence after five years compared to only 20 to 25% of businesses that receive little or no support.

It is with similar assumptions for success that entrepreneurship training exists. Entrepreneurship programs are in some ways a form of early-stage incubation support within the walls of universities. This paper will examine some of these underlying assumptions that have led to the institutionalization of entrepreneurship training and it will seek to assess the benefits of this development by reviewing the practices and performance of Linköping University's Entrepreneurship Programme (ENP). We will present an overview of entrepreneurship training in its historical context while considering what researchers define as the characteristics of entrepreneurs and what correlations may or may not exist between the theoretical and psychological aspects of entrepreneurship and the actual training of individuals. We will not attempt to argue these points, but instead, through presenting the ENP programme, we will seek to contribute suggestions and recommendations for entrepreneurship training and to demonstrate its value for stimulating economic growth.

Entrepreneurship and Entrepreneurs

Entrepreneurship as a component of theory and economic study is not at all new to the university curriculum, but entrepreneurship education as an application-based training for new business development is a relatively recent phenomenon. Before the 1970s, it was most likely that undergraduate and graduate students enrolled in collegiate schools of business had little opportunity to study entrepreneurship. While some colleges offered a single course in small business management, it was rarely required and even more rarely respected. (Kent, 1990, p. 111) In the *Annual Review of Progress in Entrepreneurship Research: a Rationale*, David Watkins echoes this sentiment and confirms that "the field of Entrepreneurship has indeed 'emerged,'" and he notes numerous conferences, institutes, associations, and journals dedicated to entrepreneurship and entrepreneurial discourse to support his assertion (Watkins, 2003, 10). From an academic perspective, where the validation of a discipline's value is determined by whether or not it is a research discipline or scientific discipline, entrepreneurship has not yet gained the full recognition as a domain within academia (Watkins, 2003). However, by virtue of the sheer numbers of papers, articles, theses, dissertations, and university courses dotting the landscape of entrepreneurship, one could argue that it has indeed become a relevant, if not respected, research discipline.

of liberal arts offerings including business, engineering, life sciences, mathematics/informatics, history and social sciences, medicine, teaching, languages and literature. See <http://www.liu.se>

How did it happen?

The 1970s and 1980s witnessed the end of the Vietnam conflict, the slowing and ultimate end of the cold war, and the realization by the United States government that traditionally-funded scientific research could be transferred into the marketplace to support and encourage new trends in economic development. As institutes contemplated ways to exploit the research commercially for both profit and economic good, they became more aware of their place, if not obligation, within the economic framework of their communities. In 1975 [in Sweden as well as in other countries] a third objective was added to the agenda of universities to “be open to influences from the outside world, [and] disseminate information about their teaching and research activities” (Henrekson and Rosenberg, 2000, 6). Today this third objective is an integrated component of most Swedish higher education (Johannisson, 2003).

By the 1980s influences both inside and outside many universities led to changes in what had been very traditional management education programs. Over the ensuing twenty years, increased interest in the commercialisation of university technology; establishment of science, research, and technology parks; and the development of business incubation programs led to an ever-heightened awareness of the need for more and better business managers of new enterprises. University business schools, some more readily than others, took up the gauntlet and introduced programs designed to train young graduates to take on the challenges of business creation. “College presidents and deans began to recognize that their most prolific and potentially biggest donors were often entrepreneurs who were willing to support entrepreneurship programs on college campuses through scholarships, contributions, endowed chairs, and centers” (Kent, 1990, p. 112). In the United States, traditional business schools such as the Kellogg School of Management at Northwestern University, could finally justify and formalize their entrepreneurship programs without fearing the threat of reduced contributions from large accounting firms which expected MBAs to be specially trained for executive management. In fact, new entrepreneurial graduates throughout the country, particularly between 1990 and 2000, were themselves becoming significant donors to their universities.

Increased global mobility and competitiveness has also catalysed entrepreneurship programs.

As early as 1988, Senator John Button, then Federal Minister of Industry, Technology and Commerce of Australia, said, “Many of our best inventions are lost to overseas concerns because Australians fail to exploit their industrial potential. If we are to capitalize on our ingenuity we must train entrepreneurs capable of developing and managing technology-based industries” (Wan, 1988, 66).

So, while it is true that many universities within the United States, Europe and Australia have offered graduate level programs in entrepreneurship, mostly theory, for many years, the recent surge in popularity has been catalysed by significant changes in technology commercialisation practices within university settings just since the early 1980s. This phenomenon in addition to increased global market competitiveness has led many academic and non-academic researchers and/or professionals to attempt to describe, define, and teach the skills and behaviours that could presumably lead to greater numbers of entrepreneurs and entrepreneurial activity. As this process has become validated within universities, government-funded business development agencies, and in private consulting firms, it has also become formalised and in fact, institutionalised.

By the mid 90's, more than 120,000 college students in the United States enrolled in entrepreneurship classes and Rice University in Houston, has required all of its students to take a full course in entrepreneurship since 1996. (Randall, D. 1997)

In 2001, the University of Kentucky looked closely at Lee T. Todd, an entrepreneur who had started, run and sold two high-tech businesses—Projectron Inc. and DataBeam Corp. Today, Todd is the President of the University and has established an entrepreneurship center, increased funding to a venture-capital fund, and working to improve the university's research capabilities—"not just to boost the school's academic stature, but to fill the pipeline for high-tech start ups" (Barker, 2003, 2).

One of the most important indicators for increased entrepreneurial activity on university campuses in North America is found in a recent survey by the Association of University Technology Managers (AUTM) which shows university revenues from technology licensing increasing from \$186 million in 1991 to \$1.3 billion in 2000. At the same time, university inventions led to the start of some 454 companies in 2000 compared to 241 in 1994. (Barker, 2003). Data on start ups between 2000 and 2004 reflect market downturns, but according to AUTMs 2002 survey of licensing activities, 450 new companies (reported by 214 institutions) were started in 2002 and new licenses and options executed in 2002 increased by 15.2% over 2001, showing the slow reversal of the downward trend of previous years (AUTM 2002).

Defining the entrepreneur

Smilor's suggestion that every entrepreneur wants to succeed may be the single characteristic of entrepreneurs on which many, if not most, can agree. It is possible that to ultimately *define* entrepreneurship as a disciplinary domain within the university is to render it definable—an action which in itself seems threatening to the very essence of what it may mean to be entrepreneurial. The actionable, yet indescribable nature of entrepreneurship makes it nearly Zen-like in character. Zen came into China in the first century A.D. through influences of Indian Buddhism. And while the Chinese of the so-called Middle Kingdom did not like all aspects of this Buddhism, they (especially the Taoists) were impressed by "its subtle dialectics, and penetrating analyses and speculations" (Suzuki, 1973, 1). According to Daisetz Suzuki, "Zen is not necessarily against words, but it is well aware of the fact that they are always liable to detach themselves from realities and turn into conceptions. And this conceptualization is what Zen is against. . . Zen insists on handling the thing itself and not an empty abstraction. It is for this reason that Zen neglects reading or reciting the sutras or engaging in discourse on abstract subjects. And this is a cause of Zen's appeal to men of action in the broadest sense of the term" (Suzuki, 1973, 5).

As with Zen, the *being* is more important than the *doing*. Taoism purports that being alive is more important than the meaning of life. Athletes strive to reach a state of 'being in the zone' where performance exceeds ones own expectations and one achieves a level of confidence, ability to focus, and to relax (Taylor, 1996). Psychologists, sociologists, historians, and economists are interested in researching entrepreneurs in part because of their phenomenological quality. There are those who discuss entrepreneurship from a behavioral or even gender perspective. Psychologist, Alan Jakobowitz, describes five stages inherent to the development of an entrepreneur. "He suggests that a child is often exposed to entrepreneurship in early childhood, experiences trouble in school, problems at work, enjoys an exposure to risk, and is blissfully independent" (Farris 99 in Spaeth 2004,

10). Most would agree that not all human beings are entrepreneurial. There are also studies that have also demonstrated that those who have so-called entrepreneurial traits are not guaranteed to start businesses (Huefner, J., Hunt, K., and Robinson, P.B. 1991 in Spaeth 2004). Not all would agree on the particulars of the origins behind an individual's inclination to practice or behave entrepreneurially, however. The view that something 'unusual' is inherent to the entrepreneur is a part of the fascination of its study and of the attempt to create or emulate it. Psychologists would probably be challenged by Schumpeter's notion that the behavior might actually be 'abnormal' and even by the notion that entrepreneurship could be a behaviour. Economists have sought a definable behaviour in the entrepreneur, for to be definable is to be measurable and to be measurable is to be predictable—allowing for greater control of organizational change that can ideally lead to a company's profitability. Today, however, what may prove to be more measurable and even understandable is the concept of entrepreneurs reacting and acting within their respective cultures and environment (Davidson, Low, and Wright 2001; Anderson, 2000; Aldrich and Martinez 2001).

These discussions will likely lead to a long future of research and debate. In the meantime, economists, investors and regional developers are content to gamble on the notion that an individual who is both entrepreneurial and managerial is worth cultivating for the development and financial well-being of a community.

The teaching of entrepreneurship as a practice is a form of practical application of existing theory or definition. As in the application of any science, practical applications can often comfortably avoid theoretical debate. The application is based on the acceptance of the general assumptions made about entrepreneurship by most theoreticians and generally resting on Schumpeter's views that, as Watkins reasserts "entrepreneurs do things other than those that are accomplished by normal behaviour" (Watkins, 2003, 32).

Certainly, enough data, qualitative and quantitative alike, has accumulated to lead most of us to believe, theoretically perhaps, that it is worthwhile to attempt to train entrepreneurs—either by giving creative and innovative individuals the skills to manage business, or giving business managers the notion and opportunity to create and innovate.

If we are to accept that some aspects of creativity, ingenuity, drive, and perhaps some financial and organizational abilities lay at the base of the entrepreneur's character, then we can assume also that entrepreneurs have existed since the beginning of humankind. How or if the entrepreneurial or enterprising person functioned or didn't within his or her community would have and still does depend entirely on the politico-socio-economic environment in which that individual lives.

Whatever genetic predisposition might lend certain entrepreneurial characteristics to any individual, he or she must also be supported by a society that does not inhibit those traits. In Russia today there exists an intellectual understanding of and curiosity for entrepreneurship. Government officials and many academics have read about and have seen the results of business development programs around the world. Still, the majority of university professors and deans in the Russian universities are baffled by the notion of their students' even 'needing' to consider 'having' to work for themselves when they can 'certainly find work' when they leave the university. On the streets, outside the halls of academia, entrepreneurs abound—most of them in the form of unofficial taxi-drivers—citizens trying to make a few rubbles, dollars, or euros from non-sanctioned forms of business.

In 1954, human psychologist, Maslow first published "Motivation and Personality." He recognized that most people seek to satisfy personal needs through their work. He suggested that there exists a predictable scale of needs that most people will attempt to satisfy in sequence. He also theorized that a person could not even recognize or pursue the next higher need in the hierarchy until her or his currently recognized need was substantially or completely satisfied, a concept called prepotency. Maslow's hierarchy of needs is often illustrated as a pyramid with the survival need at the broad-based bottom, moving up through safety/security, then social/love/acceptance, then to esteem/recognition/success and finally self-actualisation need at the narrow top.

In order for an individual to satisfy a need, he or she must be able to recognize the need. Hunger and thirst—basic survival—are relatively easy needs to recognize. Maslow's establishment of a hierarchy of these needs, with success and self-actualization at the top suggested that these were also needs that are not necessarily achieved or even recognized by the individual as necessary. The entrepreneur is a self-actualizer. For him or her, success defined by wealth and recognition (of self and invention) is a principal motivation. The social environment in which an entrepreneur thrives is an environment that encourages or at least accepts what the American writer Thoreau called self-reliance. (Spaeth, 2001).

In Sweden, the community of Gnosjö² is regularly cited as a place that holds a particularly entrepreneurial spirit. Historically, Gnosjö has, unlike other Swedish communities, shunned the support of 'outsiders' including the state whenever it suffered low economic times. The citizens of Gnosjö are historically, self-actualizers. Caroline Wigren, in her most thorough doctoral dissertation on the spirit of Gnosjö examines what prove to be not so extraordinary characteristics of a community that is actually more 'enterprising' than entrepreneurial (Wigren, 2003, 202). The people are indeed self-actualizers. They have also found ways to create wealth through producing products that are in demand regardless of economic influence or cycle—"dish drainers, whips, outdoor furniture, wire baskets" (Wigren, 2003, 73). Whether they can be said to be innovative in their conceptualising of new products or needs may be questionable. On the other hand, it could be argued that a community or region is entrepreneurial if it can create wealth by successfully understanding and exploiting market needs.

If one were to evaluate Gnosjö's entrepreneurial characteristics by the same measures as the GEM³, the distinctions made by Wigren between what she calls 'enterprising' and what she might like to have called 'entrepreneurial' become clearer. GEM distinguishes between *opportunity entrepreneurs* who take advantage of business opportunities and *necessity entrepreneurs*, those who, as the name also suggests, start a business out of a basic need to survive. In their 2003 regional profile on entrepreneurship in South Africa for example, they conclude that 63% of the entrepreneurs took advantage of business opportunities, while 37% were necessity entrepreneurs. The report suggests that "because entrepreneurs can be motivated by both opportunity and necessity or other reasons (e.g. lifestyle), the total entrepreneurial activity rate does not necessarily equal the sum of opportunity and necessity entrepreneurial activity" (GEM, 2003). If we assume that self-actualization and drive are key components for entrepreneurship, however, without the added element of creativity and innovation (i.e. *how* one actually exploits the business

² Gnosjö (pronounced Gnoh-whə) is a community in southern Sweden of just over 10,000 inhabitants.

³ GEM-The Global Entrepreneurship Monitor is an annual assessment of national levels of entrepreneurial activity. Conducted by a partnership of the Ewing Marion Kauffman Foundation, Babson College, and London Business School the GEM began in 1999 and now studies approximately 30 countries each year. (see: <http://www.gemconsortium.org>)

opportunities and necessities), then perhaps we are not adequately distinguishing between enterprise development and entrepreneurship. It is likely that Wigren uses the term 'enterprising' rather than 'entrepreneurial' for this very reason. The entrepreneur, then, regardless of definition or environment, can be said to help stimulate economic development through the creation of new business *and* to *accelerate* economic development through creativity and innovation that leads, ideally, to higher levels of productivity and competitiveness.

Stimulating Entrepreneurship

When entrepreneurship training was in its infancy within universities twenty years ago, there was considerable doubt as to the qualification and competence of professors to offer such training. Earlier studies demonstrated that the small business person (as well as participants in the ENP programme) can harbour a certain skepticism towards organizations which perform such training (Gibb, 1990; Klofsten and Mikaelsson, 1996). Such skepticism has often been the result of misunderstandings between the worlds of academia and industry where the concepts of management, commercialization, profit and wealth are viewed or thought to be viewed from significantly different perspectives. In other words, the business person will assume that the academic has little or no experience with the so-called 'real world.'

Today, graduates and/or participants of early entrepreneurship programs and practice are, yes, middle aged. The programs themselves are mature and ever-diversifying. According to the Kauffman Foundation, more than 1,500 colleges and universities offer some form of entrepreneurship training and interest in entrepreneurship education has spread to non-business disciplines, where students in engineering, life sciences and liberal arts are interested in becoming entrepreneurs.

A recent study conducted jointly by the University of Arizona's Eller College of Business and Public Administration and the Kauffman Center for Entrepreneurial Leadership, revealed that entrepreneurship education program alumni start more new businesses, develop more products and are more likely to be involved in high technology endeavours than their peers.

In their study, published in 2000 by the Kauffman Center and titled *The Impact of Entrepreneurship Education*, Alberta Charney and Gary Libecap surveyed 2,484 Eller College alumni, including 460 who were graduates of the Berger Entrepreneurship Program. Also surveyed were department heads and other administrators from the University of Arizona (including the Office of Technology Transfer), the UA Foundation and the Eller College dean. They learned that compared to other business school alumni, entrepreneurship graduates:

- Are three times more likely to start new businesses.
- Are three times more likely to be self-employed
- Have annual incomes that are 27 percent higher and own 62 percent more assets.
- Are more satisfied with their jobs.

Furthermore, it is important to be clear that entrepreneurial activity is not a compulsory outcome of an entrepreneurship education program. (Rabbior, 1990, p. 54) Courses that inspire entrepreneurship as behaviour will foster a society of confident self-actualizers and

innovators who are equally as valuable to the economic well-being of a community as the business creators themselves. Today, some universities in Sweden have suggested that as many as 50% or more of their students should start companies—even before they complete their studies. This notion, often promulgated by local economic developers in the hope that it will encourage graduates to remain in the community where they've attended university, is one that—if it were 'successful' would likely lead to an over-abundance of inexperienced business 'managers' many of whom have had little or no exposure to business experience prior to graduation. During the nineties this may have worked for thousands of software programmers who were supported by so much money that their own lack of skills was as transparent as many of the companies they pretended to manage. Today however, hard economic lessons have demonstrated that for most entrepreneurs, the experience of working for someone else may make them better leaders when they start their own companies.

Formal training of entrepreneurs in South Africa is still relatively new. In the 1990s, "the government's Reconstruction and Development Programme (RDP) placed major emphasis on entrepreneurial awareness and training" (Ladzani and Van Vuuren 2002, 155). Inspired by entrepreneurship practices in other parts of the world, regional service providers began entrepreneurial training, but today, in spite of considerable efforts, just three of eleven, or 27%, of service providers in South Africa's Northern Province, actually provide business, entrepreneurial, and performance motivation training (Ladzani and Van Vuuren 2002).

Ladzani and Van Vuuren, in their recent study of South African entrepreneurship training for emerging SMEs, emphasize these four clear strategies necessary for reducing the failure rates of new business development:

- Existing Training Firms Should Revise their Training Materials. *It is good that business skills are offered to entrepreneurs. It is even better to introduce and strengthen entrepreneurial skills, particularly to emerging entrepreneurs, so that they know how to generate ideas, screen these ideas, identify opportunities from the generated ideas, and assess whether they have entrepreneurial characteristics that would enable them to succeed in business.*
- SME Service Providers Should Benchmark their Services with Successful Similar Institutions. *SME service providers that are successful should share the secret of their success with those that are attempting to succeed.*
- Educational Institutions Should Introduce and/or Strengthen Entrepreneurship Education. *An entrepreneurial culture should begin at home, and then proceed to higher education and training institutions. When pupils are oriented into entrepreneurship from an early age, it becomes easier when they have their own entrepreneurial ventures.*
- Emerging and Potential Entrepreneurs Should be Encouraged to Take Courses in Entrepreneurship. (Ladzani & Van Vuuren, 2002)

Given what we've learned over the last ten years, through others' experiences and our own, is that there are a multitude of different activities necessary to train or influence entrepreneurship (Klofsten, 2000). Certainly three basic activities should continue to be found at a university:

- The creation and maintenance of an enterprising culture on the whole at the university.

- Separate courses in entrepreneurship where students can learn more about entrepreneurship as a subject itself.
- Specific training programmes for individuals who feel that they may wish to start their own enterprise; for example the ENP-programme. These are primarily 'hands on' and may or may not university credit and which may be suitable for students, faculty, staff, and members of the local community (Klofsten, 2000).

What is different today from just ten years ago is that universities not only have more qualified business practitioners teaching on campus, but professors studying the phenomenon of entrepreneurship have themselves developed substantially. Universities that were criticized for lacking competency in undertaking entrepreneurship training (Klofsten and Mikaelsson, 1996) are today held in much greater esteem. Today, entrepreneurship is a 'household' word among students in business and even among those in some scientific and technology disciplines, but it remains a foreign concept to many students and professors alike on university campuses. Gibb's notion that entrepreneurship should permeate all facets of university activities invites us to consider the importance of providing not only access to business development concepts within individual departments and courses, but to foster entrepreneurial thinking across all disciplines. Students studying education, philosophy, the arts, music, history, and languages, as well as engineers, scientists, and business majors should be provided with a basic foundation of economics and business development practice in order to fully appreciate the "street value" and potential, as it were, of their work.

The ENP Programme

In the spring of 1994, Linköping University launched the Entrepreneurship and New Business Development Programme (ENP). It was seen as a critical component of a more comprehensive programme structure for business support of technique- and knowledge-intensive firms.⁴ The University, together with SMIL (a private network of enterprises), already had a great deal of experience in providing support to established firms. They had a good track record of starting firms, but there was no formalized infrastructure for the 'younger' entrepreneurs to become a part of the start-up process or to ensure or improve the quality of these firms. The founders of the ENP also envisioned an opportunity to create a more enterprising university. As with many institutions new to the entrepreneurship game, the administration neither hindered nor supported the founding of the programme (Klofsten, 2000). Since ENPs inception in addition to many other related programs, the university has become an ardent defender and supporter of business development and entrepreneurship.

The first ENP workshop served as a pilot programme. Ten persons representing five companies participated, their response was very positive, and we were encouraged to continue. Over ten years the program has grown considerably. In the spring of 2004, 35 persons participated in the fourteenth programme (ENP-14). The programme has also been developed in 10 other regions throughout Sweden and among these regions a total of 35 ENP programmes have been conducted, which has resulted in approximately 400 businesses (up from 80 in 2000) that employ approximately 2000 persons (up from 800 in 2000). Since 2000 the ENP-programme has been a part of a project funded by the

⁴ A firm can be considered to be technology-based or knowledge-intensive if a certain portion of the firm's budget is devoted to research and development, the employees have a high level of education (Master of Engineering or equivalent), and the firm has a technology-based or knowledge-intensive business idea.

European Commission, 'Unispin', whose aim is to support regions in Europe that lack an infrastructure for entrepreneurial development (Klofsten, 2000). The CIE ENP Programme in Sweden continues to grow (figure 1):

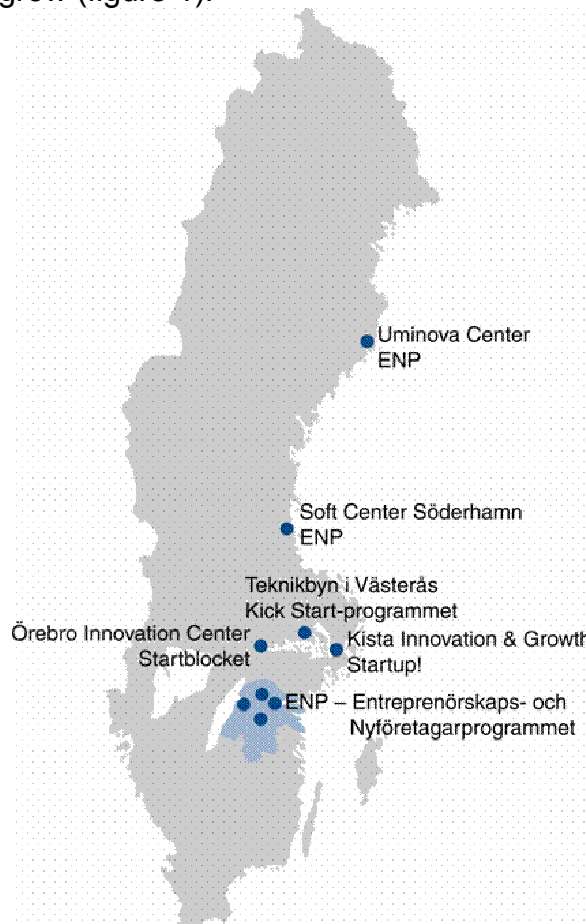


Figure 1

Content and execution

The ENP programme is based on a holistic approach in assisting the entrepreneur to grow his or her company in such a way that it attains a “business platform” (Klofsten 1998). This platform requires a business to attain some level of success in the majority of eight principal areas of their business. Aspects related to the core group of the business (for example, the founders’ driving forces and competence), external provision of resources (for example, customer relations and other corporate relations), and the business itself (for example, idea, product, market, and organisation) formed the foundation, therefore, of the portfolio for the ENP programme.

Over the years, a large number of articles have been written on business support and business training. In a comprehensive literature review (Autio and Klofsten, 1998; Jones-Evans, 1996), the authors highlighted two main categories of support—configuration orientation and process orientation. Configuration orientation (which seems to be the one most studied) deals with static arrangements, for example the description of facilities, budgets, organisational charts, localisation, and institutional links. Process orientation refers to support of a more ‘hands-on’ nature that investigates and takes into consideration, for example a firm’s actual need for management support, the heterogeneity of the population of firms, and the need to learn by doing. A third conclusion is that process orientation is preferred over configuration orientation in the training of

entrepreneurship because the former's dynamism and pedagogy is more able to meet the individual participant's need of support. With this, we do not mean to say that 'hardware', for example in the form of good premises and money, are unimportant, rather that 'software' is often a crucial resource and decisive for whether an activity will be successful (Heydebreck et al., 2000).

Instead of focussing on premises and finance ('hardware'), the ENP programme focuses on supplying a solid base of general knowledge to the participants ('software'). The ENP-training programme builds on four important precepts that support the participant's attainment of the eight cornerstones of the business platform. These four precepts include:

- A neutral approach—no investments/no interference: There is an understood 'code of conduct' among the trainers, mentors, and participants in the program so that the sharing of ideas and information can flow freely.
- A credible environment—While openness and sharing are encouraged, there is also a demand for respect of proprietary material rights.
- People, not just ideas—It is understood also that ideas change more often than people. Therefore, we focus on the development of the person more than on the idea.
- Motivated persons only—Entrepreneurship requires motivated, reliable and committed individuals with positive outlooks.

Once enrolled in the programme, each participant is to develop a business plan based on his/her own idea, but with a strategic and realistic perspective. The development of this plan is aided through:

- Workshops. In these, the most important components in the process of developing a business, for example marketing, sales, and legal issues, are discussed.
- Mentoring. Each and every one who participates is assigned a mentor who is a senior entrepreneur able to share significant experience with the participant.
- Supervision. The participants meet in person with programme management to check progress, receive advice and coaching.
- Networking. Each and every one receives free membership in SMIL the year the programme takes place.
- Use of Incubator facilities. Here, the possibility of renting premises in one of the local science parks⁵ on very easy terms is offered.
- Seed Financing. If an idea is judged to be economically sound, help with good funding is offered in the form of grants or soft loans.

The main theme that holds the different sections of the programme together is that of the business plan and the platform cornerstones, whose purpose is to facilitate development work. These combined provide the framework of the programme and help to generate successful business presentations at the culmination of each ENP. Participants are supported at all times by an experienced business network. In this network, there are not

⁵ Mjärdevi Science Park, Berzelius Science Park, and ProNova Science Parks are located within close proximity to the university. Mjärdevi was founded in 1984. Currently, approximately 170 companies who employ nearly 5,000 persons comprise the park, making it one of the most expansive in Europe. Berzelius focuses on the fields of medicine and medical technology. ProNova, located next to the university's Norrköping Campus, is a smaller inner city park with substantial company formation dedicated to IT and electronics.

only many entrepreneurs but also venture capital companies and other supportive organisations. The University and its entrepreneurship programs including ENP, rely on close collaborations with the local and regional science parks (2) where we often recruit candidates for ENP, conduct workshops and seminars, and where our participants can find flexible premises in which to work temporarily or long-term.

When ENP was initiated, the first programme lasted approximately one year, starting in the early spring and finishing in late fall. It became obvious that this time span was much too long, mainly because most of the eager participants started up their firms before the programme was due to finish. The participants needed access to the programme for a shorter time. Today, the ENP is conducted in fewer than 6 months, using the same content. The result has been positive and the participants are more committed for the entire programme than they had been previously. The following diagram illustrates the process (Figure 2):

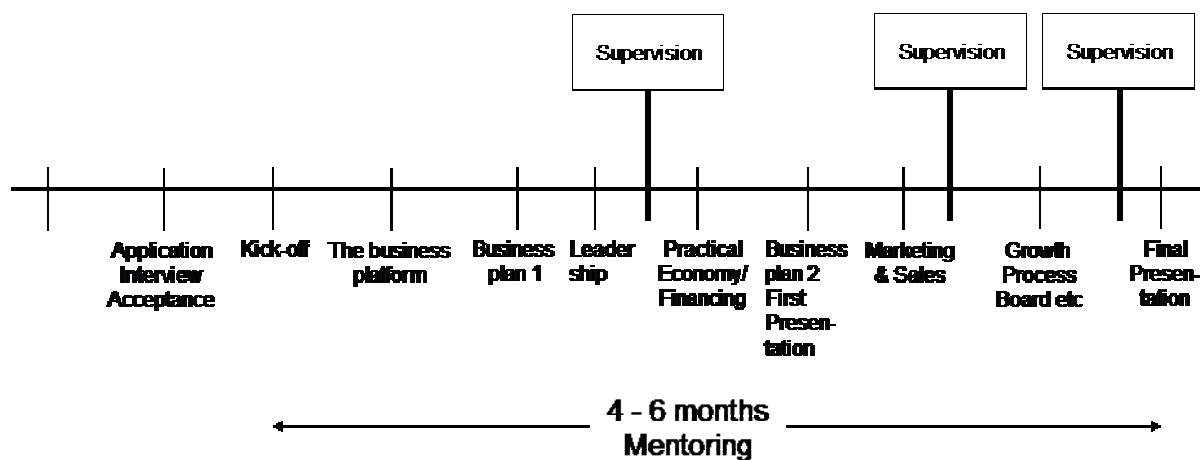


Figure 2

Target Group and Recruiting

The ENP-programme has been marketed principally through the university's internal newspaper and leaflets, distributed primarily to students in the higher years of study. Firms and other organisations which are associated with the SMIL network are invited to visit by email, fax, or the regular mail. Perhaps the most important instrument for marketing is the direct communication with the students in the entrepreneurship courses or the word-of-mouth effect that arises from satisfied participants of previous programmes. Certainly, due the success of the program and its growth, we have seen that personal references have contributed positively as well.

The ENP-programme has two main target groups and these are employees at:

- Linköping University, for example students, researchers, and teachers.
- Technology-based or knowledge-intensive firms and organisations.

The criteria that are used to recruit persons from these target groups are very simple - the person must have an idea (which does not need to be particularly well articulated) and must, as a person, be strongly motivated. Each and every one of the applicants is interviewed by programme management to ensure that the applicant fulfils these two criteria and that they have understood that the issue is that of a programme whose

purpose is to start businesses and not that of a traditional university course. The relatively simple and informal recruiting procedure was chosen based on the following:

- It is almost impossible to judge at an early stage whether an idea is economically sound, and it is not at all certain that the best idea leads to success (Timmons, 1994; Klofsten, 2003).
- The entrepreneurial process itself is distinguished by active and performance-oriented behaviour in persons in the form of being able to develop business opportunities (Bygrave, 1994, McClelland, 1961).

Consequently, the programme focuses on the individual (the entrepreneur or the entrepreneurial team) rather than the greatness of the idea. To develop an idea into a business is a process that can take a long time. It is totally dependent on the persons behind the firm and their ability to take advantage of business opportunities on the market. In the programme, consequently, active participation is expected where one, for example must take the initiative in the relationship with his/her mentor, take advantage of the network that is offered, and exploit the relations created in the programme. What is offered can be likened to an arena of activities (or opportunities) where it is a matter of the participant taking advantage of these as effectively as possible.

Financing the Programme

No fees are charged for participating in an ENP-programme. The target groups, which largely consist of students, lack the ability to pay, and it has not been considered appropriate to demand a fee for the simple reason that certain individuals with entrepreneurial potential would perhaps, by having to pay, miss the opportunity for training. Ten years ago, it had become popular to discuss taking ownership or equity in new enterprises developed through training or incubation. In creating the ENP programme, we elected to remain a neutral partner and avoid creating the image of being an investment company.

The programmes are financed with public money and the total cost of conducting a programme of 'normal' size (10-12 business start-ups) is approximately 450 KSEK (52 KUSD), and this does not include the costs of other components of the business development network such as incubator or seed capital management.

Success Factors behind the ENP programme

Over ten years' time we have learned a great deal about entrepreneurs and entrepreneurship training. Past and present participants in the ENP program have provided valuable feedback that has allowed us to continually improve our own performance and results from year to year. All participants have appreciated the discipline and pace of the programme, the structured outcome of their own ideas and plans, and the increased network of professionals who are ready and willing to support them, not only during the program, but afterwards as well.

During the spring and fall of 2003 data was gathered reflecting the program's ten year history. ⁶In the first stage of research ten case studies of young knowledge-based ventures

⁶ This research was conducted by the CIE under the supervision of Professor Magnus Klofsten and Semir Nouira, PhD Candidate in Industrial Organization at Linköping University.

representing different industries were completed. The purpose of these studies was to understand the process of idea generation, development and execution in terms of internal and external factors that might influence the process itself. The identification of any influences could also assist in deriving 'relevant' measures for our survey study. The case studies revealed degrees to which an idea either expanded or contracted over time in terms of the business concept and its execution. These variables of convergence or divergence provided a useful starting point for a survey which examined

1. start-up origin, localization, turnover and employment, business orientation and market aspects
2. idea development
3. financing, and
4. The founding team.

From 321 identified businesses, we selected 170 as accessible (we could identify them) and relevant (there existed some kind of activity around the idea) for the study. Using this sample as a base, we received 167 completed questionnaires through telephone interviews. The interviews reduced non-response and helped to avoid any misinterpretation of the questions.

Summary of Results

The surveys, which also looked at characteristics such as the age, size, and ownership of the firms, reflect some extremely positive trends in entrepreneurship training:

- the average firm is now 3.6 years old
- 70% of these firms employ fewer than 5 people and report turnover of less than 1.5msek or 170,000 €
- 40% want to expand
- 60% are started by teams
- 61% are spin-off firms (32% from private sector)
- 74% are exclusively owned by the founder(s)
- 60% have been located in a business incubator
- 85% offer service or combination of service and product
- 39% sell their service or product internationally

Although the assessment of idea development in and of itself proved to be an interesting outcome of the survey and forms a significant part of another work in progress, the most relevant portion of the survey for this review of the entrepreneurship training program has demonstrated that over ten years, there is a growing interest on the part of new companies to expand and an increasing number of companies started by teams. In fact, the National Business Incubator Association (NBIA)⁷ has reported similar trends among companies supported by their members offering start-up support through incubation.

Based on results from the survey and from previous lessons learned, we can suggest the following twelve-step program for a successful entrepreneurship training program:

⁷ See online reports at <http://www.nbia.org>

- 1) Develop a broad and holistic program. Consider the breadth of what it takes to conceive of and to start a company. For universities teaching entrepreneurship across the curriculum, it is reasonable to assume that while some students may never choose to become entrepreneurs, it is likely in today's economy that they may work for one.
- 2) Supply the best competence available to suit the needs of the course. Those who are entrepreneurs or have worked with entrepreneurs generally have the best competence.
- 3) Define the needs of each participant. Often new entrepreneurs are not fully aware of their own needs, or they have not found a voice to express them. Programme managers and mentors can help to assess these needs and propose actions and solutions.
- 4) Associate the programme with a network of firms. Many of the participants will not have an established network and are in great need of coming into contact with other entrepreneurs both for advice and for business.
- 5) Increase the participant's self-confidence as entrepreneurs and new business owners. Many of the participants lack business life experience. Help them to feel comfortable with their 'business' image.
- 6) Demand measurable returns. Record and document progress and deliverables including business plan stages, visits with customers, presentations, and other project specifications.
- 7) Use functioning 'toolboxes' that have been well-tried. Since the programme is 'hands-on', its success will largely depend on the structure and quality of the workshops. Be certain that lecturers and guests have proven 'toolboxes' for training.
- 8) Plan the mentorship carefully. Practice openness to what all mentors may have to offer regardless of age, color, gender or religion. Our experience has shown that the criteria for selection should consider such things as personal chemistry, competence, openness, and enthusiasm for sharing knowledge.
- 9) Practice versus theory. It is important to ensure a practical orientation to the programmes, but nearly any toolbox or structure will likely have some theoretical underpinnings. Remember that there is an important relationship, too, between starting a company and exiting or ending one. The business plan should not be an exercise in itself, but a concrete manifestation of idea, design, and implementation that can lead to the successful sales of the product and/or service.
- 10) Focus your programme on your target group. Although it can be interesting to invite participants from diverse sectors, a training program such as ENP is not the place to incite innovation between the pizza manager and the robotics engineer. We heartily encourage their meeting in order to develop a better system for pizza production, but in the context of a training program we encourage a more homogenous mix of entrepreneurs simply to facilitate conversations, commitment and contributions from the participants. The ENP program is designed for technology-based and knowledge-intensive activities.
- 11) Create credibility. Participants, while understandably protective of their business ideas, need to work in an open atmosphere. They must feel confident that they can do so without compromising their business and material rights privacy.
- 12) Balance the formal and informal. Training entrepreneurs also requires remembering to act and be somewhat entrepreneurial. While necessarily structured, the programme should allow flexibility, openness, and action. New ideas should be allowed to evolve according to their own timetable if possible.

In 1990, C.A. Kent wrote a text entitled *Entrepreneurship Education* in which he said, “Like any new venture, these new programs in entrepreneurial studies must be given room to breathe, flexibility of movement in order to develop their educational products, and protection to grow and flower into a healthy maturity” (Kent, 1990, p. 84) Maintaining the ‘entrepreneurial’ quality of a programme in an academic setting would be considered by some as an oxymoronic futility. But his words are worth calling to mind today. He likely could have predicted many of the lessons learned the ‘hard way’ by university entrepreneurship trainers. He cautions about over emphasizing marketing while ignoring product development, production, customer support or finance, for instance. He bemoans the badly written student business plan, and urges more emphasis on raising funds from informal sources. “How to approach and work with professional venture capitalists is simply irrelevant for 99.9 percent of all entrepreneurship students” he insists. (Kent, 1990, p. 85) .

Looking back over the ENP programme’s ten years’ of evolution, we are confident that we have kept a broad perspective on entrepreneurship. We would concur with those who have said that searching for appropriate definitions of entrepreneurship is not constructive and in fact increases the risk that narrow definitions may actually inhibit the participation of potential entrepreneurs in entrepreneurship training. (Rabbior, 1990, p. 53)

In his contribution to Kent’s work on Entrepreneurship Education, W.F. Kiesner echoed some of the fears of both administrators and industry professionals alike when he said, “Courses must be totally relevant to the entrepreneurial experience, and must also appear relevant. They must be taught by faculty with actual small business entrepreneurial experience. The courses should be industry- and market-specific. Perks such as college credit are of little relative importance to the consumers of entrepreneurial education. Short, quick, hard-hitting courses, during nonworking hours, are perceived by the entrepreneurial community as being of most value. (Kiesner, 1990, p. 110) While these fears were certainly justifiable, they reflected some of the early barriers that had to be overcome by those who saw even greater value in teaching entrepreneurship—well beyond ‘nonworking’ hours.

Fourteen years later, this paper is but one of hundreds of testimonies that entrepreneurial studies are well on their way to healthy maturity.

“College campuses are idea incubators where people learn skills and forge work habits and relationships that serve them all their lives,” said Rob Chernow, the Kauffman Foundation’s senior vice president of entrepreneurship. “We know there’s an entrepreneurial spirit sweeping across college campuses today, and we’re thrilled to build on this momentum so that entrepreneurship becomes a natural and vital aspect of the American educational experience.”

In fact, in June 2003, the Kauffman Foundation selected 15 universities⁸ from among thirty schools invited to demonstrate interest by developing a preliminary concept to compete in the Kauffman Campuses initiative. Each of the 15 universities selected was awarded a \$50,000 planning grant to assist with the development of a comprehensive proposal to be presented in December. At that time, five to seven universities will be awarded grants of up to \$5 million each based on their creativity and commitment to make entrepreneurship

⁸ Florida International University, Howard University, Purdue University, Syracuse University, University of California-San Diego, University of Illinois, University of Maryland-Baltimore County, University of Memphis, University of New Mexico, University of North Carolina, University of Rochester, University of Texas-El Paso, University of Wisconsin, Wake Forest University, Washington University

training and experiences available across college departments and to students of diverse disciplines. Universities must also demonstrate their ability to raise matching funds.

CONCLUSIONS AND IMPLICATIONS FOR RESEARCH AND PRACTICE

In this paper we have provided an overview of university-based entrepreneurship training and have focused on the training of entrepreneurs in university environments in Sweden. While not attempting to debate the origins or definitions of entrepreneurship, we acknowledge that regardless of its origin, it reflects the actions of some individuals more than others. And, we acknowledge that the acts of an entrepreneur, especially when enhanced with business skills and/or knowledge, lead to successful company formation. Hence, we, and many others cited in this paper have concluded that not only is it possible to stimulate entrepreneurial 'behaviour' but that to do so leads to an improvement in the quality and productivity of firms.

Much of the discussion in entrepreneurship education continues to focus on how to motivate young people as though these were motivations that they have never possessed. Rabbior pointed out some years ago now that people "are indeed born with ambition, motivation, and a willingness to take risks, but encounter barriers that erode this spirit of adventure" (Rabbior, 1990, p. 53) His message is one that we might still remember as we continue to develop new programs. We should examine our existing systems of education at all levels and seek to remove as many barriers, political and pedagogical, as possible that "erode self-confidence and self-esteem and, along with them, the spirit of adventure and the willingness to take initiative and risk--the spirit of entrepreneurship" (Rabbior, 1990, p.53).

The ENP model has been developed to stimulate technology-based and knowledge-intensive businesses. There is little reason to assume that it cannot be used to catalyze start-up development in other environments. As regions explore ways to encourage economic growth and greater business independence, training, not only at the university level, but at much earlier ages will be an important consideration. The opportunities are great but the implications for practice are varied given the environment, available expertise, education and backgrounds of participants, and local and regional support. Certainly as these programmes are tried and tested they will become the important models of the future and the material for further research.

The ENP programme, although begun as a university-based model is now used in 10 regions throughout Sweden. It has demonstrated its success in helping to inspire entrepreneurial behaviour among students and business professionals alike. This model has been developed to stimulate technology-based and knowledge-intensive businesses, and it has now been shown to encourage entrepreneurship in diverse environments where communities have sought to improve their business development climate.

In previous studies, including in our own past studies, it has been pointed out—despite highly positive talk about entrepreneurship—that certain barriers exist, both on the supply side and in the execution of entrepreneurship training. These barriers have ranged from clashes in internal priorities and questions about necessary competence to the credibility of

the one supplying the training. While these barriers are not completely gone, they are certainly lower—and fewer. In just the last four years, literally thousands of universities worldwide have adapted some form of business start-up training—not just to support growth and community wealth through taxation, but to provide a valuable tool to graduates who otherwise might not have even considered the possibility of creating their own wealth and/or success through the commercialisation of their ideas.

It has become clear that the successful institutionalization of entrepreneurship in universities today has generated new implications for research. Entrepreneurship as behavior has become the domain not only of business schools, but also of the social sciences, engineering, history, and even philosophy schools. The questions that face us now may be where the many facets of entrepreneurial studies belong, and why. Within business schools it seems clear that their role is to promote the practical training of new business developers, those who are business majors as well as those who come from many disciplines at the university. We content that it remains an important task for those intending to carry out research in entrepreneurial behaviour or to stimulate individuals practically to behave entrepreneurially is to create an understanding of the mechanisms underlying the criteria for success. These criteria are not unlike the criteria of good executive business management, but the critical difference lies in scale. The one or two individuals who start up a company have no staff, no money, little support, and often little experience. Their compass is their soul—their driving spirit, as it were.

Rabbior insisted that “entrepreneurship education programs should not be assessed based on the number of entrepreneurs that they create.” (Rabbior, 1990, p. 54) It’s possible that some who participate in many university programs will not actually start a company for many years, if at all. Rabbior suggests that programs are easier to evaluate and measure if they are written with clear objectives in mind. The ENP program with its emphasis on technology and knowledge-based ideas, holistic approach, and use of professional mentors and networks helps to ensure its success. Nevertheless, with each group of participants, we learn more about their needs and our abilities to meet those needs, and we are reminded to be entrepreneurial in the development of our own programme.

As we look back over the last ten years of the ENP program, we understand that while it is the goal of the program to encourage the establishment of firms, we also have learned the important values of our broader based entrepreneurship studies within the school of economics which are offered to students from throughout the university. Entrepreneurship embodies the very spirit of academia—creativity, innovation, leadership, ambition, and success.

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Appendix:

Main Findings from GEM 2003 Executive Report on South Africa

This is the first GEM report to analyse cross-regional patterns of entrepreneurial activity in South Africa. Many of the national findings about entrepreneurship from the GEM 2001 and 2002 reports have been confirmed. However, there is considerable and significant variation in entrepreneurial activity across regions. In particular we find:

- Gauteng's total entrepreneurial activity rate of 9.9% is three times higher than the rate in Northern Cape and North West, which has the lowest total entrepreneurial activity rate. Much of this variation is due to differences in opportunity entrepreneurial activity levels across regions. In particular, high opportunity activity rates in Gauteng and the Western Cape considerably boost the overall rate of entrepreneurial activity in South Africa.
- Total entrepreneurial activity in Gauteng and the Western Cape is significantly higher amongst people between 18-54 years old than it is in the rest of South Africa. The pattern of entrepreneurial activity by age in these two regions more closely reflects that in developing countries than entrepreneurial activity in the rest of South Africa does. To some extent, therefore, lower entrepreneurial activity rates in South Africa

compared to other developing countries reflect lower entrepreneurial activity rates by young South Africans outside of Gauteng and the Western Cape.

- As in previous GEM reports, a positive relationship between educational attainment and entrepreneurial activity was found. This pattern is true across regions. There

is,

however, a notable exception in Gauteng where non-matric and matric entrepreneurial activity rates do not differ significantly. Gauteng also has significantly higher non-matric entrepreneurial rates than all other regions.

- As in previous GEM reports, this report finds that individuals located in major urban areas are far more likely to be involved in entrepreneurial activity than those in

rural

areas. This difference is much greater for opportunity entrepreneurship than necessity

entrepreneurship. This no doubt reflects the greater availability of opportunities and higher proportion of people with matric in large urban areas.

- As in previous GEM reports, this report finds that Black Africans are far less likely to be involved in entrepreneurial activity than other racial groups. However, in contrast to this national finding, GEM 2003 finds that opportunity entrepreneurship activity rates amongst Black Africans in Gauteng are not significantly different to those amongst Whites. Furthermore, Black Africans in Gauteng have much higher opportunity activity rates than Black Africans in the rest of South Africa.
- As in previous GEM reports, this report finds that individuals who believe they have the skills to start a business are much more likely to do so. Overall, Black Africans are much less likely to believe they have the skills to start a new business, even after controlling for education.