

Review

Entrepreneurship- the role of Higher Education in South Africa

Angelo Nicolaidis

Angelo Vaal University of Technology. Email: pythagoras13@hotmail.com

Accepted 09 May, 2011

Entrepreneurship continues to assume a vital role in the South African economy as well as the economies of many developing nations across the globe. The creation of new business activities has become a major driver in the economy and these greatly affect economic growth, job creation and general prosperity and, to an extent, enhance the national competitiveness of the nation in the global business arena. Although South Africa is trying to intensify the amount of entrepreneurial activity there are still a wide variety of challenges. According to the Global Entrepreneurship Monitor (GEM) research shows that a low level of overall education and training is still the biggest challenge facing the nation. Consequently a critical performance area must be to improve the level of overall education and training whilst promoting the notion of entrepreneurship as a viable option. This paper strives to answer some important questions relating to entrepreneurship. First and foremost, why is entrepreneurship necessary and who, precisely, are entrepreneurs and where may they be found? What can government do to promote entrepreneurship and what is it that Higher Education can do to develop a greater entrepreneurial awareness in South Africa given that there is ambivalence as to the degree to which entrepreneurship can be taught? Are South African universities able to develop cross-functional thinkers who are innovative and have entrepreneurial skills that are needed in the local economy? To what extent do the local universities encourage entrepreneurship by making use of innovative programme designs and are there specialist post-graduate programmes in entrepreneurship or is it simply regarded as an area business students must be aware of with no explicit academic entrepreneurship bias? The answers to these questions and their implications for the nation are discussed in this paper.

Key word: Higher Education, entrepreneurship, government role.

INTRODUCTION

The critically vital role and positive contribution of entrepreneurship and the promotion of a vigorous entrepreneurial culture in economic and social development in South Africa cannot be overstated. At the national level, South Africa is estimated to have approximately 2 million small and medium business enterprises (SMMEs), representing 98% of the total number of businesses. These SMMEs employ roughly 55% of the country's labour force and contribute approximately 42% to the country's wage bill. A major problem for South Africa is the fact that 87% of these SMMEs are survivalist in nature and the majority of these are black owned, while 41% are owned by women (2006 study on entrepreneurship). In South Africa, the ratio of entrepreneurs to other workers is roughly 1 to 52. When compared to the ratio in developed countries, which is of 1 to 10 (Friedrich & Visser, 2005), this is indeed a poor ratio.

Why is entrepreneurship and why is it necessary?

Entrepreneurship has been defined as a: *"process of conceptualising, organizing, launching and, through innovation, nurturing a business opportunity into a potentially high growth venture in a complex, unstable environment"* (Rwigema and Venter (2004).

It is the entrepreneurs who create and give birth to new technologies, products and services. They also create new markets and jobs along the way. Entrepreneurs are savvy risk takers, implementers and innovators. They transform the socio-economic landscape by creating and exploiting new opportunities. In a world where people live in fear of being made redundant and where corporations "right-size", "downsize" or "retrench" employees, whichever term you prefer to use, entrepreneurship is seen as a viable option, albeit with risks attached. Entrepreneurship is thus regarded as a "dynamic process

of vision, change, and creation. It requires an application of energy and passion towards the implementation of new ideas and creative solutions. Essential ingredients include the willingness to take calculated risks..." (Kuratko, 2003). Entrepreneurs tend to create products that fly in the face of established knowledge, and in the process they challenge the status quo. They are essentially risk-takers who pursue opportunities that others may fail to recognize.

By fostering entrepreneurship a society promotes the competitiveness of businesses. If real transformation is to occur in South Africa, there must be space for creativity and imagination in overhauled policies. South Africa is faced with a multitude of challenges including the great need for a higher economic growth-rate. There is a growing need to transform innovations and new creations or products or services into something more meaningful. This transformation will create employment. Many employees are forced into becoming more flexible functionally and opt to become self-employed in areas where they feel they have relevant skills and /or training and education. The promotion of entrepreneurial thinking and action will in essence, to very large extent create employment, which is much sought after and desired for masses of unemployed South Africans. Generally speaking, entrepreneurship will be a driver for economic growth and its benefits in the South African scenario will be huge, particularly when there is a negative business climate as in a recession. It also facilitates global economic development and increases the skills of employees. Human capital and personal development are able to grow. This is very important given that large businesses cannot conceivably hope to even absorb 5% of the surplus of unemployed people. Entrepreneurship will also create a fresh competitiveness in markets as entrepreneurs are individuals who identify opportunities and use these to their own benefit (Maas and Fox, 1997). The country is obliged by external economic forces to become far more competitive whilst the changing face of the workforce and types of work, means that the skills necessary for socio-economic growth need to be reassessed (King and McGrath, 2002).

At the macro-level private sector development and entrepreneurship growth are essential components for attaining the United Nations Millennium Development Goal of poverty reduction. Once sound macroeconomic policies are in place and market access is provided, emerging markets need to nurture and develop entrepreneurs who would be in a position to take advantage of a myriad of business opportunities created by increasing globalisation. Economically, entrepreneurship definitely revitalizes markets as the creation of new business leads to job creation and this has a huge knock-on effect on the economy. Socially speaking, entrepreneurship tends to empower citizens and it generates innovation and shifts mindsets that were previously sedate. Such changes have the potential to

successfully integrate developing countries into the global economy.

Who are entrepreneurs?

The amount of entrepreneurship in any society is reliant on the presence of three critical dimensions including, innovativeness; risk-taking; and pro-activeness (Morris and Kuratko, 2001) but it is something which can also be learnt (Timmons and Spinelli, 2004). Schumpeter (1934) regarded entrepreneurs as individuals who are radical market innovators. He saw them as instigators of "creative destruction" through the process of innovation. He believed that all industries are at some point in time, appropriately replaced by others. This replacement process he termed as "destruction" making way for "creation" hence the term "creative destruction". This process is ongoing and new entrepreneurial enterprises are being founded daily in the United States of America (Census, 2000). South Africa as a growing economy is also subject to this phenomenon.

Whilst education is not able to totally prepare budding entrepreneurs to become successful business owners, it greatly enhances the prospect of success. Entrepreneurs are generally confident individuals who show promise in creativity and innovation and have the know-how obtained from either Higher Education institutions, from family networks or have simply gone out there and researched for themselves, often learning by a painful trial-and-error approach. The education of an entrepreneur will greatly influence his/her perception of entrepreneurship. They have the ability to transform a simple idea into a workable reality. Entrepreneurs tend to network very well and think conceptually. They basically see an opportunity in the market and exploit that opportunity by gathering resources and taking measured and carefully managed risks. Entrepreneurs are always results orientated and seek to add value by satisfying the needs of their market. Many of them are challenged by their education. The growing interest in entrepreneurship is leading to more and more universities offering entrepreneurship as a course of study.

Where do we find entrepreneurs?

Many entrepreneurs have been driven by necessity into entrepreneurial ventures. A large number of businesses in various sectors of the economy, such as marginal mining enterprises, have over the last few years tended to layoff middle-management and workers and this has led to unemployment figures escalating. People have thus been forced in a sense, to start other ventures such as small businesses. Others have been more fortunate and have been employed by companies where there is a need for people who are able to think cross-functionally.

Many South Africa high school students have now begun to see entrepreneurship as a potential career choice and this is also the case in the United States of America (Bardach, 1997). In fact, the demand has been so great that many American Universities have established entrepreneurship centres (Katz, 2000). In South Africa, entrepreneurs are found in the business world and the community at large, in both the public and private sectors as well as in the formal and informal sectors. There are also many entrepreneurs in the Arts and Science.

What can government do to promote entrepreneurship?

The South African government has fortunately recognised the vital contribution that entrepreneurs can play in the economic development and the social upliftment of the nation. Consequently, a vital component of the government's ten year vision of the Accelerated and Shared Growth Initiative of South Africa (ASGISA) is for the nation to become an entrepreneurial in orientation. A number of Global Entrepreneurship Monitor (GEM) reports highlight that the vast array of problems in education and training are the major inhibitors of entrepreneurial growth in South Africa. This is particularly noticeable in the age groups 18-34 years of age. The legacy of Apartheid and the inferior quality education given to blacks in the past has meant that huge numbers of black people have lost the opportunity to acquire skills that are required to drive entrepreneurial initiatives. In addition, critical thinking skills were not encouraged and most entrepreneurial education was non-existent for blacks.

Today, individuals who recognize solid business opportunities are rewarded and those previously excluded from participating in the economy now have opportunity to access it. They are also supported by various development services, and can become fully integrated into the economy. If South Africa is to meet and sustain the material needs of all its people, it is imperative that the government must thus begin to vigorously develop a spirit of enterprise in which entrepreneurial ventures are acceptable and worthy of support. In this regard, individuals should be helped more to take calculated risks. Creativity, learning and innovative thought through education should also be vigorously promoted. Schumpeterian entrepreneurs (individuals who learn to become entrepreneurs) should be nurtured whilst Kirznerian entrepreneurs (those who are naturally entrepreneurially orientated), should be supported more. Opportunities do exist (objectively) waiting to be discovered, but it is the actions put in motion by entrepreneurs to exploit any given opportunity that in fact create the opportunity (Alvarez and Barney, 2007).

The "network paradigm" as it has been defined by Cooke and Morgan (1993), is a major way in which innovation possibilities can be capitalized on. The necessary resources such as finance and infrastructure should to an extent be made available by the government. Organs should exist at Universities in which "selection panels" have a greater vision in identifying people with a natural aptitude for creative and innovative business development. The individual entrepreneur should be able to make use of his/her family networks as well as governmentally assisted social networks.

There is clearly a very strong relationship between education levels and entrepreneurial activity which lead to the failure or success of business ventures. As a result of this entrepreneurship education should be encouraged as far back as the primary school level as learners' self-confidence about their ability to start a business later in life is to a large degree built on such education. Innovation and technology in education are important entrepreneurs should be guided to discover which opportunities exist if these are not immediately apparent to them (Casson and Wadeson, 2007). Essentially they should explore and then exploit opportunities (Foss and Klein, 2010).

A number of international studies on the theme of entrepreneurship strongly suggest that the building blocks of successful small business are the expertise and skills and the of the business owner. The implication is thus that predominantly, but not exclusively, black people should be given opportunities to develop entrepreneurship skills through affirmative action policies and other measures.

What can Higher Education do?

It is apparent that the Apartheid economic dispensation in South Africa provided higher education offerings which served the then needs of industry well, in that they made available a workforce that would be trapped so to speak, in a comfort zone, working for a 'boss'. The offshoot of such education was to instill within future university students the notion that one should graduate and then seek employment in large corporations or other such formal sector settings rather than opt for something innovative and creative as a work option. Today however, SMMEs are accounting for a sizeable chunk of economic activity. The result is that HEIs are increasingly obliged to redefine their role in the South African economy. The primary function of HEIs should thus now be to seek to instill a greater entrepreneurial character among students. HEIs should also strive to carefully consider local development needs and support the promotion of entrepreneurial education initiatives, and this should not only be at the tertiary level but as early as the primary school level. Government must fully support such initiatives and promote holistic education (Nieuwenhuizen

and Kroon, 2002) at all levels and help to establish entrepreneurial ventures.

The role of Higher Education is clearly to meet the socio-economic needs of the country whilst safeguarding social justice and democratic values. In addition HEIs have an important role to play in regional innovation systems and what are termed learning areas (Morgan, 1997). They also serve as knowledge producers, teach and are agents of exchange in a society (Etzkowitz *et al*, 2000). The higher education system must therefore provide the requisite research, knowledge and a highly skilled workforce if the nation is to compete in the global arena which is highly dynamic (Cloete and Bunting, 2000). Entrepreneurship is a rapidly developing area of study in South Africa and it is clearly assuming greater prominence in the global business arena. There is much greater demand for entrepreneurship training locally. Consequently, more faculties are required to offer entrepreneurship as a course or at least make it a greater part of existing courses where it does indeed exist.

It is clear from the available literature that education including entrepreneurship is critical as it contributes to job creation and helps considerably to reduce poverty (Timmons and Spinelli, 2004). Higher Education institutions are regarded as the custodians of knowledge in society and play a very significant role in developing a nation. This is why entrepreneurship education should not merely be a niche activity. This realization has dawned on Higher Education institutions and has resulted in a noticeable increase in entrepreneurship programmes since about 1998. The process is ongoing and it is a matter of time before there is a relatively fixed entrepreneurship culture in South Africa, which will challenge academics and students alike. Many new challenges are facing universities as they seek to develop and establish growing entrepreneurship programmes. South Africa needs to seriously revamp its human capital strategies if it is to begin to meet the challenges of the global marketplace.

First and foremost will be the promotion of the very great potential for innovative start-up business ideas. An effective investment in national higher education initiatives concerning entrepreneurship, which will to an extent meet the needs of the population, will underpin the international standing of South Africa's higher education institutions. Only by recognizing the great value and importance of entrepreneurship, and by expanding education about it, can South Africa hope to obtain a pre-eminent position in the world of education and become truly competitive economically. In many societies in Africa, education has always played a very important role alongside culture in forming an individual (Micere, 1999). The cultural mindset concerning entrepreneurship in any region needs to be taken into account and the aspects which may either promote or go against entrepreneurship as a career option should be carefully analyzed. In this

regard, the "spatial and cultural proximity" between those that produce knowledge and those who use knowledge is particularly salient (Koschatzky, 2001). The South African education curriculum at school level as well as in Higher Education system needs to be transformed so as to make entrepreneurship one of the most important subjects that should be taught (DoE, 2001). A difficulty could be that to achieve a measure of parity for students from disadvantaged backgrounds, access may become limited to other students. This implies that higher education would have to be further expanded. There is a problem however, in that there are no acceptable paradigms or suitable theories as to what entrepreneurship education should encompass (Norton *et al.*, 1999). This is a major challenge for South African universities to overcome by meaningful research initiatives on their part. By this I mean that Higher Education institutes should link research more closely to the market. Vaal University of Technology, amongst other institutions of Higher Learning has recognized the importance of entrepreneurship and states the following on their website:

"The Vaal University of Technology is committed to the development of higher education....To achieve excellence in teaching and learning endeavours by developing entrepreneurial, technological and cognitive skills....To create an environment conducive to develop behavioural, attitudinal competencies and social skills through cultural, sporting and personal development activities...To generate innovative and relevant research which solves the problems of industry and the community....To create a culture of Lifelong Learning to empower our communities by sharing knowledge, skills and resources...All these functions will be enhanced by national and international partnerships in order to meet the needs of stakeholders of a democratic society." (www.vut.ac.za).

Entrepreneurs should be multi-skilled and flexible enough to be able to compete globally (Chisholm, 1998), and also be in a position to identify national and international trends. They should also be able to isolate and identify entrepreneurial opportunities that have potential growth and should then be able to take advantage of these opportunities. Entrepreneurship courses should carefully separate business skills from entrepreneurial skills. Business strategies and business plans whilst important elements do not really improve a person's entrepreneurial skills. Dana (1993) expresses the opinion, that entrepreneurship education should train students in knowledge and skill acquisition that would enable them to bring an idea, process or invention from conception to full business potential. Whilst practical experience is essential there must be harmony in education. By this I mean that the practical components requiring innovation and creativity, new idea-generation and practical action, and the academic knowledge

components, need to be carefully counter-balanced so as to make the study meaningful.

A strong knowledge base for entrepreneurship should be created via research and the findings of such research must be disseminated. Students must be in an educational environment in which entrepreneurial ideas are generated and tested. The results should then be made known. The personal growth of students should be facilitated and their critical faculties should be developed as far as possible. Given the very wide range of personalities, the characters of students should be built so as to make their learning more significant. Ideally, students should be inspired to learn for themselves in an environment which promotes the idea of lifelong learning and an ethos of personal research should pervade every higher education institution and be part of the mindset of each and every student. Entrepreneurship courses at Universities can make a very significant contribution in promoting meaningful entrepreneurship, as they could allay the fears of failure of potential entrepreneurs by educating the students about pitfalls and risks to avoid when embarking on a new business venture. Students will thus have a fuller understanding of entrepreneurship as a phenomenon and surely become more competent stakeholders in entrepreneurship at whatever level; investor or employee, manager or entrepreneur (Maranville, 1992). Young adults should be made capable and be taught to become self-reliant rather than expect to be fended for in an economy which is limited in capability and which has approximately a 24% unemployment rate. In a nutshell, as entrepreneurship is a philosophy which can help the South African economy to grow, it should be supported as a total system (Timmons, 1999).

Another major challenge facing entrepreneurship education in Higher Education institutions is an academic faculty body, which has entrepreneurial ability and the necessary qualifications to make the subject intelligible and meaningful to students. There are clearly shortages in suitably qualified academic staff to teach entrepreneurship. While some faculties have a glut of PhD academics who cannot find suitable employment, entrepreneurship has too few suitable academics (Pfannestiel, 1998).

In many parts of the world, South Africa being no exception, entrepreneurship is battling to find academic legitimacy. Entrepreneurship should be a separate stand-alone subject and not be viewed as simply part of Business Management or part of an interdisciplinary field. It is also good and well to have guest speakers and guest lecturers, as these tend to offer a measure of interaction with entrepreneurial business people, but this is not really enough. Academic staff able to alter the mindsets of students and who do have the ability to effectively teach basic business skills and develop creative thinking in their students by giving them practical assignments, whether

individual or group, should be the priority. Course content should focus on the skills and knowledge an entrepreneur would need to be successful (Benson, 1989). What is paramount is that potential entrepreneurs see themselves as self-reliant, aware, creative, analytical and knowledgeable individuals who are able to successfully become self-employed and make a meaningful contribution to the society in which they live. They require an entrepreneurial perspective (Kuratko, 2003). This perspective should ideally be developed at high school levels where more business related subjects should be added to existing curricula, perhaps being made compulsory to an extent.

Higher Education institutions create an environmental awareness of entrepreneurship and its many facets and support entrepreneurship in many ways (see figure 1). This learning should be life-long learning and is necessary to sustain individuals in society in this new century where business is changing (Drucker, 1995). It is also invaluable to the promotion of the philosophy. Higher Education institutions need to ask the question as to what the appropriate relationship between education and the ever-changing workplace is and what it is precisely that employers are seeking in terms of skills and capabilities in young people entering the world of work?

Universities could be more supportive of entrepreneurs, as is the case at the University of Johannesburg, which involves students in gaining practical experience in direct selling and practical sales management. Students completing the National Diplomas in Marketing, Retail Business, Sport Management, Small Business Management and the Certificates in Marketing and Sales as well as the Foundation Programme, have the opportunity to gain two years of practical sales and one year of practical sales management experience. Once they complete their studies some students may find it difficult to obtain full-time employment. By participating in the above project in which they do practical sales for any of the Direct Selling Association (DSA) companies, they are able to generate income for themselves and have opportunities for personal and entrepreneurial development. This opportunity granted through the partnership with the DSA gives students a competitive advantage. Students who successfully complete the respective modules could reflect on their CVs that they have two years sales experience as well as one year experience in managing a sales team. On a macro level, this project contributes towards alleviating unemployment and instilling an entrepreneurial spirit which our country so desperately requires (Govender, 2005). Universities should also be more analytical and reflective of entrepreneurship and its huge potential to impact positively on the economy of the entire southern African subcontinent. They have great potential to influence the decision of an individual for or against a career as an entrepreneur. This is particularly important for young

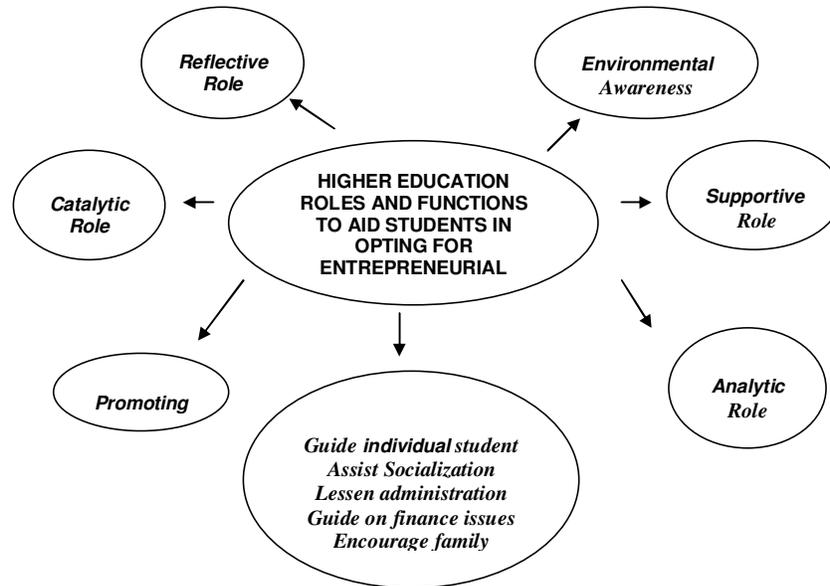


Figure 1: Higher education's pivotal role in entrepreneurship

unemployed individuals who are either, graduates or non-graduates, women and the unemployed in any particular society.

Places of learning should be the catalysts of entrepreneurial motivation and should drive it forward as a viable alternative to working for someone else. Teaching should be facilitated to maximize the potential of individual students and to encourage a sense of curiosity and motivation in them and they should become alert and aware about opportunities (Kirzner, 2009). Above all, Universities should be seen as places where there is a teamwork mentality between students and academics with respect to things entrepreneurial. New patterns of work organization are appearing in the workplace and team-based work is increasing, with fewer levels of management and supervision, multi-tasking if not multi-skilling, and a greater need for effective communication skills (Probert, 1999). Learning groups could be established which would go a long way to sustain a climate of learning. In these groups of students, they would inspire each other and assist each other, with the guidance of academic staff, to succeed with a business venture.

CONCLUSION

Entrepreneurship gives students a new way of looking at the world, irrespective of whether or not they opt to develop their own enterprises. New business start-up activity is probably one of the most important social activities for countries around the world. The rise of new

business significantly affects economies and creates jobs and generally makes society more prosperous. Entrepreneurship is now a mainstream in many countries around the world. The young entrepreneur faces many challenges in attempting to launch and grow potentially good businesses. About 11 % of entrepreneurs attempting to create high growth businesses, known as "opportunity entrepreneurs" expect to provide 20 or more jobs over a period of 60 months as opposed to 2% of entrepreneurs who are "entrepreneurs by necessity" (Zacharakis *et al*, 2001). This type of mentality is common globally, therefore, a vision of what entrepreneurship is all about will have very important implications on the economy as a whole. It should be fostered in light of job creation and the alleviation of poverty amongst the masses. Entrepreneurship provides individuals with career options and has great potential to aid society to become self-sustaining (Scott, 2003). It is a means of socio-economic upliftment for the downtrodden in society and should be vigorously promoted at school and higher education levels.

Students embarking on an entrepreneurial career path should have greater access to government financial support throughout their study. Private sector investment initiatives in entrepreneurial education should also be bolstered and in this regard, the government should provide incentives to the private sector enterprises which support quality entrepreneurial programmes. Business could, for example, assist universities to develop digital libraries which would make entrepreneurship initiatives worldwide accessible to virtually all entrepreneurship students. This would also enable students to contact

specialists in the field and they could maintain electronic links. Each entrepreneurial student could interact with vast numbers of people around the world, quickly and simply and relatively inexpensively. The vision of the future can be drastically altered for entrepreneurship students by the use of the Internet. Higher Education institutions must become lively communities of intellectuals once again, as in the Renaissance, in which both academic faculty and students can collaborate more and discover together, understand and meaningfully utilize knowledge. The use of the Internet can never however, replace the personal interaction between students and academics. This can also assist young unemployed graduates to gain a sense of worth in work.

Students can be self-motivated and even self-learn with appropriate guidance and facilitation, where they are able to discover and self-actualize to an extent. Entrepreneurship education should continue to receive increased attention and should be more vigorously researched. Only by utilizing entrepreneurship will South Africa be able to cope with the challenges of this century. Universities cannot any longer sell the notion of preparing students for a "lifelong career". The education revolution has arrived (Norman and Spohrer, 1996) and for successful entrepreneurship, top-notch education is paramount. Higher Education institutions should be providing extra entrepreneurial capacity and this should be especially aimed at high-potential student entrepreneurs (Driver *et al*, 2001), as it is these individuals who will ultimately succeed more and be able to employ others, thus alleviating the huge levels of unemployment in society. Opportunities must be created or seized and vigorously pursued (Timmons, 1999).

Students must be taught to identify opportunities in the marketplace and their potential risks and should also be assisted to innovate and create something different in establishing a new venture and this should begin from the school years (Van der Berg, 2004). Management skills must also be taught including planning, organizing, leading and controlling (Nieman and Bennett, 2002). The private sector could help them to obtain capital and resources and develop projects such as that of the DSA to reward them for their labours.

REFERENCES

- Alvarez SA, Barney JB (2007). Discovery and Creation: Alternative Theories of Entrepreneurial Action. *Strategic Entrepreneursh J.* 1: 11-26.
- Bardach KC (1997). "Patterns and trends in executive education", *Selections*, 14(1)
- Benson GL (1989). "A note on Entrepreneurship Education in Colleges and Universities", *South Afr. J. Entrepreneursh and Small. Bus.* 1(3)
- Casson M, Wadeson N (2007). The Discovery of Opportunities: Extending the Economic Theory of the Entrepreneur. *Small Business Economics*, 28: 285-300.
- Census (2000). U.S. Census Bureau Statistics, 1995-1996. http://www.census.gov/epcd/ssel_tabs/view
- CHE (Council on Higher Education) (2004). *South African Higher Education in the First Decade of Democracy*. Council on Higher Education, Pretoria.
- Chisholm RF (1998). *Developing network organizations, learning from practice and theory*. Addison Wesley Publishing Company, Reading.
- Cloete N, Bunting I (2000). *Higher Education Transformation: Assessing Performance in South Africa*. Centre for Higher Edu Transform. Pretoria.
- Dana LP (1993). "An International Survey of Entrepreneurship Education", *J. Enterprising Culture*, 1(1)
- DoE (Department of Education) (2001). *National Plan for Higher Education*. Depart of Edu, Pretoria.
- Driver A, Wood E, Segal N, Herrington M (2001). *Global Entrepreneurship Monitor: 2001 South African executive report*, Graduate School of Business, University of Cape Town, Cape Town
- Drucker PF (1995). *Managing in a time of great change*, Butterworth-Heinemann, Oxford.
- Etzkowitz, H, Gebhardt C, Webster A, Cantisano Terra BR (2000). "The future of the university and the university of the future: evolution of ivory tower to entrepreneurial paradigm", *Research Policy*,
- Friedrich C, Visser K (2005). *South African Entrepreneurship Education and Training*. Leap Publishing, De Doorns.
- Foss NJ, Klein PG (2010). *Entrepreneurial Alertness and Opportunity Discovery: Origins, Attributes, Critique*. In H.
- Landström F, Lohrke The Historical Foundations of Entrepreneurship Research (p. Chapter 5). Edward Elgar. Northampton.
- Govender KK (2005). Executive Dean's Message. Partnership between the Direct Selling Association and the University of Johannesburg, Auckland Park, 23 June 2005.
- Katz J (2000). "The resource for entrepreneurship education", <http://www.slu.edu/eweb/>.
- King K, McGrath S (2002). *Globalisation, Enterprise and Knowledge : Education, Training and Development in Africa*, Symposium Books, Oxford.
- Kirzner I (2009). *The Alert and Creative Entrepreneur*. *Small Business Economics*, 145-152.
- Koschatzky K (2001). *Aspects in the Innovation Process*, Münster : Lit Verlag
- Kuratko DF (2003). *Entrepreneurship Education : Emerging Trends and Challenges for the 21st Century*. The Entrepreneurship Program, College of Business, Ball State University, Muncie, IN.
- Maas GJP, Fox W (1997). *Entrepreneurship and public management*. Juta and Company, Ltd, Cape Town.
- Maranville S (1992). "Entrepreneurship in the Business Curriculum", *J. Educ for Bus*, 68(1)
- Micere GM in Makgoba (ed.) (1999). "African Culture in Education for Sustainable Development" in *Afr Renaissance, Mafube, Tafelkop*.
- Morgan K (1997). *The Learning Region: Institutions, Innovation and Regional Renewal*, *Regional Studies*, 31.
- Nieman G, Bennet A (Eds). (2002). *Business Management: a value chain approach*. Van Schaik, Pretoria.
- Nieuwenhuizen C, Kroon J (2002). "Identification of Entrepreneurial Success Factors to Determine the Content of Entrepreneurship Subjects", *South Afri. J. Higher Educ.* 16(3): 157-166.
- Norman DA, Spohrer JC (1996). "Learner-centered education", *Communications of the ACM*, 39(4)
- Norton B, Kaplan T, Hofer C (1999). "Model programs for entrepreneurship curricula at the undergraduate, master's and doctoral levels", U.S. Association for Small Business and Entrepreneurship Annual Conference, San Diego, CA.
- Pfannestiel T (1998). "It's not just a job, it's an indenture: Graduate studies and the academic job market," *Academe*, 84
- Probert B (1999). *Global Impacts on Work in a Post-Industrial Society*, Quality VET Conference, Royal Melbourne Instit of Technol, Melbourne.
- Rwigema R, Venter R (2004). *Advanced Entrepreneurship*, Oxford University Press, Cape Town.
- Scott I (2003). *Balancing excellence, equity and enterprise in a less-industrialised country: The case of South Africa*. In G Williams (Ed.) *The Enterprising University: Reform, Excellence and Equity*. Society

- for Research into Higher Education and Open University Press, Buckingham.
- Timmons JA (1999). New venture creation-entrepreneurship for the 21st Century. 5th Edition, McGraw-Hill, Boston.
- Timmons JA, Spinelli S (2004). New Venture Creation: Entrepreneurship for the 21st Century, McGraw Hill Irwin, Boston.
- Van der Berg S (2004). School education and transformation. <http://transf.audit.co.za/articles/education/pdf> www.vut.ac.za
- Zacharakis AL, Neck HM, Bygrave WD, Cox LW (2001). Global Entrepreneurship Monitor: National Entrepreneurship Assessment-United States, Executive Report, Ewing Marion Kaufman Foundation, Kansas City, MO