CHAPTER 5

5 CREATIVITY AND THE TRAINING AND DEVELOPMENT OF ENTREPRENEURS

5.1 Introduction

Reynolds, Bygrave, Autio, Cox and Hay (2002:40), suggest that education is a key element in the framework conditions that enhances economic growth through entrepreneurship.

Although the issue of teaching and learning strategies and methodology for post graduate management programmes has long attracted debate among academics, training providers and management practitioners alike, the fundamental learning process that underlies entrepreneurial activity, from the initial insight through various stages of development, is an issue still largely unexplored (Marchisio & Ravasi 2001:2).

Entrepreneurs identify opportunities, create ideas and decide on their actions on the basis of a mixture of creativity, rational analysis and intuition (Yendell 1997:8). This impact on the learning objectives of entrepreneurship education, varies from the creation of an entrepreneurial awareness among students, through the development of entrepreneurial skills, to the teaching of specific business related knowledge (De Clerq, Crijns & Ooghe 1997:13).

Hjorth and Johannisson (1997:2) are of the opinion that entrepreneurship and learning have overlapping features and therefore training for entrepreneurship cannot be separated from entrepreneurship itself. Such training in turn, has to be related to the personal strategies being used to adopt an entrepreneurial mode in everyday life. Training for entrepreneurship bridges tacit and formal knowledge.

According to Obrecht (1998:11) entrepreneurship courses of study should provide the students and trainees with appropriate materials, which would allow an enlarged approach of entrepreneurship. Entrepreneurship education has to be nurtured by disruptive ways of thinking, which in turn could give birth to new approaches of entrepreneurial values. The particular balance between conventional delivery and learning methods, and the various action learning and participant-led approaches

possible, highlight the challenge to facilitators within the field of management education (Halborg 1998:1).

Compared to management education, entrepreneurship education has to go further. Entrepreneurship education is not just problem solving, analysing solutions and finding safe or acceptable courses of action. It is not just making business plans. It is more than that: it emphasises capacity for change and thus implies open-mindedness.

The purpose of this chapter is to investigate the literature of the entrepreneurship education and development domain to ascertain what the status of creativity development in the domain is, with particular reference to the concepts "opportunity exploitation" and "growth maximization".

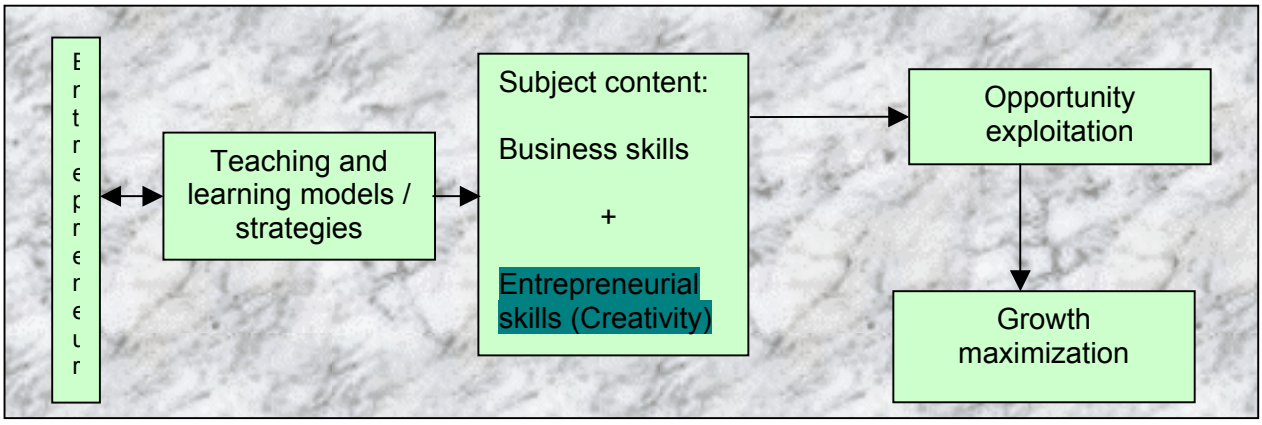

Figure 5.1: Chapter purpose

5.2 Learning, Training, Education and Development

The word "learn" comes from the Middle English "lernen", meaning to learn or teach. The words "learn" and "teach" are therefore derived from the same source (Dunkin 1987:11). The *Random House dictionary of the English language* (2001) defines "learning" as the act or process of acquiring knowledge or skill, the modification of behaviour through practice, training or experience". Miner *et al*. (2001:305) defines learning as a systematic change in behaviour or knowledge that could be brought about via own experience, learning from others, experimentation, trial-and-error, refinement, exploration, sharing of knowledge, etc.

The word “teach” also has another derivation, namely to show a person how to do something. Teaching as a success, signifies that learning is implicated in teaching (Dunkin 1987:11). Instruction is at the centre of teaching. Teachers must understand different ways of involving students in learning activities and techniques for checking their understanding (Eggen & Kauchak 2001:11).

Young and Sexton (1997:223) defined effective entrepreneurial learning as a problem-solving process centred on the acquisition, storage and use of entrepreneurial knowledge in long-term memory. It is therefore not enough for an institution to claim that it provides entrepreneurship education. The content of what is provided, analysis of potential entrepreneurs and the expertise of trainers should also play an important role (Ladzani & Van Vuuren 2002:156).

Wambui (2002:69) states that education should provide an opportunity for students to learn, explore and implement ideas, entrepreneurial education should encourage students to look for creative and innovative ideas that may provide multiple solutions to problems and develop their capacity to think independently. Avenant (1990:53) names a number of requirements that education must satisfy:

- Purposefulness – effectiveness of teaching is in direct proportion to the clarity with which the goal is understood
- Planning – the teacher must plan to achieve his goal
- Pupil-self-activity – it is incorrect to say that a teacher teaches his students – at most he can manipulate the circumstances in such a way that the students can form their own concepts easily through self-assertion, perception, comparison and selection
- Placing in context (or integration) – opportunities must be created for students to understand relationships by comparing and sorting, to integrate new subject matter into the already existing concept structures, and thus to progress from the concrete to the abstract, or from the known to the unknown
- Experience – subject matter must be presented in a concrete, visible and real manner
- Motivation – education must be tuned in to motivate students to co-operation, interest and enthusiasm.

- Socialisation – steps need to be taken to create a social climate in which learning can flourish, inter alia, group or team work
- Individualisation – individual differences should be taken into account to ensure each student develop the maximum of his/her potential
- Evaluation – to ascertain whether the goals have been attained
- Mastering – teachers are to ensure that once work has been explained, students will master it completely through coaching, repetition, and revision.

Development, the orderly, durable changes that occur over a lifetime, results from the interaction of the environment and heredity and includes three aspects (Eggen & Kauchak 2001:29):

- Personal development (an understanding of who we are)
- Social development (examines our changing abilities to relate to each other)
- Cognitive development (changes in the way we think and process information).

5.3 Entrepreneurial needs

Gibb (1998:4) argues that it is necessary to look at the capacity needed to be a successful entrepreneur. Entrepreneurs have an acute need to make things happen in order to generate income, rather than wait upon the activities and initiatives of others. This reinforces a feeling of total responsibility for the success or failure of the business, and is, in turn, underpinned by the opportunity, as well as a need, to manage a wide range of tasks and (at least in the early stages of business) to do everything personally.

The table below shows the main obstacles experienced by entrepreneurs in both the formal and informal sector in South Africa:

Table 5.1: Obstacles experienced by entrepreneurs (Source: Adapted from Foxcroft, Wood, Kew, Herrington & Segal 2002:32)

OBSTACLE	FORMAL	INFORMAL
Lack of money for running costs	39%	65%
Lack of money to buy capital items	45%	63%
Transport	41%	50%
Weather	35%	43%
Competition	41%	40%
Theft	39%	32%
Unavailability of electricity	20%	34%
Lack of business skills	27%	33%
Unavailability of water	16%	31%

Apart from having training with regard to ways and means of addressing their immediate obstacles, Watson and Boshoff (2002:102) investigated opinions of entrepreneurial practitioners of topics that should be included in curricula and found that the following were rated highly:

- Linkages between entrepreneurship, strategic and general management
- Definitions of entrepreneurship
- Entrepreneurship (the person)
- The environmental influences of school/education/training
- The personal characteristics and mental traits of the entrepreneur
- The environmental issue of competition dimension
- The environmental characteristics of information and risk
- Opportunity recognition during the growth phase, and
- Strategic alliances during the harvest phase.

5.3.1 Societal Level Needs

At the societal level there are arguably three key basic emerging entrepreneurial capacities (Gibb 1998:8):

- The first relates to building a manager's capability to cope with the overall uncertainties of an increasingly entrepreneurial "way of life".
- The second relates to the demands made upon managers by the withdrawal of the boundaries of the state in the regulation of business activity and the associated wider responsibilities to build trust in the community and the environment – the responsibilities of "entrepreneurial governance".

- The third relates to the increasing internationalisation context of the managerial job and the related need to cope flexibly with "global" aspects of greater complexity and uncertainty – global sensitivity.

5.3.2 Organisational Level Needs

At the organisational level there are arguably four key areas of capacity that could be described as entrepreneurial (Gibb 1998:8):

- The first is the capacity of managers to design organisations to make effective use of entrepreneurial behaviour by focusing them more clearly upon meeting the challenge of greater turbulence in the environment – developing the entrepreneurial organisation.
- The second capacity is related to managing decentralised and autonomous units more holistically where greater responsibility now has to be taken for guiding business development processes and shaping organisation development associated with these processes – managing business development processes.
- The third relates to the enhanced need directly and personally to manage "know who" networks of external stakeholder relationships upon which business and personal success will depend – stakeholder relationship management.
- The fourth capacity is that of strategic thinking (as opposed to more formal business planning skills), the latter being much less relevant in a turbulent international environment – flexible strategic orientation.

A strategic position is the way the business as a whole is located relative to competitors in the playing field of the market, that is, the competitive space. The entrepreneur must therefore be able to decide what stage in the value addition process he/she expects his/her venture to occupy. Selecting a well-defined customer segment enables the business to focus limited resources, to concentrate its efforts, and to defend it against competitors.

The entrepreneur must learn to understand the needs of his/her customers, to rationalise them and to distinguish them from each other. Satisfying a need represents an end and there are a number of means by which to achieve the end. Having decided which particular needs of the customer they will satisfy, the entrepreneur must

decide the means, or technology, that they will adopt in order to do so (Wickham 2001:229).

Market positioning describes the way the venture's outputs, products and services are located in the marketplace relative to those of competitors. Success will only be achieved if the new venture offers customers something which is different from and more attractive than that offered by the existing players.

5.3.3 Individual Level Needs

At the *individual* level, entrepreneurship will arguably demand the exercise of a range of personal enterprising capacities (opportunity seeking, creativity and innovation, self management, taking independent initiatives, taking decisions under greater degrees of uncertainty with 'intuition' playing a more substantial role, and seeing things through over time).

The degree to which personal entrepreneurial skills are demanded of the manager/ entrepreneur is a function of the contextual environment he or she faces (Gibb 1998:16). High levels of uncertainty and complexity in an environment will demand greater entrepreneurial behaviour. These 'skills' include, inter alia,

- *Intuitive decision taking/making* – the skill to take decisions based upon judgment with limited formal information,
- *Creative problem solving* – finding innovative ways of dealing with major problems and opportunities,
- *Managing interdependency on a 'know who' basis* – social skills associated with building trust and friendship, with key stakeholders and contacts,
- *Ability to conclude deals* – skill in bringing together different perspectives on a problem or deal in order to achieve a firm conclusion, and
- *Strategic thinking* – an ability to 'think' on his/her feet, about the longer term implications of activities without resort to more formal planning of "scenarios".
- *Project management* – ability to manage and 'see through' specific new developments (which build the business internally and its reputation externally)

- *Time management* – ability to cope with flexible hours and multiple demands from internal and external stakeholders and family
- *Persuasion* – skill in persuading stakeholders to undertake courses of action which are judged desirable
- *Selling* – skill in setting out the benefits to stakeholders of dealing with a company as a business
- *Negotiating* – skill in bringing together different perspectives on a deal to reach a conclusion of advantage to the business
- *Motivating people by example* – ability to lead by example

Another key capacity associated with managing in the above scenario will be that related to 'learning to learn' more effectively through action and experience. A final key component is that of the personal and entrepreneurial use of communication and information technology.

The skills/capacities that support strategic thinking will be discussed in what follows.

5.3.3.1 Problem analysis

This approach starts by identifying the needs individuals and organisations have and the problems they face. The approach begins by asking the question "what could be better?" Having identified a problem the next question to ask is "how might this be solved?" This approach demands a full understanding of customer needs and the technology that might be used to satisfy them (Wickham 2001:218).

The entrepreneur will need to use analysis heuristics i.e., cognitive strategies, in order to gain and integrate new information about the world, also referred to as "thinking shortcuts" or "rules of thumb". The heuristics entrepreneurs call upon to generate business ideas can be seen to involve two types (Wickham 2001:223).

- The first type is analysis heuristics i.e., cognitive strategies in order to gain and integrate new information about the world, to understand the patterns in this information and to spot market gaps.

- The second type is synthesis heuristics. Synthesis involves using a cognitive strategy to bring the ideas developed from analysis back together again in a new and creative way generating a new perspective on customer needs and how they might be addressed. Analysis is about spotting opportunities. Synthesis is about creating innovations that might exploit those opportunities.

These two sets of heuristics lie at the centre of a process with information as an input and new business opportunities as an output. This process is iterative.

5.3.3.2 Creative Problem solving

A problem occurs when whatever exists does not match with what is wanted or expected. The problem of falling sales usually calls for a creative solution since the causes may be unique and difficult to identify. Solving problems is a sequential process with iterative loops:

- Problem definition
- Idea generation
- Creative idea evaluation (Amabile 1996:24) is in essence the second round of brainstorming. It is more focused in order to clarify concepts and arrive at practical ideas that can be implemented to solve a problem.
- Idea judgment
- Solution implementation

This skill is a crucial individual level need and supports not only the development of business concepts, but also the implementation thereof.

5.3.3.3 Creative decision-making

Decision-making can be defined as selecting a course of action to achieve a desired purpose (Lumsdaine & Lumsdaine 1995:241). Entrepreneurs need to develop a careful balance between making decisions based on past experiences and keeping their minds open to new possibilities.

Lumsdaine and Lumsdaine (1995:245) proceed to provide a process for decision-making that is parallel to the creative problem-solving process in that it uses both left-brain and right-brain thinking processes:

- Goal – be focused (left-brain) and flexible (right-brain) about what is wanted,
- Knowledge – be wary (left-brain) and aware (right-brain) about what you know,
- Belief – be objective (left-brain) and optimistic (right-brain) abut what you believe,
- Action – be practical (left-brain) and magical (right-brain) about what you do.

In order to bridge the gap between identifying opportunities and/or solutions to problems and implementing them it is critical for entrepreneurs to obtain creative decision-making skills. Furthermore, deciding which problems and opportunities are best left alone, calls for experience, expertise and authority – in short, creative decision-making skills.

5.4 Entrepreneurship programme models

Models are used as frameworks, or paradigms, of the thinking within the subject matter. Therefore, they serve as a guideline for the compilation of entrepreneurship education programmes. Understanding the elements and their influences on the development of entrepreneurial potential is crucial to the internalisation of entrepreneurship theory and the development and implementation of policy initiatives to enhance entrepreneurship education (Pretorius, Van Vuuren & Nieman 2004:5). Mayfield and Weaver (1997:1) refer to the paradigm as the underlying philosophy that dictates the methodology used in the training of entrepreneurs because it guides the relevant thinking, content, pedagogy and ultimately, the outcomes.

Fayolle (1997:4) is of the opinion that the object of training in entrepreneurship can be defined as provoking the union of an actor- and a project- or process-element. The entrepreneur can be understood in terms of competencies, socio-demographic and psychological characteristics, and behaviours. Experiences with students taught that it was impossible to develop an enterprising spirit and entrepreneurial behaviour, unless an integrated approach was used, balancing the conceptual, instrumental and experimental dimensions. The impact is only really experienced in the long or short term if the student has become fully involved, either individually or collectively, and if phases of experimentation and application have been experienced (Fayolle1997:9)

5.4.1 Pedagogic objectives

Entrepreneurial training and education acts as a facilitator for entrepreneurial activities with the goal of stimulating entrepreneurial activity and performance (Antonites 2003:45). The most fundamental change in business education today is the reorientation from a "techniques-based curriculum" to what can be characterised as a "competencies-based curriculum" (Bentszen-Bilkvist, Gijselaaers & Milter 2002:3).

The popular perspective to design a strong curriculum is that one must first determine the desired outcomes. In this regard it is interesting to note that a study of small-scale enterprise development in the Tshwane Metropolitan Municipality indicated that small business owners prefer formal training as a method of development (Ligthelm & Morojele 2001:34).

Once the outcomes have been determined, designing the inputs is straightforward. The inputs become courses, activities, programmes, cores, assignments, etc. In short, the inputs become a curriculum (Carland & Carland 1997:3). Fayolle (1997:8) reinforces the viewpoint by stating that it is important to specify the pedagogic objectives before making explicit the approach adopted. However, like any dynamic system, curriculum design is an on-going process. The curriculum is continuously evolving, but fundamental change is extremely difficult because the curriculum paradigm itself has not changed (Carland & Carland 1997:3).

Fayolle (1997:8) mentions the following key elements of an entrepreneurship programme:

- The *development of knowledge* specific to entrepreneurship, inter alia, what a business start up implies, identifying some of the major issues.
- The *development of entrepreneurial skills* ("know how"), inter alia, analysis of complex situations; using and articulating technical knowledge acquired in other disciplines; seeking and mobilising adequate resources in their environment, in order to find solutions for problems identified; working in teams and enhancing the different competencies of each member in the service of a project and a group of entrepreneurs.

- The development of an *entrepreneurial way of being*, which consists of making each student into an individual who is:
    - adaptable, curious, capable of observing an environment, and of seizing and transforming economic opportunities
    - autonomous and able to take initiatives, and
    - responsible and liable to develop for and by himself, an economic activity.

This "entrepreneurial way of being" can be stimulated according to Gibb (1998:11) through the following:

- The development of commitment
- The development of a strong sense of responsibility
- The development of a strong sense of ownership
- The development of capacity to cope with risk, money and social status
- Learning to cope with long and flexible hours
- The development of a sense of freedom and independence. Learning to make decisions in uncertainty with limited data
- Developing the ability to manage interdependency of key stakeholders
- Developing capacity to take initiatives and be proactive
- Developing ability to cope with income fluctuations and customer dependency for rewards
- Developing the ability to manage changes in social and family relations
- Developing capacity to manage/control holistic task structure
- Developing the capability to learn to learn as entrepreneurs, and
- Developing capacity to cope with loneliness.

The importance of several objectives in entrepreneurship education was measured, based on a survey among 15 leading university entrepreneurship educators (Hills in De Clerq, Crijns & Ooghe 1997:15). The results of this survey show the major importance (on a 7 point-Likert-scale) of:

- Increasing awareness and understanding of the process involved in initiating and managing a new business enterprise (6.7)
- Increasing student awareness of the new venture/smaller company career option (5.5)
- Developing a fuller understanding of the interrelationships between the business functional areas (5.5)

- Contributing to an appreciation of the special qualities of the entrepreneur (5.1)
- Increasing the understanding of the role of new and smaller firms within the economy (3.6).

5.4.2 Emerging models for Entrepreneurship Programmes

Generally a variety of emerging models for an entrepreneurship program can be given. The context of every training programme is different, based on the philosophy, paradigms and experience of the programme developers (Pretorius & Nieman 2002:51). Programmes should not be compared with each other unless they have the same contexts.

Each programme model reflects a conceptual view of entrepreneurship education. According to De Clerq, Crijns and Ooghe, (1997:14) three main focuses are possible: the business plan, the business life cycle and the business functions. Entrepreneurial strategies can be the subject of presentations and illustrations, bringing out the key points. All the above are important and should be taught.

However, few ventures begin with a functionally differentiated structure in the start-up phase. Functional differentiation is something that is created through time. As a consequence, entrepreneurship education needs to be differentiated more by stage of venture development rather than by department of functional expertise. The knowledge available in the different domains is not irrelevant to new ventures, but should be incorporated within an appropriate developmental framework (De Clerq *et al.* 1997:15).

Van Vuuren and Nieman (1999:3) developed a model with three dimensions of entrepreneurial performance training:

Table 5.2: Model with three dimensions of entrepreneurial performance training adapted from Van Vuuren and Nieman (1999:3)

Motivation	Entrepreneurial skills	Business skills
Need for achievement	Creativity	Management/Leadership skills
Ability to inspire	Innovation	Business plans
Expectations of the high achiever	Ability to take risks	Financial skills
Obstacles or blocks	Ability to identify opportunities	Marketing skills
Help	Ability to have a vision for growth	Operational skills
Reactions to success or failure	Interpret successful entrepreneurial role models	Human Resources skills

Van Vuuren, who is regarded as the technical developer of this model, uses the Motivational and Expectation Theory of Vroom (1964) as diversion instrument. Vroom's theory proves that achievement can be seen as the multiplication function of individual motivation (M) and the ability (V) of the individual P = f (MxV). Abilities within this context are regarded as existing and acquired knowledge. Analogous to Vroom's model, Van Vuuren uses the construct "achievement" in the context of "entrepreneurial performance" as well as "business skills" that need to be present in order to achieve or maintain a level of achievement.

Based on the entrepreneurial performance (E/P) model, educational programmes are planned to cover the three key constructs of the model. Within the context of any planned programme, different quantities and qualities of skills and knowledge are included. The three elements are shortly described as follows:

- Motivation – The development of performance motivation of the entrepreneur is advised for incorporation in all programmes, proposing that it contributes towards qualities like inner control, persistence, leadership, decisiveness, determination and shear guts. The associated skills include specifically the development of achievement imagery.
- Entrepreneurial skills – Included in this category are various creativity, risk taking and opportunity identification skills.

- Business skills – This category covers skills such as financial, marketing, operational, human resource, legal, communication, management and business plan compiling skills.

Cocks and Pretorius (2002:178) describes an entrepreneurial education model where education for entrepreneurial performance (E/P) is a linear function of the facilitator's ability and skills (F) to enhance motivation (M), entrepreneurial skills (E/S) and business skills (B/S) through the creative use of different approaches (A's) and the business plan (B/P):

E for E/P	= aFxbM [cE/S x dB/S x [eA + fB/P]
E for E/P	=Education for improved entrepreneurial performance
F	=Facilitators ability, skills and experience
M	=Motivation
E/S	=Entrepreneurial skills
B/S	=Business skills and knowledge
A	=Approaches of learning used
B/P	=Business plan utilisation as an approach
A to f	=Constants

Being a mathematical model and as the constructs are multiplicative, there is an indication that the absence of any one of the elements such as motivation, entrepreneurial skills or business skills will lead to zero or extremely low levels of entrepreneurial performance as measured by the involvement and execution of start-up activities by the student.

Pretorius (2000a; 2000b) developed a model for entrepreneurial education (E/E). The E/E model considers not only the content of entrepreneurial education programmes but also the context in which such programmes are operated by the facilitators and the approaches that they use. The model identifies five constructs relevant for entrepreneurial education to increase start-ups and also indicates the relevance of the programme context. Its focus during development was specifically to increase "start-ups" as outcome requirement (Pretorius 2001:133) through education. The E/E model constructs include:

- Entrepreneurial success themes,
- Business knowledge and skills,
- Business plan utilisation,
- Learning approaches,
- The facilitator, and
- The programme context.

Pretorius (2001:230) suggests that the facilitator is the key construct and based on his skills, knowledge, experience and methodology application should govern the constructs into a mix (similar to the well known marketing mix). The facilitator as a variable is not only a construct but also governs the variable mix and changes it according to varying demands during the programme.

In comparing the above two models Pretorius, Van Vuuren and Nieman (2004:16) noted that:

- The nature of the E/P model does not require reference to approaches and the facilitator as constructs as its focus is on performance of the entrepreneur rather than the success of the training course.
- The business plan construct is implied as part of the business skills required for the E/P model while in the E/E model it is regarded as an important tool for training especially to assist in the conceptualisation of the holistic picture of the venture and its future operations.
- The business plan construct can also be regarded as part of the approaches construct as it forms part of the pedagogy used to develop insight into the holistic business. The value of the business plan itself is probably less than the value of the creation process and opinions vary widely between academics, financiers and entrepreneurs.

Although motivation to excel is mentioned as part of the entrepreneurial skills (E/S) construct according to Pretorius *et al*. (2004:17), it is considered as key to the E/P model. Both E/S and B/S are common to both models and therefore the following integrated model is proposed to educate for entrepreneurial performance:

E for E/P = f [aF x bM (cE/S x dB/S) x (eA + fB/P)]

Where

E for E/P = Education for improved entrepreneurial performance
F = Facilitators ability, skills and experience (E/E model)
M = Motivation (E/P model)
E/S = Entrepreneurial skills (both models)
B/S = Business skills and knowledge (both models)
A = Approaches of learning used (E/E model)
B/P = Business plan utilisation as an approach (both models)
a to f = Constants (0 > constant < 1)

Education for E/P therefore, is a linear function of the facilitator's ability and skills (aF) to enhance motivation (bM), entrepreneurial skills (cE/S) and business skills (dB/S) through the creative use of different approaches (eA's) and specifically the business plan (fB/P). It is important to realise that the constants will have a value ranging between zero and one. For example, a facilitator could have very low skills and abilities that he would apply but it is above absolute zero. The same would be true for the constants of the other constructs that have to do mainly with the learner.

The multiplicative nature of the new model points to minimum requirements that any programme that aims to contribute to venture start-ups should have. Any construct, that when evaluated, is completely absent will result in zero success levels while weakness in a particular construct will decrease effectiveness in overall outcome of the programme.

Antonites (2003:145) in his creativity, innovation and opportunity finding (CIO) action-learning model, emphasises thinking through reflection and action, supported by experience. The background of the model proposed in his dissertation is supported by the work of Vroom (1964) in his well-known expectancy theory of motivation. This theory eventually proved that performance can be seen as a multiplicative function of the individual's motivation times his/her abilities P=f(MxA). Abilities are seen as existing and acquired knowledge (Van Vuuren & Nieman 1997:4).

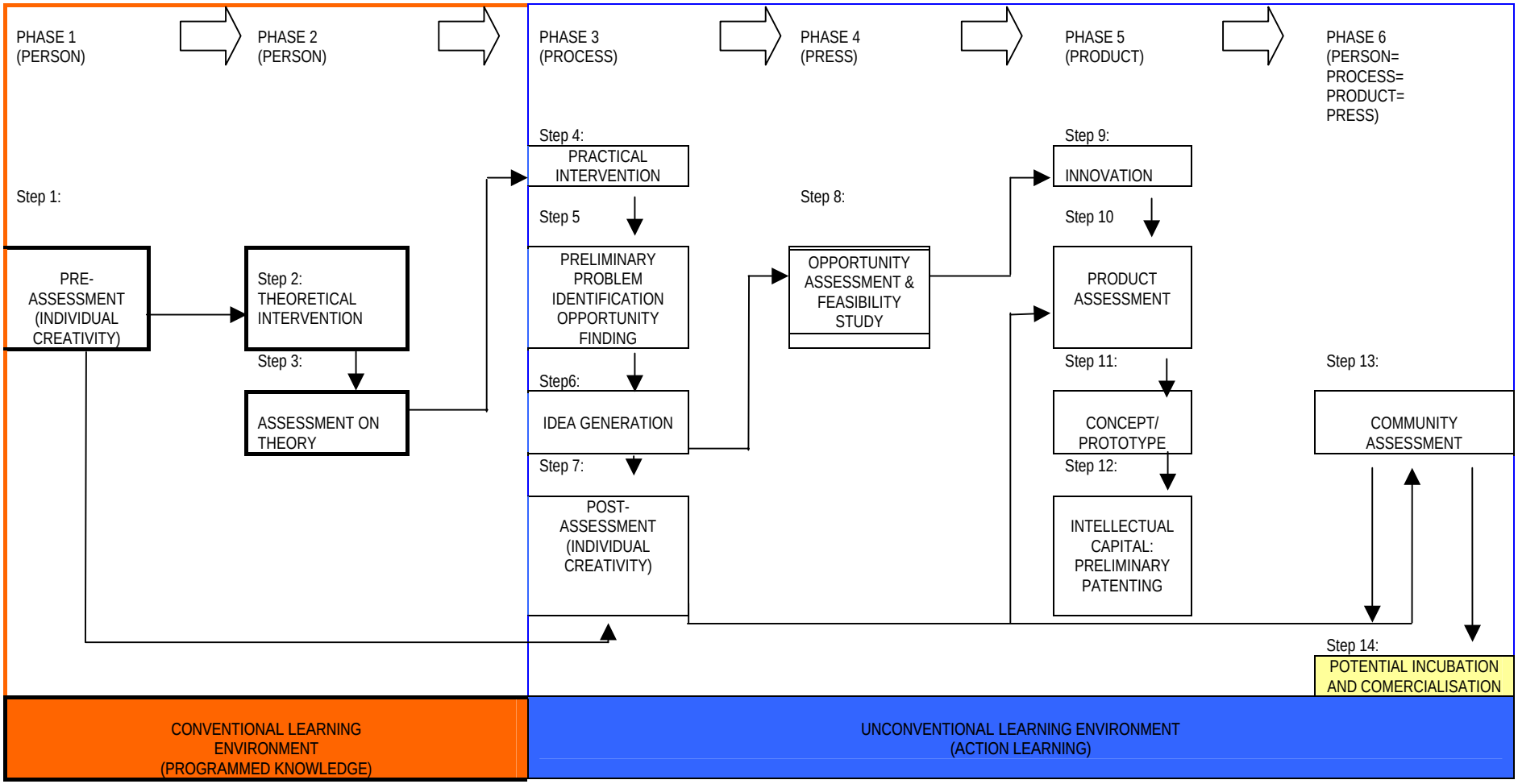

Figure 5.2: Creativity, Innovation and Opportunity finding model (Antonites 2003:204)

Antonites (2003:211) found the following:

- The model focused on training the entrepreneur and not the traditional manager.
- The intervention ensured the acquisition of skills with feasible opportunity finding as the primary point of convergence.
- The model addresses the entrepreneurial skills: creativity, innovation and opportunity finding directly, as part of an entrepreneurship training programme.
- Pertinent differentiation is established to understand the exact variance between an "idea" and an "opportunity", within an entrepreneurial and market context.
- The training model accentuated the feasibility and realism of market related opportunities.
- The training methodology applied in this study is based on experiential and action learning and therefore overcomes stifling pedagogical paradigms in teaching business and entrepreneurship.
- The model reveals more about, and, for the learner, due to its learner centred approach, than teaching methods that disclose more about the lecturer, and
- The study offers future educators a tool and approach to cultivate creativity, innovation and opportunity finding.

5.4.1 Content

Pedagogical content knowledge is an understanding of "ways of representing … the subject that make it comprehensible to others" and "an understanding of what makes the learning of specific topics easy or difficult" (Eggen & Kauchak 2001:9).

With respect to entrepreneurial syllabuses, the specific profile of students, leads here more than elsewhere to certain types of approach by the teacher, and this must be taken into account. Naturally the fact that these students should in theory be more independent-minded, self-confident and have more power of internal control should be taken into account (Duechneaut 1997:15).

De Clerq *et al.* (1997:15) made a study on the topics that are dealt with in entrepreneurship education in 25 leading business schools in the USA. It was found that the following topics were dealt with in entrepreneurship education:

Table 5.3: Topics dealt with in entrepreneurship education in the USA adapted from De Clerq, Crijns & Ooghe (1997:15)

Start-up of ventures	• creativity • financing new ventures • identification and evaluation of opportunities • implementation of new ventures • management of new ventures • new venture marketing • obtaining the required resources • planning new ventures • purchasing existing ventures • risk analysis • starting new ventures
Growth of new ventures and critical moments	• bankruptcy • financing growing ventures • joint ventures • management buy-ins • management buy-outs • management of growth • mergers and acquisitions • selling a venture • transition from start-up to growth
Marketing	• brand management • commercialisation of products • entrepreneurial marketing • marketing of new products • marketing planning • marketing strategy • product development • sales

Financial aspects	• accounting • cash flow analysis • creating value • development of budget control system • financial analysis • financial compensation • financial planning • financing growing ventures • financing new ventures • valuation of a venture • venture capital financing
Organisation and human resources management	• entrepreneurial career • entrepreneurial teams • HRM aspects • organisation culture • organisation management • organisation structure • staffing • work roles in organisations
Operational and technological management	• information management
Strategic issues	• corporate strategy • entry strategies • industry strategy
Legislation related issues	• franchise management • government contracting • intellectual property • legal aspects • licensing • taxation aspects

Innovation	• change management innovation management
Small and large companies	• differences between small and large organisations • family businesses • intrapreneurship • small business management
Personal aspects, characteristics and skills of entrepreneurs	• business ethics • development of entrepreneurial competencies • leadership • negotiations • personal values • persuasion process • skills of entrepreneurs
General issues	• business transactions • international aspects • management consulting • project management • utilisation of resources

The above confirmed Garavan and O' Cinneide's (1994:4) observation, that although entrepreneurs display three major features, namely knowledge, skills and attitudes, the first receives thorough and analytic attention in the formal education situation, the second receives sketchy attention and the third is hardly addressed at all. This lack of integration impacts on the level of entrepreneurial output in the South African situation.

5.4.4 Learning Styles

An individual's learning style describes the way in which one acquires and uses information in developing an understanding of, and in solving, problems. To be effective, the entrepreneur, like any other learner, needs to employ different learning

styles, e.g. concrete experience, reflective observation, abstract conceptualisation and active experimentation (Garavan & O'Cinneide 1994:12). For example, a deficiency in concrete experience may lead to an inability to formulate plans, and a deficiency in active experimentation may lead to an inability to implement plans.

Carland and Carland (1997:4) investigated the effects of learning styles and found that traditionally, business is taught passively by lecture and illustration of problem and solutions. The traditional view is that business programmes are rigorous and many students are not sufficiently motivated to perform well. Traditionally, the expectation is that those students who succeed are those who are achievement oriented and highly motivated, or, those students who work hard. Further, such students will succeed regardless of the approach used to teach the course. The corollary is that those students who do not do well are uninterested, not highly motivated or not achievement driven, or, not willing to devote long hours outside of class. Such students will not do well, regardless of the approach used. Modern researchers in business education are increasingly recognising that learning is different from academic performance and that the structure of the teaching paradigm needs to change in order to increase the learning rate of all students.

However, in a survey of Business Administration students (Carland & Carland 1997:6), it was found that students of management or business administration tended to display the accommodation learning style, a style at odds with the traditional approach to business instruction.

Karl Jung's theory of personality types forms the foundation for much of the field of cognitive psychology. Kolb, quoted in Carland and Carland (1997:5) building on Jung's theory of personality typology, identified four types of learning styles that people employ. These are described in what follows:

5.4.4.1 The Convergent Style

The convergent style relies on conceptualisation and active experimentation, and has as its major strength problem solving, decision-making and practical application of ideas. The converger's greatest strength is in the practical application of ideas.

Through hypothetical, deductive reasoning, the converger focuses knowledge on specific problems. Convergers tend to be good at solving problems, testing theories, and decision-making.

5.4.4.2 The Divergent Style

The divergent style emphasises concrete experience and reflective observation, and has as its major strength imaginative ability and awareness of meaning and values. The diverger has the ability to view concrete situations from many different perspectives. As a result, the diverger is good at generating ideas, recognising problems, and creativity.

5.4.4.3 The Assimilation Style

The assimilation style emphasises abstract conceptualisation and reflective observation, and has as its major strength inductive reasoning and an ability to create theoretical models. The assimilator is best at inductive reasoning and in assimilating disparate observations into an integrated explanation. The assimilator's greatest strength is in the ability to construct theoretical models. Assimilators are good at defining problems, formulating theories, and planning.

5.4.4.4 The Accommodation Style

The accommodation style emphasises concrete experience and active experimentation, and has as its major strength doing things, carrying out plans and tasks and getting involved in new experiences. The accommodator is the opposite of the assimilator. The accommodator is best in those situations where one must adapt to specific immediate circumstances. The accommodator is good at implementing plans, engaging in new experiences, and in taking goal-oriented action.

5.4.4.5 Creativity and Learning Styles

In the abstract conceptualisation/concrete experience dimension, the preference of an entrepreneur is not as clear. Kolb as referred to by Ulrich (1998:7) termed the conflict between concrete experience and abstract conceptualisation as "creative

tension". To be creative, one has to be freed from the constraints of a previous focus on abstract concepts and to experience anew. Ulrich (1998:7) describes the creative process as a synthesis of problem-finding and problem-solving. Thus a creative person is one who is able to co-ordinate activities in each of the different modes of learning. Consequently, both the abilities are important to entrepreneurs, with the balance between them varying with individual entrepreneurs depending on whether problem-finding or problem-solving is more important for innovation.

On the active experimentation/reflective observation dimension, our understanding of entrepreneurial behaviour indicates a primary preference for action. Opportunities and innovative ideas must be followed through to activate entrepreneurship. Thus, an entrepreneur would be expected to favour active experimentation rather than reflective observation (Garavan & O'Cinneide 1994:13).

Learning styles have the following implications for teachers and trainers (Eggen & Kauchak 2001:137):

- Instruction needs to be varied
- Students need to be made aware of the ways they most effectively learn
- Teachers need to be sensitive to the differences in students.

5.4.5 Teaching methods

Derived from the ancient Greek "methodus", which implies sustained, systematic and scientific research, methodology is often incorrectly typified as a recipe approach (Avenant 1990:277).

According to Duechneaut (1997:5), training can definitely develop the entrepreneurial potential of the student, by taking two complementary axes: personal development and learning by doing. Duechneaut (1997:6) summarised teaching methods in a didactic model versus an enterprising model:

Table 5.4: Didactic model versus enterprising model (Duechneaut 1997:6)

Didactic model	Enterprising model
Learning from teacher alone	Learning from each other
Passive role as listener	Learning by doing
Learning from written texts	Learning from personal exchange and debate
Learning from "expert" frameworks of teacher	Learning by discovering (under guidance)
Learning from feedback from one key person (the teacher)	Learning from reactions of many people
Learning in well organised, timetabled environment	Learning in flexible, informal environment
Learning without pressure of immediate goals	Learning under pressure to achieve goals
Copying from others discouraged	Learning by borrowing from others
Mistakes feared	Learning from mistakes
Learning by notes	Learning by problem solving

The pedagogical methods, which are best suited to an entrepreneurial learning style, are the convergent style and the accommodation style. In practice, however, in the typical educational and training situation, the future entrepreneur is most likely to encounter the assimilation style and the divergent style. This traditional teaching approach focuses on developing a participant's mastery of various abstract concepts which can be integrated into a framework for a given business discipline. Performance is evaluated by testing the participant's ability to recall various abstract concepts. The rational approach performs its intended purpose well i.e., the acquisition of knowledge on the part of the participant. Participant participation, however, is solely reflective. The traditional approach does not reach for the more complex outcomes associated with experiential learning i.e., application, analysis, synthesis and evaluation (Garavan & O'Cinneide 1994:8).

The entrepreneurial-directed alternative to the traditional teaching approach is one that requires the instructor to become a learning process facilitator. Such an approach entails extensive use of learning exercises such as role playing, management simulations, structured exercises or focused learning feedback situations in which the participant must take an active role. The traditional "listen and take notes" role of the participant is minimised. After participating in the learning exercises, participants reflect on their experience and develop generalisations through small discussion groups. The discussion groups develop hypotheses, based on their learning experiences, which are further tested with additional learning exercises. In this way

all four learning abilities are eventually used and developed, much as they would be in the typical entrepreneurial situation (Garavan & O'Cinneide 1994:9).

In support of the above, Klandt (1998:9), mentioned that the student should have the chance to develop and improve individual targets, therefore, within certain limits the targets should not be determined by the teacher. Targets could include the following:

- Active and limited information search

The learning process should be one that provides scope for the students, to discover their own information needs to identify information sources and independently be able to balance information costs and information benefits.

- Analytical and holistic problem diagnosis, system thinking

The student should be confronted with tasks, which cannot only be solved using analytical (standardised, quantitative) methods. Qualitative and highly complex problems where creativity and intuitive problem solving are practiced should also be given to the student.

- Decisions and performance under time pressure

Of practical importance is that often a fast but not optimal decision leads to better results (for example in the opinion of the competitors) than an optimal decision which is available later.

Todorov and Dimitrov (1998:16) identify the following methods that contribute to success in Bulgarian entrepreneurial training:

- Utilisation of active (interactive) educational methods

Some of the most frequently used methods are aided discussions, brain storming, role playing, preparing and solving case-studies, developing and public defence of business plans and projects. Since 1991 these methods have been tested over the years and are continuously enriched. Their utilisation and sometimes creation, re-

quired some analytical and communicational skills on the part of teachers and some preparation in advance on the part of students.

- Practical orientation of education

Undoubtedly, the very nature of entrepreneurship education imperatively requires its strong practical focus. Solving and preparing case studies, developing business plans and preparing projects on the basis of real companies from the practice form the way entrepreneurship education should be directed.

- Teamwork

Todorov and Dimitrov (1998:18) viewed teamwork as one of the biggest achievements of the Bulgarian entrepreneurship education. Bearing in mind the predominantly individualistic Bulgarian character, independent creation of teams, their work and joint project defence is one of the most substantial advancements in the learning process.

- Utilisation of non-academic assistants in education

The future development of this established tradition in education will be considered. The participation of entrepreneurs, managers, bankers and policy makers, provides unique support for the practical orientation of the educational process. Such participation also enhances the post-graduate career options of some students who receive job offers.

- Application of up to-date (licensed) software and hardware

Effective realisation of good business plans and projects is quite impossible without using the options of forecasting, summarising and graphic presentation provided by information technologies. Utilisation of databases, decisions from the past, adapted to the specific business conditions, programmes and networking, e-mail and Internet facilities, undoubtedly increase students' skills and knowledge.

- Effective "know-how" transfer from developed industrial countries

With, entrepreneurship education, as a socially cultural and psychological phenomenon, significant adaptation of foreign results is required as well as high qualifications

of teachers. Probably, international projects and participation in international conferences and seminars are the best forms of such kind of transfers.

- Establishment of entrepreneurship development centres in respective universities working in close partnership

The Entrepreneurship Development Centre experience shows great future for such structures to provide invaluable support to entrepreneurship education development and shortening the distance between universities and real business.

5.4.5.1 Problem-posing methods

Problem-posing methods are methods in which teachers inspire their students to meaningful learn by the creation of motivating problem situations through which the students discover relationships by collecting data, as well as reasoning, hypothesis stating, experimenting and the cognitive processes of comparison, contrasting and classification and consequently acquire new knowledge (Avenant 1990:279).

5.4.5.2 Classroom versus Experiential learning

For many years experiential learning has been a concept of interest to educators in a variety of disciplines. Experiential learning is defined as a sequence of events that require active involvement by the student at various points (Carland & Carland 1997:1). Its advocates and its critics are many and varied. The central tenet is always that one learns best by active involvement. Some researchers, e.g., Coleman (1976) as quoted by Carland and Carland (1997:2) believe that experiential learning has a strong advantage in that it depends upon intrinsic motivation and that learning through experiential concepts is less easily forgotten than learning through the information assimilation of the traditional classroom. Carland and Carland (1997:2) concluded that it is well established that two of the four primary learning styles exhibited by students, the divergent and accommodation learning styles, function better with concrete experience.

Carland and Carland (1997:6) describe the steps in learning under the classroom and experiential learning systems as follows:

- The Classroom Learning System
    - receiving information through a symbolic medium such as a book or lecture,
    - assimilating and organising information so that the general principle is understood,
    - being able to infer a particular application from the general principle, and,
    - moving from the cognitive and symbol-processing sphere to the sphere of action.

The case study method, within the classroom learning system, has established itself as the most suitable approach used in the education of students at all levels of entrepreneurial training. One possible reason for this is that the case study method is easy to use within the conventional classroom situation and with large classes. However, it may also be possible that the use of case studies demands less effort from the traditional lecturer (Pretorius *et al*. 2004:23).

- The Experiential Learning System
    - carrying out an action in a particular instance and seeing the effects of the action,
    - understanding the effects in a particular instance,
    - understanding the general principle under which the particular instance falls, and,
    - applying the concept through action in a new circumstance within the range of generalisation.

The advantages of the classroom method include a reduction of the time and effort required to learn something new. Its disadvantages are that it depends heavily on the symbolic medium, which is usually language, and it depends upon extrinsic motivation. Although experiential learning is time consuming, it has a strong advantage in that it depends upon intrinsic motivation. More important, learning through the experiential concepts is less easily forgotten than learning through the information assimilation of the traditional classroom.

In general it can clearly be seen that the types of pedagogy suited to the entrepreneurial context necessitate far-reaching development of the traditional role of the teacher. As Duechneaut (1997:14) points out, the twenty-first century teacher:

> will no longer be a lone individual advancing knowledge (researcher), nor a lone individual imparting it (communicator), nor even the organiser of all this (executive director), instead, no matter what the future holds, he will keep his role as a source of motivation and as a facilitator of exchange.

5.4.5.3 Role models/Mentoring

This method of teaching relies on changes in people that result from observing the actions of others. There are different forms of modelling (Eggen & Kauchak 2001:236):

- Direct modelling (attempting to imitate the model's behaviour)
- Symbolic modelling (imitating behaviours displayed by characters in books, plays, films and television)
- Synthesised modelling (developing behaviours by combining portions of observed acts).

The use of role models could, according to Kreitner and Kinicki (1995:292), be a direct guideline for the entrepreneur in terms of certain role expectations that need to be present per definition. The entrepreneur can therefore realise that his/her chosen role model applies intensive innovation, took a calculated risk and strives towards unusual opportunities. Role insecurities could be removed as the entrepreneur can obviously see what is expected of the typical entrepreneur by making use of a role model to model him/herself on. Entrepreneurs therefore place themselves on an equal footing with the role model and in certain cases lets themselves be motivated to the extent that an even better achievement than that of the role model could be the result.

Robbins (1988:42) remarked: "To model excellence you should become a detective, an investigator, someone who asks lots of questions and tracks down all the clues to what produces excellence".

5.4.5.4 Whole brain teaching

Research on the human brain has led to the development of a four quadrant whole brain model by which human thinking style preferences can be described (de Boer, Steyn & du Toit 2001:185). Herrmann (1996:126), the father of brain dominance technology, indicates that the human brain functions at its most innovative, productive best when all four quadrants engage situational and iteratively in the process.

The cerebral hemispheres (left-brain and right-brain) contain about 80 % of the brain. Primary mental processes in these hemispheres include: vision, hearing, intentional motor control, reasoning, conscious thinking and decision-making, imagination and idea synthesis. Herrmann found that for optimum learning left-brain thinkers had to be taught differently from right-brain thinkers. He furthermore established a reciprocal lack of appreciation for the different thinking mode and concluded that both types of thinkers could benefit by knowing how to use the whole brain (Lumsdaine & Lumsdaine 1995:79).

Each cerebral hemisphere has a separate structure that nestles into it, namely one half of the limbic system which regulates hunger, thirst, sleeping, emotions and plays a powerful role in learning since it is critical in transferring incoming information to memory (Lumsdaine & Lumsdaine 1995:78). In the course of his research Herrmann realised that data seemed to fall into four clusters, not only into two cerebral hemispheric divisions. This discovery led to the development of the four-quadrant whole-brain model. Each quadrant has distinct clusters of thinking abilities or ways of learning and knowing.

Quadrant A thinking is factual, analytical, quantitative, technical, rational and critical. People who prefer quadrant A thinking prefer subject areas such as arithmetic, algebra, science and technology. Quadrant B thinking is organised, sequential, controlled and persistent (Lumsdaine & Lumsdaine 1995:86). Quadrant C thinking is sensory, emotional, and interpersonal. People with this preference would take social sciences, music and participate in group activities. Quadrant D thinking is visual, holistic, imaginative and intuitive and entrepreneurs, artists and playwrights have strong preference for quadrant D thinking.

The whole-brain method acknowledges the fact that it is necessary to use all four brain quadrants for an effective learning process to take place. The idea is therefore to develop the use of the less preferred quadrants, although students have preferences.

5.4.6 Problems experienced with the development of entrepreneurs

Klofsten (2000:340) indicates that small business owners are sceptical towards organisations offering training, that they are often unaware of what is available on the market and furthermore that they often lack sufficient resources to participate in formal training programmes.

Gunther and Kirchoff (1998:3) indicate that start-up companies are different in their needs and that according to each different situation new or changed further or continuing education needs and consultation demands may come into existence. The further and continuing education demands are tendency open i.e., they vary permanently. They originate from the entrepreneur's insight in each actual upcoming deficit of his authority concerning capability of acting and deciding, they articulate themselves at that point where mistakes are imminent. Requirements and practical needs arise, concerning persons or enterprises. They neither are to be anticipated, nor to be generalised.

Skill-building approaches depend on how teachable a specific competency is. To truly develop expertise in a skill, an individual needs multiple and varied experiences – studying the basic characteristics of the skill, experimenting with it, getting coached, and then making improvements and refinements (Conger & Benjamin 1999:49).

The consequence of this is that a large proportion of young entrepreneurs are not attracted by traditional planned programs. This kind of abstract planning has nothing to do with the everyday problems and questions coming out in the process of establishing a start up company. Therefore most of the programmes fail (Gunther & Kirchoff 1998:4).

5.5 Creativity as subject content in Entrepreneurship programmes

Van Vuuren and Antonites (2001:5) analysed the importance of creativity and innovation in a model to improve entrepreneurial performance by means of training intervention and found that it received strong support. They also combined the concepts with business skills and concluded that the importance and need for innovation and creativity training is recognised but the importance of the "how to" factor was not addressed or seen as contributing to improved entrepreneurial performance.

In a generalised manner i.e., not entrepreneurship domain specific, the following creativity skills that are learnable have been identified (Glassman 1991:5):

- The ability to associate remote stimuli in the environment with elements in the mind and combine them into new and unusual ideas,
- The ability to keep an open mind and see new perspectives,
- The ability to generate many ideas,
- The ability to adopt many different problem-solving approaches,
- The ability to generate a variety of really different ideas,
- The ability to develop ideas,
- The ability to generate infrequent and uncommon ideas, and
- The ability to hang in there when going against consensus and to be persistent in the face of criticism.

Pretorius and van den Berg (2002:203) indicate that creativity, as an entrepreneurial skill should include:

1. Techniques for facilitating creativity,
2. Removing barriers to be creative,
3. Critical thinking versus creative thinking,
4. Personal attributes and actions that facilitate creativity,
5. Improving intuitive creativity,
6. Creative problem solving and opportunity finding, including opportunity delineation, and
7. The generation of ideas and evaluating and prioritising ideas.

5.6 Chapter Conclusion

The general conclusion from the literature study is that thinking has progressed from the study of entrepreneurial personality traits and demographics to examine the issue of whether "entrepreneurship can be taught?", and recently to focus on the role of the cognitive aspects of learning.

Solomon *et al.* (2002:6) indicated that effective entrepreneurial education requires students not only to experience some core functional elements of a business administration programme, but that those functions be presented from the point of a start-up and to expose students to substantial hands-on experience.

Learning to start a business requires different and creative approaches of which the utilisation business plan is the most important approach (Pretorius *et al*. 2004:22). The literature study furthermore indicated that practical knowledge i.e., business skills on business planning, business strategising, financial management, marketing management etc. are crucial in the concepts "opportunity exploitation" and "growth maximization", and that curricula on the development of creative skills' application in the above concepts and the supporting subjects are still in the developmental phase.

It is only recently that the issue of creativity and innovation as subject matter in the entrepreneurship domain started to get attention and thought. It is perceived therefore that the application of creativity and innovation in content as well as method with regard to the entrepreneurial domain could only benefit from research.

However, it must be kept in mind that success as an entrepreneur depends not only on creativity skills but also on, inter alia, motivation, interpersonal and business skills.