# A MODEL OF CREATIVE AND INNOVATIVE TECHNIQUES THAT WILL PREPARE FINAL YEAR STUDENTS TO BECOME ENTREPRENEURS

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Submitted in fulfilment of the requirements for the degree of Master of Technology Entrepreneurship to be awarded at the Nelson Mandela Metropolitan University

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## DECLARATION

I, Michael Boakye Yiadom (student number: 213441446) hereby declare that the dissertation submitted for the degree of Master of Technology in Entrepreneurship at the Nelson Mandela Metropolitan University, is my own work and that it has not previously been submitted for assessment or completion of any postgraduate qualification to any other university or for any other qualification.

Michael Boakye Yiadom November 2014

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#### ABSTRACT

Creativity and innovation are significant for the creation of a knowledge and productive base economy with its associated growth, sustainability and job creation. However it is noticed that students will need to employ the techniques on creativity and innovation in order to prepare themselves sufficiently to become business owners and entrepreneurs in this current global world where government jobs are difficult to come by. Therefore, the primary objective of this study is to determine creative and innovative techniques that will prepare final-year students to become entrepreneurs.

A hard copy Word document questionnaire was considered an appropriate measurement method for this study. The targeted population of the study included entrepreneurial experts, business owners, teachers and lecturers of business management/studies in the Sisonke District of Kwazulu Natal Province. Thus, some 100 entrepreneur experts, owners of businesses, teachers and lecturers were identified as part of the sampling frame. A total number of 67 questionnaires were administered out of the 100 targeted– giving a response rate of 67%. The quantitative data were processed using Excel, leading to appropriate descriptive statistical analyses, including frequencies, means, medians and standard deviations.

In order to obtain a better understanding of a model that will prepare final year students to become entrepreneurs, problem statements and sub-problems were stated and a *t*-test was used to establish demographic variables, whilst correlation analysis among skills was conducted regarding the model of creative and innovative techniques. Factor analysis was conducted using the Cronbach's alpha coefficient which confirms that training in the model will prepare students to become entrepreneurs.

The results from the empirical study revealed that a model of creative and innovative techniques will prepare students to become entrepreneurs, with a total of 70% of respondents attesting to it.

Based on the relevant literature study and the empirical results, recommendations were made in order to support the training needs of students on creativity and innovation techniques. However, the unavailability of an exhaustive entrepreneurial experts database and small number of further education and training colleges in the Sisonke District, did not allow the research to draw on a larger representative sample. Thus, this limitation has impeded in-depth statistical analysis that would have allowed

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the research to obtain more accurate findings. Further studies could be investigated from lecturers, business owners and experts whether an introduction of a special curriculum on creativity and innovation in further education and training schools may prepare students to become entrepreneurs.

**Key words**: Creativity, innovation, creative techniques, entrepreneurship, entrepreneur, innovation techniques.

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# LIST OF ACRONYMS

AI	Artificial Intelligence
AT&T	American, Telephone and Telegraph
B/S	Business Skills
BWAS	Barron-Welsh Art Scale
CPS	Creative Problem Solving
DTI	Department of Trade and Industries
EAO	Entrepreneurial Attitude Orientation
EC	European Commission
ETM	Enrichment Triad Model
EQ E	Entrepreneurial Quotient
INCEI	Institute of Creativity and Educational Innovations
IPAR	Institute of Personality Assessment and Research Laboratory
IS	Innovative Style
PCA	Principal Component's analysis
PECEI	Educational Model for Creative development
PICL	Product improvement checklist
R&D	Research and Development
SATSA	Southern Africa Tourism Services Association
SCAMPER	Substitute, Combine, Adapt, Modify, Put to other uses, Eliminate,
	Reverse
SEDA	Small Enterprises Development Agency
SKI	Speech Knowledge Interface
SWOT	Strength, Weakness, Opportunity, Threats
USA	United States of America
VPKSS	Vehicle Packager Knowledge Support System

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#### CHAPTER ONE

#### INTRODUCTION AND BACKGROUND OF THE STUDY

#### 1.1. INTRODUCTION

There have been several entrepreneurs in South Africa with many talented, creative and innovative ideas in the past decades. They include the likes of Koos Bekker, the corporate media entrepreneur, who was nominated by the Epstein foundation for the coveted Ernest and Young Entrepreneurship Award in 2006; Sol Kerzner, the founder and chairman of Kerzner International, a privately held resort operator; Mark Lamberti, one of South Africa's entrepreneurs who built the biggest retail group in the country and on the continent, under the banner of Massmart. Lamberti ascribes his own entrepreneurial success to becoming financially involved in business and taking some financial risks at a relatively young age, as well as finding an outlet for his creativity in the retail sector and finally associating with entrepreneurial individuals during the course of his career (Makura 2010:116).

It can be seen from the example of these people that creativity and innovation form part of their quest for achieving success as compared to what transpires these days where students and the youth devote much time and attention to the search for non-available government jobs, instead of using their own creative and innovative techniques to prepare a way to become entrepreneurs themselves. It might well be asserted that we are teaching people out of their creativity (Robinson 2006). Creativity is often obvious in young children, but it may be harder to find in older children and adults because their creative potential has been suppressed by a society that encourages intellectual conformity (Sternberg 2006:93). Creativity is as important in education as literacy and should be treated with the same respect (Robinson 2006). According to Florida (2003:6), "the creative individual is no longer seen as an iconoclast, he or she is the new mainstream". Also Howkins (2002:129) observes how French economist and journalist Baptisto uses the term entrepreneurship to describe the person who unlocks capital tied up in land and redirects it.

Moreover Howkins (2002:129) observes that creative entrepreneurs in the economy

operate like original model entrepreneurs but with an important difference, they use creativity to unlock wealth that lies within themselves — like true capitalists with their belief that creative wealth, if managed correctly, engenders more wealth.

Similarly, Caves (2001:2-10) asserts that the desire of creative artists differs largely in value and in a systematic (if not universal) way from their colleagues in the rest of the economy where creativity plays a lesser (if not often negligible) role. Also the need to create an environment for entrepreneurship was raised by some large companies in aid of generating new ideas on new product development and new business models (Weflaufer 1999:76). Research indicates that everyone has the potential to become an entrepreneur given the right set of circumstances.

There is a need to discover mechanisms that would encourage students to start up their own businesses and become entrepreneurs after graduation. Davidson (2006:2) suggests that most people with creative skills would be able to pursue a successful career as entrepreneurs. According to Weflaufer (1999:88) regarding Jack Nasser's notion of challenging employees at Ford, they should think and act as if they were the owners of the company while reflecting on any creative ideas they have for company growth. People also need to adjust to change, rapidly and without difficulty, both for their own well-being and for that of the societies in which they live. Education will need to foster flexibility/openness, ability to produce novelty, ability to tolerate uncertainty and similar properties, in other words creativity (Cropley 2001:158).

Gardner (1993:35) states that the creative individual is the person who solves problems regularly, fashions products, or defines new questions in a domain in a way that is initially considered novel but that ultimately becomes accepted in a particular cultural setting. Similarly, Drucker (1985:67) sees managers as entrepreneurs and not distinct from them and noted the importance of the systematic management of innovation opportunities and knowing how to identify them. According to Lurbart (1994:305), creativity is the capacity to produce novel or original work that matches task constraints or the development of appropriate and novel solutions. A talent or gift for creativity may be inherited by some people but learned or developed by others. Recent thinking shows that the ability to think and act creatively can be fostered in the classroom and transferred or applied in different learning contexts (Berger 1997:1). Similarly, being innovative is closely linked to being

creative, seeing possibilities, seizing opportunities, and creating new ventures; markets or products are all part and parcel of innovation (NCE 2003). An innovator is someone who has an idea, sees its potential, and sets about promoting or advocating it to a wider audience, often with profit in mind – in this sense entrepreneurship is closely related to the term innovation (NCE 2003).

According to the National Commission on Entrepreneurship (United Kingdom), entrepreneurship is the process of discovering and presenting an opportunity to create value through innovation (NCE, 2003). It has been noticed that students who graduate from Esayidi Further Education and Training College and other FET Colleges in South Africa are often not able to use their own creative and innovative techniques in order to become entrepreneurs; it is hoped that this study will help them overcome this challenge.

### 1.2. PROBLEM STATEMENT

It has been observed that South African students and more importantly those at the Further Education and Training colleges (FET) are preoccupied with the hunt for non-available government jobs, forgetting about the creative and innovative potential they have to be self-employed. Creativity and innovative techniques are important tools that can prepare students to set up their own businesses and to become entrepreneurs. Much research has been done on creativity and innovation but little emphasis has been placed on how to articulate this and prepare students to start their own businesses and become entrepreneurs. This study will investigate why with much creativity and innovative techniques available, students are unable to use these techniques to generate ideas and to prepare themselves for entrepreneurship.

The main purpose of this study is to enable students to apply their creative and innovative ideas when preparing for entrepreneurship. Students often do not see themselves as creators and innovators. The research problem therefore is: **How can students be empowered to use their own creative and innovative ideas to prepare themselves for entrepreneurship?** 

### 1.3. SUB-PROBLEMS

In order to develop a research strategy to deal with and solve the main problem, the following sub-problems have been identified:

- What creative and innovative techniques are revealed in literature that will prepare someone to become an entrepreneur?
- What innovative and creative techniques do successful entrepreneurs and other experts believe will prepare a person for entrepreneurship?
- How can the results obtained from the resolution of sub-problems 1 and 2 above be integrated into a model of creative and innovative techniques that will prepare a person to become an entrepreneur?

## 1.4. **RESEARCH OBJECTIVES**

This section provides the primary and secondary objectives of the study.

## 1.4.1. Primary research objective

The primary objective of this study is to determine creative and innovative techniques that will prepare final-year students at the Esayidi Further Education and Training College (FET) for entrepreneurship.

## 1.4.2. Secondary research objectives

To help achieve the primary objective, the following secondary objectives have been formulated:

- To help students understand and use various models of creativity and innovation that will prepare them to become entrepreneurs.
- To undertake a theoretical and empirical investigation into creative and

innovative techniques that will prepare students to become entrepreneurs.

• To help students understand creative problem-solving processes and techniques to think creatively to generate new business ideas.

## 1.5. DEFINITION OF SELECTED CONCEPTS

Welman, Kruger and Mitchell (2005:20) advance the notion that concepts are the building blocks of any theoretical model. They describe a concept as an abstraction representing an object, a property or certain phenomenon. In this view therefore concepts serve as the foundation of communication, introduce a perspective, provide a means of classification and generalization and are components of theory. This view is shared by Cooper and Schindler (2006:36) who regard a concept as a generally accepted collection of meanings or characteristics associated with certain events, objects, conditions, situations and behaviours. The concepts of this study are:

## 1.5.1. Creativity

According to Mumford (2003:110), creativity embodies the production of novel, useful products. A creative individual solves problems, fashions products, or poses new questions within a domain in a way that is initially considered to be unusual but is eventually accepted within at least one cultural group (Gardner 1994:145). Liep (2001:2) defines creativity as an activity that produces something new through the recombination and transformation of existing cultural practices or forms. According to Fischer, Giaccardi, Eden, Sugimoto, and Ye (2005:482), much human creativity is social, arising from activities that take place in a context in which interaction with other people and the artefacts that embody collective knowledge are essential contributors. Creativity is also the achievement of something remarkable and new, something which transforms and changes a field of endeavour in a significant way and the kinds of things that people do that change the world (Feldman, Cziksentmihalyi & Gardner 1994: 1).

Moreover, it is the exceptional human capacity for thought and creation (Rhyammer &

Brolin 1999: 261). Creativity is 'a person's capacity to produce new or original ideas, insights, restructurings, inventions or artistic objects, which are accepted by experts as being of scientific, aesthetic, social, or technological value'(Vernon 1984:94). Also it is the ability to produce new knowledge (Dacey & Lennon 2000).

### 1.5.2. Innovation

Innovation is a change that creates a new dimension of performance (Druker 1985:72). McDaniel (2002:57) describes "innovation" as a process whereby the entrepreneur uses an existing invention to make something new or to make things differently. Innovation is the sum of invention plus the commercialization of that invention (Ireland, Hitt, Camp & Sexton 2001:56). According to Jun and Deschoolmeester (2003:4), the entrepreneurs' innovativeness is demonstrated by their willingness and capability to create a paradigm shift in science and technology and/or market structure in an industry from a macro perspective. Innovation refers to the implementation or "transformation of a new idea into a new product or service, or an improvement in organization or process" (Heye 2006:253).

### 1.5.3. Entrepreneur

Allan (1999:817) defines entrepreneurs in general terms as individuals who are eager to take risks, possess animal spirit, with an urge to quest for self-realization, independence and prosperity. An entrepreneur is someone who is prepared to undertake risk, establish a new business venture, and offer new or existing products in order to make a profit (Bann 2009:1). Johnson (2001:365) defines an entrepreneur as an individual who takes responsibility for and ownership in creating a business venture. Hellriegel and Slocum (1996:708) describe the entrepreneur as the label that is usually given to someone who creates new business activity in the economy. Another viewpoint is that the perception and exploitation of an opportunity as well as the creation of an organisation are of utmost importance to entrepreneurs (Reitan 1997:3; Druker 1985:25 &Timmons 1999:41). According to Shapiro (1981) as quoted in Reitan (1997:2), the potential entrepreneur

surfaces and takes the initiative when an opportunity presents itself. However, seizing the opportunity must coincide with the willingness and ability to take advantage of the opportunity. Wickham (1998:43) cautions by asserting that entrepreneurs are not robots blindly fulfilling an economic function, but they operate within societies that define and are defined by culture.

## 1.5.4. Entrepreneurship

According to Shane and Venkataraman (2000:218), entrepreneurship is how and by whom opportunities to create future goods and services are discovered, evaluated, and exploited. Entrepreneurship is seen by Timmons (1999:27) as the starting of a business (utilizing of an opportunity) and/or the growth and development of that specific business. Entrepreneurship is defined as the transformation of innovation into a new product, service or business; this is done in order to take advantage of a market opportunity (Drost 2010:28). Fatoki (2011:161) defines entrepreneurship as a dynamic process of wealth creation by individuals or by a group of individuals.

## 1.6. DELIMITATION OF THE RESEARCH

According to Collis and Hussey (2003), delimitation explains how the scope of a study is focused in one particular area. Also delimitation involves the factors that will narrow the scope of the proposed study and thus are integral parts of the design of the study (Mauch & Park 2003:115). Three delimitating items associated with this study are:

### 1.6.1. Institution

The study will be limited to researching models of creative and innovative techniques that will prepare final-year students at the Esayidi Further Education and Training College to become entrepreneurs, which could then be generalized to all Further Education and Training Institutions in South Africa (FET).

### 1.6.2. Participants

This study will target fifty (100) respondents who are entrepreneurial experts from the Sisonke District of Kwazulu-Natal. Much emphasis in this study will be on the uses of structured in-depth interviews with the selected participants, and open-ended questions will be used to facilitate this research.

### 1.6.3. Geographic

The study will be conducted in the Sisonke District of KwaZulu-Natal Province which comprises Kokstad, Harding, Umzimkhulu and Ixopo. It is expected that the findings of this study will prepare these students to become entrepreneurs and then further be generalised to all students.

## 1.7. KEY ASSUMPTIONS

It is assumed that:

- All final-year students at the further education and training colleges do not have the creative and innovative techniques to set up their own businesses in order to become entrepreneurs after graduation.
- All final year students are potential entrepreneurs.
- There is not much information on the need for students to be part of the Small and Medium Scale Enterprises in South Africa which is a catalyst to become an entrepreneur.

## 1.8. SIGNIFICANCE OF THE STUDY

Successful entrepreneurs come in various ages, at different income levels, in different genders and races. They differ in education and experience, but research indicates that most successful entrepreneurs share certain personal attributes which include creativity.

The relevance of this study when completed is that it will help students at the Esayidi FET College and those in other schools in South African to create and invent ideas that will enable them start up their own businesses in order to become entrepreneurs. This will also contribute to the growth of Small and Medium Scale enterprises in South Africa since such businesses will be established. It will also help ease pressure on the few non-available government jobs, because students can use this study as a guide to establish jobs for themselves. Finally, it will help teachers and trainers in their quest for imparting and improving knowledge in their areas of expertise.

### 1.9. RESEARCH DESIGN AND METHODOLOGY

According to Welman and Kruger (2001:6), research design is the plan according to which research participants are obtained for the purpose of collecting information. Leady (1997:3) shares the same opinion, stressing that the design process includes the visualization of the data and the problems that are envisaged with the use of that information in achieving the results of the research project. According to Cooper and Emory (1995:14), research design constitutes the blue print for the collection, measurement and analysis of data; it forms the plan and structure of the study to obtain appropriate answers to the research questions. Research procedures which the study will follow to investigate the primary and secondary objectives are presented by means of a:

#### 1.9.1. Literature study

In order to realise the objectives of this study, a relevant literature review examining creative and innovative techniques which will enable students to become entrepreneurs will be conducted. Students will also become acquainted with models of creativity and innovation which will prepare them for entrepreneurship, thus providing a conceptual framework for this research. The sources of information will be such as books, journal articles, electronic database, the internet, theses, and other relevant sources.

### 1.9.2. Empirical Study

The empirical study will consist of the following:

#### 1.9.2.1. Population

The population of this study – in order to carry out the empirical study – will be the entrepreneur expectations in the Sisonke District of the KwaZulu-Natal Province, South Africa. Some of the towns in this district are Kokstad, Umzimkhulu, Harding, and Ixhopo.

### 1.9.2.2. Sample

A minimum of fifty entrepreneurial experts will be selected from the Sisonke District. This will involve small business owners, teachers of entrepreneurship, graduate students of entrepreneurship and other experts. They will help test the new model of creativity and innovation and express their opinions on whether it will prepare students for entrepreneurship.

#### 1.9.2.3. Survey interview Questions

In order to obtain empirical perspectives, a survey questionnaire will be designed from the literature review on the new model of creative and innovative techniques analysis and sent to the individual experts directly on hard copy for their answers. Questions will form a basis of gathering information by being asked during structured interviews. All questions will be prepared in advance in the form of an interview schedule. This will be conducted with the Entrepreneur Experts in the Sisonke District of KwaZulu-Natal for their views and opinions on the new Model and the extent to which it will prepare students to become entrepreneurs.

#### 1.9.2.4. Measuring instruments

The questionnaire will be created by means of Windows Word document and the information provided will be systematically captured on a spreadsheet. The objective here is to develop a model of creative and innovative techniques that will prepare final year students to become entrepreneurs.

#### 1.9.2.5. Data Analysis

Statistical analysis is broadly classified as either descriptive or inferential (Beins & McCarthy 2012:106). Descriptive statistics enable researchers to numerically organise and summarise information obtained from a sample. This type of statistics may include the construction of graphs, charts, and tables, as well as the calculation of the measures of central tendency (e.g. mean, median, and mode) and dispersion (e.g. range and standard deviation). By comparison, the use of inferential statistics enables researchers to draw conclusions about a population based on information obtained from a sample. Inferential statistics may take the form of parameter estimation and hypothesis testing (Weiss 2012:4). In the case of this study, data will be analyzed by the use of descriptive statistics. This will help analyze the views and opinions of the experts on how the model of creative and innovative techniques will prepare final year students to become entrepreneurs.

#### 1.10. STUDY OUTLINE

The rest of the research study consists of five chapters which are organised as follows: **Chapters Two and Three** will elaborate on the study's theoretical framework and will provide a literature overview of creative and innovative entrepreneur techniques under consideration and entrepreneurship at large.

Chapter Two: Creativity and Creative techniques

Chapter Twowill focus on creative and innovative techniques, the meaning and conditions of creativity, concepts and definitions of creativity, creativity tools and techniques, how to boost creativity in psychological perspective, blocks to creativity and creativity models in order to prepare students to become entrepreneurs.

**Chapter Three:** The Development of a model that will prepare students to become entrepreneurs. Chapter Three will deal with entrepreneurship and its characteristics, entrepreneurial innovation, types, sources and process of innovation, the link between creativity and innovation, a model of creativity and innovation techniques, an implementation model of creative and innovative techniques that will prepare students to become entrepreneurs.

Chapter Four: Research design and Methodology

Chapter Four will outline the research methodology, which includes the research paradigm, sampling design, data collection, data analysis, and measuring instruments.

Chapter Five: Empirical results and data analysis

Chapter Fivewill present and discuss the study results and findings obtained.

Chapter Six: Conclusion and Recommendation

Chapter Six will conclude the study, summarise and give recommendations. The conclusion will be based on both the literature study and empirical findings.

## 1.11. SUMMARY AND CONCLUSION

The aim of Chapter One was to place the current study into perspective by stating the problems of the research along with the primary and the secondary research objectives. The remaining chapters will aim at achieving the objectives of the study. The next chapter presents the concepts of creative and creativity techniques that will prepare final year students to become entrepreneurs.

### **CHAPTER TWO**

# CREATIVITY AND CREATIVE TECHNIQUESTO PREPARE STUDENTS FOR ENTREPRENEURSHIP

#### 2.1. INTRODUCTION

In Chapter One, the background to the problem statement, delimitation of the research, the importance of the study, objectives and concepts were discussed. This chapter addresses what literature reveals are creative techniques and which creative techniques do successful entrepreneurs and other experts believe will prepare a person for entrepreneurship. The chapter will review creativity, define concepts, meaning and conditions of creativity. Creative tools and techniques will be reviewed. The chapter will close with a review of creative models from creative experts that will prepare students to become entrepreneurs. According to Welman, Kruger and Mitchell (2005:39) a reviewof related literature can provide the researcher with important facts and background information about the subject under study. A review will also help a researcher to develop various parts of the study. Fisher (2010) also states that a literature review is conducted to critically assess the existing body of knowledge as regards the constructs of the proposed study, and to assist the researcher to build on the existing body of knowledge. Echambadi, Campbell and Anganwal (2006) posited that constructs are the basic building blocks which connect theory development to testing. In order to understand how this overview will help students to become entrepreneurs, the areas identified will be given sub-headings in detail.

### 2.2. DEFINITION OF CONCEPTS

The concepts in this chapter are explained below:

#### 2.2.1. Creative problem solving

According to Titus (2000:225) creative problem solving (CPS) is a special case of

problem solving, it involves transforming one's knowledge through a number of stages to reach creative outcomes. It develops solutions to problems that may be ill-defined and are heuristic (that is, not 'standard' in nature) and need to be solved without using known algorithms. They include tasks such as writing a paper or solving a mystery. These problems allow creative expression in their resolution. The solver needs to develop solution pathways that are both novel and appropriate to the task at hand (Amabile 1983:357). The CPS process requires methodical, disciplined and sustained thinking (Couger 1995; Gilbert, Prenshaw & Ivy 1996). Creative problem solving is the mental process of searching for a new and novel creative solution to a problem, a solution which is novel, original and not obvious.

### 2.2.2. Creative thinking

Onda (1994) argued that creative thinking is a set of divergent and convergent thinking. He defined creativity as something that consists of creative abilities that produce something original and viable and creative personalities that support the abilities (Onda 1994:99). He further explains that creative abilities are made up of creative thinking and creative skills. According to him, creative thinking consists of divergent and convergent thinking. Similarly, Treffinger, Isaksen, and Dorval (2000:7) described creative thinking as a divergent process – they view creative thinking as divergent thinking itself. They further state that in the process of creative thinking, we begin at a single point or with a single question, but extend our search in many different directions, thereby generating a wide variety of new possibilities.

Also Nickerson (1999:392) observes that creative thinking is the generating step of original and novel options; which is followed by critical thinking that evaluates what creative thinking offers and makes a selection for further consideration. Puccio and Murdock (2001:70) state that creative thinking is a rational process that enables people to successfully produce novel and useful responses to open-ended challenges and opportunities. According to Amabile (1998:79), creative thinking refers to howpeople approach problems and solutions i.e. their capacity to put existing ideas together innew combinations. The skill itself depends to an extent on personality and how an individual

thinks and works.

## 2.2.3. Creative Techniques

According to Sefertzi (2000:3) concrete creativity supporting techniques are developed to promote and generate creativity, to break fixed ideas, to stimulate imagination as well as to define the conditions in which creativity takes place (the creative environment or climate). Creativity techniques can be classified into seven categories depending on the methods and means utilized according to Zusman and Zlotin (1998:1). Traditionally, techniques belonging to the first five categories were psychology-based. Today, with the development of knowledge-based approaches (groups 6 & 7); the first five categories may be combined with knowledge as well. A growing number of psychologists are supporting the idea that the seven categories can increase creativity in an individual. The seven categories are listed below:

- **Conditioning/motivating/organising techniques**: These techniques help create an environment that facilitates the removal of various mental blocks and unleashes natural creativity.
- **Randomization**: These techniques force individuals to make more random attempts to solve a difficult problem and to move "outside the box" of their preconceived perceptions and assumptions.
- **Focusing techniques**: These techniques include special focusing techniques to help an individual focus on one issue at a time and avoid frustration.
- **Systems**: A system contains a set of focusing or random steps to be followed in a specific order.
- **Pointed techniques**: These techniques offer single or multi-step recommendations following a pre-determined, promising direction. This direction may be identified as useful based on intuition, experience or documented knowledge.
- **Evolutionary directed techniques**: These techniques offer directions according to fundamental patterns of evolution.
- Innovation knowledge-base techniques: These techniques utilize structured

knowledge resulting from the past human innovation experience.

### 2.2.4. Models

According to David (1996:1) a Model is a representation containing the essential structure of some object or event in the real world. Harcourt (2010:1) states that a model is a systematic description of an object or phenomenon that shares important characteristics with the object or phenomenon. Scientific models can be material, visual, mathematical, or computational and are often used in the construction of scientific theories. David (1996) stressed further that the representation may take two major forms:

- Physical, as in a model airplane or architect's model of a building.
- Symbolic, as in a natural language, a computer program, or a set of mathematical equations.

He also states that the knowledge and understanding that the scientist has about the world are presented in the form of models. Of the two types of models, physical and symbolic, the latter is used much more often in science. Symbolic models are constructed using either a natural or formal language, example English, German, and Spanish (Kain 1972). With regards to this study the symbolic model will be used to describe how creative and innovative techniques will prepare final year students to become entrepreneurs.

### 2.3. CREATIVITY OVERVIEW AND MEANING

Theories and ideas about creativity stem from far back in history, unsurprising as Ryhammer and Brolin (1999:260) point out that the development of new ideas and original products is a particularly human characteristic. The notion of 'inspiration' or 'getting an idea' is found in the Greek, Judaic, Christian and Muslim traditions and is founded on the belief that a higher power produces it. During the Romantic era in Europe, the source of inspiration and its artistic expression was seen as being the human being. During this era, originality, insight, the creative genius and the subjectivity of feeling were
highly valued. From the end of the nineteenth century, people began to investigate the question of what fostered creativity. It is important for students to identify these ideas and notion in order to think creatively to become entrepreneurs.

According to Bruce and Bessant (2002:32) creativity is the willingness to join ideas in new ways to solve problems and exploit opportunities, while the successful using of new ideas in the form of new or improved products, services or processes serves as innovation. Furthermore, creativity is the application of knowledge and skills in new ways to achieve a valued goal. To achieve this, learners must have four key qualities: the ability to identify new problems, rather than depending on others to define them, the ability to transfer knowledge gained in one context to another in order to solve a problem, a belief in learning as an incremental process, in which repeated attempts will eventually lead to success, and the capacity to focus attention in the pursuit of a goal, or set of goals (Seltzer & Bentley 1999: 10). These will enable entrepreneurship.

Similarly The National Curriculum Handbook (1999:3) describes that creative thinking skills enable pupils to generate and extend ideas, to suggest hypotheses, to apply imagination, and to look for alternative innovative outcomes. Also entrepreneurial creativity requires a combination of intrinsic motivation and certain kinds of extrinsic motivation – a motivational synergy that results when strong levels of personal interest and involvement are combined with the promise of rewards that confirm competence, support skill development, and enable future achievement (Amabile 1997:18). Similarly, Csikszentmihalyi (1999:313) interprets creativity as a systemic process consisting of individuals originating the idea, the gatekeepers who represent the field or society, and the culture or domain within which creativity occurs. These factors then interact in order to interrogate and validate the new ideas. According to Mumford (2003:110), creativity embodies the production of novel, useful products. There is the need for students to come out with something novel, and present a useful product creatively to the society they find themselves in, before – and continuing after graduating as entrepreneurs. Also a creative individual solves problems, fashions products, or poses new questions within a domain in a way that is initially considered to be unusual but is eventually accepted within at least one cultural group (Gardner 1994:145). Additionally, Liep (2001:2) defines creativity as an activity that produces something new through the recombination and transformation of existing cultural practices or forms. According to Fischer, Giaccardi, Eden, Sugimoto, and Ye (2005:482), much human creativity is social, arising from activities that take place in a context in which interaction with other people and the artifacts that embody collective knowledge are essential contributors. Also creativity is the achievement of something remarkable and new, something which transforms and changes a field of endeavour in a significant way and the kinds of things that people do that change the world (Feldman, Cziksentmihalyi & Gardner 1994: 1).

Moreover, it is the exceptional human capacity for thought and creation (Rhyammer & Brolin 1999: 261). Creativity is 'a person's capacity to produce new or original ideas, insights, restructurings, inventions or artistic objects, which are accepted by experts as being of scientific, aesthetic, social, or technological value (Vernon 1984: 94). Students need these talents and ideas to prepare themselves in order to become entrepreneurs.

Furthermore, creativity is the ability to produce work that is both novel (original, unexpected) and appropriate (useful, adaptive concerning task constraints), (Sternberg 1999: 3). According to Moultrie and Young (2009:300) creative acts should correspond to a known situation, they refer to creativity as the production of ideas which are both novel and applicable to an identified opportunity. Also Perry-Smith and Shalley (2003:89) develop the value perspective by arguing that creativity is continuous, so the outcome is more or less creative– not either or. Creativity is some alteration in the recessive schema of an individual, a group, or an organization that leads to a change in the dominant schema that then turns out to improve fitness (Stacey 1996: 286). Students need this to become entrepreneurs to increase the small and medium scale enterprises in South Africa.

According to Dahlberg (2002:1) creativity is an ability to respond adaptively to the needs for new approaches and new products. It is essentially the ability to bring something new into existence purposefully, though the process may have unconscious, or subliminally conscious, as well as fully conscious components. Novel adaptation is seen to be in the service of increased flexibility and increased power to grow and/or to survive. The 'something new' is usually a product resulting from a process initiated by a person. Creativity has been viewed as the construction of ideas or products which are new and potentially useful (Amabile 1988:123), although in an entrepreneurial sense there should also be a subsequent link to innovation and profitability in monetary and social terms. Similarly, creativity can also be judged in terms of the amount of imagination utilised in solving problems (McFadden 1998:309). Individual creativity within an organisation contributes to overall competitive advantage and organisational innovation, while teams or groups of creative individuals increase this advantage further (Hirst, Van Knippenberg, & Zhou 2009:281).

It can be observed that this individual creativity will enable entrepreneurship. Young (1985:77) defines creativity as the actualising of our potential, involving the integration of our logical side with our intuitive side. It can involve an advance in thought but may also retain links with the past. Ford and Harris (1992:186) believe it to be a modifiable and deliberate process which exists to some degree in everybody.

Also, Filipczak (1997:32) promotes the need to have both adaptive and innovative creative individuals. Creative adaptation concerns the reworking of existing ideas and concepts, while innovative creativity relates to the invention of new and different ideas. These when evident will enhance students' ability to set up their own enterprises to become entrepreneurs. Akehurst, Comeche, and Galindo (2009:277) believe that, instead of focusing on individual talent, the heads of organisations should be more concerned with creating and sustaining an internal environment which is supportive of collective creativity and innovation. This achievement can also be through setting up ones own business and thereby becoming an entrepreneur.

However, entrepreneurial creativity exists before, during and after the lifetime of a particular business since it is shaped in part by the social world and by the individual decision maker (Fillis & Rentschler 2006). Entrepreneurial creativity has been defined as

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the generation and implementation of novel, appropriate ideas to establish a new venture (Amabile 1997:18). This definition can be found alongside much entrepreneurship literature on new venture formation (Hisrich 1992:53; Woo & Daellenbach 1994:507). This implies that with creativity, students will be able to form their own business venture in order to become entrepreneurs. Creativity is however something that is impossible to define in words (Bohm 1998:1). According to Reid and Petocz (2004:42) creativity is viewed in different ways in different disciplines: in education it is called 'innovation'; in business 'entrepreneurship'; in mathematics it is sometimes equated with 'problem-solving', and in music it is 'performance or composition'. The World Conference on Higher Education proclaimed creativity as 'an innovative educational approach' in Article 9 of their statement of Missions and Functions in Higher Education (Reid & Petocz 2004: 51).

Similarly, Cannatella (2004:59) mentions that the need for creativity is biologically, physically, and psychologically an essential part of human nature, and that it is necessary for human reproduction, growth and cultural striving. Moreover Clarkson (2005:6) observes that there are many traits which have been associated with creativity, such as divergent thinking, introversion, self-esteem, tolerance for ambiguity, willingness to take risks, behavioural flexibility, emotional variability, ability to absorb imagery, and even the tendency to neurosis and psychosis.

Based on the various meanings and explanations given above, A creative individual can be defined as a person who is able to use his own power, time, knowledge, opportunity and imagination to deliver a product or service that satisfies human needs. It can be observed that when students possess these traits, they may be able to create and deliver new products in their attempt to set-up their own business as entrepreneurs.

## 2.4. SOURCES OF CREATIVITY

According to Adams (2005:4) cognitive psychology provides the most prolific and developed perspective on sources of individual creativity. In 1950, J.P. Guilford, then President of the American Psychological Association, stated in his presidential address

that the topic of creativity deserved greater attention. Following this seminal call to action, psychological research on creativity expanded significantly. These efforts have concentrated on the cognitive process behind creativity, the characteristics of creative people, the development of creativity across the individual life span, and the social environments most conducive to creativity (Simonton 2000 :1). Amabile (1999:4) has provided the field with one of the most simple and yet comprehensive frameworks for the topic. According to Amabile (1999:4) creativity arises through the confluence of three components, which will be used to explain the sources of creativity for this study. The three components are:

- Knowledge: All the relevant understanding an individual brings to bear on creative effort.
- Creative thinking: Relates to how people approach problems and depends on personality and thinking/working style.
- Motivation: Motivation is generally accepted as key to creative production, and the most important motivators are intrinsic passion and interest in the work itself (Adams 2005:4).

The diagram (2.1) below depicts Amabile's models of creativity as explained above.

FIGURE 2.1 THE THREE COMPONENTS OF CREATIVITY



Source: Adapted from Amabile (1999:4)

## 2.4.1. Knowledge

Amabile (1999:4) describes knowledge as all the relevant information that an individual brings to bear on a problem. According to Gardner (1994:233), there are two types of knowledge that may be required for creativity. On one hand, in-depth experience and long-term focus in one specific area allows people to build the technical expertise that may serve as a foundation, or playground for creativity within the domain. According to Adams (2005:5), creativity rests on the ability to combine previously disparate elements in new ways, which implies a need for a broader focus and varied interests. According to McMullan (2007:34) there are 5 specific types of knowledge that are useful underpinnings for entrepreneurial creativity. Other types of business knowledge are not important –

which are, selling know-how, negotiation know-how, knowledge of the competition, knowledge of the industry and core technology know-how. Also Okpara (2007:4) observes that expertise encompasses everything that a person knows and can do in the broad domain of his or her work, knowledge and technical ability. Moreover Johansson (2004:104) ascribes that the best profile for creativity is the T-shaped mind, with a breath of understanding across multiple disciplines and one or two areas of in-depth expertise. He explains that we must strike a balance between depth and breadth of knowledge in order to maximize our creative potential. These together will contribute to the creative ability of students, which will enable them to become entrepreneurs.

## 2.4.2. Creative Thinking

According to Amabile (1999:4) creative thinking skills embraces all cognitive creative processes; for example, inspiration, imagination, flexibility and combining the non-conventional into a novel idea. Similarly Okpara (2007:4) ascribes that creative thinking refers to how you approach problems and solutions, the capacity to put existing ideas together in new combinations. The skill itself depends quite a bit on personality as well as on how a person thinks and works. Both Amabile and Gardner assert that creative thinking is a key aspect of the creative process; they address this topic at a high level. Amabile suggests that key aspects of creative thinking are:

- 1. Comfort in disagreeing with others and trying solutions that depart from the status quo.
- 2. Combining knowledge from previously disparate fields.
- 3. Ability to persevere through difficult problems and dry spells.
- 4. Ability to step away from an effort and return later with fresh perspective (incubation).

This implies that students will be able to set themselves up and become entrepreneurs when they are able to approach ordinary and complex problems such as new product designs, packaging, branding and so forth creatively, and throughout the process involved a new product will evolve, from idea generation to final commercialization.

## 2.4.3. Motivation

According to Amabile (1998:1157) people will be most creative when they are primarily intrinsically motivated by the interest, enjoyment, satisfaction, and challenge of the work itself. This intrinsic motivation can be undermined by extrinsic motivators that lead people to feel externally controlled in their work. Intrinsic motivation is essential in channeling the passion and interest of creative personnel in an organisation that carry out a task because they feel they enjoy the challenge of it. Individuals are extrinsically motivated when an additional goal is reached which is separate from the act of doing the work, or when a constraint imposed by an extrinsic source is overcome.

Similarly Okpara (2007:4) states that people become more creative when they feel motivated primarily by the interest, satisfaction, and challenge of the situation and not by external pressures; the passion and interest, a person's internal desire to do something unique to show-case himself or herself; the person's sense of challenge, or a drive to crack a problem that no one else has been able to solve.

According to Antonites (2003:81) the model suggests that the creative person is a function of "expertise", "creative thinking skills" and "motivation". The combination and integration of these variables results in creativity. Moreover students will be encouraged to create ideas when they are motivated at school, workplace during vacation and at their various homes; there should be words of encouragement for them to persevere in becoming entrepreneurs – after and before graduation.

## 2.5. CONDITIONS OF CREATIVITY

Research into creativity has generally been concentrated on a description of the creative individual and on the identification of the sufficient – or at least necessary conditions for creative production. A number of biographers have taken great pains to research the lives

of internationally recognized creators, in an attempt to identify and describe those attributes which have distinguished acknowledged creative producers from the great mass of humanity (Drevdahl 1956:21; Mackinnon 1962:484). However, biographical studies are often fraught with ambiguity. It remains to be proven that the Eureka phenomenon and the peculiar personality characteristics identified and emphasized by the biographers are really those conditions which are necessary for creativity. For example great emphasis has been laid upon the tension within the innovator during the creative act culminating in a sudden solidification of Gestalt, the social withdrawal and rejection of others, and his general irritability. On the contrary, it may be that the creative act is a slow and arduous reorganization of ideas or that the stressed personality characteristics exist just as commonly in non creative individuals but are not as strongly emphasized in their biographies.

Finally other people in the general population may have as much or even more of particular talents necessary for creative production, but lack other conditions which must synthesize with existent ones to allow potential creativity to emerge. A good example of such a characteristic may be that persistence may never allow the emergence of the potential. Yet, biographies of creative innovators may yield valuable clues which could be followed up in laboratory or classroom studies. But follow-up is impossible until some common agreement on the definition of the concept of creativity is reached. Ausubel (1964:344) defines the creative individual as one who must make or be capable of making, a unique discovery that is different in kind from ordinary expressions of creativity. This definition precludes the study of the creative individual in a laboratory or classroom situation of 100 or 1 000 pupils; hope to stumble over the unequally different creative individual? And, how is one to recognize that this creative product is different in kind from ordinary expressions of creativity? Therefore laboratory and other controlled classroom studies must, perforce, limit themselves to the assessment of ordinary expressions of creativity that is the identification of a response in a structured sample of stimulation, which is original within the sample of subjects studied.

This may, of course distort the meaning of creativity in another direction; for it assumes that creativity is normally distributed throughout the population and that any random

sample may include a share of the upper portion of the distribution.

The gain from this approach is the ability to locate all members of a sample along a continuum of creativity. Since most of the other characteristics which one wishes to identify are also measurable along a continuum, one has the opportunity to examine the possible concurrence of some or all of these characteristics, together with originality of response. In a number of research centers in the USA, psychologists have examined large groups of people with the goal of discovering those personality traits which correlate with creativity.

For example, Barron at Berkeley described the person with the disposition towards creativity as more observant, independent on his cognitions, having a greater brain capacity which allows him to make richer syntheses; more sensitive and possessing a stronger ego (Barron 1963:3). In another paper, he presented results which suggested that the simple person (one who refers to low-complex and symmetrical stimulation) is not flexible in thought, stubborn, pedantic, unbending, ethnocentric and politically conservative, while the complex person (one with a high disposition towards creativity) tends to be social, dissident, pessimistic, impulsive, independent of judgment and with a high personal tempo (Barron 1963:139). Research into the area of curiosity, both as a motivational factor and as personality traits, has led the senior author to compare closely Derlyne's description of curiosity (Derlyne 1963) with one of Barron's measures of creativity, the Barron-Welsh Art Scale (BWAS).

From the results of a number of experiments, there are reasonable grounds for believing that both Barron and Derlyne are dealing with similar concepts and using similar stimulus materials, while naming the response differently; Derlyne calling preference for complexity and asymmetry as part of the disposition to be creative. Students who seek to identify personality as correlating creativity have focused upon the relationship of intelligence to creativity. (MacKinnon 1962:484) argues that there is an apparent correlation in the entire ranges of intelligence and creativity, but that the magnitude of the correlation varies greatly at different levels of intelligence. It is generally accepted that creativity and intelligence may become independent only after some relatively high 10

level has been exceeded (Vernon 1964:163).

Thus we are led to the conclusion that intelligence may be a necessary condition for creativity and that creative potential requires minimal level of intelligence. Research into the relationship between curiosity and creativity has been summarized in a paper by the senior author (Day 1968:37). He pointed to the findings of positive correlations between scores of various tests of curiosity with scores of various tests of creativity.

## 2.6. DIFFERENT KINDS OF CREATIVITY

The literature on creativity is sparse, but it is becoming apparent that there may be several kinds of creativity. Donald and MacKinnon (2005:290) have outlined three different kinds of creativity used as a basis for research at the Institute of Personality Assessment and Research Laboratory (IPAR), Berkeley, California.

- The first is artistic creativity, which reflects the creator's inner needs, perceptions and motivations.
- The second type is scientific and technological creativity, which deals with a certain problem in the environment and results in novel solutions but exhibits little of the inventor's personality.
- The third type is hybrid creativity, found in such fields as architecture that exhibits both a novel problem solution and the personality of the creator.

In studying creativity, the IPAR group, along with most other research groups that have investigated this process, have assumed that all kinds of creativity share common characteristics, and these assumptions seem to be true. It appears that most creative persons are relatively uninterested in small details or facts for their own sake; that they are more concerned with meaning and implications. Creative people have considerable cognitive flexibility, communicate easily, are intellectually curious, and tend to let their impulses flow freely (MacKinnon 2005: 308). However there will be no doubt those creative ideas will prepare learners and students to become entrepreneurs.

# 2.7. BLOCKS TO CREATIVITY

In order to think creatively and for students to become entrepreneurs there is the need to identify obstacles that will prevent students from thinking creatively. This will help students to adjust themselves well to formulate ideas in order to set up businesses and become entrepreneurs. According to Learnets (2013), creative blocks are explained with a metaphor i.e. a road. The road to a creative solution is treacherous and frequently dotted with obstacles. These obstacles are the creative blocks that must be avoided to achieve an end. Similarly, Ogilvy according to Adams (1974:13-74) identifies several blocks to our creative thinking. He breaks these into four basic groups to aid our understanding:

- Framing and Perceptual Blocks
- Cultural and Environmental Blocks
- Emotional Blocks
- Intellectual and Expressive Blocks

# 2.7.1. Framing and Perceptual Blocks

According to Learnets (2013) this also refers to observational blocks and these are obstacles which prevent people from seeing a problem or understanding information required to solve a problem. He states further that people constantly look, but do not always see everything, the prime reason is because people have difficulties defining the problem, or fail to obtain enough information to be able to solve the problem. Adams (1974) describes six types of perceptual blocks:

- 1. Difficulty in Isolating the Problem
- 2. Tendency to Delimit the Problem Too Closely
- 3. Inability to See the Problem from Various Viewpoints

- 4. Seeing What You Expect to See Stereotyping
- 5. Saturation
- 6. Failure to utilize all Sensory Inputs.

People are familiar with these perceptual blocks. We can spend hours, even days failing to see the obvious. Then when it hits us, we cannot believe how easy the solution really is. We are struck with the "blinding flash of the obvious". The problem of seeing what you expect to see – stereotyping – plagues all of us. According to Learnets (2013), the problem with stereotypical perception is that it limits creativity. Moreover Adams observes that, in working with quality improvement teams we see this all the time. It seems especially prevalent in high-tech companies. People in these companies are so accustomed to finding technology solutions that they sometimes overlook the simple, management or procedural solutions that quality improvement can lead to. One team in a chemical company "knew" they had the right solution to a problem of a valve not tripping when it was supposed to.

There wasn't sufficient air pressure coming through the one-inch pipe from the compressor. The solution was "obvious". Buy a bigger compressor. But the new compressor was quite expensive, almost \$100,000 and required additional staff to maintain it. When the team decided to look for alternative solutions, one became clear, i.e. use a four-inch pipe in place of the one-inch pipe. The problem was really not pressure, but airflow. The larger pipe enabled the current compressor to trip the valve easily. If the team had easy access to the money needed for the new compressor, that is the solutions to all problems: more money, more staff, or more computers. Saturation can take place in many ways with all of our sensory modes. An exercise used by many quality team instructors illustrates this. I first saw it used in New England Telephone. The problem is simple: draw the telephone touchtone pad with all the numbers, letters and \* and # in the correct positions. We all use this simple device every day of our lives, but few people get this exercise correct. In fact, even in New England Telephone, it took many months before the first person got it right.

On the other hand, when they let people work together as a team of four or five people, they always got it exactly right. Different people remembered different things, and knew that they knew and were able to convince the others. This makes an important point that will be discussed later. The power of a team to be creative almost always exceeds the power of the individual. Also the sixth perceptual block Adams discusses is the failure to utilize all sensory inputs. Too often in a business situation we tend to limit our sensory inputs to sight and sound. Taste, smell and touch are rarely used. These need to be observed to be creative. During a benchmarking visit years ago, AT&T managers were shocked when one of the Japanese executives actually tasted the solder compound to see what kind of flux AT&T was using.

## 2.7.2. Cultural and environmental blocks

Adams (1974) discusses many different cultural and environmental blocks which prevents us from thinking creatively. According Learnets (2013), an environmental block refers to problems which are created by the culture one lives in and the immediate environment. This needs to be observed by students desiring to become entrepreneurs. According to Liu (no date: 6) the social and culture environment may hinder the production and recognition of creative alternatives. The cultural blocks he gives, at least for those in our culture are:

- Taboos, according to Learnets (2013) the way people are raised and educated ensures we have certain patterns of thinking and behaviour. Taboos are positive in a certain way as they protect society against unacceptable thoughts and deviant behaviour.
- Fantasy and reflection are a waste of time, lazy, even crazy. According to Liu (no date: 8) reason and logic versus humor, fantasy and artistic thinking, that is feelings, intuitions, and emotions are depreciated in business problem solving. Also valuable insights and understanding come from analytical exercises, yet valuable cues and ideas can arise by admitting and examining feeling, intuitions, and emotions.
- Playfulness is for children only.

- Problem-solving is a serious business and humor is out of place.
- Reason, logic, numbers, utility, practicality are good; feeling, intuition, qualitative judgments, pleasure are bad.
- Tradition is preferable to change.
- Any problem can be solved by scientific thinking and lots of money.
- He also gives examples of environmental blocks:
- Lack of cooperation and trust among colleagues
- Autocratic boss who values only his own ideas; does not reward others
- Distractions phone, easy intrusions
- Lack of support to bring ideas into action.

Some of these blocks are especially relevant to our subject today. These have to be studied in order for learners to prepare well to become entrepreneurs.

## 2.7.3. Emotional blocks

According to Adams (1974) emotional blocks are also important. Cougher (1995:75) explains that these interfere with our freedom to explore and manipulate ideas, they prevent us from communicating our ideas in an acceptable manner. Also Learnets (2013) ascribes that, whenever we suffer from obstacles which hinder our freedom to form and express ideas we often suffer an emotional block stopping us from being creative. There is the need for students to identify emotional blocks of creativity to overcome it in order to become entrepreneurs. The emotional blocks discussed are:

- Fear of making a mistake, to fail, to risk. According to Learnets (2013) we often fear to take risks and that is completely normal. After all, correct behaviour is rewarded and wrong behaviour is punished in society. You must also consider what might be the consequences, especially the worst case scenario.
- Inability to tolerate ambiguity; overriding desires for security, order; "no appetite for chaos"
- Preference for judging ideas, rather than generating them

- Inability to relax; incubate, and "sleep on it"
- Lack of challenge (problem fails to engage interest) versus excessive zeal (over motivation to succeed quickly)
- Inability to distinguish reality from fantasy.

According to Adams (1974) we may not have emphasized enough the necessity of breaking the emotional blocks. One of the strongest is the barrier of feeling foolish. Often we don't share our ideas because we are afraid we are going to be laughed at. We are afraid others will think our ideas are stupid. In his book, Conceptual Blockbusting, he describes a simple game that he gets students at Stanford to play to conquer this fear. He breaks the ice with the following game by dividing the group as follows: If a person's last name starts with one of the following letters, he or she is that animal:

CAT: A – G MOUSE: H - L ELEPHANT: M – R PIG: S – Z

Next, the person must find a participant s/he has never met before and stand in front of that person. Then when Adams says, "GO!" they all must start making the sound of that animal as loud as they can. It is important that students understand and identify these blocks to creativity so that they are able to prepare well for entrepreneurship.

## 2.7.4. Intellectual and expressive blocks

According to Adams (1976:13), Intellectual blocks result in an inefficient choice of mental tactics or a shortage of intellectual ammunition; whereas Expressive blocks inhibit one's vital ability to communicate ideas – not only to others, but to oneself as well. According to Lenaerts (2013), this type is often challenging to combat as it requires practice and refinement. He ascribes that whenever we speak about intellectual blocks, it implies someone has a problem with their strategy (the way a person works), their persuasion

(the way a person sells his idea) or their expression (the way a person acts and talks). This he says influences our creative process. Intellectual and expressive blocks result from the following:

- Solving the problem using an incorrect language (verbal, mathematical, visual)
- Inflexible or inadequate use of intellectual problem-solving
- Lack of, or incorrect information
- Inadequate language skill to express and record ideas (verbally, musically and visually)
- Lack of understanding of related information
- Lack of mental faculties in the specialized area

## 2.8. HOW TO BOOST CREATIVITY

Everyone is creative, we can all innovate if given time, freedom, autonomy, experience to draw on, perhaps a role model to emulate and the motivation to get on with it. There are times when the most creative person becomes bored, starts going around in circles, or hits a cul-de-sac. Seven unusual creativity boosters that research has shown will increase creativity, are:

## 2.8.1. Psychological distance

People often recommend physical separation creative impasses by taking a break, but psychological distance can be just as useful. Participants in one study who were primed to think about the source of a task as distant, solved twice as many insight problems as those primed with proximity to the task (Jia, Edward & Samuel 2009:1127). Research found that trying to imagine a creative task as distant and disconnected from the current location encourages higher levels of thinking.

## 2.8.2. Fast forward in time

Like psychological distance, chronological distance can also boost creativity. Foster,

Jens, Friedman, Ronald and Libermar (2004:177) asked participants to think about what their lives would be like one year from now. They were more insightful and generated more creative solutions to problems than those who were thinking about what their lives would be like tomorrow. According to Foster et al. (2004), thinking about distance in both time and space seems to cue the mind to think abstractly – and consequently more creatively. They observe further that one should project oneself forward in time and view a creative task as one, ten or a hundred years in the future. This will boost creative thinking in the minds of students.

## 2.8.3. Absurdist stimulation

According to research, the mind is desperate to make meaning from experience. The more absurdity it experiences, the harder it has to work to find meaning. Participants in one study read an absurd short story by Franz Kafka before completing a pattern recognition task (Proux 2009:1125). Compared with control participants, those who had read the short story showed an enhanced subconscious ability to recognize hidden patterns. Absurdity is a meaning threat which enhances creativity.

## 2.8.4. Use bad moods

According to research emotional states increase both problem solving and flexible thinking, and are generally thought to be more conducive to creativity. But negative emotions also have the power to boost creativity. A study of 161 employees revealed that creativity increased when both positive and negative emotions were running high (George & Zhou 2007:605). They appeared to be using the drama in the workplace positively, thus ensuring creativity of students.

## 2.8.5. Combining opposites

Interviews with 22 Nobel Laureates in physiology, chemistry, medicine and physics as well as Pulitzer Prize winning writers and other artists, have found a surprising similarity in

their creative processes (Rothenberg 1996). Called 'Janusian thinking' after the many-faced Roman god Janus, it involves conceiving of multiple simultaneous opposites. Integrative ideas emerge from juxtapositions, which are usually not obvious in the final product, theory or artwork. Physicist Niels Bohr may have used Janusian thinking to conceive the principle of complementarity in quantum theory (that light can be analysed as either a wave or a particle, but never simultaneously as both). This should be encouraged and introduced to learners to empower them to become creative and innovative in setting themselves up for a business venture.

## 2.8.6. Path of most resistance

According to Ward (1994:1), when people try to be creative they usually take the path of least resistance by building on existing ideas. This is not a problem as long as you do not mind variations on a theme. If you want to produce something novel, it can be limiting to scaffold your own attempts on what already exists. The path of most resistance can lead to increased creative solutions.

## 2.8.7. Re-conceptualisation

People often jump to answers too quickly before they have really thought about the questions. Research suggests that spending time re-conceptualising the problem is beneficial. According to Mumford et al. (1994) experimental participants produced higher quality ideas when forced to re-conceive the problem in different ways before trying to solve it. Similarly a classic study of artists found that those focused on discovery at the problem-formulation stage produced better art (Csikszentmihalyi & Getzels 1971:47).

## 2.9. BASIC ATTRIBUTES OF HIGHLY CREATIVE STUDENTS

Being creative is essential for a student to become an entrepreneur. This demands certain attributes that create a distinction between an ordinary student and a potential entrepreneur. According to Marsh II (2002: 25), creative students show certain

characteristics that make them "stand out" from their peers, and these characteristics can be enhanced through computer technology and hypermedia, especially the ability to use graphics more than text to convey meaning and provide links. Among these characteristics are:

## 2.9.1. Originality

This is the ability to produce unusual ideas, to solve problems in unusual ways, and to use things or situations in an unusual manner. Sometimes, originality is viewed as uncommonness of response i.e. the ability to make remote or indirect connections. Creative students, being skeptical of conventional ideas, are willing to take the intellectual risks associated with creative discovery. However, it is unlikely that originality alone will provide sufficient creativity, because it also needs to be combined with other factors, such as a strong cultural presence, an intellectual mind, sensitivity toward form, the involvement of rational trains of thought, the acquisition of certain occupational skills such as writing, engineering, architecture, painting or music, and even the temperament to experience emotional and phenomenological wonder (Cannatella 2004: 61).

## 2.9.2. Persistence

Creative students are usually persistent individuals who are willing, if necessary, to devote long hours to a given task and to work under adverse conditions. Above all, creative people are willing to face failure. Frustrations seem to motivate them to increased effort (McKinnon 2005: 309).

## 2.9.3. Independence

Creative students are independent thinkers, who look for the unusual, the unexplored. Such people notice things that other people do not, such as colors, textures, and personal reactions. Frequently, these people explore ideas for their own sake to see where they may lead. Unlike the nonconformists who flout convention because they feel a compulsion to be different, independent thinkers maintain a balance between conformity and nonconformity. Unlike conformists, creative persons are open to experience and confident in the worth of their ideas. However, they are often their own most severe critics (Samuels 2004: 112). Also Rockman has reported that students independently using laptops spend more time with computers, spend substantial amounts of out-of-school time completing schoolwork on their notebook computers, and improve their research and analysis skills (McKinnon 1995:310).

#### 2.9.4. Involvement and Detachment

Once a problem has been identified, creative students become immersed in it, first researching how others have tried to solve it, and becoming acquainted with its difficulties and complexities. Thus, involvement sets the stage for their own creations. Creative students soon become sufficiently detached to see the problem in its total perspective. By setting work aside temporarily, creative persons give ideas the freedom to develop (Schell 2004: 14).

## 2.9.5. Deferment and Immediacy

Creative students resist the tendency to judge too soon. They do not accept the first solution, but wait to see if a better one comes along. This tendency to defer judgment seems to be an attribute of an open-minded person, one who is unwilling to reach a decision prematurely (Hillman 2006: 5).

## 2.9.6. Incubation

By putting the problem aside temporarily, creative students allow the unconscious mind to take over, make various associations and connections that the conscious mind is unable to do. The incubation may be long or short, but it must be utilized. Sleep or almost any change of activity helps to encourage illumination. This period of purposeful relaxation permits the mind to run free (Reeves & Clark 2000: 118). After a long period of frustrated

effort, creative students may sometimes suddenly solve a problem. This sudden flash of insight is the fruit of unconscious inner tensions. It may be that the powers of association are enhanced when the mind runs freely on its own. The flash usually occurs after a period of incubation, when individuals are not actively pursuing the problem. A Japanese inventor says that his most creative ideas come when he forces himself to dive in his swimming pool until his lungs run out of oxygen (Reeves & Clark 2000:117).

## 2.9.7. Verification

Although illumination provides the necessary impetus and direction for solving a problem, the solution must be verified through conventional objective procedures. Sound judgment must complete the work that imagination has set in progress. Activating the imagination puts the intellect in touch with deeper levels of the psyche and arouses positive feelings of wellbeing (Clarkson 2005: 2). A flash of insight may be partially if not totally unreliable and merely serve as a catalyst for liberating the creator from a restricted approach to the problem. Sometimes, one flash of inspiration will precipitate others.

## 2.9.8. Discovers problems

Until recently, most studies of creativity focused on the problem solving aspect of creative behavior. It is clear that the divergent thinker solves problems differently from the convergent thinker. The question of how the divergent thinker, or creative person, experiences problems, however, has not been given much attention. Is the process essentially one of evolving a new solution to an old problem? Or is it more likely to be finding a new solution to a new problem, discovered by the creative person? On the basis of some three decades of research, Getzels and Csikszentmihalyi (2001:67) believe that the way in which a person discovers problems is the essence of the creative process. They have identified three problem situations in which the learner is given both a problem and a method for solving it. The first situation is, for example, to find the area of a rectangle, which requires the subject to multiply side *a* by side *b*. The second is the situation in which the learner is given a problem, but not a method.

For example, find the area of the rectangle. Here, the individual must engage in reasoning and analysis in order to solve the problem. The third situation is one in which the learner is given neither a problem nor a method for solving it. For example, how many important questions can you ask about a rectangle? Here, the problem solver must become a problem finder. Once each problem has been formulated, solutions must be sought. Getzels and Csikszentmihalyi (2001:68) believe that many potentially creative learners prefer to work on problems they discover themselves. Others may be more comfortable in more structured situations. Certainly, problem finders, as well as creative students in general, have been sorely neglected in our educational institutions. Also Cannatella (2004:63) observed that problem solving, conceptual ability, aesthetic experience, intuition, observational analysis, imagination, and experimentation are among the indispensable guides that promote and enhance creative activity.

#### 2.9.9. Generates alternatives

One of the basic characteristics of creative thinking is finding different ways of viewing problems. In convergent or logical thinking, the process of searching for alternatives usually stops after a few approaches are suggested and one is selected as the final solution. All unreasonable or far-fetched approaches are summarily dismissed. In creative thinking, one deliberately searches for as many alternatives as possible. A promising solution suggested early in the process is acknowledged and put aside for later reference. The generation of other alternatives continues. Unlikely, wild or very unreasonable possibilities are tentatively accepted without evaluation, which is done later. Basically, the objective is to delay a final decision by loosening up fixed patterns of thinking. Most problems can be solved in a variety of ways. While a logical approach may seem ideal, there is no guarantee that it is the best solution. A deliberate generation of alternatives enables one to consider other possibilities that appear unacceptable at first (Osborn 2000: 133).

In addition to generating alternatives in group problem-solving processes, individualized assignments for generating them can be developed in a variety of ways. According to

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deBono (1990:156), who studied creativity in elementary school children, geometric figures are ideal, since they can be developed in an unequivocal form. The student is merely asked to generate different ways of describing a figure. As students find out what the generation of alternatives is all about, they move on to less artificial situations. Pictures provide another useful way of generating alternatives. Students are requested to describe what they think is happening in the picture. The different interpretations are then used to disclose alternative ways of seen things. Also there are different levels of description: what is shown, what is going on, what has happened, what is about to happen, and so forth. He suggests that the teacher leaves the assignment quite open at first, but later requires more specific descriptions. Brief anecdotes also provide excellent sources for generating alternatives, especially when the anecdotes concern different people or animals (de Bono 1990: 160). The assignment becomes one of asking for a point of view from each of the parties concerned.

Kimball (2000:11) illustrates with an example: A boy and his dog are watching a squirrel in a tree; in the background are a man and a woman; describe what is happening from the viewpoint of the boy, dog, squirrel, man, and woman. Again, the variety of responses can be used to illustrate differences in perception. Sometimes, a favourable description of an event may be changed to an unfavourable description by merely altering the emphasis given to the various facts, but not the facts themselves. While all those techniques apply more to elementary school children than college students, there may be ways in which the professor could adapt those findings to encourage creativity in other educational settings.

#### 2.9.10. Challenges basic assumptions

In solving problems, one must begin with basic assumptions. These are any ideas, principle, or truth deemed self-evident. They provide the foundational structure for problem solving. Unfortunately, they also set boundaries for reducing problems to manageable proportions. If one or more basic assumptions are false, however, the resulting solution will also be false. Many assumptions are handed down by tradition. To challenge them may be considered unfair, sacrilegious, or downright stupid. Certain

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verifiable false assumptions have been held above suspicion for years. At one time, for example, the tomato was considered poisonous (Williams 2001:33). For years, scientists were thwarted in their attempts to learn about the human body because it was considered sacrilegious to examine cadavers (Scholl & Inglis 2001:313).

In a similar manner, the boundaries imposed on problem solving often lead to faulty conclusions. These boundaries, often self- imposed, are rarely challenged because they represent a natural structuring process of the human mind. If someone steps outside the boundaries and solves the problem, this person is considered to be operating unfairly. Yet the boundaries are arbitrarily imposed (Scholl & Inglis 2001: 316). In challenging basic assumptions, both the limits and validity of individual concepts should be questioned for the purpose of restructuring established patterns of thinking. This can lead to different and sometimes improved results. Professors often discourage creativity by emphasizing the mistakes on written exercises. A better procedure would be to call attention to what was done well and then to point out sources of difficulty, leaving the student with the task of discovering the exact mistakes. The student can then rework certain assignments for credit (Eble 1996: 8).

#### 2.9.11. Minimizes labels or categories

By using labels, one risks misrepresenting information. It is convenient to function with relatively few categories, but this often results in polar thinking, one must be either right or wrong. Sometimes even those categories that at one point were rather functional tend to become outdated over time. However, the label remains permanent and contributes to rigid thinking. Also Hoover (2000:113) mentions that all young adults, for example, are aware of the restrictive influence of the term "son" or "daughter". It is appropriate to supervise young children closely; but when children get older, close supervision may even be harmful. Some parents fail to realize that the reality behind the fixed term is changing constantly as they grow. They may even seek to control a young person's behavior even after s/he has entered college. Despite the problems they present, labels or categories are necessary. They can be used effectively if qualified. For example, an individual may be "partly right" and "partly wrong", not for or against something but

someplace in between (Davis 1993: 88). One learns to use labels cautiously by engaging in experiences designed to challenge them, to do without them, or to establish new ones. Teachers might ask students to pick out certain words in the newspaper that seem to generalize or categorize ideas and concepts.

For example, students might examine how the words "justice", "equality", "disadvantaged youth", "women's liberation", and "patriotism" are used (Kozma, Belle, & Williams 2000: 99). A class debate also provides an excellent opportunity for examining how certain labels can be used to influence listeners. Technology expands the horizons of the students, and is now an indispensable tool in society, which allows students to engage in real-world interactions with people by means of electronic mail, computer conferencing, video conferencing, and groupware. The computer may be more useful in serving as a basis for solving real-world problems than the passive lectures many of us have been accustomed to in the past (Marsh II 2000:32).

## 2.10. CREATIVE TECHNIQUES AND TOOLS

Many techniques exist to stimulate creative thinking and to prepare students to own their own businesses in order to become entrepreneurs. Most of us are not natural creative thinkers. Telling oneself and the team "to be creative" does not usually yield results. Some special techniques are required to help us use our brains in a different way to change our usual thinking process. Some techniques which are not exhaustive are explained below; these may work well when solving business problems and when generating ideas creatively to setup a business in order to become an entrepreneur.

## 2.10.1. Brainstorming

According to Sefertzi (2000:7), brainstorming is one of the business world group based creativity processes for problem solving. It is a method of engendering a large number of ideas from a group of people in a short time. It can be used for generating a large number of ideas or solutions for well-defined strategic or operational problems, such as new product and business ideas to become entrepreneurs as individuals or a group. It

constitutes the initial phase for the implementation of many other groups based on creative techniques.

Brainstorming sessions take place in a group of 6 to10 people.

The presence of a leader is necessary to stimulate the generation of ideas, as well as a preparation phase to gather the necessary data and information to approach the problem. A recorder writes the problem statement and the idea generated by the group on a white board. Several guidelines for brainstorming are available, such as: suspend judgment, free-wheel, quantity, and cross fertilise. The whole process takes normally one hour and can be conducted through several stages. The session begins with stating the problem and calling for solutions by the leader. The following stages can be: restate the problem in the form of "How to select a basic restatement and write it down as 'In how many ways can we...", warm-up session, brainstorming, and identify wildest idea. An evaluation method is additionally used to identify the ideas that have a value for implementation. The four basic rules of brainstorming are:

- a. No criticism and no prior judgment of any idea,
- b. All ideas, even the absurd, are welcome,
- c. Quantity has value, the more ideas the better, if a large quantity of ideas is generated, then the idea pool very likely would contain high-quality ideas,
- sharing and combining ideas, and constructing ideas based on those developed by other members of the group for producing new ideas, Osborne (1963), Rawlinson (1981), Chen (1998:541), Higgins (1996:371), European Commission (1998).

After securing an idea, students can implement it by generating a product to the market in order to become an entrepreneur. The table below explains the brainstorming phases as ascribed by the European Commission (1998).

## TABLE 2.1

# **BRAINSTORMING PHASES**

Phase	Application
Orientation	Define the problem to be studied for the participants, clarify the rules of
	the game.
Preparation	Gather data and information necessary to approach the problem in an
	efficient manner.
Warm-up	Carry out the exercise: redefine a problem different from the one to be
	studied, experiment with it for a few minutes.
Production of	Generate the maximum of ideas without prior judgment - always ask
ideas	"what else" - quantity of ideas is quality - no limits - no criticism -modify
	others' ideas to produce new ones.
Incubation	Let the subconscious work.
Syntheses	Gather the ideas generated – analyse them – work with logical thinking.
Evaluation	Evaluate the ideas gathered and analysed – develop and combine them
	before proceeding to put them in practice.

Source: European Commission (1998).

## 2.10.2. Story boarding

This is a creativity technique for strategic and scenario planning based on brainstorming and used mainly by groups (Sefertzi 2000:8). It requires a leader, a secretary and takes place in a group of 8 to12 people. The leader arranges the ideas generated by brainstorming in a logical order on a white board creating a story. This technique allows identification of the interconnections of ideas and how all the pieces fit together. It can be used to identify issues, problems, solve a complex problem and determine ways to implement solutions. The story boarding process includes four phases: a) planning, b) ideas, c) organization and d) communication. Each phase includes a creative session (it takes 45 minutes) and a critical session, in which participants critique their story board. • The planning phase begins with the problem definition or the issue being examined –the topic header. Purpose header, a miscellaneous column and other, normally 10 to12 headers (column titles) are placed and brainstormed in order to give ideas and then items, which are listed under the headers (the purpose header is listed first).

• The second phase – the ideas board, is to take one column from the planning board, which becomes the topic header and the items of that column become headers of new ideas.

• In the third phase – the organisation board, participants identify who is responsible for implementing chosen solutions, what has to happen, and when.

• In the last phase – the communication board, participants identify who to communicate with, for all of the events identified in the organisation board to take place.

Through the process, visual graphics to summarise or present relevant points are presented by the leader. These might be strategic models, places or things (Higgins 1996:370).

## 2.10.3. Lotus Blossom

According to Sefertzi (2000:9) this technique can be used in scenario planning and is very effective for forecasting strategic scenarios. It is designed for groups and is used to provide a more in-depth look at various solutions to problems. It begins with a central core idea surrounded by eight empty boxes or circles. Using brainstorming, eight additional ideas (solutions or issues) are written in these boxes. In the next step, each of these eight ideas becomes the core of another set of eight surrounding empty boxes, which are filled in by new ideas using brainstorming. The process continues until a satisfactory solution or a sufficient number of ideas have emerged (Higgins 1996:375). Students can use this in group or after the group ideas, use own individual ideas to prepare themselves to become entrepreneurs.

## 2.10.4. Checklists

This creative technique is used mainly for product improvement or modification. It involves applying a series of words, verbs, adjectives or phrases contained in checklists or tables to an existing product or service or its attributes. Osborn's Checklist is the best known and includes the verbs: put to other uses, adapt, modify, magnify, minify, substitute, rearrange, reverse and combine. Each verb contains also an expanded definition in the form of questions. For example, the description of the verb substitute is: Who else instead? What else instead? Other ingredient? Other material? Other process? Other power? Other place? Other approach? Other tone of voice? (Osborn 1963). The method is to apply each of the verbs and its expanded description to a product or service. Also Van Gundy introduces Van Gundy's PICL(product improvement checklist). This is used in the same way as Osborn's list, gives many options containing 792 words, both standard and unique that can be applied to existing products or services, and 102 stimulation questions (Van Gundy 1993). Checklist will enable students to apply and articulate their own ideas to the one in the list in order to produce a product for sale and become entrepreneurs. Table 2.2 bellow is Osborn's Checklist to think creatively to generate ideas.

## TABLE 2.2

# **OSBORN'S CHECKLIST**

Question	Description
Put to other uses?	New ways to use as is? Other uses if modified?
Adapt?	What else is like this? What other idea does this suggest? Does past offer parallel? What could I copy? Whom could I emulate?
Modify?	New twist? Change meaning, colour, motion, sound, odour, form, shape? Other changes?
Magnify?	What to add? More time? Greater frequency? Stronger? Higher? Longer? Thicker? Extra value? Plus ingredient? Duplicate? Multiply? Exaggerate?
Minify?	What to subtract? Smaller? Condensed? Miniature? Lower? Shorter? Lighter? Omit? Streamline? Split up? Understate?
Substitute?	Who else instead? What else instead? Other ingredient? Other Material? Other process? Other power? Other place? Other approach? Other tone of voice?
Rearrange?	Interchange components? Other pattern? Other layout? Other sequence? Transpose cause and effect? Change pace? Change schedule?
Reverse?	Transpose positive and negative? How about opposites? Turn it backward? Turn it upside down? Reverse role? Change shoes? Turn tables? Turn other cheek?
Combine?	How about a blend, an alloy, an assortment, an ensemble? Combine units? Combine purposes? Combine appeals? Combine Ideas?

Source: Higgins (1996:370-380).

# 2.10.5. Morphological Analysis

This method is a product improvement technique, permitting an in-depth analysis of products or processes (Sefertzi 2000:9). This will help students to create their own business ideas to become entrepreneurs. It involves applying a set of words to an item or another set of words. Normally, one set of words is verbs and the other set is attributes of the product. Another way is that one set of words would be components of the product (breaking the product down into its parts) and the other set of words would be alternative

solutions. The method is to combine each word of one set with each word of the other set. These two sets of words result in a two-dimensional matrix. A three dimensional matrix can be created by adding a third list of factors. The difficulty of this technique is the large number of ideas deriving of the multiple combinations that can be made (Higgins 1996:370, EC 1998).

## 2.10.6. Mapping Process

According to Sefertzi (2000:9) the use of maps is particularly useful in strategic management thinking in organisations, helping to organise discontinuities, contradictions or differences, and bring pattern, order and sense to a confusing situation, acting as a spatial representation of a perspective. This will also help as individuals and particularly as students. Sefertzi (2000:9) also ascribes that there are many forms of mapping, including computer-based tools to support mapping:

## 2.10.6.1. Mind Mapping

This is an individual brainstorming mapping technique designed by Tony Buzan. It begins with a central focal point, a problem, an object, a name or issue, written in the centre of a piece of paper with a circle around it. Each major facet of the problem or the solution to the problem originating from the central idea is then brainstorming in order to generate new ideas. Each of those ideas is then written on lines drawn outward from the circle. The next step is to brainstorm those ideas in order to identify issues related to the problem, or solutions that are written on smaller lines that are drawn on the prime lines forming a branch. Additional perspectives such as implementation factors or further definition of the solutions could go on those lines. One branch may also be chosen in order to develop a whole new mind map based on that branch. When a mind map is completed, it's possible interrelations and possible multiple appearances of issues, and its overall meaning in the context of the problem must be examined (Buzan 1983). This can be used by students to generate ideas in order to become entrepreneurs.

#### 2.10.6.2. Mapping for generating collective creativity

The use of maps to support collective creativity is a more complicated process. It is necessary to introduce appropriate maps to students. It is also important that students find the maps useful for organising and planning their work to become entrepreneurs. According to Sefertzi (2000:10) the mapping process usually involves three phases:

**1st phase** starts with a brainstorming exercise in order to initiate a discussion around the problem or the product. Normally, the participants (students) are asked to mention all aspects they regard as relevant to the problem to be dealt with. During this process a large number of visual references are used to elicit the perspectives of the members with regard to the potential new concept. It is emphasised to the participants (students) that the maps are intended to enrich the conversation, and should not be perceived as representations of the concept itself, but more as the semantic terrain or space, which covers all potential strategies. The knowledge elicited is discussed, and in about 2 hours is organised and structured by the participants (students) into a map that they intuitively understand. This map is the initial cognitive map, which describes all the problematic areas in brief outlines.

**In the 2nd phase** of the process, which serves to expose the individual participants' (students) perspective both to themselves and to the other members of the group, the participants discuss the values that they associate with a very large range of objects and images. A number of these images are then selected that are considered to metaphorically represent potential aspects of the product strategy.

**In the 3rd phase,** these images and appropriate annotations are arranged in a twodimensional space, positioning the images depending upon how the values of these objects relate to one another. In doing this, the group is mapping out a terrain constituted by the differences between the images, expressing the range of different product strategies open to the group (Fentem, Dumas & McDonnell 1998:417).

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## 2.10.7. The Excursion Technique

This is a useful technique for forcing a group to have new thought patterns to formulate strategies. The process involves five steps (Higgins 1996:380):

**In the 1st step** – the excursion – the consultant asks participants to take an imaginary excursion to a physical location (a museum, a jungle, a city, another planet, etc.), which has nothing to do with the real problem. After the excursion each participant writes down 8 to10 images, which s/he saw during the journey (things, people, places or items) in the 1st of 3 columns.

In the 2nd step, the consultant asks participants to draw analogies or express relationships between what they saw on the excursion and the problem as defined, and to write them in the column 2 next to each of the items identified in the first column.

**In the 3rd step,** participants are asked to determine what solutions to their problems are suggested by the analogies or the relationships in column 2, and write them in column 3 beside the items and analogies identified in the other columns.

In the 4th step, participants share their experiences from the excursion: what they saw, their analogies and their solutions.

In the 5th step, as with brainstorming, participants may have a discussion on each other's ideas.

Eventually the leader helps the group come to a common solution or a set of solutions to the problem.

## 2.10.8. Computer-based creativity techniques

Computer-based supporting techniques to stimulate the human creative process have an immediate and pragmatic aim, which is the implementation of computational models

(computer software) to generate and organise ideas for creative work (Sefertzi 2000:11). These are used more frequently in research planning, product design, knowledge acquisition, decision making, and motivation. One can distinguish groups of computerised creativity techniques, such as AI models, Idea Processors systems and visualisation and graphical systems.

## 2.10.8.1. AI (artificial intelligence) models of creativity

Al deals with solving non-quantified, unstructured problems. Its task is about knowledge representation and reasoning and to built intelligent, rational, and autonomous agents. Current AI models of creativity involve different types and appropriate techniques of supporting the generation of new ideas. According to Boden (1998:347), in respect to the three types of creativity, there are also three main types of computer models that involve:

- a) The stimulation of the combination of ideas, mainly by using analogies in the sense that associated ideas shares some inherent conceptual structure.
- b) The exploration of structured concepts, so that novel and unexpected ideas result. It requires considerable domain-expertise and analytical power to define the conceptual space and to specify procedures that enable its potential to be explored.
- c) The transformation of a problem, so that new structures can be generated which could not have arisen before. New solutions to a problem can be created with transforming a problem into a new problem, solve the new problem and then adapting the solution back to the original problem.

Al employs symbolic approaches for creative problem solving and includes stimulus such as heuristics, search, weak methods, knowledge representation and reasoning to facilitate problem structuring and idea generation. The focus of Al creativity techniques in the form of computerised programs, is to help users to take a fresh look at problems by guiding what may be a user's otherwise undisciplined intuition through a series of problem-solving exercises, and to think in non-linear and non-logical ways. The main advantage of computerised, guided problem solving is that the programs prompt a user for ideas in a thorough manner. Recent programs of AI include knowledge-based approaches, using large-scale databases and narrative systems (Chen 1998:541).

#### 2.10.8.2. Idea Processors software

Idea processors have a close relationship with artificial intelligence and use many artificial intelligence techniques. Idea processors are normally software packages developed for personal computers or workstations. They are used for idea generation and organisation in some specific stages of problem solving, acting as knowledge-support systems (Chen 1998:545). In order to assist the human thinking, idea processors usually perform extensive search in large databases, knowledge bases, or text bases. For many idea processors the electronic brainstorming is the most important technique to generate ideas.

The use of computer programs helps to de-structure and then to restructure thinking in a different way. The Idea Generator Plus program provides seven components to the user, that permit going through a step-by-step problem analysis and solution finding process: examine similar situations, examine metaphors, examine other perspectives, focus on goals, reverse the goals, focus on the people involved, and make the most of the ideas (Nirenberg 1985). In another program, the Idea Fisher, using hypertext databases from Fisher Idea Systems Inc., all entries in the database are cross-referenced by concept and association. It uses a giant cross-referenced text base of words and phrases representing concepts and images enhanced by a series of questions. The program also allows generating new ideas based on combination of words by creating a list of people, animals, verbs, adjectives and phrases that are associated with the combination of two words that a user chooses. This will help prepare students to become entrepreneurs.

## 2.10.8.3. Visualisation and graphical systems

According to Sefertzi (2000:13) computer support methods, such as visualisation of data and graphical techniques for marking up visual phenomena and expressing knowledge
about data in rule form, are available to support creativity. These involve working with visual data such as images, drawings, sketches, diagrams, charts, graphs, graphical objects, that are specific to the domain, and they take the form of expressing ideas and concepts through sketching, annotation and examining multiple or alternative views of the same data, all of these vary according to the domain of interest. There are a lot of such systems giving various opportunities to the users. A visualization system, the Inspiration(from Inspiration Inc.) provides a blank canvas in which the user can quickly record and arrange ideas as they occur and allows a visual approach to organising thoughts.

The system can also change the relationship between ideas and connect related ideas by dragging links between them to create a graphical map of the user's thinking. Another visualisation system is Axon 200used for creating complex flowcharts or concept diagrams and describes how different factors or events influence each other. It uses checklists and visual attributes such as colour, shape, size, scale position, depth, link and icon. It also creates relationship diagrams, which allow the user to represent multiple relationships between various visual objects on the screen (Chen 1998:541). Visualisation systems are important in design such as the Speech Knowledge Interface(SKI) system that supports rapid graphical interaction with visual images, and the Vehicle Packager Knowledge Support System(VPKSS) that aids designers at the conceptual stage of the design process (Candy 1997:3).

#### 2.10.9. Spatial representation tools

According to Sefertzi (2000:13), there are also computer-based tools, such as computer-based information and communication systems, for supporting representations and creating cognitive maps in two-dimensional spaces. Some representations use a specific notation, others use spatial proximity to indicate the relationship between objects (usually words relating to concepts) in the spaces, and others, used in marketing and design departments called "mood boards", use collections of images as metaphors that reflect the quality aspects of the product strategy (Fentem, Dumas & McDonnell

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1998:418).

### 2.10.9.1. Kelly Repertory Grid technique

This is a knowledge elicitation tool used in the marketing, management and expert systems development. It analyses data using principal components analysis (PCA) software and produces a map by plotting the first two components. The map produces a spatial positioning of text with respect to dimensions that are significant or correspond to the personal constructs that the participant member uses to categorise and evaluate the world (Kelly 1955).

### 2.10.9.2. Spatial Information Systems

These systems have been designed to support creativity by mapping objects (concepts, text objects, design requirements and parameters) into two-dimensional spaces, using various combinations of "knowledge processing" and multivariate statistical analysis techniques. Users can also select an area of this space and to create a new space by reprocessing using principal components analysis (PCA), only the data associated with the objects lying within this subspace (Fentem, Dumas & McDonnell 1998:420). For example, one of these systems searches research papers for the frequency of certain keywords and uses a type of PCA to analyse the results of this search and represent these keywords and the papers within a common two dimensional space (Sugimoto, Hori & Ohsuga 1996:369). Another system named En Passant 2stores researchers' notes and triggers to recall and to reconsider. The users can browse their notes and view relations among them interactively (Aihara & Hori 1998:469).

### 2.10.9.3. Spatial hypertext systems

These systems have been designed for the exploration of alternative structures for content, and applications in which the domain structure is not well understood at the outset, or changes during the course of a task. In spatial hypertext, the links between nodes are conveyed implicitly by arranging the nodes in the space. Nodes appear in different contexts through multiple spatial references to the same underlying content (Marshall & Shipman 1995:88). The users are presented with a window that acts as a workspace in which they organise their material. The nodes arranged in the space represent links to familiar objects such as documents, images, comments, and links to www. hypertext pages, plus more unique structures known as "composites" and "collections". Marshall and Shipman's VIKI spatial hypertext system, for example, was designed to support new product development, helping teams to make sense of the many diverse kinds of business-related material relevant to the new product, by assisting them in arranging it spatially. This will enhance the creative minds of students to prepare them for entrepreneurship.

### 2.11. Mental provocation

Mental provocation is a creativity technique developed by Edward de Bono. This involves using apparently contradictory statements to liberate oneself from traditional patterns of perception, so inducing a state of instability which may point the path to a new idea. Mental provocation allows us to look at things from a different angle. It puts distance between you and your problem, and stimulates you to find out-of-the-ordinary solutions. Being mentally provocative means "going crazy in a controlled way". Taking your problem as a starting point, you make a statement that is diametrically opposed to all your past experience and convictions. To let other people know that you don't mean this statement to be taken literally, you prefix your statement with the word "PO" – standing for "Provocative Operation" (de Bono 2002:79). This will enable students to generate ideas creatively in order to set up own enterprises to become entrepreneurs. According to Sefertzi (2000:7) as explained by Higgins (1996:370), apart from the creative supportive techniques there are other stimuli that can extend perspectives to approach a problem, as depicted in **Table 2.3** below.

# TABLE 2.3:

# STIMULI TO EXTEND PERSPECTIVES TO APPROACH A PROBLEM

- 1. List the elements that would bring on success.
- 2. List the elements that we visualise as failure.
- 3. Visualise success seen from the viewpoint of fifty years from now.
- 4. Visualise success seen from the perspective of one hundred years ago.
- 5. Look for impossible and desirable ideas.
- 6. Create analogies with other things that have been successful.
- 7. Imagine and write down ideas that are wild, illegal, crazy, etc.
- 8. Insert the problem from its present scenario to a totally different scenario.
- 9. Return from the fantasy scenario to the present scenario and try to associate the ideas generated in the fantasy scenario, with ideas that might apply to the real problem.
- 10. Imagine what people we admire would say.
- 11. Search for pairs of ideas that are apparently unconnected and that can be associated by a third.
- 12. Imagine that everything exists and all we have to do is find it.
- 13. Change the level on which the problem is approached.

Source: Higgins (1996:370-380).

# 2.12. CREATIVE MODELS

Researchers of creativity have attempted to define models that can be used to describe the interaction between the various components of creativity. This also implies that through a careful study of these models, students can prepare themselves in order to become entrepreneurs. According to Mijburgh (1997:20) it is useful to look at these models in order to improve our understanding of the nature of creativity.

# 2.12.1. The four (4) P Model of creativity

Cougar (1995:4) suggest a four tier model to describe the interaction between various components of creativity (Figure 2.2). The model shows the nature of creativity involving interaction between the person, process and product, all within the influence of the environment.



FIGURE 2.2 THE FOUR 4PS MODEL OF CREATIVITY

### 2.12.1.1. The Person

According to Antonites (2003:149) it is of great value to inquire into what it takes to develop creativity. How does a creative person perceive things and is it possible to develop creativity? Amabile (1999:5) first explains the "person" side of creativity in terms of expertise, which includes all knowledge, experience and talent a person can use to

Source: Cougar (1995:4)

apply in a certain situation. This expertise could be acquired through his/her educational background, training interventions and even by means of daily interactions with others. Through this students will generate ideas to creatively prepare themselves to become entrepreneurs. Moreover, expertise alone will not prepare a student sufficiently to become an entrepreneur.

Secondly the motivation aspect of the creative person which determines what the person will do and whether s/he will in fact do it. The inner motivation will determine what the student will do and how s/he will think to generate ideas in order to become an entrepreneur. Antonites (2003:150) explains that the creative thinking skills of the person plays an enormous role in the way s/he will deal with a problem or idea and how to associate unrelated components and combine them in a new or unique format. All these thinking skills are based on the principles of divergent as compared to convergent thinking. This study places more emphasis on the creative thinking component of Amabile's model, as it is through creative thinking skills that students will prepare themselves to become entrepreneurs.

#### 2.12.1.2. The process

The creative process is assimilated by the student and is based on the work of Nystrom (1979). According to Antonites (2003:150) the creative process generally follows these steps: Awareness and Interest; Preparation; Incubation; Illumination (Insight); and Verification. Students will become creative when they are able to go through this process to help generate ideas, so that they can set up their own businesses as entrepreneurs.

### 2.12.1.3. The Product

According to Antonites (2003:150) students learn that the new innovation or product is the direct result of the creative-thinking process. The process as indicated by Couger (1995:18), tells the student how creativity plays a catalyzing role in the new product development process. This will help students develop own ideas to introduce a new

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product as an entrepreneur. Figure 2.3 depicts the process:





Source: Adapted from Couger (1995:18)

A critical differentiation is made between the terms creativity; discovery; invention and innovation. These together will contribute to the student's ability to produce something in order to become an entrepreneur.

# 2.12.1.4. The Press (environment)

The student is exposed to all the environmental barriers to creativity. Barriers are divided into perceptual, cultural, physical and psychological/intellectual barriers. A careful analysis and understanding of these barriers will enable students to adjust accordingly to fit into any situation that will enable them to generate ideas and create products or services in order to become entrepreneurs.

# 2.12.2. The Stage Models of Creativity

The stage models of creativity describe how a person needs to act on what they know in order to produce creative outcomes. They examine creativity in terms of the processes used to change or modify one's knowledge in order to generate creative outcomes. Some of these models are:

# 2.12.2.1. Wallas' stages model

Wallas (1926), a forerunner in creativity theory, proposed four stages of creative thought (in Vernon 1970:93, Jens 2010:1) which are:

# 1. Preparation stage in which the problem is investigated

According to Vernon (1970:93), during this stage regulatory thought is employed. Wallas defined regulatory thought as following rules in the order in which ones attention is directed to the successive elements in a problem. Seeking, rather than scanning, is the method used for the search for ideas, as is made necessary by the constraints of the problem.

# 2. Incubation

According to Jens (2010:1), Wallas' incubation is by far the most susceptible to scrutiny; because of the obscure nature of this stage, it is not directly observable. The incubation stage may be reached by directing attention to another problem, or by abstaining from thought about problems altogether. According to Vernon (1970:94-95), during the incubation stage, conscious thought about the problem is halted, and a series of unconscious and involuntary mental events takes place. For incubation to culminate in illumination, Wallas adds, uninterrupted mental relaxation during incubation is essential.

# 3. Illumination stage

Wallas describes the illumination stage as the culmination of series of unsuccessful associations carried out in the incubation stage, leading to eventual success. According to Wallas, series of associations are unconscious and operate in what he labels the fringe of "consciousness". The point at which successful associations rise to consciousness "intimation," is a state which Wallas expressed

as a prolonged state leading to conscious control over what associations are brought to consciousness from the fringe and when they are brought to consciousness (Vernon 1970:96-97). However according to Hayes (1978:230-231), because new theory is evolved slowly as the understanding of the new information develops, illumination does not occur as an instantaneous flash, such as Wallas described.

# 4. Verification stage

According to Jens (2010:1) this stage is the least detailed by Wallas and provides a straightforward explanation. The solution is verified as being correct or workable, or incorrect or not workable. Unlike the incubation stage, it is a fully conscious stage and, like preparation, involves the use of logic for evaluation.

# 2.12.2.2. Cropley Stages Model

Cropley (1997) added various stages to the Wallas model which are:

- 1. The need to engage in thinking creatively initially, that is, to recognise or "find" a problem, challenge or issue about which the person can be creative (the Preparation stage).
- 2. The need to communicate the creative outcome to others (the Communication stage), and
- 3. The need to have the outcome judged by others in the culture (the Validation stage).

The Preparation stage makes the problem finding more explicit. Without Communication and Validation a creative outcome may be produced but cannot receive "socio-cultural validation" (Cropley & Urban 2000:493). Cropley's stages model is depicted on Table2.4 below.

# TABLE 2.4 CROPLEY'S STAGES MODEL

Preparation	perceiving or identifying a problem			
	$\overline{\Omega}$			
Information	about the subject of the problem accessing relevent information			
Incubation	thinking divergently about the problem making new links and association			
	<u>र</u> ु			
Illumination	becoming aware of a novel possibility a solution or interpretation			
Verification	checking and evaluating the novel outcome			
र				
Communication	displaying the novel outcome to others and getting feedback			
Validation	the creative outcome is judged in terms of its relevance and effectiveness by judges			

Source: Cropley & Urban (2000:493).

At each stage, psychological process prepares the knowledge for the next stage of creativity (Cropley & Urban 2000:493). The outcome at each stage is called a psychological configuration (Simonton 1988). It is essential for students to study these stages well in order to prepare thoroughly for entrepreneurship.

### 2.12.3. Geneplore Model

Propounded by Finke, Ward, and Smith (1999), this studies how people think when they are being creative. The concept of creative cognition, the Geneplore Model, showed that when an individual thinks creatively, the mind progresses through two phases – generation and exploration (Finke, Ward, & Smith 1999:189). According to Korba (1993:6) the Geneplore model of creative cognition is a heuristic model of creative functioning and based upon the principles of cognitive science.

Also Korba (1993:7) explains that the cognitive processes require both inductive and deductive strategies to discern the pre-inventive or emergent structures that form creativity. It therefore reflects the hierarchical and lateral interconnection of various cortical functions like mental synthesis, transformation, reduction, interpretation and inference to generate and explore novel ideas or problem stimulus (Korba 1993:14).

Many creative activities can be described in terms of an initial generation of candidate, mental structures followed by exploratory evaluation of them. Furthermore, Finke, Ward and Smith maintain that during the process of creative cognition one alternates between generative and exploratory processes, refining the mental structures according to the constraints of the particular task.

After an individual comes up with multiple options at one generative process, s/he analyzes and evaluates them to decide whether to select the effective option(s) in the exploratory process. Students need to go through this phase of thinking to generate ideas creatively on which product or services they intend to deliver. Ganeplore model is illustrated in (**Figure 2.5**) bellow.



Source: Korba (1993:7)

# 2.12.4. The enrichment triad model (ETM) (1970)

The Enrichment Triad Model (ETM)was developed by Renzulli in the 1970s. It is a programme for infusing high-end learning strategies into existing educational programmes to promote excellence, enhance self-confidence, and nurture creativity in students (Garcia-Cepero 2008:295). The programme was developed as an alternative to the available models for gifted education and has been transferred to the regular classroom as a model to develop students' creative productivity. ETM in educational settings can contribute to the development of creative productivity, high-end learning and skill, high self-regulating skills and high levels of motivation among students (Garcia-Cepero 2008:300).

### 2.12.5. A phenomenographic analysis model

A phenomenographic analysis was done on business students by Petocz, Reid and Taylor (2009:409-415). This study identified that although the notion of creativity makes an appearance in the lists of graduate attributes from many universities, it seems that it is rarely discussed as a concept with students, and rarely appears as part of the formal material of a course of tertiary study, at least in business. Rather, it is held up as a characteristic to aim for, and students are told that the highest marks will be reserved for work that displays creativity. The study highlights the importance for students to be aware of the contextual aspects of creativity and the different ways in which creativity is recognised in the particular domain in which they are working (Petocz, Reid & Taylor 2009:414-415). This approach when adopted will contribute to students' ability to think creatively in order to develop ideas and produce a unique product or service. This will help establish their own business, thereby becoming entrepreneurs before and after graduation.

# 2.12.6. Educational model for creative development (PECEI)

The model was developed by the Institute of Creativity and Educational Innovations (INCEI). The model is based on the indicators that have traditionally been considered as those that define creativity and innovation (Pèrez, Alonso-Geta 2009:305). The model adopts the approach that creativity is an acquired skill, although some individuals possess this quality naturally, which enables students to find new solutions to different problems posed. The model is a strategic model that relates to the individual (development of creative and entrepreneurship spirit), to the process (of innovation), to the product, and to the context. In order to evaluate creativity, mental and behavioural aspects are measured and basic indicators are used that can be categorised in terms of the subject, the process and the context (Pèrez, Alonso-Geta 2009:311). Behavioural and biographical inventories are then used on those identified as creative through a questionnaire. Indicators of creativity, according to this model are:

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- Sensitivity in general and when faced with a problem;
- Knowing how to discover what is beyond the established information or insufficiently explained;
- Ability to detect problems and anticipate consequences;
- Fluency;
- Productivity in the sense of not being content with the first results and persevering;
- Seeking alternatives;
- Ability to formulate new hypotheses and new approaches;
- Mental flexibility;
- Capacity to change perspectives;
- Unique character;
- Self-confidence;
- Capacity for syntheses;
- Association;
- Analysis;
- The ability to refine resources;
- Imagination;
- Desire for achievement;
- Organisation;
- Communication; and
- Searching for experiences.

In relation to the individual, the model defines creativity by:

- Divergent thinking;
- Originality;
- Flexibility;
- Independence;
- The motivation to succeed;
- Sensitivity;
- The capacity for inventiveness; and

• Imagination.

The model indicates that students should be freed from the limitations and obstacles which impede creative behaviour, namely:

- Fear of making mistakes;
- Fear of failure;
- Lack of motivation;
- Laziness;
- Negativity;
- Dependence on the group; and
- Insecurity.

The model also highlights the other potentialities that should be developed such as:

- Self-reference;
- Self-confidence;
- Proactiveness;
- Knowing how to delay gratification;
- Imagination;
- Curiosity;
- Interest;
- A critical sense;
- The ability to assume collective thought;
- Overcome frustration; and
- Persevere towards achievement.

The first step is to promote (at a cognitive level) the development of new beliefs and opinions. To do this, new patterns of perception need to be developed to allow a person to free himself or herself from prejudices and to develop new beliefs and attitudes. An individual's expectations influence the change and development of new beliefs and attitudes. The model also implies that the teaching practice will always be "probabilistic" in the sense that certain teaching practices might not produce certain outcomes. The "resistance" of students should always be taken into account. The educator cannot

abandon or cling to authority as this would favour convergent thinking, submission and impede the development of creative ability. The educational environment should be conducive and permits original contributions and divergent thinking (Pèrez Alonso-Geta 2009:311). The process in the PECEI model should be understood as a tool of thought. The process requires:

- Inventiveness by having an idea, a hypothesis, a project and being able to develop it.
- The ability to use ideas outside of the judgment system.
- Ideas have to manifest, be developed, tested, evaluated and modified and the ability to escape the typical dominant idea should be enhanced.
- Stimulation, intuition, direction and perseverance are required to overcome the environment and its resistance and to give incentive to the effort of achieving.
- Divergent and critical thinking are essential because it defines the direction when confronted with multiple options.
- Various strategies can be used to improve the creative process.

This model is important to consider in the development of a model of creative and innovative techniques that will prepare final year students to become entrepreneurs, as it contributes to students' ability to generate own ideas on thinking creatively, which in turn will boost their skills for entrepreneurship.

# 2.12.7. Csikszentmihalyi's systems orientated model

According to Csikszentmihalyi (1999:314) creativity is seen as a social construct that is the result of an "interaction between the producer and the audience". The Model consists of three components, which are:

- 1) The individual (personal background) draws information in a domain and transforms or extends it via cognitive processes, personality traits, and motivation;
- 2) The field (society) consists of people who control or influence a domain and evaluates and selects new ideas;
- 3) The domain (culture) is a culturally defined symbol system which preserves and transmits creative products to other individuals and future generations.

# 2.12.8. Amabile's Model 1983

This model indicates that creativity is "culturally and historically bound". The relevant factors working together are:

- Domain relevant skills (or expertise) can be considered as the basis for any performance in a given domain. This component includes factual knowledge, technical skills and special talents in the domain in question;
- 2. Creative thinking skills include cognitive style, application of heuristics for the exploration of new cognitive pathways, and working style;
- Task motivation that includes motivational variables that determine an individual's approach to a given task. Baer and Kaufman (2005:4-6), Bergh and Theron (2009:414), Runco (2007:403).

As explained earlier in the chapter, this model in creative thinking will help prepare students for entrepreneurship.

### 2.13. SUMMARY AND CONCLUSION

Chapter Two reviewed creativity and creative techniques, blocks, conditions of creativity and finally creative models that will prepare students to become entrepreneurs. The chapter began by reviewing creativity in general, followed by the definition of concepts in the literature, creative techniques and tools, blocks and conditions of creativity. According to Bruce and Bessant (2002:32) creativity is the willingness to join ideas in new ways to solve problems and exploit opportunities, while the successful application of new ideas in the form of new or improved products, services or processes serves as innovation.

However according to the researcher, a creative individual is one who is able to use his/her own power, time, knowledge, opportunity and imagination to create a product or service that satisfies a human need. He observes that if students are able to identify creative blocks, understand and use creative techniques, models and finally conditions of creativity, it will prepare them to become entrepreneurs. Chapter Three will review literature on who is an entrepreneur, innovation and techniques, and the link between creativity and innovation. A complete model of creative and innovative techniques for this study is provided at the conclusion of **Chapter 3**.

# CHAPTER THREE THE DEVELOPMENT OF A MODEL

### THAT WILL PREPARE STUDENTS TO BECOME AN ENTREPRENEUR

### 3.1. INTRODUCTION

Chapter Three will address the issue of what experts and other entrepreneurs believe to be creative and innovation techniques that will prepare someone to become an entrepreneur. The results obtained from the resolution of sub-problems 1 as reviewed in Chapter Two and sub-problem 2 as in the initial part of chapter 3 below will be integrated into a model in the final part of Chapter 3 to prepare students to become an entrepreneur. The purpose of this chapter is to review the literature related to creativity and innovation techniques. The chapter will also look at who is an entrepreneur, its advantages and disadvantages and distinction between entrepreneurship. Finally the chapter will conclude with the development of a training model to prepare students for entrepreneurship, to own their own business and to enjoy the benefits of owning an enterprise.

# 3.2. Definition of concepts

### 3.2.1. Innovation

Creativity is needed for innovation. Innovation is the process of both generating and applying creative ideas in some specific context. In other words, innovation involves the introduction of something new and valuable – an artifact or a method – into a functioning production, marketing, or management system, according to Cropley(2008:257). Innovation, according to Kotelnikov (2010:1), occurs at six interwoven areas in the organisation, which are, organisational-, strategy-, technology-, process-, product- and marketing innovation. These seven interwoven areas are illustrated in **Figure 3.1** below.

FIGURE 3.1 SYSTEMATIC APPROACH TO INNOVATION



Source: Kotelnikov (2010:1)

Also, Afuah (in Cropley 2008:258) point out that new technological knowledge and new market knowledge to processes and people lead innovation. Christensen, Anthony and Roth (in Cropley 2008:258) show that three factors define an organisation's strengths and weaknesses in relation to the innovation process, namely:

- 1. What a firm has (the importance of resources),
- 2. How a firm does its work (the importance of processes), and
- 3. What a firm wants to do (the firm's values).

Innovation is tied to behaviours, actions and personalities of the individuals, or actors.

Luecke and Katz (in Cropley 2008:258) emphasize two stages in the process of innovation where these behaviours, actions and personalities play an important role, namely:

- Invention that consists of idea generation, idea evaluation and opportunity recognition (creativity), and
- Exploitation that consists of development and commercialization (innovation).

Organisations need systems to be in place that provide the proper measurement, motivation, incentives and rewards to foster innovation that is aligned with the innovation strategy. It is necessary to design a system that encourages innovation and a structured process that guides the development of ideas. Innovation in an organisation is often used to refer to the entire process by which an organisation generates creative new ideas and converts these into useful and viable commercial products, services and business practices and is often referred to as "thinking outside the box". Thinking outside the box is a helpful state of mind when trying to come up with a solution to a problem. It is a way of looking at something and turning it on its head in order to come up with a new answer.

### 3.3. WHO IS AN ENTREPRENEUR?

According to Matthews (2007:5), an early initial focus of entrepreneurship research was on the unique characteristics of individual entrepreneurs. However the 42 characteristics of living entrepreneurs identified by Horn Day's research (1982) were also found in managers who did not choose to be self employed and hence did not differentiate the entrepreneurs. Recent work confirms that it is not possible to profile the typical entrepreneur. No psychological or sociological characteristics have been found which predict with high accuracy that someone will become an entrepreneur or excel at entrepreneurship (Davidson 2006: 1). Davidson's research based evidence suggests that if people are faced with an opportunity that suits them, and in interaction with people with complementary skills, most people would be able to pursue a successful career as entrepreneurs (Davidson 2006: 2).

Today scholars continue to debate what defines an entrepreneur. In French the word "entrepreneur" means: the one "who takes risks and starts something new" (Dees 2001:1). According to Drucker (quoted in Dees 2001:1) the entrepreneur always searches for change, responds to it, and exploits it as an opportunity. Also Sharma and

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Chrisman's (1999:11) define entrepreneurs as individuals (or groups of individuals) who act independently or as part of a corporate system, who create new organisations, or who initiate renewal or innovation within an existing organisation. According to Scott and Marshall (2009: 219), there are at least four different meanings or definitions of the term entrepreneur which are:

- The basic meaning is a person who owns and runs a business but not necessarily a new business, small, growing, or a successful business.
- Economists perspective; an entrepreneur as a person who risks capital and other resources in the hope of substantial financial gain, or as someone who specializes in taking judgmental decisions about the use and coordination of scarce resources. More emphasis is put on calculated risk taking.
- Sociologists view an entrepreneur as a creative innovator in the business sphere, in contrast with the conventional business owner, capitalist, or professional manager, who conforms more often to established procedures and objectives. It further stated that this conception originated with Joseph Schumpeter, who defined "entrepreneurs as individuals who develop and implement new combinations of the means of production, a function he described as fundamental to economic development" in his book, The Theory of Economic Development (1934).
- Finally, the entrepreneur is used casually to refer to the owner or creator of a new business, small, growing, and successful business. This includes any person who sets up a small business, or changes from being an employee of an organization to being self employed, even though neither needs any significant degree of innovation nor capital.

As part of the evolution of the entrepreneur and entrepreneurship phenomenon, the 1980s saw the development of the concept called intrapreneurs. This concept is about people who work alone or in teams who are employees within an organization or worked

for the organisation, but took responsibility for some innovation, costly exercise or risky development, or even involved in routine subset of activities, in the expectation of additional personal financial reward for successful ventures and profitable operations. In some cases the definition of intrapreneurs may include employees whose remuneration structure depends heavily on bonus and commission payments, or other incentive payments such as sales people (Scott & Marshall 2009: 219). The term entrepreneur or entrepreneurship seem to be elusive - there is no clear, consistent definition. Some researchers have simply equated venture creation with entrepreneurship, whilst others strongly believe that there exists a fundamental difference between entrepreneurs and small business owners. According to Martz, Biscaccianti, Neil and Williams (2005: 360), at least two scales, the Entrepreneurial Quotient (EQ) and the Entrepreneurial Attitude Orientation (EAO) can be used as tools to identify potential entrepreneurs.

Timmons and Spinelli (2009: 41) define effective entrepreneurs as internally motivated, high energy leaders with a unique tolerance for ambiguity, a keen eye toward mitigating risk, and a passion for discovery and innovation. These leaders create or identify and pursue opportunities by marshalling the diverse resources required to develop new markets and engage the inevitable competition. Martz et al.(2005: 361) categorise entrepreneurs into ten different subsets such as: independent innovators; economies of scale exploiters; value manipulators; successor in family business; independent; started from scratch; acquirer; creators; inheritors; and operators. In explaining what an entrepreneur is, Fayolle (2002: 260) states that there are eight principal themes of entrepreneurship, which are presented in **Table 2.2** 

#### 3.3.1. Types of Entrepreneurs

Casson, Yeung, Basu and Wedeson (2006:461), maintain that entrepreneurial behaviour is increasingly recognised as being heterogeneous with variations in the level and nature of experiance as a notable source of the differences between entrepreneurs. A distinction is made between habitual (experienced) and novice (first-time)

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entrepreneurs. For purpose of this study it is implicit that grade 10 school learners need to be approached from the novice perspective. Research on entrepreneurial motivation has produced two broad hypotheses popularly known as the "push" and "pull" theories of entrepreneurial motivation (Kirkwood 2009; Niemen, Hough & Nieuwenhuisen 2003; Gilad & Levine 1986). The push-theory postulate that people are pushed into entrepreneurship by negative situational factors such as dissatisfaction with their existing jobs, unemployment and setbacks in their careers. To the contrary the pull-theory postulate that alert people are attracted to entrepreneurship including the need for independence, money (personal wealth), challenge or need for achievement, opportunity identification and lifestyle desires. Four push-factors consisting of job dissatisfaction, the changing world of work, help from an employer to start a business and motivations regarding children were found to be important motivators (Wickham 1998:36) identifies the following personalities as entrepreneurs:

- 1. The inventor: someone who has developed a new innovation and who has decided to make a career out of presenting that innovation to the market.
- The unfulfilled manager: a professional manager who, despite being offered a stable income, intellectual stimulation, status and a degree of security still feels the lack of independence.
- 3. The displaced manager: because of economic changes (for example, restructuring trends such as downsizing and delivering).
- 4. Young professionals: young, highly educated individuals with formal management qualifications who have decided to skip the experience of employment and have opted to work on their own.
- 5. The excluded: unemployable individuals.

The last category raises more interest because unemployability is not defined and could probably refer to the lack of skill, education, information or finance in someone who still has the potential to be an entrepreneur. Miner (1996:35) agrees with Wickham, asserting that there is not only one set of entrepreneurial characteristics or one kind of entrepreneur. The following types of entrepreneurs have being distinguished:

- a. Personal achiever entrepreneurs are those who possess the following characteristics: the need to achieve, the desire to plan and set goals, strong personal initiative and strong personal commitment.
- b. The emphatic super-sales person entrepreneurs are those whose characteristics include: the capacity to understand and feel with another, the desire to help others, the belief that social processes are important, the need to have a strong, positive relationship with others.
- c. The real manager entrepreneurs are characterised by: the desire to be a corporate leader, decisiveness and positive attitude to authority, the desire to compete, a desire for power and to stand out from the crowd.
- d. The expert idea generator entrepreneur is known by his or her desire to innovate, love of ideas and the desire not to avoid assuming the different personalities of potential entrepreneurs.

What one makes out of the above descriptions of the entrepreneur is that they accommodate just about everybody.

# 3.3.2. Advantages of becoming an entrepreneur

That entrepreneurship is encouraged all over the world is due to the following advantages of being an entrepreneur (Bowler & Dawood 1995: 7; Bygrave 1994: 5; Zimmerer & Scarborough 1996: 3):

- 1. An opportunity to gain control over one's destiny.
- 2. An opportunity to reach one's full potential.
- 3. An opportunity to contribute to society and be recognized for one's efforts.
- 4. An opportunity for financial benefit. Although money is seldom the overriding motivation for an entrepreneur, it is regarded as a material measure of success and symbolises the merits of one's ideas and dreams.

### 3.3.3. Drawbacks of being an entrepreneur

Entrepreneurship is not without problems. The following shortcomings have been identified (Timmons 1999: 312; Zimmerer & Scarborough 1996: 5; Deakins 1996: 162; Clark & Louw 1991: 7-8; Lambing & Kuehl 1997: 17): Firstly, they work long hours without time for recreation, family or personal reflections. Secondly, wrong decisions have a tremendous effect financially since they operate on very thin margins because their credit worthiness is very low and their only finance often is from their own or family contributions. Thirdly, entrepreneurs are ambitious and set high goals that at times are not achievable. That the enterprise has been established and is running is no guarantee of success and this leads to high-tension levels. Fourthly, too many legal instructions and regulations dampen freedom of entry and performance and entrepreneurs may not be able to protect their investment through patents or other means. Lastly, sometimes the business culture does not support entrepreneurial behaviour sufficiently to enable active participation in the economy.

# 3.4. Difference between Entrepreneur and Entrepreneurship

The term entrepreneur is used to describe men and women who establish and manage their own business. The process involved is called entrepreneurship. Entrepreneurship is an abstraction whereas entrepreneurs are tangible people. Entrepreneurship is a process and an entrepreneur is a person. Entrepreneurship is the outcome of complex socio-economic, psychological and other factors. Entrepreneur is the key individual central to entrepreneurship who makes things happen. Entrepreneur is the actor, entrepreneurship is the act. Similarly, entrepreneurship is the most effective way of bridging the gap between science and the marketplace by creating new enterprises. An entrepreneur is the catalyst who brings about this change. Also entrepreneurship is the process of mobilising and risking resources (land, capital, human resources) to utilise a business opportunity or introduce an innovation in such a way that the needs of society for products and services are satisfied, jobs are created, and the owner of the venture profits from it. This process includes new as well as existing ventures, but the emphasis is

usually on new products or services, and new businesses (Cronje, Du Toit, Marais & Motlatla 2004:40).

Entrepreneurship is the act of initiating, creating, building and expanding an enterprise or organisation, building an entrepreneurial team and gathering other resources to exploit an opportunity in the marketplace for long-term gain (Van Aardt & Bezuidenhout 2002:4). Entrepreneurship is a dynamic process of vision, change, and creation. It requires an application of energy and passion towards the creation and implementation of new ideas and creative solutions. Essential ingredients include the willingness to take calculated risks in terms of time, equity or career, the ability to formulate an effective venture team, the creative skill to marshal needed resources, the fundamental skill of building a solid business plan and finally the vision to recognise an opportunity where others see chaos, contradiction and confusion (Kuratiko & Hodgetts 2004:30). This study seeks to look at how creative and innovative techniques will prepare students to become entrepreneurs, therefore the attention and our focus is on the entrepreneur as a person – not entrepreneurship as a process.

#### 3.5. ENTREPRENEUR INNOVATION

According to Wickham (2004:183), innovation is described as a means of exploiting business opportunities. It includes the successful exploitation of new ideas or change that creates a new dimension of performance. The term innovation may refer to either radical or incremental changes to products, processes or services. In 1987, Robert Solow was awarded the Nobel Prize for developing a modern Growth Theory, which identifies technological progress and innovation has the greatest engines of growth. Since then, a consensus has emerged that innovation has a significant effect on productivity at the firm-, industry-, and country level (Cameron 1996:10). Also recent research suggests that innovation is a central mechanism that transforms social capital into economic growth (Akçomak, Semih & ter Weel 2006). The social perspective of innovation is gaining more attention; many scholars highlight the importance of social cohesion (Moulaert, Martinelli, Swyngedouw, & Gonzalez 2005:1969). Also European Commission emphasizes the importance of innovation to the development of sustainable inclusive societies in (Europe

European Commission 2005:24). Despite extensive study, there is no unified definition of "innovation" (Grønhaug & Kaufmann 1988:530). There is a growing consensus that economic wealth and social cohesion are mutually reinforcing and innovation is increasingly relevant for both goals.

According to Drucker (1985), a commitment to the systematic search for imaginative and useful ideas is what successful entrepreneurs share...entrepreneurship can occur in a business of any size or age because...it has to do with...innovation, the disciplined effort to improve a business' potential...from a conscious, purposeful search for opportunities – within the company, industry and larger social and intellectual environment...from pulling together different strands of knowledge, recognizing an underlying theme in public perception, or extracting new insights from failure. The key is to know where to look. The Oslo manual (2005) defines innovation as "a new significant improved product (goods or service), or process, a new marketing method, or a new organizational method, business practices, workplace organization or external relations". A key feature of innovativeness is the ability to combine knowledge across fields – from science and technologies to art and design – "thinking outside the box". Invention and innovation are not the same: invention is the first occurrence of an idea for a new product or process, while innovation is the first attempt to carry it out in practice, Oxford handbook of innovation (2004).

The distinction implies that innovation is a more complex process involving more actors and more sources of learning. Innovation can take place at any time in all parts of the economy – including non-market sectors and public services, Oxford handbook of innovation (2004). Innovations are driven by various sources, like demand, new R&D knowledge or new possibilities to apply existing knowledge in other contexts. A growing number of companies have shifted from large Research and Development departments to more open innovation approaches, combining in-house and external resources in order to maximize economic value. Also the creative and innovative power of the "users" is used to create new innovations, (Florida 2004). Similarly, enterprises that work closely with users have a good innovation success rate (Leonard & Dorothy 1988:603). Broadening of the innovation focus widens the group of innovators. According to Florida (2004) it emphasises the importance of innovation management, leadership, continuous training, and the development of organisational routines for knowledge application and innovation among all workers.

According to European Commission (2006), the complexity of innovation processes demands institutional setups which support interaction. Higher education and vocational training contribute innovation by teaching knowledge and skills, creating new knowledge and supporting partnerships and lifelong learning. Also the modernisation of European higher education – reforms in quality, governance and funding – seeks to respond to the needs of society, including innovativeness. The wide understanding of the benefits of joint knowledge creation and sharing in universities, businesses and society at large is essential for Europe's innovation, (European Commission 2006). Similarly, an important topic among researchers studying innovation and innovativeness concerns effects on performance and can be traced back to Schumpeter (1934), who looked at economic development as a process of quantitative changes, driven by innovation ( Fagerberg, Nelson & Mowery 2005).

Also, Grønhaug and Kaufmann (1988:530) linked innovativeness to organisational performance and argued that firms must be innovative to gain a competitive edge in order to survive and grow. Other authors have also emphasized the importance of innovation (Deshpande, Farley & Webster 1993:23; Han, Kim & Srivastava 1998:30; Rogers 2003:550; Knowles, Hansen & Shook 2007:363; Crespell & Hansen 2008:1703). However, still others have argued that failure is the most likely outcome of product innovations (Schilling & Hill 1998:67; Cooper 2001; Jenssen 2003:93), and that the imitator and not the innovator may be left with the profit (Teece 1986:285). Also the creation of "meaningful experiences" for consumers should be the concern of innovation (Boswijk, Thijssen & Peelen 2005). "Experiential services" centre on the experiences of the clients during interaction with the service providers instead of only the advantages that follow from the products and services they receive (Voss & Zomerdijk 2007:97). Product and process innovation occur along with incremental process innovations, and the creation of additional business models is particularly characteristic of experiential

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services. The uncritical use of manufacturing-based arrangements may be unsuitable for the study of innovation in the service sector (Voss & Zomerdijk 2007:97). Drucker (1999) went on to identify seven key areas in which entrepreneurs should look for innovation opportunities namely:

- a) Unexpected occurrences, including failure; for instance Ford gained knowledge from the Edsel failure that the automotive market was segmented by lifestyle instead of income group and promptly produced the Mustang;
- b) Incongruities were used to justify Alcon Laboratories' monopoly for its enzyme product to dissolve the ligament in cataract removal. The enzyme was readily accepted by eye surgeons because the product resolved the problem of having to cut off the ligament, a step that eye surgeons were not comfortable in performing;
- c) **Process needs** for example linotype made it easy to produce newspapers quickly and advertising allowed news to be distributed practically free of charge;
- d) Industry and market changes Drucker attributed the success of brokerage firm Donaldson, Lufkin and Jenrette to its founders' recognizing that the market for institutional investors would predominate in future;
- Demographic changes, such as when the Japanese were quick to recognize the baby bust and education explosion around the 1970s and used the change to move strongly ahead into robotics;
- f) Changes in perception, which could dramatically bring about innovations as with the Americans' obsession with health and keeping fit. Their obsession had launched magazines, health foods and exercise classes;
- g) New knowledge that could require long lead times and convergence of other kinds of technologies, such as an operational digital computer, which did not materialize until 1946 despite knowledge about it being available by 1918. It is noted that a combination of these areas could account for the successful and highly profitable innovations for companies like Sony.

Josef Schumpeter (1934) is largely regarded as the first important source of modern innovation theory. In his economic analyses, Schumpeter focused on the firm and the role

of the entrepreneur in the economic process. In general, innovation denotes the successful introduction of novelties. The word "innovation" itself originates from the Latin word "innovare", which can be translated as "renewal". To be innovative thereby indicates the ability to create something new. It is normal to separate the act of innovation and the output of innovation. It is also normal to distinguish between inventions and innovations. An invention is the first occurrence of an idea for a new product or process, and innovation is the act of putting it into practice (Fagerberg, Nelson,&Mowery2005).

### 3.5.1. FORMS OF INNOVATION

This categorisation is based on the idea of applications or uses for innovation. By this references are made to areas or fields where innovations are used. It is possible to differentiate three principal applications for innovation: product, service and process.

### 3.5.1.1. Product innovation

According to Smith (2006:22) product innovations loom large in the public imagination. Products, especially consumer products, are probably the most obvious innovation application. This needs to be given much attention for students to become entrepreneurs. Example is the Dyson vacuum cleaner product innovation. Dyson (1997) developed a "dual-cyclone" technology and used it to create a new efficient vacuum cleaner. As a vacuum cleaner is a consumer product, what makes it innovative is that it functions in a different way from a conventional vacuum cleaner. Instead of employing a fan to suck dust into a bag, it rather dispenses with the bag and uses Dyson's patented dual-cyclone technology to extract dust and place it in a clear plastic container. From a commercial perspective the attraction of product innovation is that the novelty of a new product will persuade consumers to make a purchase. It is not surprising that "product development" is one of the four business strategies put forward by Ansoff (1988) for the future development of a business. Product innovation does not necessarily need to be consumer products, they can just as easily be industrial products such as machinery and equipment.

### 3.5.1.2. Service innovation

Service innovation typically takes the form of a new way of providing a service, often with a novel and very different business model, (Smith 2006:23). Occasionally they even take the form of entirely new service. The creation of 'Direct line' telephone insurance business is an example of the first type of service innovation. For years the insurance business had been transacted via high street outlets, door-to-door, by post or through intermediaries known as insurance brokers. Peter Wood, the creator of the Direct line telephone insurance business, realized that with appropriate on-line computer services, it would be possible to cut out these expensive and unproductive ways of dealing with the public, and telecommunication in recent years has given rise to a whole raft of service innovations very similar to Direct line, where new technologies are used both to provide customers with a better service and enable service providers to improve their productivity by providing it more economically.

### 3.5.1.3. Process innovations

According to Smith (2006:24), if service innovations come second after product innovations, then process innovations come a poor third. Yet process innovations often have an even bigger impact on society than either product or service innovations. The early nineteenth century Luddite movement in and around Nottingham (Chapman 2002), where stocking knitters who worked on machines in the home took to rioting and breaking the new, more efficient, machines located in factories, because they feared that the new machines would destroy their livelihoods, is testimony to the power of process innovations. Also much less well known, but just as significant in terms of its impact on society, is the "float glass" process developed by Alistair Pilkington, in which plate glass is manufactured by drawing glass out across a bed of molten tin (Quinn 1991). Prior the introduction of this process innovation, plate glass used for shop windows and office windows was expensive and of poor quality, largely because the only way of getting a flat surface was to grind it and polish it (Smith 2006:25). **Table 3:1** below depicts Henry Ford's introduction of the moving assembly line an example of process innovation.

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# TABLE 3.1CRAFT V. MASS PRODUCTION AT FORD 1913-1914

Assembly	Craft Production,	Mass Production,	Production in Effort
Time	1913 (minutes)	1914 (minutes)	(%) percentage
Engine	594	226	62
Magneto	20	5	75
Axle	150	26.5	83
Components			
into vehicle	750	93	88

Sources:(Wormack, Jones & Roos 1990).

According to Smith (2006:25), Henry Ford's introduction of the moving assembly line at his new Highland Park in Detroit in 1913 resulted in a dramatic reduction in manufacturing effort. Improved productivity on this scale enabled him to reduce the price of his T model car. The price of a Ford Model T, which in 1908 was \$850, fell to \$600 in 1913 and \$360 by 1916 (Freeman & Louca 2001:275).

# 3.5.2. TYPES OF INNOVATION

In order to understand better what innovation is so that students would know when they are innovating, there is the need to draw a distinction among the various types of innovation which will prepare them to become entrepreneurs. According to Smith (2006:26), it has long been noted that one can differentiate innovation in terms of the degree of novelty associated with them. Also some innovations employ a high degree of novelty, while others involve little more than "cosmetic" changes to an existing design. This distinction between big-change and small-change innovations has led some to group innovations as either radical or incremental (Freeman 1982). Differentiating innovation by using just two classes in this way limits it and does not bring the subtle but important

difference between innovation (Smith 2006:26). This is because it fails to show where the novelty often lies. To address this, Henderson and Clark's (1990:9-30) analytical framework provides a typology which allows us to analyse and predict modest innovation in terms of both competition and market place. This typology can be applied to all forms of innovation as it seems to focus only on product innovation.

At the heart of Henderson and Clark's analytical framework is the recognition that products are actually systems. As systems they are made up of components that fit together in a particular way in order to carry out a given function (Smith 2006:27). Henderson and Clark (1990:9) ascribes that to make a product requires two distinct types of knowledge, which are:

# Component knowledge

That is knowledge of each of the components that performs a well defined function within a broader system that makes up the product. This knowledge forms part of the "core design concepts" (Henderson and Clark 1990) embedded in the components.

# • Systems knowledge

According to Henderson and Clark (1990:9) this knowledge is about the way the components are integrated and linked together. This knowledge is about the systems works and how the various components are configured and work together. This they refer to as "architectural" knowledge.

The distinction between component and system knowledge are used to differentiate four categories or types of innovation by (Henderson and Clark 1990:9), as depicted in **Figure3.2** below.

# FIGURE 3.2 TYPOLOGY OF INNOVATIONS



Components/Core Concepts

Source: Smith (2006:28).

### 3.5.2.1. Incremental innovation

According to Smith (2006:29) this refines and improves an existing design through improvements in the components. Also Christensen (1997) defines incremental innovation as "a change that builds on a firm's expertise in component technology within an established architecture". In the case of the washing machine example used earlier, incremental innovation would be in a matter of offering a machine with a more powerful motor to give faster spin speeds. Similarly Smith ascribes that incremental innovation is the most common. Gradual improvement in knowledge and materials lead to most products and services being enhanced over time. However these enhancements typically take the form of refinements to particular components rather than changes in the system.

### 3.5.2.2. Radical innovation

Radical innovation is about much more than improvements to existing designs. A radical innovation calls for a whole new design, ideally using new components configured in a

new way (Smith 2006:29). According to Henderson and Clark (1990), radical innovation establishes a new dominant design, and hence a new set of core design concepts embodied in components that are linked together in a new architecture. Radical innovations are comparatively rare (Smith 2006:29). According to Rothwell and Gardner (1989:147), at the most about 10 percent of innovations are radical. Radical innovation is often associated with the introduction of a new technology as depicted in **Table 3.2** below.

# TABLE: 3.2 RADICAL INNOVATION

Radical innovation	Technology	Impact on society
Telephone	Telecommunications	New means of mass communication
Jet Airliner	Jet power	Growth of mass travel, foreign holidays
Television	Television	New leisure activity, entertainment
Personal Computer	Microprocessor	New administrative system, internet services. Example; banking

Sources: (Smith 2006:29)

# 3.5.2.3. Modular Innovation

Modular innovation uses the architecture and configuration associated with the existing system of an established product, but employs new components with different design concepts (Smith 2006:31). Similarly, as with incremental innovation, modular innovation involves new or at least significantly different components. The use of new or different components is the key to the feature of modular innovation, especially if the new
component embraces a new technology. New technology can transform the way in which one or more components within the overall system can operate, but the system and its configuration/ architecture remains unchanged (Smith 2006:31).

#### 3.5.2.4. Architectural innovation

According to Smith (2006:32) with architectural innovation, the components and associated design concepts remain unchanged but the configuration of the system changes as new linkages are instituted. Similarly Henderson and Clark (1990:12) point out that the essence of an architectural innovation is the configuration of an established system to link together existing components in a new way; this is not to say there will not be some changes to components. Manufacturers may well take the opportunity to refine and improve certain components, but essentially the changes will be minor, leaving the components to function as they have in the past but within a new re-designed and re-configured system. Also the Walkman was a huge commercial success, selling 1.5 million units in just two years (Sanderson & Uzumeri 1995:761). However the significance of the Walkman is not just that it sold well, it illustrates the power that is sometimes associated with architectural innovations.

## 3.6. INNOVATION STYLES AND TECHNIQUES

Innovation Styles 2007 introduce four Innovation Styles and how they help to categorize and strategize the selection of idea-generation techniques; these will serve as a basis of the techniques students can use to innovate and to prepare them to become entrepreneurs. According to Innovative Style (2007:5), acknowledging the different ways we innovate is a key to working together successfully – in a team, in an organization, or as individuals. Similarly, human beings have a solitary approach to meeting a creative challenge, when using the mixture of the four Innovation Styles: **Visioning, Modifying, Exploring**, and **Experimenting** (IS 2007:5). To instill a healthy environment for innovation, each approach must be recognized, valued, and put to its best use while practicing versatility among all four approaches(Innovation Styles 2007:5).

This implies that in order for students to become entrepreneurs they need to adopt and make use of these techniques.

## 3.6.1. Modifying

People who have Modifying profiles like to refine and improve what has already been done – they refine and optimize. These techniques are more linear than intuitive in their approach to generating ideas. They take advantage of different ways of organizing known information so as to approach problems from new and more comprehensive angles. Using a logical pattern or a sequence of steps, they help focus the attention on where to look for innovations.

## 3.6.2. Visioning

According to Innovation Styles (2007:5), people who have visioning profiles like to imagine an ideal future and let long-term goals be their guide; they envision and idealize. Visioning searches for a clear mental picture of the future. When students are able to instill this, it will prepare them to become entrepreneurs.

## 3.6.3. Exploring

According to Innovative Styles (2007:5),people who have Exploring profiles like to question assumptions and discover novel possibilities. They challenge and discover and this often employs symbols to sense what is metaphorically possible. These techniques take advantage of the right-brain capability to perceive whole solutions in sudden leaps of logic. When students are able to explore, it will prepare them to become entrepreneurs.

## 3.6.4. Experimenting

People who have Experimenting profiles like to test out various combinations of new ideas and learn from the results – they combine and test (IS 2007:5). Students should be

in a position to create new ideas and do experiments to achieve a result out of that. At a later stage the results need to be tested to find out how it will help realize an innovative idea – this will help them to conceive an idea for product or service in order to become an entrepreneur. Based on the four innovation styles, Innovation Styles (2007:13) proposed four compass questions that one can use based on specific issues to generate ideas as depicted in Table 3.4; if applied this will prepare students to become entrepreneurs.

# TABLE 3.3 COMPASS QUESTIONS ON INNOVATION STYLES

	Visioning	Modifying	Exploring	Experimenting
Promote strategic thinking by asking:	"How can we be ideally positioned within our industry?	"How can we improve upon our core strengths and competencies?"	"How can we rewrite the rules of competition?"	"How can we synergize different markets / technologies / partnerships?"
<i>Meet customer needs by asking:</i>	"What could	"How can we build	"How can we offer	"How can we give
	represent	on what our	our customers	customers
	the ultimate	customer	radically	the best mix of
	wishes of our	is already	new and exciting	features and
	customers?"	doing?"	solutions?"	benefits?"
Improve quality /	"What could give	"What could simplify	"What could totally	<i>"What processes could we integrate and synergize?"</i>
work processes	us a 'world class'	or refine our	re-engineer our	
by asking:	process?"	processes?"	processes?"	

Sources: Innovation Styles (2007:13).

## 3.7. THE LINK BETWEEN CREATIVITY AND INNOVATION

Burns (2005:267) indicates that creativity is essential in an entrepreneurial organization. He suggests that creativity leads to innovation and entrepreneurship drives the whole process. In his opinion creativity is the very soul of entrepreneurship. Similarly, Bolton and Thompson (2000:157) add to this view by asserting that creativity as the starting point of opportunity is turned to practical reality through innovation. Creativity can be described as the process through which innovation occurs. Creativity thus occupies the roles of an enabling process by which something new comes into existence. To create a viable innovation, the creative idea must be identified and accompanied by a viable means of converting the idea into a needed product or service. This implies that innovation and creativity together link up to introduce a product or service for an individual in order to become an entrepreneur. According to Bamber, Owens, Davies and Suleman (2002:204), innovation is traditionally the successful implementation of creative ideas. Therefore creativity is construed to be the nexus of innovation and a necessary condition for innovation to occur. This however means that creativity underpins innovation and innovation underpins entrepreneurship. In the business environment, a new product or service must be substantially different, not only an insignificant change. The change must increase customer value or producer value. Innovations are intended to make entrepreneurs more financially secure as they are able to meet customer needs through being innovative and offer products that satisfy customer needs.

The succession of many innovations grows the whole economy. In the organisational context, innovation may be linked to performance and growth through improvements in efficiency, productivity, quality, competitive positioning, and market share. Organisations that do not innovate effectively may be destroyed by those that are innovative. This is due to the fact that innovative organisations respond to changes in customer needs and wants. The ability to respond to changes in customer needs and wants enhances an organisation's competitive advantage (Nieman & Bennett 2002: 58). Entrepreneurs have innovative ideas, because business involves new products, new processes, new markets, new materials and new ways of product development. Successful entrepreneurs and small business owners are innovative and creative. Innovation results from the ability to see, conceive, and create new and unique products, processes or services.

Entrepreneurs see opportunities in the marketplace and visualise creative new techniques to take advantage of the identified opportunities. Innovation or the production of new or original ideas and products is usually included in any definition of creativity (Cronje, Du Toit & Motlatla 2005:43). Creativity is needed for innovation. Innovation is the

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process of both generating and applying creative ideas in some specific context. In other words, innovation involves the introduction of something new and valuable – an artifact or a method – into a functioning production, marketing, or management system, according to Cropley (2008:257). **Table 3.5** below explains the link between the definition of innovation and creativity, personality traits of creative and innovative individuals and the creative and innovative process as ascribed by (De Jager 2010:33).

## TABLE 3.4

Links between Creativity and Innovation			
	Creativity	Innovation	
Definitions Personality traits of creative and innovative individuals	<ul> <li>Accomplishment of new development.</li> <li>A result of the interaction between an individual and his/her environment</li> <li>With commercial intent</li> <li>Strong commitment to a personal aesthetic</li> <li>Explore <ul> <li>Mental mobility</li> <li>Tolerance for complexity</li> <li>Have to work harder to sell their ideas</li> <li>Accept failure and learn from it</li> <li>Work at it constantly</li> <li>Flexibility of mind</li> <li>Know their creative abilities</li> <li>Commitment to perfection</li> <li>Ask the right questions</li> <li>Ability to synthesise/analyse</li> <li>Intrinsically motivated</li> <li>Willingness to take risks</li> <li>Excel in finding problem</li> <li>Original</li> <li>Can produce new forms and patterns</li> <li>Reinterpretation of information</li> <li>Veer towards non-conformity</li> <li>Crave fame</li> <li>Disturb the status quo of the company</li> </ul> </li> </ul>	<ul> <li>Accomplishment of new developments- A result of the interaction between an individual and his/her environment</li> <li>With commercial intent to create wealth</li> <li>High valuation of aesthetic qualities in experience</li> <li>Broad interests</li> <li>Attraction to complexity</li> <li>High energy</li> <li>Independence of judgment</li> <li>Intuition</li> <li>Self-confidence</li> <li>Ability to accommodate opposites</li> <li>Firm sense of self as creative</li> <li>Persistence</li> <li>Curiosity</li> <li>Intellectual honesty</li> <li>Internal locus of control</li> <li>Risk taking</li> <li>Entrepreneurs</li> </ul>	
Creative and innovative process	<ul> <li>Orientation</li> <li>Preparation</li> <li>Incubation</li> <li>Illumination</li> <li>Verification/evaluation</li> </ul>	<ul> <li>Define the problem</li> <li>Idea generation</li> <li>Verification/evaluation</li> </ul>	

## LINKS BETWEEN INNOVATION AND CREATIVITY

Sources: De Jager (2010:33).

#### 3.8. A MODEL OF CREATIVE AND INNOVATIVE TECHNIQUES

As explained earlier in Chapter Two, researchers of creativity have attempted to define models that can be used to describe the interaction between the various components of creativity. This makes it possible to put forward a model of creative and innovative techniques that will prepare an individual to become an entrepreneur. This section of the chapter discusses the design of a model of creative and innovative techniques that will prepare a person to become an entrepreneur. The basis of the model is derived from Amabile's creativity model. To arrive at the final model an integration of the various creative and innovative techniques explained in both Chapters 2 and 3, will form the actual structure of the model of creative and innovative techniques that will prepare people to become entrepreneurs. According to Amabile (1994:4), creativity is stimulated through the confluence of three components namely, Knowledge, Motivation and Creative thinking.

Amabile (1994:4) asserts that knowledge is the relevant understanding an individual brings to bear on a creative effort. This means that even though knowledge is a necessary condition to creativity, it does not lead directly to the generation of a new product. On motivation Amabile (1999:1157) explains that people become creative when they are primarily intrinsically motivated, by enjoyment, satisfaction and the challenge of the work itself. This means that people need to possess these characteristics to be motivated in order to be creative. Amibile further observes that, even though this is a necessary condition for the motivation to be creative, intrinsic motivation can be undermined by extrinsic conditions that will lead people to feel externally controlled in their work; therefore without it there exists a serious challenge to be motivated in order to become creative. This means that motivation which is faced with major challenges will take a long time to prepare someone to become an entrepreneur.

According to Amabile (1994:4), creative thinking explains all cognitive creative processes like inspiration, imagination, and flexibility and combining the non-conventional into a novel idea– this will prepare people to become entrepreneurs. Okpara (2007:4) observes that creative thinking refers to how people approach problems and solutions and the

capacity to put existing ideas together in new combinations. This means that ideas generated should be combined to solve a problem, and therefore to introduce a new product or service. This in turn will prepare a person to become an entrepreneur. Amabile (1994:4) explains that creative thinking techniques relate to how people approach problems and depends on personality and thinking/working styles or techniques. These thinking styles or techniques are the basis of the model of creative and innovative techniques that will prepare a person to become an entrepreneur. Below is the model of a creative and innovative technique as depicted in the **diagram 3.3** below;

#### CREATIVE AND INNOVATIVE TECHNIQUES MODEL Mind Mapping Story Boarding SCAMPER Creative Techniques Morphological Brainstorming Lotus Blossom analysis. Excursion Checklist technique -Grid techniques Idea processo Special software. -Spatial hypartest Visualisation & information techniques Graphic -Mental systems System Provocation -Snowball Techniques П Ţ ſ, Innovative Techniques Modifying Experimenting Exploring Visioning New Product/ New Product/ New Product/ New Product/ New Product/Service Service Service Service Service

ENTREPRENEUR

FIGURE 3.3

According to the model above, in order for someone to become an entrepreneur requires the person to choose among the techniques to innovate and create. People should be in position to identify which profile characteristics he/she thinks can easily help him/her to generate the needed product ideas in order to become entrepreneurs. People with a Modifying profiles like to refine and improve what has already been done – they refine and optimize, so to produce products/service first the person should choose between any of

Sources: Researcher

the creativity techniques for modifying, examples are the SCAMPER techniques, Brainstorming, checklist or snowball techniques to generate the ideas that can be put into a prototype and to the final product to the market.

When one is able to use these techniques for creativity and innovation, it will be possible to use and access ones own product/service ideas that will make one an entrepreneur. In the same vein, characteristics to innovate– when combined with any of the techniques to create, for instance morphological analysis, mental provocation, idea processor software– will enable the person to generate new product or service ideas through experimentation in the market. Students with Experimenting profiles will test various combinations of new ideas and learn from the results. When combining and testing it, this may enable them to produce their own product/service to become entrepreneurs. According to Innovative styles (2007:5), people with Exploring profiles like to question assumptions and discover novel possibilities; they challenge and discover and this often employs symbols to sense what is metaphorically possible. When people with exploring characteristics to innovate use Mind mapping, excursion techniques, and spatial information systems, they will be able to make assumptions and also to discover novel possibilities of new product ideas. With the help of symbols they may find a solution which is the making of a new product/service on the market.

The final part of the model explains that when students identify and choose the Lotus Blossom grid techniques, story boarding, visualisation or graphic techniques as a tool to think creatively and search for a clear mental picture of the future, for instance by picturing the brand, package, contents as well as the quality of the proposed product/service they want to create, through visualising they can make this idea become reality. This will result in these students becoming entrepreneurs. According to the Innovative style (2007:6) people will benefit by knowing which techniques belong to which innovative style (techniques). When a specific innovative style profile of an individual is known, it can be selected to generate products/services and thereby the individual will become an entrepreneur. It is further explained that to be innovative and creative, it is necessary for an individual or group to identify which techniques should be facilitated to generate a new product. This may lead to entrepreneurship.

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# 3.9. AN IMPLEMENTATION MODEL TO TRAIN STUDENTS TO BECOME ENTREPRENEURS

According to Anusca, Romina and Yves (2009: iii),creativity and innovation are becoming increasingly important for the development of the 21<sup>st</sup> century society. Education is seen as central in fostering creative and innovative skills. In order to train students to become entrepreneurs, an extended model needs to be designed to prepare them. According to the European Commission, creativity concerns all fields of human activity and it can be developed at all levels of education (EC 2008).

Also, since the mid-1990s, there has been a growing recognition from policy-makers and commentators alike that learner creativity is an extremely important aim for education. The economic imperative to foster creativity in business has helped to raise the profile and credentials of creativity in education more generally (Anna 2001:11). In order to prepare students to become entrepreneurs, the Lateral thinking training model propounded by Edward de Bono will be used. Edward de Bono has had faculty appointments at the universities of Oxford, London, Cambridge and Harvard. He is widely regarded as the leading authority in the direct teaching of thinking as a skill. He originated the concept of lateral thinking and developed formal techniques for deliberate creative thinking (de Bono1970:1).

According to De bono Consulting (2013), lateral thinking gives a deliberate, systematic process resulting in innovative thinking. In order to prepare students to become entrepreneurs, Lateral thinking training will teach them how to think creatively, turn problems into opportunities, find alternative solutions, and dramatically increase the number of new and practical ideas by the use of unconventional thinking techniques normally untapped by average ways of thinking. Lateral thinking is also needed not only by people involved with strategy devising, or who work in Research and Development, but by anyone desiring a disciplined process for innovation, idea generation, concept development, creative problem solving, or a strategy to challenge the status quo thereby benefitting from lateral thinking (de Bono Consulting 2013). It should be noted that in

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order to become an entrepreneur, students should study the training model below to creatively generate own ideas, turn ideas to opportunity and convert opportunities to business. The training model is depicted in **figure 3.4** below.

## FIGURE 3.4

## CREATIVITY AND INNOVATION TRAINING MODEL

Generating	Converting	Opportunity	
Ideas Creatively	Ideas to Opportunity	to Business	
Thinking Techniques	Opportunities	Business Skills	
-Alternatives/Concept Extraction	-The higher growth - Size	<ul> <li>General management skills</li> </ul>	
-Focus	- Durability	- Marketing skills	
-Challenge	-High gross margins		+
-Random Entry	- Free cash flow	- Operational skills	ENTREPRENEUR
-Sensitizing Techniques	-The greater the opportunity	- Human resource management skills	
-Provocation	-The extent of market imperfectness	<ul> <li>Communication skills</li> <li>Business plan compilatio</li> </ul>	n
-Harvesting	- Discontinuities etc.	- Financial management	
- Treatment of Ideas		- Cash flow management	

Sources: Researcher

#### 3.9.1. Generating Ideas using De Bono's Creativity and Innovation techniques

According to Bailey (2007:46), De Bono's research found that the brain is indeed a self-organizing system that routinely interprets inputs into patterns. It is not then inherently designed for creativity. However, if certain lateral thinking tools are applied, the brain can be encouraged or trained to become more creative. Also, all around us is a vast amount of information, data, ideas, and images that we process through our five senses. Our brains are highly developed pattern-recognition machines, and thus process this information into a handful of recognizable patterns (De Bono1992: 151). Similarly, many people suppose that new ideas mean new inventions in the form of mechanical contrivances. This is perhaps the most obvious form a new idea can take but new ideas include new ways of doing things, new ways of looking at things, new ways of organizing things, new ways of presenting things, new ideas about ideas. From advertising to engineering, from art to mathematics, from cooking to sport, new ideas are always in demand. This demand need not be just a general indication but can be as specific as one likes. One can actually set out to generate new ideas (De Bono 1970:41). It is against this background that students should be trained to be more creative and innovative to generate own ideas in order to become entrepreneurs. Below are the techniques one can use to generate initial ideas.

## 3.9.1.1. Alternatives/Concepts Extraction

With alternatives/concepts extraction, De Bono (1992:119) emphasises that students should be trained to identify the problem (product) or the effect it has on society. How to find an appropriate solution to the problem (product idea) the student should be taught to ask, "Is there another way?" "What are the alternatives?" Also to understand this, "We go from an idea ... to a concept which becomes the fixed point for other ideas. We also learn from the concept to a 'broader concept,' which then becomes the fixed point for alternative concepts" (De Bono 1992: 129). "In general, it is difficult to work at the concept level. So it makes sense to work at the idea level and then keep 'pulling back' to find the concept. What is the concept here? What concept is being carried out by the idea?" (De

Bono1992:139). These are the questions the students should know and understand in order to generate ideas creatively. Also De Bono (1970:45)states that the search for alternative ways of looking at something seams natural to people and that they feel is something they just always do. He said to some extent it is true, however further stressed that lateral search for alternatives goes far beyond the natural search. In the natural search for alternatives one is looking for the best possible approach whilst in the lateral search for alternatives one is trying to produce as many alternatives as possible. One is not looking for the best approach but for as many different approaches as possible. Students should be taught to generate enough ideas when they are using this technique in order to discover one where opportunities exist for business purposes in order for them to become entrepreneurs. One may generate a number of alternatives and then return to the original most obvious one.

- A generated alternative might prove a useful starting point.
- A generated alternative might actually solve the problems without further effort.
- A generated alternative might serve to rearrange things so that the problem is solved indirectly (De Bono 1970:46).

According to De Bono (1970:47), to change the search for alternatives from being a good intention to a practical routine, students can set a quota. A quota is a fixed number of alternative ways of looking at a situation. This will enable them to generate ideas to solve a problem (product). He went further to identify geometric figures as a method to generate ideas through alternatives. Through this students can look at the material and make of it what they will --- the material will remain the same. This is in contrast to verbal material where tones, emphasis, individual shades of meaning all give the material an individual flavour which is not available to everyone (De Bono 1970:47).

According to De Bono (1970:48), to generate ideas alternatively using geometry, students should study, or if a teacher is involved they should adhere to the following procedure. The teacher/student starts off with the geometric figures in order to indicate what the generation of alternatives is all about. When the idea is clear s/he can move on to less artificial situations. In practice the situation should be as follows:

1. The figure is shown on the board to the whole class or else given out to each student on a separate piece of paper.

2. The students are asked to generate different ways of describing the figure.

3. The teacher can then collect the written alternatives or not, depending on the size of the classroom and the available time.

4a. (papers not collected)

The teacher asks for a volunteer description of the figure. If one is not forthcoming he points at someone and asks that person to describe the figure. Having received the first description the teacher asks for other variations. The other possible variations are listed. 4b. (papers collected)

The teacher may pick out one or two papers without needing to go through the lot. He reads out the description. He then asks for other variations or goes through the accumulated papers and picks out any variations. If there is sufficient time between sessions the teacher could go through the papers and draw up a histogram list of the variations offered .This is then shown at a subsequent session.

5. The function of the teacher is to encourage and accept variations, not to judge them. If a particular variation seems outrageous the teacher does not condemn it but asks the originator to explain it more fully. If it is obvious that the rest of the classroom cannot be persuaded to accept this outrageous variation then it is best to list it at the bottom. However it should not be rejected.

6. Whenever there is difficulty in generating variations the teacher must insert a few possibilities which he himself has prepared beforehand. Finally the other method of generating ideas is the material type; students can be made to contribute their mind in several ways to generate ideas. It is clear that if students follow the steps and other methods and procedures diligently, they will be able to generate ideas to seize opportunities which could be converted into business in order to become entrepreneurs

## 3.9.1.2. Focus

According to De Bono (1992: 92), "Focus is a deliberate effort to pick out a new focal point". Focus enables one to sharpen or change ones perspective in order to improve creative efforts (De bono consult 2013). Through focus a person can learn to focus on areas that no one else has bothered to think about. This could lead to a breakthrough idea

simply because the person is the first one to pay any attention to that area. **Focus example**: A student is waiting at a dentist's office for an appointment. The office has stored some magazines, a television, a couple of children's toys, and an aquarium for people to look at while they wait. The student can decide to think of ideas for ways to make the waiting more enjoyable and productive. To do this, the student should visualise:

- 1. Put out books of crossword puzzles, brain teasers, and Sudoku.
- 2. Make available several laptops with free wireless access.
- 3. Convert one wall of the waiting room into a white board with a sign inviting people to doodle or draw on it.

The power to define a creative focus at will offers a big advantage in becoming more innovative and a creative thinker. Moreover, understanding how to add general areas for focus as well as problem areas, further grows the student's chances to come up with innovative and creative ideas (De bono Consulting 2013).

## 3.9.1.3. Challenge

De Bono (1992:105) observes that the creative challenge simply refuses to accept that the current way is necessarily the best way. According to De Bono (1970:65), a cliché is a stereotyped phrase, a stereotyped way of looking or describing something. But clichés refer not only to arrangements of ideas but to ideas themselves. It is usually assumed that the basic ideas are sound and then one starts fitting them together to give different patterns. But the primary ideas are themselves patterns that can be restructured. It is the purpose of lateral thinking to challenge any assumption for it is the purpose also to try and restructure any pattern. General agreement about an assumption is no guarantee that it is correct; it is historical continuity that maintains most assumptions – not a repeated assessment of their validity. Factor challenge has three elements, which are:

- a) The block: this blocks the current path and forces the mind to find an alternative.
- b) Escape-escape from the unnecessary condition to find an alternative and new pattern.
- c) Drop it drops the unwanted ideas at the end of the process and looks for the next.It challenges the continuity of the mind in certain ways.

The continuity of analyses looks at some types of continuity such as the continuity of neglect, continuity of lock in, the continuity of complacency, the continuity of time-sequence (De bono Serious Creativity: Using the Power of Lateral thinking to create Ideas 314), which are all useful in training students to generate own ideas.

## 3.9.1.3. 1. Example: Demonstration problem using the challenge technique

Students can be taught to generate ideas through the challenge technique. For instance a student can be given instructions to plant four special trees so that each one is exactly the same distance from the others. How would the student arrange the trees? The usual procedure is to try and arrange four dots on a piece of paper so that each dot is equidistant from every other dot. This will turn out to be impossible. The problem seems impossible to solve. The assumption is that the trees are all planted on a level piece of ground. If one challenges this assumption one finds that the trees can indeed be planted in the manner specified. But one tree is planted at the top of a hill and the other three are planted on the sides of the hill. This makes them all equidistant from one another (in fact they will be at the angles of a tetrahedron). One can also solve the problem by placing one tree at the bottom of a hole and the others around the edge of the hole. When students study or are taught in this way it will enable them to challenge existing problems and come out with new ideas, which can be converted into an opportunity leading to a new business establishment.

## 3.9.1.4. Random Entry

In using random entry, De Bona (1992:177) explains that students can generate ideas by obtaining a word which has no connection whatsoever with the situation and hold the two together. From that juxtaposition students will develop new ideas. According to De Bono (1970:136), to bring into reality random stimulation two ways to follow are:

- (1) Exposure.
- (2) Formal generation.

#### 3.9.1.4.1. Exposure

Students should be taught that the division between exposure and formal generation of random stimulation is only one of convenience; if one actively puts oneself into a position where one is subjected to random stimulation that is part exposure and part formal generation. He further explained the following as a means of generating random inputs which can be used to train students to generate ideas.

1. Accepting and welcoming random inputs. Instead of shutting out something which does not appear relevant one regards it as a random input and pays it attention. This involves no further activity than an attitude that notices what comes along.

2. Exposure to the ideas of others. In a brainstorming session the ideas of others act as random inputs in the sense that they do not have to follow one's own line of thought even though they occupy the same field of relevance. Listening to others, even if one disagrees very strongly with their ideas can provide useful input.

3. Exposure to ideas from completely different fields. This sometimes goes under the heading of cross disciplinary fertilization. It means discussing a matter with someone in a totally different field. For instance a medical scientist might discuss systems behaviour with a business analyst or with a fashion designer. One can also listen to other people talking on their own subject.

4. Physical exposure to random stimulation. This may involve wandering around an area which contains a multitude of different objects, for instance a general store like Woolworths or a toy shop. It may also mean going along to an exhibition which has nothing to do with the subject you are interested in. The main point about the exposure method is to realize that one is never looking for anything. One could go to an exhibition to see if there was anything relevant. One could discuss a problem with someone in another field in order to hear their views on it. But that is not the purpose. If one goes looking for something relevant then one has preset ideas of relevance. And such preset ideas of relevance can only arise from the current way of looking at the situation. One wanders around with a completely blank mind and waits for something to catch ones attention.

useful.

## 3.9.1.4.2. Formal generation of random input

According to De Bono (1970:136), attention is a passive process even if one wanders around an exhibition without looking for anything relevant. Attention tends to settle on items which have some relevance to the established way of looking at a situation. No matter how hard one tries to resist doing so, one is still exerting some selection. This reduces the random nature of the input but still allows it to be very effective. In order to use truly random inputs students need to be trained to generate them deliberately. This seems paradoxical, since random input is supposed to occur by chance. What students need to know is to set up a formal process to produce chance events. Shaking a pair of dice is such a situation. Three methods suggested are:

- 1. Use of a dictionary to provide a random word.
- 2. Formal selection of a book or journal in a library.
- 3. The use of some routine to select an object from the surroundings (e.g. the nearest red object).

Formal selection of a book or journal simply means that one makes a point of picking up a journal from a particular position on the shelf no matter what the journal may be. One opens it and reads any article in it, no matter how remote these may seem. One can do the same thing with a book. These are but examples of how one can set up deliberate habits or routines in order to generate random inputs.

## Example: Relating a random word

A problem is stated and written out on the blackboard. The students are then asked for suggestions of a number up to the number of pages in a dictionary (e.g. a number from 1 to 460) and then for another number to give the position of the word on that page (e.g. 1 to 20). Using a dictionary the corresponding word is located. The word is written down together with its meaning (unless the word is a very familiar one). The students are then

asked for suggestions as to how the word could be related to the problem. To begin with, the teacher may have to make most of the suggestions himself until the students get used to the process. Each suggestion is elaborated briefly but no attempt is made to note down the suggestions. The session goes on for 5 to 10 minutes. The ideas can further be converted into an opportunity, thereby realizing business to become an entrepreneur.

## 3.9.1.5. Sensitizing Techniques

The purpose of sensitizing techniques is to feed ideas into the mind in order to allow our thinking to follow new and creative tracks. Techniques which belong to sensitizing techniques are stratals and filament.

Stratals: This refers to a number of unconnected statements put together solely to form a stratal. The aim of a stratal is to sensitize the mind so that new ideas can be realized (De Bono 1992:184). "The strata is consciously formed by an unconscious idea, then the strata may serve to bring that idea into consciousness" (Serious Creativity: Using the Power of Lateral thinking to create Ideas 186). The more disconnected layers may result in more sensitization.

The Filament technique: it distinguishes ways for thinking requirements to form a creative process. "The basic requirements of the thinking situation are listed one under the other. Each of the requirements is then considered in a "filament" extending from this requirement (Serious Creativity: Using the Power of Lateral thinking to create Ideas 319).

## 3.9.1.6. Provocation

A provocation (abbreviated as "PO") is a temporary idea that is used to encourage new perceptions and patterns and is "used for its movement value" (De Bono1986: 58). Thus, the goal is to "move on from the provocation to end up with useful ideas" and the provocation itself is only a "temporary phase". The provocation serves to take us out of the comfort of an existing pattern (De Bono 1995:18). For instance, if my focus (objective) is to improve a new car model, and my PO is "dolphin", I would think of ideas brought to mind by the word dolphin (sleek, fast, intelligent, dorsal fin, communicates with others),

and then apply those ideas to the focus: intelligent cars, cars with aerodynamic fins, cars that communicate with other cars or traffic lights and so forth.

In training students to generate ideas we can use provocation as a technique. Possible pairs of words might include:

- Ice cream PO electric light
- Horse PO caterpillar
- Book PO policeman
- Rain PO Wednesday
- Stars PO football
- Stars PO decision
- Shoe PO food

Students are not specifically asked to relate the words, or to find some connection between the two or to show what the two words have in common. Any kind of ideas which arise is accepted. There is no question of directing the kind of ideas that the students ought to be having. If on reading through the results one cannot see the connection then one asks how it came about, one asks for the missing links. One does not care what the idea is but to know how it came about.

## 3.9.1.7. Harvesting

According to De Bono (1970), in any creative thinking session, there are at least three purposes: 1. To find the magic idea; 2. To produce new ideas that can be shaped into usable ideas; 3. To stock the mind with a repertoire of concepts and ideas that may not be useful at the moment but that will enrich any future thinking on the same or related matters (and even on other matters). With poor harvesting, the second and third of these purposes is ignored (De Bono 1992: 211). Students should be trained to harvest ideas by following this process and afterwards they can generate product ideas to become entrepreneurs.

#### 3.9.1.8. Treatment of Ideas

De Bono reviews multiple ways of evaluating ideas including: quick rejection of ideas, shaping ideas, tailoring ideas, strengthening ideas, reinforcing ideas, take-up of ideas, comparison, faults and defects, consequences, testability, and evaluation (De Bono 216-223). Students should be given training to identify ideas creatively as beginners. According to De bono consultancy (2013), the treatment techniques are good for working with initial ideas to make them more specific. It will give the student a particular picture of what must be done and what needs to satisfied based on what s/he wishes to offer to society. When ideas are treated by such means, an idea will be generated about a perceived product.

#### 3.9.2. Opportunity recognition and identification

According to Antonites (2003:120), it is important to figure out the fundamental difference between the entrepreneur's idea and the opportunity the idea is destined for. This will enable students to identify areas where a fruitful business venture can be established. Timmons (1999:80) defines an opportunity as a phenomenon that seems attractive. Attractive in the sense of the profitability that it poses for the entrepreneur as well as attractive with regards to the value it will hold for the consumer who is destined to use it. Focusing more on the newness of the opportunity, Baron (2006) defines the opportunity as "perceived means of generating economic value that previously has not been exploited and is not currently being exploited by others". Students should be able to identify the signals for what constitutes economic value and to exploit it creatively, in order to convert the ideas into a business and thereby becoming an entrepreneur. Also based on Venkataraman's work, Sarasvathy (2002) describes the entrepreneurial opportunity as "a set of ideas, beliefs and actions that enable the creation of future goods and services in the absence of current markets for them". Kor, Mahoney, and Michael (2007: 1191) state that entrepreneurs do not act in response to changes and economic environment, but they stimulate demand through innovation by creating new products and services, advertising, and personal charisma. It is further argued that entrepreneurial

judgement goes beyond pure imagination, good insight, and self confidence but involves information gathering and consulting facilities within an organisation. Entrepreneurship is about devising and creating new markets and evaluating product or service opportunities and techniques. These views clearly resonate well with the role of opportunity in venture creation as presented in the Timmons model.

Timmons and Spinelli (2009: 112) state that for the entrepreneurs to spot opportunities with ease, they should apply the following criteria: The higher growth, size, durability, and high gross margins and free cash flow, the greater the opportunity. It is further argued that entrepreneurs should look out for the extent of the market imperfectness, the higher rate of change, discontinuities and chaos greater inconsistencies in existing service and quality, in lead times and lag times, greater vacuums in information and knowledge. All of the above represent the areas where entrepreneurs should creatively focus when searching for high potential opportunities. Similarly, Baron and Ensley (2006) identified differences between novice and experienced entrepreneurs. Where the novice entrepreneurs focus more on newness or uniqueness and their gut feeling, the experienced entrepreneurs focus more on factors and conditions directly related to actually starting and running a new venture. Examples are the ability to generate positive cash flow and meeting customer needs.

Also, Baron and Ensley (2006) came up with five attributes as a dimension of the nature of opportunity. These are, (1) solving a customer's problem, (2) ability to generate positive cash flow, (3) manageable risk, (4) superiority of product/service, and (5) potential to change the industry. Moreover on the judgment of opportunity, Baron and Ensley(2006), suggested five attributes, (1) favourable financial model, (2) positive assessments or advice from others (friends, financial advisors, and industry experts), (3) how novel the opportunity was, (4) the existence of a large untapped market, and (5) intuition or gut feeling. Students should study the nature and judgment of opportunity as mentioned above. This will enable them to foresee when opportunity arises and to tap into it in any future business venture in order to become a successful entrepreneur. According to Dyer (1997:18), the successful entrepreneur is opportunity oriented. This behaviour is

measured in as much as how s/he identifies new opportunities and formulates new ideas to make use of such opportunities. Through creativity and innovation techniques, students will be able to identify an available opportunity in any idea generated so as to convert it into a business in order to become an entrepreneur. Hisrich and Peters (2002:39) sees the entrepreneur's total commitment to the identified opportunity as of the utmost important. This should also be seen as important to students as a yardstick to be converted into their own business and become a successful entrepreneur. The identification of opportunity by students as well as its in-depth analysis is a sign for the creation of the suitable business plan, which is an effective caricature of how the business will be— therefore students should study this. To analyse an opportunity correctly, Timmons (1999:84) presents the following graphic illustration which should be studied by learners carefully to identify the proper cues creatively for a business establishment.

# FIGURE 3.5 ANALYSIS OF OPPORTUNITY



Market size

Sources: Adapted from Timmons (1999:84).

Students should take note that, opportunities are per definition time limited. The framework wherein the opportunity is present is called the window of opportunity or

opportunity opening. For a student to become an entrepreneur s/he must be able to take hold of an opportunity by using his or her idea. **Figure 11** reveals that with the growth of any market, certain opportunities open up as time goes by. As the market expands and becomes more established, opportunities that are more advantageous than earlier or possibly later in the market growth cycle, will present themselves. The opportunity (window) moreover opens at a certain time and as growth increases it may become saturated – therefore the opportunity possibilities decreases. It should however be noticed that the length of time that the market opportunity is "open" thus is of the utmost importance to the student, in order to convert it into a business. Similarly, Hisrich and Peters (2002:41) support this by seeing the window of opportunity as one wherein the true and perceived value of the opportunity must be determined as well as the risk and income that could result from it.

The opportunity should also be placed in relation to the student's personal skills and goalsand the in-depth competitive-analysis surrounding the opportunity should be determined. They add that the "window" could be the most measurable determinant of risk and income and reward. The aforementioned also forms the basis for income and reward. The authors point out that a wide difference exists between the appearance and value of an opportunity analysis plan and the real business plan. The distinction is of great value with regards to the fundamental role that the opportunity analysis plan has to play in the in-depth analysis of the opportunity as such. This plan also includes a descriptive analysis of the product or service including the analysis of the student and, if available, his/her team specification in respect of planned activities and resources that are needed to change the opportunity into a viable business creatively. When analyzing opportunity physically the following questions framework should be available and be known:

- Which market need has to be satisfied?
- What personal observation was completed to analyse the need?
- What social prerequisites are seen as underlying this need?
- What market research was done to describe the market need?
- Are the patent requirements seen as a part of the opportunity?
- Does noticeable competition exist in the market and how can the behaviour of the

competition be best described?

- What does international market and competition look like?
- What would the profitability be like in terms of the activity that it requires?.

Students should also notice that several challenges can prevent the realization of the window of opportunity and they must be proactive to prevent it. Also, Sahlman and Stevenson (1991:36) mention that certain hurdles could arise within this window of opportunity. Certain strategies by competitors can challenge and hasten the closing of the window, things like the developing of product substitutes, technology may hold certain complications due to its turbulent nature, and consumer preference can drastically change as well as the manufacture's attitude. The authors suggest that these hurdles could be easily overcome or prevented by means of the implementation of cost-effective methods, distribution power, patent right, trade secrets and obvious product differentiation.

According to De Bono (1996), successful creativity calls for certain skills that change primary concepts and perceptions. He ascribes the fact that creativity is a logical process and should the individual accept and understand the process as logical, it will motivate him/her to take further creative action. This statement presents certain training possibilities for students in order to become entrepreneurs. It should however be noticed that when students are trained to identify opportunities arising from their ideas generated in terms of its high growth, size, durability of the idea, high gross margins, free cash flow, how great the opportunity, the extent of market imperfectness, and finally discontinuities, they will be able to see clear business ideas and implement these ideas by establishing a business.

## 3.9.3. Converting opportunity into Business (Business Skills (B/S))

Once students have recognised opportunities as explained above, there is the need for them to be taught on how to convert such opportunities into a business entity by creatively converting them into a viable business venture, and thereby becoming entrepreneurs. To do this they will need business skills that will enable them to put their ideas into practice. Business skills are required to run the business and to sustain it on a daily basis. According to Nieman and Bennet (2006:4), there are certain functional areas in business which are essential for any entrepreneur. These areas include: general management, marketing management, financial management, human resource management, production and operations management, corporate communications management. Students will need these skills to creatively set up a business in order to become entrepreneurs. The most significant business skills that students will need to become an entrepreneur are summarized in **Table 3.5** below.

## TABLE 3.5

## BUSINESS SKILLS REQUIRED TO BECOME ENTREPRENEURS

Business Skills	Training Need Descriptions
General management	How a business works and how it must be managed. Planning, organising, leading, motivating and control also form part of general management. Proper planning for the future, the investigation of all production factors, leading the operation and the control of all staff activities will ensure that the performance of the entrepreneur is greatly enhanced.
Marketing management	Conducting market research, selecting a target market and how to sell to it and positioning the business in the market. Identifying the marketing mix (price, product, place, promotion, physical evidence, people and process) within the business as well as managing consumer behaviour.
Legal skills	Business forms, contractual law, understanding the necessity for ethical behaviour within a business as well as registering trademarks, logos and designs.
Operational management	Manufacturing the finished product and service, identifying raw materials and suppliers, identifying wholesalers and retailers.
Human resource	Management of people within the business. Recruiting, selecting and training and development of employees on a continuous basis are important.
Communication skills	Internal communication between employees and owner/manager and external

TABLE 3.5. BUSINESS SKILLS REQUIRED TO BECOME ENTREPRENEURS CONTINUED		
	communication between the entrepreneur (student) and all other stakeholders such as customers and suppliers.	
Business plan compilation	Before committing time and energy to preparing a business plan, the entrepreneur (student) should do a quick feasibility study of the business concept. The feasibility study – done by the entrepreneur (student) – is in preparation for writing the business plan. The business plan is a comprehensive action plan of how an entrepreneur will achieve his/her business goals.	
Financial management	How to do financial planning, how to collect money from customers and pay suppliers, what sources of finance must be used to obtain capital and how to compile financial statements – income, balance and cash flow statements.	
Cash flow management	Managing the cash inflow and outflow in a business and solving cash flow problems.	

Source: Botha (2006:71).

## 3.9.3.1. General Management Skills

According to Hisrich, Peters and Shepherd (2005:21) the development of particular skills, namely inner control, risk taking, innovativeness, being change oriented, persistence and visionary leadership differentiates an entrepreneur from a manager. Training in business skills will enable a student to acquire the necessary aptitudes and abilities to become a successful entrepreneur. However in addition to the management skills explained in **Table 3.5** above, a detailed explanation of the specific skills needed is summarised in **Table 3.6** below:

## TABLE 3.6

## GENERAL MANAGEMENT SKILLS SPECIFIC AREAS OF TRAINING NEEDS

Areas of Training	Explanation and what needs to know/trained
Planning	<ul> <li>Students need to know and understand that:</li> <li>Planning talks about the activities of the business in the near future, as well as in the distant future.</li> <li>It helps managers to detail out exactly what should be done by a particular business to be successful and achieve its goals.</li> <li>It's a critical management activity, which implies that if they fail to plan the business will also fail. To become an entrepreneur, students should be able to plan from production to finance and to the final consumer.</li> </ul>

TABLE 3.6: GENE	RAL MANAGEMENT SKILLS TRAINING AREAS CONTINUED
Organizing	<ul> <li>The needs to understand what goes into the organizing of the entire activities that takes place in the business to become a successful entrepreneur. According to bound et al. (2011:14), organizing is a framework used to put a plan into implementation. People in the business are given tasks and responsibilities that enable the business to accomplish its objectives. When businesses are organized well, it will help managers to minimise costs, because the best use of resources and time are made. For instance through proper organizing;</li> <li>The production department will know in reality the number of units to produce.</li> <li>The marketing department when to launch an advertisement.</li> <li>The human resources manager the number of jobs to fill.</li> </ul>
Leading	Leadership is working with and through individuals and groups to accomplish business goals. Leadership focuses on interpersonal aspects and is regarded as a force that inspires and energises people and brings about change, (Bounds et al. 2007:107). Leadership is important because it influences others to help achieve objectives, if the influencing does not happen, leadership does not take place, and therefore there is the need for students to emulate this behavior in order to become a successful entrepreneur. There is the need for the best form of leadership style be adopted, there is an option between; 4. Autocratic - where leaders have absolute authority on all matters. • Participative - Where leaders believe in power sharing and involve their subordinates in
	<ul> <li>decision-making, policy formulation, and problem solving.</li> <li>Consultative - leaders who consult to groups and members before making a decision but do not accept the group's thinking and ideas.</li> <li>Consensus - those who encourage group discussions and make decisions based on their findings.</li> <li>Democratic - those who transfer the final power and authority for making decisions to the members/groups.</li> <li>Free-reign - refers to leaders who turn almost all power and authority to groups/ members; it is also called laissez-faire leadership.</li> </ul>
Motivating	entrepreneurs. Students should have the zeal and motivation by encouraging the workers, subordinates and entire employees in their efforts, so that they can contribute their best to the success and growth of the business. Even more than particular cognitive abilities, a set of motivational attributes - childlike curiosity, intrinsic interest, perseverance bordering on obsession - seem to set individuals who change the culture apart from the rest of humankind" (Nakamura & Csikzentmihaly 2002; 258). This will make them successful entrepreneurs.
Control	Control includes creating realistic standards to measure the performance of employees. Afterwards if there are any deviations from the standards, appropriate steps are taken to rectify it to ensure that the goals of the business are achieved. Control is an ongoing process in a business (Bounds et al. 2011:14). Students need to know and understand the purpose of control so that the desired goals of the business are achieved.
Risk taking	<ul> <li>Risk is the possibility or probability that an event such as recession in the economy could occur and that it will have consequences which will impact negatively on the business objectives, thereby causing financial of physical loss. To become successful entrepreneurs, students need to know that risk management is important which should be applied in all functional areas of the business. Therefore even though a calculated risk should be taken, the need for risk management process cannot be over-emphasized, these include: <ul> <li>Identifying possible risk by identifying risk-bearing activities within the business.</li> <li>Analysing each possible risk to assess how likely it is that the risk will happen.</li> <li>Evaluating the potential impact of risk in terms of financial liability.</li> <li>Controlling or monitoring the risk-by studying reports, and</li> <li>Monitoring trends in the environment so that measures can be taken to prevent it from happening.</li> <li>Treating the risk by determining what actions to take should the event occurs, using resources and contingency plans and also communicating to stakeholders (Bounds et al 2011:14).</li> </ul> </li> <li>Students should also understand that becoming a successful entrepreneur entails risk taking in a number of ways, including: <ul> <li>Their money when starting that particular business.</li> <li>Their raeres when they leave a secure job.</li> <li>Their family life as start-up needs a lot of time.</li> <li>Their health because of stress in taking a lot of responsibility on themselves.</li> </ul> </li> </ul>

TABLE 3.6: GENERAL MANAGEMENT SKILLS TRAINING AREAS CONTINUED			
Creativity	Creativity in business means coming up with a new product/service, or a new way of doing things, or even using existing products to satisfy different needs; anything that will create the need for new product or service (Bounds et al. 2006:44). The student should be creative - which is a skill a manager needs and also to become a successful entrepreneur.		
Change oriented	In order to become successful entrepreneurs, students as potential entrepreneurs should be trained to always look out for opportunities to change people's mindset so that newer, cheaper, fasters, safer - in short, better products find a place in the market. This should be in the minds of students as an agent of change in society.		

#### Sources: Researcher

If students are able to understand these skills and when they are applicable, it will enable them to identify when to implement a particular skill that will help manage the business as a successful entrepreneur. Therefore the importance of general management skills cannot be overemphasize if the students wish to become effective and successful entrepreneurs.

#### 3.9.3.2. Marketing management

On marketing training, students should be taught how to conduct a needs assessment on the market and the industry it wishes to undertake its business. This will help in the identification of the needs and wants of the potential customers, the preferences and lifestyle of consumers in the market, and will help them position their product/service in the minds of the consumers. This will contribute to the ability to compete well in the market in order to succeed. Training in marketing will also help in identifying the marketing mix (price, product, place, promotion, physical evidence, people and process). After training, students will acquire knowledge on the best pricing strategy and methods to be used. They have an option to choose between penetration pricing, skimming pricing, psychological pricing, cost-price method, and other price methods and mechanism. The student should also be trained on the product packaging, labeling and branding, the design methods and logos as well as colours to apply on the product, the quantity, the contents with connection to the consumer taste and preferences in order to realize profit. On the subject of distribution, students will be trained on the mode of distribution that is available i.e. the choice between intensive, selective and direct. Also the student should be trained on methods of distributing the products, which are mostly through agents, wholesalers or retailers, or directly to the consumer. In order for consumers to know the students' potential products, and for them to become entrepreneurs, training on promotion should also be given. This will help them create awareness on their service or product; training on the best form of media, e.g. print media (newspaper and magazine), electronic media (TV and Radio), the internet, posters, catalogues, flyers and outdoor billboards. T**able 3.7** below explains in detail in which areas students should be given training in marketing:

## TABLE 3.7

## AREAS OF TRAINING IN MARKETING

Target market	The target market refers to people who are most likely to buy the products or utilise the service of the business (Bean, Kleyn, Llewellyn, Maliehe, Maex& Kotze 2011:199). Students need to be trained to identify who their target audience will be so as to offer the best product to satisfy their needs.
Market research	<ul> <li>Training on how to conduct research is also very important to prepare students to become entrepreneurs. According to Bounds et al. (2011:154), research is a systematic investigation to find facts or collect information. There exists the need for the students to be trained to use the various research tools such as questionnaires, market surveys, interviews, observations. Training on market research hopes to provide details on: <ul> <li>The size of the total market</li> <li>What the business market share is likely to be</li> <li>The target market (potential customers)</li> <li>What influences the buying power and decision of the target market</li> <li>The make-up of the competitors of the business</li> <li>What special characteristics the product needs in order to deal with competition</li> </ul> </li> </ul>
The marketing mix	<ul> <li>This refers to a combination of the seven Ps, which are:</li> <li><b>Product</b> - This refers to what will be produced or provided to the customers/target market (Bounds et al 2011:188). The business needs to sell the right product that meets the needs of the customer. The student has to ask the following questions: <ul> <li>What are we selling?</li> <li>How will it be packaged?</li> <li>What is our product design?</li> <li>Am I selling a physical product or a service?</li> </ul> </li> <li>Price - A product is worth what customers are prepared to pay for it. When setting a price for a product, students should ensure that the price they set is high enough to pay all costs and leave enough to make a profit. The price should not be so high that it prevents potential buyers.</li> <li>Students have a choice between the following types of pricing: <ul> <li>Cost-based pricing - under this unit cost of a product is calculated as the cost of production divided by the number of units produced. The three steps involved in the determination of cost based pricing are:</li> <li>Step 1: Calculate the cost of production</li> </ul> </li> </ul>

TABLE 3.7: AREAS OF TRAINING IN MARKETING CONTINUED			
	<ul> <li>Step 3: Add a reasonable profit percentage; for example, 30% (Bounds et al. 2011: 190).</li> <li>Supply and demand pricing - with this method the selling price is not affected by the cost, but by the supply and demand for goods and services. Mostly prices are set high when demand for goods is high and low when there is a surplus of goods (Bounds et al. 2011: 191).</li> <li>Comparative pricing - this price is made when students after the cost-based pricing has being set, reviews the prevailing market price using quality and the ruling market price, to identify the gaps and price the product (Bounds et al. 2011:191).</li> </ul>		
	<b>Place</b> - Refers to where the customers can buy the products. It should be noted that the product should be there at the right time and right place, students should understand the means of distributing their products to the final consumer, they have a choice between agents, wholesalers and retailers, where necessary agreement should be made between them with regards to transport, delivery times, quantities to supply, insurance, method of payments and legal obligations if any.		
	<ul> <li>Promotion - According to Bounds et al. (2011:188), this refers to how the product or business attention will be made available to the potential buyers. The various means to this are:</li> <li>The print media, such as newspapers and magazines</li> <li>Electronic media, such as TV and radio</li> <li>The internet</li> <li>Posters, catalogues, flyers and outdoor billboards</li> <li>Packaging (Bounds et al. 2011:192).</li> </ul>		
	<b>People</b> - Refer to all the people included in the production and consumption of the product or service (Bounds et al. 2011:188). We try to identify the size of the total market, what the market share is likely to be, the potential customers, also the need to identify whether employees are coping with the dress code of the organization and how skilful they are at the production process.		
	<ul> <li>Process - Talks about the production and sale of products or services also includes informing potential customers and making follow-up after sales. The question also is does the business have the best machines to produce swiftly to make products available to the consumers?</li> <li>Physical evidence - "Evidence or the environment which customers experience, involving making known to the customers what they are buying and following up with on-site support centres, also assisting in updates and upgrades" (Bounds et al. 2011:188). Students will have to develop the skills on the marketing mix variables to be able to design appropriate products to satisfy their needs, in order to become a successful entrepreneur.</li> </ul>		

Sources: Researcher

#### 3.9.3.3. Legal skills

Students as potential entrepreneurs should understand the legal environment of their business. These refer mainly to legislations that have been passed by government and through parliament. In South Africa several laws and Acts have been passed by the government – these need to be given much attention in order to become a successful entrepreneur. In addition to that, issues such as business forms, contractual law, understanding the necessity for ethical behaviour within a business as well as registering trademarks, logos and designs, should be given attention by the potential entrepreneur (student). **Table 3.8** below summerises the legal skills students should understand to prepare themselves in order to become entrepreneurs.

#### TABLE 3.8

## LEGAL SKILLS TO PREPARE STUDENTS

Law/Act/Legislation on business	Meaning and interpretation to students
Contract law	An agreement between two or more persons to do or not to do something. A contract can either be oral, written, or implied (Bounds et al. 2011:172). It should be noticed that in order to become an entrepreneur the written contract should be given much attention, because this is where for instance a contract of employment, insurance on assets as well as purchase and sale of goods will be made by them.
Labour Relations Act No. 66 of 1995, amended by Act No. 12 of 2002	This Act regulates the relationship between employees and their unions on the one hand and employers and their organizations on the other hand. It may amend and repeal laws concerning labour relations in order to achieve sound labour relations (Bounds et al. 2013:6). The students should understand this to enable them conform to it, to avoid any future labour disputes, since they are potential employers.
Employment Equity Act No. 55 of 1998 as updated by notice No. 733 of 2009	This Act gives attention to international labour standards on employment discrimination, to ensure global compatibility (Bounds et al. 2013:9). This ensures the same terms and conditions for employees in the same company without discrimination. It provides for the certification of psychometric testing to assess employees. Students should understand this so they will employ it during their business operations in order to become a successful entrepreneur.
Basic conditions of employment Act No. 75 of 1997 as amended by the Basic condition of employment Amendment Act 2002	This Act is part of the contract between employer and employees, which needs much attention by the students. This is where conditions on working hours, leave, employment contracts, deductions, payslips and termination of services are stipulated. Under this, fair labour practices are regulated and moreover, it adheres to the rules and regulations set by the International Labour Organisation (ILO).

TABLE 3.8: LEGAL SKILLS TO PR	REPARE STUDENTSCONTINUED
Compensation for Occupational Injuries and Diseases Act No. 61 of 1997 as amended	diseases, but excludes workers who are found guilty of wilful misconduct, members of South Africa defence force or Police service. The Act ensures compensation for workers who are disabled due to occupational injuries, become ill or die whilst employed (Bounds et al. 2013:15). Students should understand when to implement this Act, for a better work environment.
Consumer protection Act No. 68 of 2008 implemented in 2011	According to Bounds et al. (2013:26), the Act is applied to all businesses in South Africa. So potential student entrepreneurs cannot dodge it. In order not breach the Act students should be trained so that they do not offer unscrupulous businesses which use the consumers because of the lack of their knowledge to their advantage. The Act also protects consumers against contracts involving unfair terms which also limit the liability of the business.
Ethical Behaviour	Ethical behaviour is a set of values that are morally acceptable in society which defines right, fair, good and honest actions (Bounds et al. 2013:61), it should be noticed that businesses that display a clear commitment to ethical conduct outperform those that do not display ethical conduct. Also students should know that ethical conduct is a prerequisite for professionalism, therefore it should be applied in all sectors of the business.
Trademarks, logos and designs	According to Susan and Julie-Anne (2006:163), a trademark is a logo or name applied by a business or producer to differentiate its product or business. The trademark is officially registered and protected by law from unauthorised use. The student should have an idea of a unique trademark that can be used to differentiate its business from others in order to become a successful entrepreneur.
Business forms	<ul> <li>Students should be trained to identify the best form of business ownership since the success of any business depends on the correct form of ownership. It should be realised that students have an option between, sole trader, partnership, companies as well as cooperative. In choosing between this students should consider factors like: <ul> <li>How the business will be managed and controlled - as well as continuity.</li> <li>Who contributes capital.</li> <li>Who bears the risk - whether there is limited liability or unlimited liability.</li> </ul> </li> </ul>

Sources: Researcher

## 3.9.3.4. Operational management skills

Training should be given to students on operational management, so as to know what goes into the prototype of the potential product, manufacturing the finished product and service, also identifying raw materials and suppliers and finally identifying wholesalers and retailers who will contribute to the sales of the product/services to the other sectors of the economy. According to Bounds et al. (2011:194), the operations plan refers to the process of the marketing plan. Once decision regarding the kind of product/service to be

produced has being made through investigation, students need to arrange for production facilities. According to Anil Kumar and Suresh (2009:1), a set of interrelated management activities, which are involved in manufacturing certain products, is called production management. If the same concept is extended to services management, then the corresponding set of management activities is called operations management. Also, production is defined as "the step-by-step transformation of one form of material into another form through chemical or mechanical process to create or enhance the utility of the product to the user".

This means production is a value addition process. At each stage of processing, there will be value addition (Kumar & Suresh 2009:3). It important to realise that production leads to operation, therefore understanding both concepts will prepare students well in order to become successful entrepreneurs. It is therefore paramount for students to understand the production system which is "that part of the organisation, which produces the products of an organization, so as to understand how they will be able to produce their own products as depicted in the **diagram 3.5** below.



# FIGURE 3.6 THE PRODUCTION SYSTEM

Sources: (Anil Kumar & Suresh 2009:1)

From the figure above, resources flow within a defined system, and are combined and transformed in a controlled manner to add value in accordance with the policies communicated by management in order to present the final product to the customer. It should be noted that the production system has the following characteristics:

- Production is an organised activity therefore all production systems have an objective.
- The system converts the various inputs to useful outputs.
- It does not work in isolation from the other organisation system.

There is feedback on activities, which is necessary for controlling and improving system performance (Anil Kumar & Suresh 2009:3). Production management needs to be undertaken having produced the goods; this is to make sure that students plan, organize, direct and control the activities of the production function(Anil Kumar & Suresh 2009:7). In operations systems inputs are converted in order to provide outputs, which are required by a customer. It transforms physical resources into outputs, the function of which is to satisfy customer needs and wants (Anil Kumar & Suresh 2009:8). According to Anil Kumar and Suresh (2009:8) operations management talks about transforming inputs into outputs, using physical resources, in order to provide the desired utilities to the customer while meeting other business objectives of effectiveness, efficiency and adaptability. It differs from personnel, marketing, finance, and other business functions. **Table 3.9** below shows the activities under production and operations management functions which students need to be taught to become successful entrepreneurs:

## TABLE 3.9

Activity	Meaning and Skills Needed
Location of facilities	This is a long-term capacity decision, which involves a long-term commitment about the geographically static factors that affect a business. It is an important strategic level decision-making for a business. It deals with the questions such as "where our main operations should be based?"
Plant layouts and Material Handling	Plant layout refers to the physical arrangement of facilities. It is the configuration of departments, work centres and equipment in the conversion process. The overall objective of the plant layout is to design a physical arrangement that meets the required output quality and quantity most economically.

# OPERATIONAL SKILLS NEEDED BY STUDENTS

TABLE 3.9: OPERATIONAL SKILLS NEEDED BY STUDENTS CONTINUED	
Product Design	Product design deals with conversion of ideas into reality. Every business has to design, develop and introduce new products as a survival and growth strategy. Developing the new products and launching them in the market is the biggest challenge faced by the organizations. The entire process of need identification to physical manufactures of product involves three functions—Design and Marketing, Product Development, and Manufacturing.
Process Design	Process design is a macroscopic decision-making of an overall process route for converting the raw material into finished goods. These decisions encompass the selection of a process, choice of technology, process flow analysis and layout of the facilities. Hence, the important decisions in process design are to analyse the workflow for converting raw material into finished product and to select the workstation for each included in the workflow.
Production and Planning Control	Production planning and control can be defined as the process of planning the production in advance, setting the exact route of each item, fixing the starting and finishing dates for each item, to give production orders to shops and to follow-up the progress of products according to orders.
Quality Control	Quality Control may be defined as "a system that is used to maintain a desired level of quality in a product or service". It is a systematic control of various factors that affect the quality of the product. Quality Control aims at prevention of defects at the source, relies on effective feedback system and corrective action procedure. Quality Control can also be defined as "that Industrial Management technique by means of which product of uniform acceptable quality is manufactured". It is the entire collection of activities, which ensures that the operation will produce the optimum quality products at minimum cost.
Materials Management	Materials Management is that aspect of management function, which is primarily concerned with the acquisition, control, and use of materials needed and flow of goods and services connected with the production process having some predetermined objectives in view.
Maintenance Management	In modern industry, equipment and machinery are a very important part of the total productive effort. Therefore their idle time or downtime becomes very expensive. Hence, it is very important that the plant machinery should be properly maintained. The main objectives of Maintenance Management are: 1. To achieve minimum breakdown and to keep the plant in good working condition at the lowest possible cost. 2. To keep the machines and other facilities in such a condition that permits them to be used at their optimal capacity without interruption. 3. To ensure the availability of the machines, buildings and services required by other sections of the factory for the performance of their functions at optimal return on investment

## Sources: Researcher

In addition to the above skills, there is the need for students to be given training to acquire the following skills in their operations:

#### a. Problem solving skills

According to Crebert et al. (2011:5), good problem solving skills empower students in their educational, professional, and personal lives. Globally, there is growing acknowledgement that for education to produce skilled thinkers and innovators in a fast-changing global economy, problem solving skills are more important than ever. The ability to solve problems in a range of learning contexts is essential for the development of knowledge, understanding and performance.

Requiring students to engage with complex, authentic problem solving encourages them to use content knowledge in innovative and creative ways and promotes deep understanding that will prepare them to become successful entrepreneurs. Also, there is a significance difference between solving "exercises" and solving "problems". The former usually have predetermined solutions, with "a well-defined route to the solution and students must simply follow the formula" (Woods 1985:20).While exercises provide an important first step to help students bridge the gap between theory and application, they do not provide the depth and complexity necessary to master problem solving skills. Students who train mostly in exercise solving tend to develop a serious handicap. They rely heavily on solutions they have seen before, rather than working from first principles.

Thus a problem with brand new context presents a formidable challenge to them (Mourtos; DeJong Okamoto & Rhee 2004). It is therefore important for students to be trained with the necessary, to be able to handle problems that emanate from finance, marketing, human resource, operation and production, and the entire sectors of the business. To help students acquire problem solving skills, as workers in business work as a team to collectively accomplish the goals of the business, students will need training on the problem solving process to become successful entrepreneurs. **Table 3.10** explains the process and what students will need to know at each stage.
# **TABLE 3.10**

# PROBLEM SOLVING PROCESS

Problem Solving Process		
Define the problem	Students should identify what the problem is. Students should represent the problem in their own words, defining the key words, terms and concepts. Students should ask themselves questions such as:	
	<ul> <li>What do I know already about this problem?</li> <li>What do I need to know to effectively address this problem?</li> <li>What resources can I access to determine a proposed solution or hypothesis?</li> <li>Gather as much information as possible to establish the cause of the problem.</li> </ul>	
Identify alternatives	Students decide on what caused the problem. Also identify all the different possible solutions and the advantages and disadvantages of each.	
Evaluate alternatives	Students look at the different possible solutions and the advantages of each.	
Choose the best alternative	Identify which solution will be the best for the problem.	
Implement the decision	Students carry out the decision.	
Evaluate the final solution	Students evaluate their final solution or results to the problem from multiple perspectives (example, an accountant; a manager; a researcher; an end-user; an advertising agent) to test its validity in a range of contexts, to assess whether the problem has been solved partially or entirely. If not, re-evaluate the situation and start at the beginning of the process again, until it is solved.	

Sources: Researcher

## b. Decision making skills

According to Strydom (2008:67), managers are confronted with many problems and opportunities, with which they need to take decision about them. To become successful entrepreneurs, students should be able to identify these problems and seize the opportunities by making a very meaningful contribution into the business. The type of decision that students will have to make in order to manage the business as well as the conditions under which they are made varies. The decision role includes the four sub-roles in which a student needs training in order to become an successful entrepreneur (as stated in Mintzberg 1990:49-61), includes:

- Entrepreneur In this role training is given on making decisions creatively to use resources of the business as well as to think about other alternatives or possibilities in all the production processes to ensure an effective and sustainable business.
- Disturbance handle Training on how to handle conflicts situations that might happen in the business premise. These conflicts can be expected or unexpected, internal or external to the business.
- Negotiator Training is given to students to enable them to create an acceptable solution in a negotiating situation, to become a successful entrepreneur.
- Resource Allocator To play this role, training is given to students to be able to establish the best possible ways to allocate and use resources (Mintzberg 1990:23).

Training will help students handle all decisions and to recognize all the areas that should be given much attention for a successful business operation.

## c. Project management skills

According to Project Management for Development Organisations (2011:2), project management is both a science and an art; it is a science because it requires the application of quantitative analysis such as charts, graphs, financial data; and an art because it deals with qualitative analysis such as negotiating, conflict resolution, political, interpersonal and organizational factors. In order to become successful entrepreneurs, students should acquire both the science and the art of project management. Students will need the knowledge on how to prepare a bar chart, pier chart, chant chart, as well as other financial indicators to be able to plan and budget well for the business projects. PM4DEV (2011:2) states further that, to manage business projects well, there are five managerial skills essential for the students to become successful entrepreneurs. In addition to problem solving skills explain above, training in technical, communicating, negotiating and conceptual skills are necessary to effectively manage projects in the

business. Below are specific training areas;

- Technical The student must have the skills to use management techniques, procedures and tools. Students need to know how to interpret a budget report, know how to read a statistical analysis of a project baseline data, and understand the correct application of the different management methodologies. These technical skills are essential for an effective project in order to become a successful entrepreneur.
- Communicating According to PM4DEV (2011:6), is the most important skill, and the one that student potential entrepreneurs should spend most of their time on during the life of the project. Good communications skills include verbal and nonverbal communications that enable a project manager to convey project information in a way that it is received and understood by all project stakeholders. The first essential skill is the ability to communicate.
- Negotiating -Negotiation is the process of obtaining mutually acceptable agreements with individuals or groups. Depending on the project structure, student entrepreneurs will need the skills to negotiate on behalf of the business operations. Negotiation takes place in areas like making trade-offs when stakeholders request changes or modifications to the business project and resources, dealing with vendors or consultants who will bid for goods or services; this may require the assistance of specialized staff such as representatives from the legal or the procurement department. It also becomes handy when dealing with business customers and building agreements that will benefit both the project and the beneficiaries (PM4DEV 2011:4). This will enable them to become successful entrepreneurs.
- Conceptual Skills -Refers to the ability to coordinate and integrate all the business projects efforts. It trains students to see projects as a whole and not just the sum of its parts. Students should be taught to understand that all the parts of business operations form a whole and they all relate and depend on one another, and to anticipate that a change in one part of the business projects will affect the entire project. The bigger and more complex the project, the larger is

the need for this type of skill. This skill helps the potential student entrepreneur keep a clear vision of the ultimate goal of the business (PM4DEV 2011:4).

It should be noticed that, when training is given to students on all these skills it will enable them manage the business and its operations well in order to prepare themselves to become successful entrepreneurs.

# 3.9.3.5. Human resource management

According to Bounds et al. (2011:22), the term human resource or labour implies in economics as the time, talent, skills and energy that people add to the production process and in return, they are paid a wage or salary. The study of human resources as a skill will add quality to the business of the student. Choosing the right caliber of employees is a priority in order to become a successful entrepreneur. To become an effective and successful entrepreneur, students should be trained on the best human resource functions as depicted in the **diagram 3.7** below:





Sources: (Bounds et al 2011:33)

## (a). Recruitment and selection

Recruitment refers to finding and appointing new employees for the business. Recruitment is an ongoing process because employees leave their jobs for other jobs, get promoted or retire, or as new technological skills are required. To be able to employ the best human resources as an entrepreneur, training should be given to learners on the best ways and steps to employ workers as explained by (Bounds et al. 2013:35), below:

- Determine the actual need of the business or department.
- Do a job analysis (being clear about the nature of the job to be performed); and prepare a job description (describing the duties and responsibilities of the employee specific to the job); and specification (the knowledge, skills and experience a person must have to be able to do what the work entails in the job description).
- Identify and decide on a recruitment source; a decision must be made as to whether it should be internal from family members or external from outside.
- Design and write the advertisement by adding information such as name of the officer recruiting, name and contact of the business, address of the business and the closing date for applications.
- The advertisement will then be placed at the chosen medium (newspaper, magazine, the internet or be given to recruitment agencies).

Selection should be made immediately applications are received in order to select the best candidate for the job, with the curriculum vitae submitted by applicants. The potential entrepreneur selects the best candidates whose background matches the job specification.

## (b). Employee contract and worker satisfaction

After recruitment and selection the need to train students on employment contracts is important. A contract of employment should be given to the successful candidates who

have offered their services to the business. An employee contract regulates the terms and conditions of the job between the employer and employee. The contract will inform the employee of the remuneration, working hours, annual leave, sick leave, and other benefits such as the pension fund and medical aid as well as the policies and procedures, and code of conduct that are applicable to the workplace.

# (c). Orientation and training

Training should be offered to students to acquire the necessary knowhow about their job so that they can offer induction to their new employees, once they are in business as entrepreneurs. It should be noted that an induction ensures that new employees are properly orientated into the business so as to start contributing to the business effectively. This can be done by the students in several ways, such as a manual with policies and procedures, visits to the various areas of the business, mentoring or coaching (Bounds et al. 2013:33).

## (d). Remuneration (salaries) and benefits

The determination and calculation of all salary-related amounts, deductions, payments to SARS in South Africa, and other beneficiaries like the pension fund, medical aid schemes and provident funds should be considered as an essential human resources skill by an entrepreneur. This cannot be ignored by the students, they must be skilled on all these in order to become successful entrepreneurs.

## 3.9.3.6. Communication skills

According to De Beer and Rossouw (2005:105), even though we study people as individuals, we should not lose sight of the fact that people are social beings. People can only exist within the framework of social institutions and through contact and interaction with one another. This interaction takes place by means of communication. Communication involves the transfer of messages between the business and its external

environment (Erasmus, de Beer, Mpofu, Cant, Steenkamp, Badenhorst-Weiss, Ferreira & Groenewald 2007:36). In order to achieve the desired goals of the business, students needs to be trained to acquire communication competency and skills to effectively deal with the various stakeholders of the business. According to Erasmus et al. (2007:37), communication refers to an individual's competency to exchange, or transfer, information that leads to an effective understanding between two or more people. They stressed however that communication competency includes:

- Informal communication;
- Formal communication;
- Negotiation.

It is therefore important that students are given the necessary training on how to communicate to its stakeholders, who are mostly customers, suppliers, investors, unions, and financial institutions whose activities may impact negatively on the business performance and sustainability.

# 3.9.3.7. Financial and Cash flow management

On financial management, students should be given training on possible areas of acquiring funds to start a business, which are mostly from own source, from an overdraft or short-term loans and also source of capital to undertake the business. According to Bounds et al. (2011:197), cash control is very important because poor cash management is the cause of failure for many businesses. So students should be taught on how to realize cash inflows and the sources which are mainly cash sales and other receipts, and cash outflows which are from expenses such as salaries, rent and electricity. Training in the form of cash budgets, and cash flow statements, needs to be given to students to empower them to stand as entrepreneurs. In addition to this **Table 3.10** below explains in detail the financial skills students will need to become entrepreneurs:

# TABLE 3.11

# FINANCIAL SKILLS REQUIRED BY STUDENTS TO BECOME ENTREPRENEURS

Meaning and explanation
This is any form of wealth employed by businesses to produce more wealth. It exists in the form of cash, inventory and equipment in business. Capital can be in the following categories:
<ul> <li>Permanent capital - this comes from some form of equity investment in shares in a limited company, or personal loans from partners or sole trader (Stokes &amp; Wilson 2006:398).</li> <li>Working capital - according to Zimmerer and Scarborough (2005:383), workingcapital serves as a business temporal funds; it is the capital the business uses to support its normal short-term operations.</li> <li>Fixed capital - this is needed to purchase fixed assets for the business such as buildings, lands, computers and equipment. Money used to purchases these items are frozen because it cannot be used for any other purpose. What is relevant is the efficiency, profitability of the business to further improve cash flows that will ensure repayment is what is needed by the entrepreneur (Zimmerer &amp; Scarborough 2005:383).</li> <li>Expansion capital - according to Nieman and Preterious (these are needed to shift the business from start-up level to a position where it can become a significant contender in the market place).</li> <li>It's very complex to raise this capital but students should know the importance of it in order to expand and grow a business to become a successful entrepreneur.</li> </ul>
It should be noted that the main source of financing available to the student are:
<ul> <li>Debt financing - this refers to the money the student can obtain in the form of a loan and that must be repaid with interest. It is the most common form of ventures (Venter &amp; Rwigema 2004:390). Debt financing sources includes bank, leasing companies, factoring companies and individuals (Lall and Sahai 2008:190).</li> </ul>
<ul> <li>Equity financing - this is where funds are obtained for the business in exchange for ownership (Lall &amp; Sahai 2008:190). According to Hatten (2006:256), those who provide equity finance own a portion of the business and is mostly interested in getting dividends, gaining from the increase in value of the business and having a say in the management of the business.</li> </ul>
<ul> <li>In South Africa the main source of finance to both Equity and Debt financing are:</li> <li>Commercial banks - According to the Organisation for Economic Corporation (2006:4), commercial banks serve as the main sources of finance to SMEs, thus if they are to flourish they need and must have access to credit. They are the single most important source of external credit to a small firm. Small businesses can rely on it for the supply of credit, transactions and deposits (Meyer 1998:1110). They offer bank loans in the form of short-term loans and long-term loans as indicated by (Hatten 2006:259).</li> <li>Equipment loans and leasing - Refers to an agreement between the owner of the asset, the "lessor", and the user of the asset, the "lessee". The lessee has the right to use the asset in return for a number of specified payments over the agreed period of time (Ayadi, Bernet, Westerfeld, Frank, Huyghebaert, Gasper, Bovha-Padilla &amp; Veugelers 2009:64).</li> <li>Trade credit - Refers to the amount owed by a business to the creditors that have supplied goods or services to the business (Hatten 2006:263). According to Longenecker, Moore, Petty and Palich (2006:231), credit extension by suppliers are very important to a start-up and remains the source of short-term funds most</li> </ul>

TABLE 3.10: FIN ENTREPRENEURS (	ANCIAL SKILLS REQUIRED BY STUDENTS TO BECOME
	<ul> <li>open-book account. Students need these skills on where to find credit from suppliers, in order to become a successful entrepreneur.</li> <li>Government agencies - certain agencies which finance small business in South Africa are: Khula Enterprises finance limited, according to Macleod and Terblanche (2004:260), it is an official agency by government to finance small businesses. Students can source for funds from there to start their businesses. Others are, Industrial Development Corporation (IDC), Small Enterprises Agency (SEDA) and Eastern Cape Development Corporation, (ECDC).</li> <li>In equity financing, the main source are: <ul> <li>Personal Savings - Finance can be obtained from different sources and the first source is from the entrepreneur (student) himself, (Nieman &amp; Nieuwenhuizen 2009:126).</li> <li>Family members and friends - According to Venter and Rwigema (2004:390), friends and family members are seen as a ready source of financing because of their relationship with the entrepreneur (student). They are more likely to give loans and without any onerous terms to its payment.</li> <li>Venture capital firms - As firms grow they gain access to intermediate finance on the equity side through venture capital (Ayadi et al 2009:62). Also Venter and Rwigema (2004:404) observe that venture capital and expansion capital for entrepreneurs (students). Students should be more conversant with these forms of finance in order to prepare themselves well to become entrepreneurs.</li> </ul></li></ul>
Budgeting	This refers to a financial plan according to which resources for specific activities are issued (Bounds et al. 2011:26). It is one of the most important tools for financial control, students should be able to prepare a budget for revenues which come from sales and expenses for operating the business.
Cash flow statement	<ul> <li>According to Jeewan, Madhanlall and Vasu (2013:109), cash flow statement gives users of financial statements information on the inflow and outflow of cash in business over the past financial year. The flow of cash is reported in the following forms: <ul> <li>Operating activities - Refers to cash flow from everyday transactions of the business.</li> <li>Investing activities - Refers to obtaining of fixed/tangible assets, proceeds from the disposal of fixed/tangible assets and the changes in the investments (fixed deposits) of the business.</li> <li>Financial activities - Also mean, cash that the business collected from the sale of shares in the case of company and increase in loans for the business. And finally cash utilized for the repurchase of shares by the business/company and the repayment of loans.</li> </ul> </li> <li>Students should know how to account for these forms of cash in order in sustain the business and to become an entrepreneur.</li> </ul>

Sources: Researcher

# 3.9.3.8. Business Plan Compilation

Business plan compilation is also very important for the student to become a successful entrepreneur. It is through this plan that potential future investors can venture into the business; also if the business wishes to acquire future mortgage loans and other capital,

the financial institutions will check this to define the solvency and liquid position of the business before credit can be given. The training on this should concentrate on the format and what the plan entails, which is summarised in **Table 3.9** below:

# TABLE 3.12

# BUSINESS PLAN AND AREAS OF SPECIFIC TRAINING FOR STUDENTS

Specific area/part of the plan	Training needs, explanation and meaning
The cover page and index	The business plan should have the name of the business, the date, and the contact details of the business owner. The index page includes title and page number of each subsection of the plan.
Executive summary	This is a summary of the entire business plan and it serves to satisfy those people unable to go through the entire plan in detail. There should be an executive summary.
Description of the business (overview)	<ul> <li>This should also be included in the plan and include the following: <ul> <li>the long-term objectives, vision and mission of the business</li> <li>the form of ownership of the business</li> <li>The business structure (organogram) this indicates: (a)</li> <li>What work needs to be done by whom, (b) the connections between various positions and task (lower, middle or top management) (c) the coordination between various departments (e.g. human resource, management and marketing).</li> <li>the description of the product or service which the business will offer.</li> <li>the legal requirements of the business, such as (a) licensing (b) compliance with health and safety requirements if considering food business (c) quality control requirements if you are considering building homes.</li> </ul> </li> </ul>
SWOT analysis	According to Bounds et al. (2011:187), the business plan should include the assessment of the student's strength, weakness, opportunity and threats; a research that will be conducted to support the establishment of business, when the student is able to assess his/her strength, weakness, opportunity and threat s/he will be able to come out with the best business idea to establish a fruitful venture.
Marketing plan	According to Bounds et al. (2011:187), is the most important aspect of the business plan, which gives details of the seven Ps of marketing as ascribed by Botha (2006). They are product, price, place, promotion, physical evidence, process, and people.
Competition	Competition refers to other businesses that sell the same or similar product, or offer a similar service (Bounds et al. 2011:32). The student should be taught to identify who their competitors are and will have an advantage over them. Bounds et al. say that is a basic challenge to managing a business and for the student to become an effective entrepreneur, students should be taught that competition is affected by five forces, namely: (a) new entrants into the industry, (b) bargaining power of customers, (c) bargaining power of suppliers, (d) threats from substitute products, and finally (e) the rivalry among competitors. When students understand these, it will enable them to position them well in the industry so that the system will not prevent them from achieving their goals as an entrepreneur.

TABLE 3.9: BUSINESS PLAN AREAS OF SPECIFIC TRAINING SKILLS CONTINUED		
Financial plan	This record details how much capital is required to run the business, how it will be raised and how the funds coming in and going out of the business will be recorded. It also includes the projected financial statements, prices and costing may also be explained further as found in the marketing plan.	
Management plan	This outlines who will be in charge of running the business as well as the skills of the entrepreneur and others in business. How the business will be managed and the form of ownership must all be planned and it is the duty of students to know and understand this.	
Legal requirements	There is the need to also show legal compliance which is mainly done in the plan, for example how the business complies with health requirements in the case of a food business, quality control with regards to building houses, (Bounds et al 2011:187) and so forth.	

Sources: Researcher

Finally, Bounds et al. (2011:187), stipulate that the business plan should not omit any of the business skills as stated by Botha 2006, in order to establish a fruitful business to become a successful entrepreneur. Training can be conducted in so many forms, for example workshops, classroom based, seminars, via distance, lectures, symposiums, in order to prepare students to become entrepreneurs.

## 3.10. SUMMARY AND CONCLUSION

This chapter explains in detail what creative and innovation techniques are, who an entrepreneur is and how creative and innovative techniques' training model will prepare students to become entrepreneurs. According to Dees (2001:1), in French the word "entrepreneur" means: the one "who takes risks and starts something new (Product/Service)". To enable a person to possess any of the characteristics of an entrepreneur, there is the need for him/her to be trained or study the training model in order to prepare well. A careful study of this model will contribute in preparing more students to become entrepreneurs, own businesses, become managers and also increase the number of Small and Medium Scale Enterprises in South Africa, which is an engine for growth and development in any country. Chapter Four will present the research design and methodology employed in the research investigation into a model of creative and innovative techniques that will prepare final year students to become entrepreneurs.

# **CHAPTER FOUR**

#### **RESEARCH DESIGN AND METHODOLOGY**

#### 4.1. INTRODUCTION

In Chapter Three relevant literature reviews discussing the entrepreneur innovation and techniques, as well as a training model of creative and innovative techniques to prepare students to become entrepreneurs were developed. The purpose of this chapter is to present the research methodology and techniques applied to obtain the findings presented in Chapter Five. In this chapter the research paradigm adopted is explained and justified. Furthermore, an introduction to the population studied, as well as a description of the sampling method used will be given. The methodology in this chapter provides information about the applied research method, the targeted population, the sample used for the purpose of the study. Lastly the statistical techniques adopted to analyse the data collected during the empirical investigation will be described.

#### 4.2. WHAT IS RESEARCH?

According to Kothari (2004:1), research refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. In fact, research is the art of scientific investigation. It is the pursuit of truth with the help of study, observation, comparison and experiment. Thus the purpose of research is to discover answers to question through the application of scientific procedures. Similarly, research is a formal, systematic and precise process undertaken in order to gain solutions to problems and/or to discover and interpret new facts and relationships (Waltz & Bausell 1981). Payton (1979) describes the process of research as the steps taken in looking for a specific answer to a specific question in an organised, objective and reliable manner. More relevant to the current research is the description of Kerlinger (1973:1), who asserts that the features and purpose of research entail critically investigating hypothetical propositions about the presumed relations amid natural

phenomena. According to Cooper and Schindler (2006: 71), research design is the "blueprint for fulfilling objectives and answering questions". It is a plan of how one intends to conduct the research (Babbie & Mouton 2001: 74) or a strategy that the researcher follows in order to solve a research problem (Leedy & Ormrod 2001: 85). In addition, Collins and Hussey (2003: 13) assert that the research design is the science and art of planning procedures for conducting studies in order to maintain the most valid findings. Leedy and Ormrod (2005:2) further define research as a systematic process of collecting, analyzing and interpreting information in order to increase the understanding of a phenomenon about which there is an interest. Although research projects vary in complexity and duration, research typically has eight distinct characteristics:

- Research originates with a question or problem.
- Research requires clear articulation of a goal.
- Research requires a specific plan for proceeding.
- Research usually divides the principle problem into more manageable sub problems.
- Research is guided by the specific research problem, question, or hypothesis.
- Research accepts certain critical assumptions.
- Research requires the collection and interpretation of data in an attempt to resolve the problem that initiated the research.
- Research is cyclical.

## 4.3. RESEARCH DESIGN

According to De Vaus (2001:1), a research design is not just a work plan. A work plan details what has to be done to complete the project but the work plan will flow from the project's research design. The function of research design is to ensure that the evidence obtained enables the researcher to answer the initial questions as unambiguously as possible. According to Bless and Higson-Smith (1995:63), a research design can be understood as the planning of any scientific research from the first to the last step. Similarly, Kothari (2004:2) defines research as the arrangement of conditions for

collection and analysis of data in a manner that aims to combine relevance of the research purpose with economy in procedure. The research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data. As such the design includes an outline of what the researcher will do from writing the hypothesis or problems and its operational implications to the final analysis of data. The details of the research design of this study will be explained in the sections that follow.

#### 4.4. RESEARCH APPROACH

#### 4.4.1. Quantitative research

According to Henning (2004:3), the focus in a quantitative study will be on control of all the variables, and participants are usually not free to express data which cannot be captured by predetermined instruments. Leedy and Ormrod (2005:94) explain that quantitative research is used to answer questions about relationships among measured variables "with the purpose of explaining, predicting, and controlling phenomena". These variables include weight, performance, time and treatment, for example (Hopkins 2000). May and Pope (cited in Imel, Kerka & Wonacott 2002:1) explain quantitative research as a study that begins with an idea which then, through measurement, generates data and by deduction allows a conclusion to be drawn. According to Labuschagne (2003:1) quantitative research is mainly concerned with the degree in which phenomena possess certain properties, states and characters and the similarities, differences and causal relations which exist within and between these. Cook and Reichardt (as cited by Ratcliff 2003:1) describe quantitative research as positivistic, particularistic, attempting to control variables, verification oriented and confirmatory. In summary, it appears that quantitative methods deal with what is measurable and the aim is to determine relationships between variables. Creswell (2009:4) on the other hand, describes quantitative research as a means for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analysed using statistical procedures. The final written report has a set

structure consisting of introduction, literature and theory, methods, results and discussion. Like qualitative researchers, those who engage in this form of inquiry have assumptions about testing theories deductively, building in protection against bias, controlling for alternative explanations and being able to generalise and replicate finding. Similarly, Balian (1988:88) points out the fact that quantitative descriptive design uses numbers – not to test but to merely describe characteristics of a group of respondents. The arrays of statistical measures used for this purpose are termed "descriptive statistics"; they include such common measures as the mean, median, mode and standard deviation.

#### 4.4.2. Qualitative research

Leedy and Ormrod (2005:94) state that qualitative research is used to answer questions about the complex nature of phenomena in order to describe and understand the phenomena from the participants' point of view. Similarly, Roberts (2010:143) reports that the qualitative approach is based on the philosophical orientation called phenomenology, which focuses on people's experience from their perspective. Inquiry begins with broad, general questions about the area under investigation. Researchers seek a holistic picture, a comprehensive understanding of the phenomena they are studying. They go into the field to collect data. Researchers may make observations; conduct in-depth, open-ended interviews; or look at written documents. Rather than words, the data are words that describe people's knowledge, opinions, perceptions, and feelings as well as detailed descriptions of people's actions, behaviours, activities, and interpersonal interactions. Moreover, Denzin and Lincoln (2000:3) agree and add that qualitative researchers study things in their natural settings. Merriam (1998:6) refers to qualitative research as "an umbrella concept covering several forms of inquiry that help us understand and explain the meaning of social phenomena with as little disruption of the natural setting as possible". According to Henning (2004:5) the qualities, characteristics or properties of a phenomenon are examined in this research approach.

Imel, Kerka and Wonacott (2002:1) cite various authors who agree that a qualitative inquiry occurs in natural settings, the researchers are themselves the instrument for data

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collection and analysis and therefore the research has an interpretive character.

#### 4.4.3. Using quantitative and qualitative research

The literature abounds with comparisons between the quantitative and qualitative research methodologies. Some of these comparisons will be addressed in this section. According to Trochim (2006:1), there has probably been more energy expended on debating the differences between relative advantages of qualitative and quantitative methods than almost any other methodological topic in social research. Quantitative researcher Kerlinger is quoted as saying, "There's no such thing as qualitative data. Everything is either 1 or 0", while gualitative researcher Campbell asserts, "All research ultimately has a qualitative grounding" (Colorado State University 2008). According to Marshall (1998:1), the debate became prominent in the 1970s and arose through a backlash against the priority attached to scientific or positivist methodology in sociological textbooks. In these works, qualitative research was referred to as "soft" and as being of interest only in respect of providing intuitions or hunches for the formulation of hypotheses, which could then be tested more rigorously using quantitative or "hard" data. Marshal (1998:1) further states that practicing researchers have recently suggested that the distinction between the two types of data is considerably more blurred than is suggested in the theoretical debate.

Henning (2004:3) sees the issue of control as the principal distinction between the two methodologies. In quantitative research all the components are controlled, but in qualitative research the variables are not controlled. In quantitative research the data collection typically occurs well in advance of the data analysis, while in qualitative research, the data collection and data analysis are not sharply differentiated (Anon. 2004). According to Labuschagne (2003:1), quantitative research is mainly concerned with the degree in which phenomena possess certain properties, states and characters, while qualitative research is mainly concerned with the nature of phenomena and therefore it is not measured in terms of quantity, amount or frequency. Charles (1995:1) and Neill (2000:1) both simply describe quantitative research as dealing with scores or numerical data, whereas qualitative research deals with words and statements. Leedy

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and Ormrod (2005:95-97) cite various distinctions between the two approaches. According to these authors there are differences in the purpose, process, data collection and analysis and the reporting of the data of these methods.

- The purpose of quantitative research is to seek explanations and predictions that will generalise to other persons and places, and could contribute to theory. Qualitative research, on the other hand, seeks a better understanding of complex situations, and observations may be used to build theory from the ground up.
- According to these authors, the process also differs: quantitative researchers follow structured and clearly defined guidelines; while qualitative researchers follow a more holistic and open-minded process which results in possible changing of focus and interpretations along the way (Leedy & Ormrod, 2005:95).
- Collecting data through the quantitative method involves one or more large samples that represent the population in order to make generalisations, while during the qualitative method a few participants are selected who can best shed light on the phenomenon under investigation (Leedy & Ormrod 2005:95-96).
- When analysing data, the quantitative researcher tends to rely more heavily on deductive reasoning, trying to maintain objectivity, conducting predetermined statistical procedures and using objective criteria to evaluate the outcomes. The qualitative researcher, on the other hand, makes considerable use of inductive reasoning, draws inferences and is more subjective when analysing the data (Leedy & Ormrod 2005:96).
- As far as the reporting on the findings is concerned, these authors state that quantitative researchers reduce their data to summarizing statistics, while the qualitative researcher constructs interpretive narratives of a more personal and literary nature, often including the participants' own responses. Another difference between quantitative and qualitative research is the role of the researcher during the process.

## 4.4.4. The mixed method design

As noted previously, in the last few decades debates have raged about the superiority of qualitative or quantitative research (Mactavish & Schleien 2000:1; Trochim 2006:1; Olson 1995:1; Imel, Kerka & Wonacott 2002). One aspect of these debates has revolved around the appropriateness of combining quantitative and qualitative methods in one research study. There are those who have viewed the two methods as incompatible (Guba & Lincoln 1994 as cited by Mactavish & Schleien 2000:1). In contrast, many other researchers have been of the opinion that these two research approaches are not mutually exclusive (Leedy & Ormrod 2005:97; Trocham 2006:1; Merriam, 1988 and Patton 1990 as cited by Mactavish & Schleien 2002:1). Leedy and Ormrod (2005:95) cite various authors who agree that we learn more about the world when we have both quantitative and qualitative methodologies at our disposal than when we apply only one of the approaches.

Also, Kidder and Fine (in Mark & Shotland (eds), 1987:72) stated, "There is nothing mysterious about combining quantitative and qualitative measures. This is, in fact, a form of triangulation that enhances the validity and reliability of one's study". Mactavish and Schleien (2000:1) cite numerous authors who, despite the disagreements, have noted a dramatic increase in the application of the mixed method research design. Also, Tshakaorri and Teddlie (as cited by Mactavish & Schleien 2002:4-5) described four different approaches for combining data analysis within a mixed method design. These approaches are summarized below:

- Conducting quantitative and qualitative data analyses on the same data simultaneously.
- Confirming or expanding results from one method through a secondary analysis using the other approach.
- Using the findings obtained through one approach (for example quantitative) as the starting point for the analysis of other data generated via the other approach (for example qualitative).
- Utilising the results of one as a starting point for developing subsequent data collection strategies (for example a new instrument) or to collect new data using

another approach (for example qualitative interviews).

Johnson and Chirstensen (2006:1) state that mixed method research designs are classified according to two major dimensions, viz., time order (i.e. concurrent versus sequential) and paradigm emphasis (i.e. equal status versus dominant status). These authors further mention that currently, proponents of mixed research attempt to use what is called the fundamental principle of mixed research. This principle implies that a researcher should use a mixture or combination of methods that has complementary strengths and non-overlapping weaknesses. They further refer to two models of mixed method research, viz., within-stage mixed model research, which mixes quantitative and qualitative approaches within one or more of the stages of research, and across-stage mixed model research, which mixes quantitative and qualitative approaches across at least two of the stages of research.

Green, Caracelli and Graham (1998:255-274) expound on the following five purposes of a mixed method design which may enhance the evaluation of the research.

- 1. Triangulation, which tests the consistency of findings obtained through different instruments
- 2. Complementary, which clarifies and illustrates results from one method with the use of another method
- 3. Development, which results from one method which shapes subsequent methods or steps in the research process
- 4. Intuition, which stimulates new research questions or challenges results obtained through one method
- 5. Expansion, which provides richness and detail to the study exploring specific features of each method.

As early as 1961, Kuhn (1961:162) argued that "large amounts of qualitative work have usually been prerequisite to fruitful quantification in the physical sciences". Trochim (2006:1) states that "quantitative and qualitative data are, at some level, virtually inseparable". He continues that neither of these approaches exists within a vacuum or

could be considered completely devoid of the other. Leedy and Ormrod (2005:94) probably sum up the benefit of using a mixed method approach best when they state that "no single highway leads us exclusively toward a better understanding of the unknown". In the following paragraphs various research paradigms will be discussed.

#### 4.5. RESEARCH METHOD: SURVEY

According to Leedy and Ormrod (2005:183), survey research involves acquiring information about one or more groups of people, perhaps about their characteristics, opinions, attitudes or previous experiences by asking them questions and tabulating their answers. The ultimate goal is to learn about a large population by surveying a sample of that population; thus, this approach is called a descriptive survey. The researcher poses a series of questions to willing participants, summarises their responses with percentages, frequency counts, or more sophisticated statistical indexes and then draws inferences about a particular population from the responses of the sample. Survey is common approach, used with more or less sophistication in many areas of human activity. Similarly, Dana's (2011:163) survey should be used if one wants to learn about a general trend in people's opinions, experiences, and behaviour. Surveys are particularly useful to find small amounts of information from a few specific people. According to Cohen, Manion and Morrison (2000:169), surveys gather data at a particular point in time with the intention of describing the nature of existing conditions, or identifying standards against which existing conditions can be compared, or determining the relationships that exist between specific events. Also Mitchell and Jolley (2007:215) adds that a survey can be a relatively inexpensive way to get information about people's attitudes, beliefs, and behaviours; with a survey, a researcher can collect a lot of information on a large sample in a short period of time. Moreover Mitchell and Jolly (2007:208) details the following recommendation as a researcher who wants to conduct a successful survey:

 The researcher has to determine whether the survey design is appropriate for the research problem. Then a decision must be made as to what questions are going to be asked, why those questions are going to be asked, of whom those questions are going to be asked, and how the answers of those questions are going to be analysed.

 After deciding that a survey is the best approach for the research question, then the researcher needs to decide what type of survey instrument is going to be used. Basically, the choice can be made from two types of instruments: questionnaire surveys in which participants read the questions and then write their responses, and interview surveys in which participants hear the questions and verbalise their responses.

For the purpose of this current study the researcher designed a hard copy survey questionnaire. The researcher sent the cover letter and questionnaire in hard copy to respondents, and by face-to-face and with the help of a telephone – administered them.

# 4.6. POPULATION AND SAMPLING

The target population for this study is identified in this section. The sample method and the sample size are also explained.

## 4.6.1. Target Population

According to Welman, Kruger and Mitchell (2005:52), population is the study object and consist of individuals, groups, organizations, human products and events or the conditions to which they are exposed. The population encompasses the total collection of all units of analysis about which the researcher wishes to make specific conclusions. Similarly, Bless and Higson-Smith (1995:85) define the targeted population as "the entire set of elements, events or group of people which is the object of research and about, which the researcher wants to determine some characteristics". Thus the targeted population is sometimes referred to as the universe or the population. Also the targeted population is the fundamental component of research design because the way in which the population is defined determines whether or not the findings drawn from a subset of

the targeted population, can be generalized to the entire population (Salkind 2010: 1052). The targeted population for this research study includes 100 potential entrepreneurs and teachers of Business Studies/Management at the Senior Secondary and Further Education and Training institutions in the Sisonke District of the KwaZulu-Natal Province in South Africa. These trainees and teachers will provide their opinions on the model of creative and innovative techniques that has been designed and will express their opinions on how it will prepare students to become entrepreneurs. Their views are important as they have been practicing entrepreneurs and business management trainers in the systems for over some period of time. They will provide answers as to whether the model when used will help the students generate business and entrepreneurial ideas to design a product or service in order to become entrepreneurs. This is why they were chosen as the targeted population.

## 4.6.2. Sampling frame

According to Welman, Kruger and Mitchell (2005:57), a sample frame is a complete list in which each unit of analysis is mentioned only once. Unless such a sampling frame is considered, it is impossible to accurately judge the representativeness of the obtained sample. The sample should be representative of the sampling frame, which ideally is the same as the population, but which often differs due to practical problems relating to the availability of information. Also a sample frame is a listing of all the members of the targeted population. It can exist if the population is finite. If it is available it can be used to draw the sample, and it is essential for certain sampling methods, but it is not required for other sampling methods.

In the current study, an exhaustive list of entrepreneur experts within the Sisonke District was unavailable. It was however possible to begin the sampling by making use of the database of SATSA for entrepreneurs, the site for promoting Small and Medium Enterprises growth. This site is dedicated to providing much information for entrepreneur start-ups in the tourism industry in the Kwazulu-Natal Province, the data base of the Small Enterprises Development Agency (SEDA) in the Province and the Municipal Offices

database of entrepreneurs in the five local municipalities – which are Ubuhlebezwe, Ingwe, Kwa-sani; Greater Kokstard and Umzimkhulu, a visit to entrepreneur and Business Studies/Management teachers at district department of education offices, and finally the Department of trade and industries(DTI) office in the District. The database obtained from their websites and hard copies comprises a list of entrepreneurs and teachers in the district. The entrepreneurs are mostly involved in the large, medium and small business owners. A sample frame of 100 potential entrepreneur experts and educators were identified for the purpose of the present study.

#### 4.6.3. Sampling Method

According to Cohen, Manion and Morrison (2000:92), the question of sampling arose directly out of the issue of defining population on which the research will focus. Researchers must take sampling decisions early in the overall planning of a piece of research. Factors such as expense, time and accessibility frequently prevent researchers from gaining information from the whole population. Therefore they often need to obtain data from a smaller group or subset the total population in such a way that the knowledge gained is representative of the total population under the study, this smaller group or subset is the sample. Stopher (2012:7) describes a sample as a subset of a targeted population. A sample may be either a large proportion of the population or a very small proportion of the population. When selecting the sampling method, there are two main categories to choose from, namely probability and non-probability sampling. According to Williams (2009:290), probability sampling takes place when the elements selected from the population have a known probability of being selected or included in the sample, whereas Leedy and Ormrod (2005:206) report that in non-probability sampling the research has no way of guaranteeing that each element of the population will be represented in the sample. Nardi (2006:118) states that with non-probability sampling the results obtained cannot be generalized to the entire population. Indeed with the non-probability sampling method the researcher is limited to making conclusions about only those who have completed the survey.

The sampling method utilised in this study is the convenience sampling method.

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Convenience sampling which is also known as haphazard sampling is one type of non-probability sampling method. Convenience sampling is defined as the method of sampling in which cases are selected because of the convenience of accessing them (Cramer & Howitt 2004:38). Also haphazard sampling involves selecting haphazardly those cases that are easiest to obtain for our sample (Wellman, Kruger & Mitchill 2005:69). Similarly, Williams (2009:290) adds that convenience sampling has the advantage of relatively easy sample selection and data collection.

#### 4.6.4. Sample size

A concern in the choice of sample size is how large a sample should be to produce a reasonable study. According to Leedy and Ormrod (2005:207), the basic rule is, the larger the sample, the better. However in most research, sample size of 60 to 300 is common, with most average at about 200 respondents. But, the nature of the study dictates specific sample sizes within each project. Statistical tests require a minimum of 20 to 30 subjects for meaningful scientific comparisons, if as in the present study a quantitative research is the intention (Balian 1988:185). According to Wellman, Kruger and Mitchell (2005:70-71), the choice of sample size is governed by:

- The confidence we need to have in our data. That is the level of certainty that the characteristics of the data collected will represent the characteristics of the total population.
- The margin of error that we can tolerate. That is the accuracy we require for any estimates made for our sample.
- The types of analysis we are going to undertake in particular the number of categories into which we wish to sub-divide our data, as many statistical techniques have a minimum threshold of data cases for each variable.
- The size of the population from which our sample is being drawn.

## 4.7. QUESTIONNAIRE DESIGN

According to Nardi (2006:67), designing questionnaires for respondents to answer on their own is one of the most common methods of data collection. Questionnaires can be sent through mail to respondents and returned at a later stage in person or by mail; distributed to a large group of people in one location at one time or can be sent via email, placed online through internet or through face to face (personal). According to Leady and Ormrod (2005:185), a majority of people who receive questionnaires do not return them and the people who do not return them are not necessarily representative of the original sample selected.

In this survey study, questionnaires were used for data collection. The purpose as observed by Thomas (2003:69) is that the questionnaires enable a researcher to collect a large amount of data in a relatively short period of time. Moreover, the researcher does not need to be present at the time information is provided, and data can be collected from people in distance places if the questionnaires are sent by regular mail or through internet, but in the case of personal face-to-face administering of a questionnaire, the researcher needs to be present.

For this study, the questionnaire administered to participants (see annexure B) is a hard copy Word designed questionnaire. Participants accessed the questionnaire by putting a tick and writings on the questionnaires, together with the researcher. Once respondents had completed the questionnaire, the information was systematically captured in a hard copy spreadsheet and the data from the spreadsheet was used for analysis.

## 4.7.1. Length of the questionnaire

According to De Vaus (2005:129), the optimal length of a questionnaire will depend on the nature of the sample and the topic under investigation. The more specialized the population and the more relevant the topic, the longer the questionnaire can be. Indeed for some topics a short questionnaire will produce low response rates because people will consider it to be too trivial or superficial. Also Mccormack and Hill (1997:78) state that there are no strict rules as to the length of a questionnaire, but researchers must bear in mind that the longer it is, the more difficult it is to persuade respondents to complete it. To avoid producing an over-long questionnaire one should check that only relevant questions that will generate useful data are asked, and consider the circumstances under which the questionnaires will be completed. Questionnaires must be kept short especially if target respondents are likely to be pressed for time. In the present study the hard copy questionnaire which was administered face-to-face with the respondents took approximately 10 minutes to complete.

# 4.7.2. TYPES OF QUESTIONS

According Brace (2008:45) there are many ways of asking questions and recording data. Different types of questions are suitable for different purposes and different types of data can be used and analysed differently. It is paramount for the designer of the questionnaire to understand the range of question types available because the choice of question types will determine the information that is produced. It is important to forecast the different types of data that will be generated, because that will determine the types of analysis that can be performed. The designer of the questionnaire, while formulating the questions should thus be mindful of how the data will be analysed.

In this study, the types of questions included in the questionnaire are as follows: open-ended question, dichotomous, multiple-choice and scale-type questions.

#### 4.7.2.1. Open-ended questions

According to Cohen, Manion and Morrison (2000:255), open-ended questions are a very enticing device for smaller scale research of those sections of a questionnaire that encourage an honest, personal comment from the respondents in addition to ticking numbers and boxes. It is the open-ended responses that might contain the "gems" of information that otherwise might not have been caught in the questionnaire. Further it puts the responsibility for and ownership of the data much more firmly into the respondent's hands. Similarly, Oppenheim (1992:56-57) suggests that a

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sentence-completion item is a useful adjunct to an open-ended question.

In Bless and Higson-Smith's (1995:120) view, open-ended questions leave the participants completely free to express their answers as they wish. Answers may be as detailed and complex or as long or short as participants feel appropriate. No restrictions, guidelines, or suggestions for solutions are given. According to Nardi (2006:73), a good way of finding out what people think is to ask them open-ended questions. These types of questions require respondents to use their own words and ideas.

# 4.7.2.2. Dichotomous questions

Cohen, Manion and Morrison (2000:250), state that, these questions require a "yes/ no" response and are useful, for it compels respondents to "come off the fence" on an issue. Further it's easy to code responses quickly and also as a funneling or sorting device for subsequent questions. Similarly, they are the simplest of closed questions and have only two possible answers, usually "yes" or "no" (Mitchell & Jolly 2007:224).

## 4.7.2.3. Multiple-choice questions

According to Brace (2008:57), multiple-choice questions are closed questions with more than one possible answer. In fact there are finite numbers of answers; the range of possible answers is predictable; and the question does not require respondents to say anything in their own words. Similarly, Cohen, Manion and Morrison (2000:251), observes that, to try to gain some purchase on complexity, the researcher can move towards multiple choice questions where the range of choices is designed to capture the likely range of responses to given statements.

## 4.7.2.4. Scale-type questions

According to Cohen, Manion and Morrison (2000:253), one way in which degrees of response, intensity of response, and the move away from dichotomous questions has

been managed can be seen in the notion of rating scales, Thurston scales, and Guttmann scaling. These are important tools for the researcher, as they build in a degree of sensitivity and differentiation of response whilst still generating numbers. Also Mitchell and Jolley (2007:225) claim that Likert-type questions are extremely useful in questionnaire construction. Whereas dichotomous items allow respondents only to agree or disagree, Likert-type items give respondents the freedom to strongly agree, agree, be neutral, disagree, or strongly disagree. Thus Likert-type items yield more information than normal-dichotomous items. Because Likert-type items yield interval data, responses to Likert-type items can be analysed by more powerful statistical tests than nominal-dichotomous items.

## 4.7.3. Description of the questionnaire

The questionnaire consisted of the following three sections:

#### Section 1: Personal background

This section had five questions relating to personal details about the respondent and covered the following: gender, age, race, and highest education achieved.

#### Section 2: Business/Enterprise Characteristics

This section deals with the information relating to the business/enterprise/company of the expert and the institution where the educator teaches. One question about the name of the business/institution/company of the respondent was asked.

# Section 3: Questions on the model's ability to prepare students to become entrepreneurs

Open-ended and closed questions were used to gather information on the model's capability to prepare people to become entrepreneurs. This section was sub-divided into

10 sections according to how the model is designed.

#### Section 3.1: General management skills

Eight questions relating to the extent to which students who acquire training with general management skills will prepare themselves to become entrepreneurs, were put to the respondents in this section. By means of Likert-scale type questions, respondents were asked to indicate the extent to which they strongly disagree, disagree, neutral, agree and strongly agree to statements in the general management skills like, planning, organizing, leading, controlling, motivating, risk taking, and change oriented, that will prepare students to become entrepreneurs. Finally they were asked to indicate in general the extent to which they statement whether general management skills will prepare students to become entrepreneurs.

#### Section 3.2: Marketing skills

Thirteen questions concerning marketing skills were asked. With the help of the five- point Likert-scale type questions, respondents were asked to answer and show the extent to which they strongly agree, disagree, neutral, agree and strongly agree, to certain marketing skills. Questions were asked using both open-ended and closed to gather information. They were asked to indicate the extent to which they agree with the statement, "to be a successful entrepreneur students need the following marketing skills", by putting a tick on either they strongly disagree, disagree, neutral, agree and strongly agree to the following marketing skills, identifying target customers, using research tools/instruments, understanding marketing mix variables, choosing a unique, brand name, trademark, and logo, pricing i.e. how much a product is worth, methods and strategies of pricing, place (where customers can buy the products. Looks also at transport and strategy to deliver products to customers), product (this refers to what will be produced or provided to customers that will give them satisfaction), promotion (how awareness about the business and its offerings will be created), people (identifying potential market share of the business and workers who will help the business succeed),

and process. Talks about the production and sale of products or services also include doing follow-up after sales, physical evidence (evidence or the environment which customers experience, involves also following up with on-site support centres, assisting in updates and up-grades), treating consumers as kings. Finally by means of five-point Likert-scale type questions they were asked to indicate to what extent they agree with the following statement; marketing skills are essential in preparing students to become entrepreneurs. These were asked to respondents to provide answers to support whether students who are training in marketing skills will become entrepreneurs.

#### Section 3.3: Legal skills

In this section respondents were asked to answer questions relating to the extent they agree with the statement, "to be a successful entrepreneur students need the following legal skills". With the five-point Likert-scale respondents were asked to choose either they strongly disagree, disagree, neutral, agree and strongly agree with the following legal skills, registration of logos, trademarks and designs, brand name and the business itself, distinguish and choose the best form of business ownership, for example sole proprietor, partnership, contractual law, ethical behaviour (a set of values that are morally acceptable in society which defines right, fair, good and honest actions), labour relations Act No. 66 of 1995, amended by Act 12 of 2002 of South Africa, Employment Equity Act No. 55 of 1998 as updated by notice No. 733 of 2009, which ensures that the same terms and conditions are given for employees in the same company without discrimination in South Africa, Basic conditions of employment Act No. 75 of 1997 as amended by the Basic condition of employment amendment Act 2002, which ensures fair labour practices are regulated, Compensation for Occupational Injuries and Diseases Act No. 61 of 1997 as amended, which ensures that compensation is given to workers who are disabled, become ill whilst employed, Consumer protection Act No. 68 of 2008 implemented in 2011, which prevents businesses to not offer unscrupulous and unfair businesses practices to consumers. Finally they were asked to indicate the extent to which they agree to the statement whether in general, legal skills are essential to prepare students to become successful entrepreneurs.

#### Section 3.4: Operational management skills

This section asked questions relating to operational management skills, on the model to the respondents. By five-point Likert-scale type questions, respondents were asked to indicate the extent they strongly disagree, disagree, neutral, agree and strongly agree with the statement, "to be a successful entrepreneur students need the following skills in operational management", the skills are; prototype of the potential, manufacturing the finished product/ service, identifying wholesalers and retailers who will contribute to the sales of the product/services to the other sectors of the economy, identifying raw materials and suppliers, operations system (where inputs are converted to provide outputs), location of facilities, problem solving, problem solving processes (which are problem definition, identifying alternatives, evaluating alternatives, choosing the best alternative, implement decision, evaluate final decision), decision making (decision on resources allocation, conflict resolution, best negotiating skills, and using own imagination to produce a product), plant layouts and material handling, process design (where a macroscopic decision-making on the overall process route to convert raw materials into finished goods are given), production planning and control, quality control, materials management, maintenance management (which is maintaining equipment and machinery in the business); out of this a total of 15 question were asked.

Finally respondents were asked in general the extent to which they agree to operational skills as essential/important to prepare students to become entrepreneurs. These together contributed to gather information about how the model of creative and innovative techniques will prepare students to become entrepreneurs.

#### Section 3.5: Project management skills

This section relates to project management skills. Six questions were asked in relation to the extent to which project management skills will prepare students to become entrepreneurs. With the five-point Likert-scale, respondents were asked to express their opinion to questions like; project management as a science, an art, technical skills, communicating, negotiating (the ability to obtain mutually acceptable agreements with

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individuals or groups), conceptual skills (refers to the ability to coordinate and integrate all the business projects). They were also to indicate the extent to which they agree to all these skills in project management in preparing students to become entrepreneurs. Finally they were asked to what extent in general project management skills are essential business skills in preparing students to become entrepreneurs.

#### Section 3.6: Human resources skills

Eleven questions were asked from respondents on human resources skills. They were asked to express their opinion on the extent to which they agree to statements and guestions on human resource skills and to indicate whether human resource skills are needed to prepare students to become entrepreneurs. Five-point Likert-scale was also used to ask their opinions about the extent they agree to the following human resource skills as essential to prepare students to become entrepreneurs; Recruitment (finding and appointing new employees for the business, Job analysis (a clear picture about the nature of the job to be performed by potential employee), Job specification (the knowledge, skills and experience a person must have to do what the work entails as in the job description, identifying and deciding on a recruitment source (internal from family members or external from outside), designing and writing an advertisement for the job, Selection (choosing the best candidate for the job, based on the curriculum vitae submitted by applicants), employee contract and worker satisfaction (which regulates the terms and conditions of the job between the employer and employee), orientation and training (which refers to orientating new employees into the business so as to start contributing to it), and finally remuneration and benefits ( which refers to the determination and calculation of all salary-related amounts, deductions and payments to South Africa Revenue Service, pension fund, medical aid schemes and providence funds). Lastly they were asked to express their opinion on whether human resource skills are essential to prepare students to become a successful entrepreneur by choosing, strongly disagree, disagree, neutral, agree or strongly agree. These were meant to determine the extent to which human resources skills will help prepare students to become entrepreneurs as depicted in the model.

#### Section 3.7: Financial management

This section asked nine questions relating to financial management. Respondents were asked to indicate the extent to which they agree that acquiring the financial skills below will prepare students to become entrepreneurs. They were asked to indicate the extent they agree to the following financial skills as essential in managing finances in order to become a successful entrepreneur; cash budget ( which refers to controlling and managing the businesses cash ), budgeting (which refers to a financial plan according to which resources for specific activities are issued), identifying source, forms and categories of capital, debt financing, equity finance, showing the main sources of debt and equity finance in South Africa which are mainly commercial banks, equipment loans and leasing, government agencies, and trade creditors, cash flow statement – which refers to the inflow and outflow of cash in the business, categories of source of cash flow from the business (operating, financing and investment activities), and finally to indicate by the uses of five-point Likert-scale the extent to which they agree to the statement that financial management skills are needed in order to prepare students to become entrepreneurs.

#### Section 3.8: Business plan skills

This section asked ten questions on a business plan. Respondents were asked to indicate the extent to which they agree with the statement that to be a successful entrepreneur, students need the following skills in business planning; the cover page and index (which includes name of the business, the date, and the contact details of the business owner and title and page number of each subsection of the plan); the executive summary (which is the summary of the entire business plan), description of the business (which involves the form of ownership, organogram, long-term objectives, and the description of the product or service to be offered); SWOT analysis (refers to the strength, weakness, opportunity and threats of the potential business); marketing plan (which refers to the description of the 7ps of business namely, product, price, place, promotion, people, physical evidence and process); competition (which refers to identifying and

stating businesses that sell the same or similar product/service); financial plan (refers to recording in detail how much capital is required, how it will be raised from the business); management plan (which outlines who will be in charge of running the business as well as the skills of the entrepreneur and others in the business); and finally legal requirements, which is showing legal compliance to the stakeholders of the business. Lastly in using the five-point Likert-scale, respondents were asked to choose the extent to which they strongly disagree, disagree, in neutral, agree, strongly agree to the statement that business plan skills are essential to prepare students to become entrepreneurs.

#### Section 3.9: Creativity and Innovation skills

Five questions were asked from this section. Experts and teachers were asked to indicate the extent to which they agree to the statement; to become a successful entrepreneur, a student will need creativity and innovation skills. By using the five- point Likert-scale, they were asked to indicate the extent to which the following creativity and innovation skills will prepare students to become entrepreneurs; using own imagination to generating ideas, using thinking tools to generate ideas, seeing business opportunities from ideas and converting opportunities into a product/services. Finally they were asked to indicate the extent that, creativity and innovation are essential skills to prepare students to become entrepreneurs.

#### Section 3.10: General statement on creative and innovative training model

This was the final and concluding part of the survey questionnaire to test a training model of creative and innovative technique that will prepare final year students to become entrepreneurs. Only one question was asked in this section to conclude the questionnaire, respondents were asked to indicate in general by using the five-point Likert-scales, whether the training model will prepare students to become entrepreneurs. By looking back to the various categories of skills in general management, marketing, operational management, project management, financial management, business plan, legal skills, human resource skills and creativity and innovation skills in the model they

were asked to indicate whether they strongly disagree, disagree, in neutral, agree and strongly agree that the model will prepare students to become entrepreneurs.

# 4.7.4. Cover letter

According to Rubin and Babbie (2010:115), an important factor encouraging response rate to surveys is the quality of the cover letter that accompanies the questionnaire. In fact the cover letter is usually what prospective respondents read first. It should therefore be constructed in a way that will stimulate them to respond and prevent any resistance they may have about participating in the survey. Similarly, the basic purpose of the cover letter is to explain briefly the aim of the study and to stress the importance of each person responding (Connaway & Powell 2010:164). People will complete the questionnaire if the cover letter stresses the potential value of the study for respondents. Rubin and Babbie (2010:115) states that, by assuring the potential respondents of the anonymity of their responses and given them an indication of the length of time needed to complete the above, a cover letter was included in this research (see annexure A). The letter introduced the questionnaire and set the background of the questions, explaining the importance of the research. A guarantee of secrecy and confidentiality and full details of the researcher were also provided.

## 4.7.5. Questionnaire pre-testing

According to Cohen, Manion and Morrison (2000:260), it bears repeating that the wording of questionnaires is of much importance and that pretesting is essential for success. A pilot has several functions, principally to increase the reliability, validility and practicality of the questionnaire (Wilson & Mclean 1994:47).

Similarly, Lee and Lings (2008:283) explains that a pilot study is a mini version of a full study. Research takes a small sample of the population and administers everything exactly as it would in the full study, to see if everything works out well. In this research, the questionnaire was given to five entrepreneur experts as a pilot study for testing the

techniques and methods used. Certain changes were made based on their responses before the questionnaire was sent to the actual sample.

## 4.8. DATA ANALYSIS STRATEGY

Upon the completion of the hard copy survey, the date on which the questionnaires were collected and captured in Excel spreadsheet, were analysed with STATISTICAL software. Descriptive statistics were used as a method of data analysis.

# 4.8.1. Descriptive statistics

According to Welman, Kruger and Mitchell (2005:231), it's about the description and/or summary of the data obtained for a group of individual units of analysis; if one variable is involved in our study, we name it univariate analysis; if two variables are involved, it is called bivariate analysis and if more than two variables are involved, it is called multivariate analysis; these were used in all sections of our analysis depending on the situation. Similarly, Lee and Lee (2000:4) say that descriptive statistics deal with the presentation and organization of data. Also Balian (1988:204) defines descriptive statistics as a form of statistical method which is merely concerned with the description of data found in a study. Moreover, descriptive statistics of a set of measurements (Mendenhall, Beaver & Beaver 2009:4).

Examples of descriptive statistics used in the present study, include frequency distribution, mean, median and standard deviation. It must also be noted that there are various forms of illustrating descriptive statistics which are; bar chart and pie chart.

## 4.8.2. Inferential statistics

According to Cramer and Howitt (2004:78), inferential statistics is a branch of statistics which deals with generalization from samples to the population of values and also involves significant testing. Sapsford and Jupp (2006: 211) confirm that inferential
statistics are used in order to draw conclusions about a wider population from sample data and to examine differences, similarities and relationships between different variables. There are two aspects to inferential statistics. The first concerns the making of inferences about populations from data drawn from samples. The second aspect comes from the testing of hypothesis or the study of relationships. In the present study, inferential statistics will not be used as the sample for this study is very small.

### 4.9. SUMMARY AND CONCLUSION

The purpose of this chapter was to document the research methodology selected for this study. The research study made use of the quantitative research methodology. A survey was deemed suitable for the type of enquiry being conducted. Explanations regarding the research design, the survey method, the sampling method, and the questionnaire design and data analysis strategy were given. The results of the empirical study will be presented in Chapter Five.

# CHAPTER FIVE EMPIRICAL RESULTS AND DATA ANALYSIS

#### 5.1. INTRODUCTION

This chapter presents the results of the empirical study which focus on testing a training model of creative and innovative techniques that will prepare final year students to become entrepreneurs. The results will be discussed in the form of a data analysis and presented with the aid of both Tables and Figures to describe the data obtained from the research survey. The response rate of the empirical study will be presented first. Secondary the empirical data related to the personal background of the respondents and the training model will be analysed through descriptive statistics. Lastly in order to gain better understanding of the research objective and problem, the researcher made use of a t-test to establish the statistical significance between certain variables regarding the model of creative and innovative techniques that will prepare final year students to become entrepreneurs.

### 5.2. RESPONSE RATE FOR THIS STUDY

A hard copy survey questionnaire was addressed to entrepreneurial experts, teachers and lecturers of business studies/management and small business owners identified from the Sisonke District of Kwazulu-Natal, through the Department of Education and the municipalities in the Sisonke District. The questionnaire which was sent with a covering letter, was addressed to a total number of 100 respondents on 28 July 2014, with the cut-off date of 15 September 2014. The final number of questionnaires submitted was 67, which resulted in a response rate of 67%.

### 5.3. DEMOGRAPHIC PROFILE OF RESPONDENTS

The questionnaire started by collecting basic information about the respondents. Section 1 of the questionnaire (See annexure B) contains queries related to gender, age, race

and education.

### 5.3.1. Gender

Question 1.1 in the questionnaire asked respondents to provide information on their gender. Table 5.1 below presents the frequency distribution of the gender.

### TABLE 5.1: GENDER

Gender	Frequency	Percentage (%)
Female	36	53.7
Male	31	46.3
Total	67	100

Sources: results obtained from the analysis of the empirical study

The gender composition presented in Table 5.1 above is illustrated below as a pie chart in Figure 5.1 below.



Sources: Table 5.1 converted to a pie chart

As shown in Table 5.1, nearly one-half of the individuals, who took part in the study, were females. In fact the sample consisted of 36 (54%) females and 34 (46%) males.

#### 5.3.2. Age

Respondents were required to give their age. Table 5.2 below shows the frequency distribution of the age range of the respondents.

Range of age in years	Number (N°)	Percentage (%)
18-25	6	9.0
26-35	23	34.3
36-45	30	44.8
46-55	7	10.4
56-65	1	1.5
Totals	67	100

# TABLE 5.2 AGE OF THE RESPONDENTS

Sources: results obtained from the analysis of the empirical study

The age range in years presented in Table 5.2 above is illustrated below as a bar chart in figure 5.2





Sources: Table 5.2 converted to bar charts

As indicated in Table 5.2 and figure 5.2, the empirical results showed that 88% of the respondents were between 18 and 45 years of age while only 12% were older than 45 years of age.

#### 5.3.3. Race

Respondents were asked to indicate which race they belonged to. Responses included the following groups; African, Asian, Coloured, Indian, and White. The findings obtained are summarised in Table 5.3 below.

### TABLE 5.3: RACE

Race/Ethnic group	Number (N°)	Percentage (%)
African	62	92.5
Asian	0	0
Coloured	5	7.5
Indian	0	0
White	0	0
Totals	67	100

Sources: results obtained from the empirical study

The composition of the ethnic group as indicated in Table 5.3 above is illustrated as a pie chart in Figure 5.3 below.





Sources: Table 5.3 converted to a pie chart

As presented in Table 5.3 and Figure 5.3, 92% of respondents were Africans and 8% were coloured. Asian, Indian and White were not easily available for the study. Given the

zero representation of the Asian, Indian, and White within the sample studied, these ethnic groups will be excluded from any subsequent inferential analysis.

### 5.3.4. Education

In terms of education, question 1.4 in the questionnaire asked respondents to indicate their highest level of education achieved. The question provided possible options such as less than Matric, Certificate, National Diploma, and Bachelor of Technology, Bachelor degree, Honours, Masters (non MBA), MBA, Doctorate and other. Table 5.4 presents the frequency distribution of the highest level of education achieved by the respondents.

Academic qualifications	Number (N°)	Percentage (%)
Less than Matric	4	6.0
Certificate	12	17.9
National Diploma	9	13.4
BTech	6	9.0
Bachelor Degree	19	28.4
Honours	6	9.0
Post graduate Diploma	8	11.9
Masters (non MBA)	1	1.5
Other	2	3.0
Total	67	100

# TABLE 5.4 HIGHEST LEVEL OF EDUCATION ACHIEVED

Sources: results obtained from the analysis of the empirical study

Table 5.4 explained above is illustrated in a bar graph as depicted in figure 5.4 below.

FIGURE 5.4 HIGHEST LEVEL OF EDUCATION ACHIEVED



Sources: results of the highest level of education converted into bar chart.

Table 5.4 above indicates that the majority of respondents made up of 74% had obtained various undergraduate degrees, presented as follows:

- National Diploma (13%)
- Bachelor Degree (28%)
- Certificate (18%) and
- Bachelor of Technology (9%)

Also, 22% of the respondents had obtained the following postgraduate degrees:

- Honours (9%)
- Postgraduate Diploma (2%)
- Masters (non MBA) (1%)

Among the respondents no-one obtained an MBA or Doctoral degree. Moreover, 6% of respondents did not have any university degree. Lastly, 3% obtained other certificates and degrees.

# 5.4. A MODEL OF CREATIVE AND INNOVATIVE TECHNIQUES THAT WILL PREPARE FINAL YEAR STUDENTS TO BECOME ENTREPRENEURS

This section focuses on the core results of the survey which was the testing of a model of creative and innovative techniques that will prepare final year students to become entrepreneurs.

### 5.4.1. Training In General Management Skills

Respondents were asked to rate a list of general management skills that when acquired by students can prepare them to become entrepreneurs in respect of the model, on a five-point Likert-scale ranging from; 1- strongly disagree, 2 - disagree, 3 -neutral, 4 - agree, and 5 - strongly agree. The results regarding this question are presented in Table 5.5 and Table 5.6 below. In Table 5.5 results are provided as a mean, median and standard deviation.

	Mean	Median	Standard
General management skills			Deviation
Planning (looking into the future and making provision for it)	4.60	5	0.52
Organizing ( a framework used to put a plan into			
implementation)	4.54	5	0.75
Controlling (creating realistic standards to measure the			
performance of employees)	4.58	5	0.61
Leading (working with and through individuals and groups to			
accomplish business goals)	4.64	5	0.54
Motivation ( the zeal in motivation and encouraging workers,			
subordinates and entire employees)	4.67	5	0.73
Risk taking (the probability that an event could occur and			
that it will have consequences which will impact negatively	4.40	5	0.74

# GENERAL MANAGEMENT SKILLS

TABLE 5.5

TABLE 5.5: GENERAL MANAGEMENT SKILLS CONTINUED					
on the business objectives thereby causing financial of					
physical loss)					
Change oriented (the ability to look out for opportunities to					
change people's mindset so that newer, cheaper, faster,					
safer - in short, better products find a place in the market)	4.58	5	0.53		
General management skills (planning, organizing, leading,					
control, motivation), will prepare students to become					
entrepreneurs	4.78	5	0.45		

Sources: results obtained from the analysis of the empirical study

The results presented in Table 5.5 above are provided as a table depicting actual percentages in Table 5.6 below.

# TABLE 5.6

# EXTENT OF GENERAL MANAGEMENT SKILLS TRAINING (IN PERCENTAGE)

Extent of training acquired in	Strongly	Disagree	Neutral	Agree	Strongly	Total
general management	disagree				agree	
Planning	0	0	2	37	61	100
Organizing	2	2	2	32	62	100
Controlling	0	1	2	34	63	100
Leading	0	0	3	30	67	100
Motivation	1	2	2	19	76	100
Risk taking	0	2	10	34	54	100
Change oriented	0	0	1	39	60	100
General management skills	0	0	2	19	79	100

Sources: results obtained from the analysis of empirical study

The results as indicated in Table 5.5 show that respondents strongly agree that training in general management skills will prepare students to become entrepreneurs. Indeed all the skills mentioned under the general management obtained the highest mean scores, between 4.40 low in ranking to 4.78, which is almost to the highest mean score of 5. Similarly, the median scores of all the skills in general management was 5 – this shows that general management skills are essential in preparing students to become entrepreneurs.

From the actual percentage presented in Table 5.6, there was a confirmation that general management skills cannot be ignored when training students to become entrepreneurs. Training skills in leading and motivation accounted for the highest percentage scores of 67% and 76% respectively. This shows that training in these skills is more likely to equip students to become entrepreneurs, as compared to the rest. In general, the need for training in general management skills was rated a score of 79% for students to become successful entrepreneurs.

#### 5.4.2. Training in marketing skills

Question 3.2 in section 3 asked the respondents to indicate with a five-point Likert- scale the extent they agree that the following marketing skills will prepare students to become entrepreneurs. Alternatives were given to the respondents to choose from. The results are presented in Table 5.7 in the form of mean, median, and standard deviation and finally presented in Table 5.8 in percentages.

# TABLE 5.7 TRAINING IN MARKETING SKILLS

	Mean	Median	Standard
Marketing Skills			deviation
Target customers (who their potential consumers are)	4.57	5	0.63
Using research tools (questionnaires, market surveys,			
interviews, observation in collecting information)	4.57	5	0.58
Knowing the marketing mix variables (product, price, place,			
promotion)	4.66	5	0.62
Choosing a unique, brand name, trademark, and logo	4.69	5	0.50
Pricing - how much a product is worth, methods and			
strategies of pricing	4.66	5	0.51
Place (where customers can buy the products. Looks also at			
transport and strategy to deliver products to customers)	4.69	5	0.53
Product (This refers to what will be produced or provided to			
customers that will give them satisfaction).	4.70	5	0.46
Promotion (how awareness about the business and its			
offerings will be created).	4.61	5	0.60
People (identifying potential market share of the business and			
workers who will help the business succeed).	4.54	5	0.53
Process - talks about the production and sale of products or			
services also include making follow up after sales	4.43	5	0.68
Physical evidence (evidence or the environment which			
customers experience)	4.36	4	0.64
Treating consumers as kings	4.67	5	0.70
Marketing skills are essential in preparing students to become			
entrepreneurs	4.72	5	0.45

Sources: results obtained from the analysis of the empirical study

The results presented in Table 5.7 above are provided as a table depicting actual percentages in Table 5.8 below.

# TABLE 5.8

# EXTENT OF TRAINING IN MARKETING SKILLS

Extent of training in marketing skills	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
Identifying target customers	0	1	3	33	63	100
Using research tools	0	1		39	60	100
Knowing the marketing mix variables	0	1	3	24	72	100
Choosing a unique, brand name, trademark, and logo.	0	0	2	28	70	100
Pricing - how much a product is worth, methods and strategies of pricing.	0	0	2	31	67	100
Place - where customers can purchase the products	0	0	3	25	72	100
Product - what will be produced or provided to customers	0	0		30	70	100
Promotion (how awareness about the business and its offerings will be created)	0	1	2	31	66	100
People - identifying potential market share of the business and workers who will help the business succeed	0	0	2	43	55	100
Process - the production and sale of products, providing after sales service	0	2	6	40	52	100
Physical evidence - the environment which customers experience	0	1	5	51	43	100
Treating consumers as kings	1	2	0	22	75	100
Marketing skills in general	0	0	0	28	72	100

Sources: results obtained from empirical study.

The results from Table 5.7 and 5.8 above indicate that respondents strongly agree that students who acquire training in marketing skills will be equipped to set up their own businesses and become entrepreneurs. The mean score for the various skills in marketing ranges from 4.36 low to 4.72 high in Table 5.7, the scores indicate that the highest mean score which is 5, is almost achieved. This signifies that students will be able to become entrepreneurs when training in marketing is given to them to acquire the skills. The standard deviation dropped as low as 0.45 for marketing skills and 0.46 for product skills, which proves that when students acquire skills in marketing they will more likely become entrepreneurs.

Lastly, Table 5.8 shows that treating customers as kings rated 75% as the best marketing skill by respondents, who strongly agree that students will need to acquire such skills to become entrepreneurs. To know and acquire skills on the environment of the business or the business premises, received the lowest percentage of 43% among the skills.

When respondents were asked to express their opinions on marketing skills in general as essential in preparing students to become entrepreneurs, a total score of 72% was rated and given as strongly agree. Based on this it can be observed that the need for students to acquire marketing skills is essential in preparing them to become entrepreneurs who own their own businesses.

#### 5.4.3. Legal skills

In section 3, question 3 asked the respondents to rate and indicate the extent that training in legal skills will prepare students to become entrepreneurs, on a five-point Likert-scale ranging from 1=strongly disagree, 2-disagree, 3=neutral, 4=agree, and strongly agree=5. The results are presented in Table 5.9 and Table 5.10. In Table 5.9 results are delivered as mean, median, and standard deviation as depicted below.

## TABLE 5.9

# LEGAL SKILLS

	Mean	Median	Standard
Training in legal skills			deviation
Legal skills in general are essential to prepare students	4.60	5	0.60
Labour Relations Act No. 66 of 1995, amended by Act 12 of			
2002(which regulates the relationship between employees and			
their unions on the one hand and employers and their			
organizations on the other hand, to avoid labour disputes).	4.48	5	0.64
Legal skills on registration of logos trademarks and designs, brand			
name and the business itself.	4.48	5	0.56
Employment Equity Act No. 55 of 1998 as updated by notice No.			
733 of 2009. This ensures that the same terms and conditions are			
given for employees in the same company without discrimination.	4.45	4	0.61
Ethical behaviour (a set of values that is morally acceptable in			
society which defines right, fair, good and honest actions).	4.43	5	0.70
Basic Conditions of Employment Act No. 75 of 1997 as amended			
by the Basic Condition of Employment Amendment Act 2002,			
which ensures fair labour practices are regulated.	4.42	4	0.55
Compensation for Occupational Injuries and Diseases Act No. 61			
of 1997 as amended. Which ensures that compensation is given to			
workers who are disabled, or become ill, whilst employed.	4.42	5	0.70
Consumer Protection Act No. 68 of 2008 implemented in 2011.	4.39	5	0.82
Legal skill on forms of business ownership.	4.37	4	0.79
Skills on contractual law-agreement between two or more persons			
to do or not to do something (oral, written, or implied).	4.36	4	0.69

Sources: results obtained from empirical study

The results presented in Table 5.9 above are provided as a table representing actual percentage in Table 5.10 below.

## TABLE 5.10

## EXTENT OF TRAINING IN LEGAL SKILLS (IN PERCENTAGE)

Extent of training in legal skills	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	TOTALS
Legal skills on registration of logos, trademarks and designs,	0	0	3	46	51	100
brand name and the business itself.						
Legal skill on form of business ownership.	1	3	2	45	49	100
Skills on contractual law.	2	0	3	52	43	100
Ethical behaviour.	1	0	3	45	51	100
Labour Relations Act No. 66 of 1995, amended by Act 12 of	0	1	3	42	54	100
2002.						
Employment Equity Act No. 55 of 1998 as updated by notice	0	1	2	48	49	100
No. 733 of 2009.						
Basic Conditions of Employment Act No. 75 of 1997 as	0	0	3	52	45	100
amended by the Basic Condition of Employment Amendment						
Act 2002.						
Compensation for Occupational Injuries and Diseases Act	0	1	8	39	52	100
No. 61 of 1997 as amended.						
Consumer Protection Act No. 68 of 2008 implemented in	1	1	8	36	54	100
2011.						
Legal skills in general are essential to prepare students in	0	0	6	28	66	100
order to become entrepreneurs.						

Sources: results obtained from the analyses of empirical study

From Table 5.9, the mean results are ranked according to the highest mean from 4.6 highest to 4.36 lowest, even though the 4.39 is low it shows that the highest mean of 5 in research study is almost met, the need for training in legal skills is strongly evident throughout the fields. In fact, the median for each legal training skill needed was between 4 and 5. The respondents expressed the strongest need for training in the following fields;

- Labour Relations Act No. 66 of 1995, amended by Act 12 of 2002 (median score= 5)
- Legal skills on registration of logos trademarks and designs, brand name and the business itself (median score= 5)
- Ethical behaviour (median score= 5)
- Compensation for occupational injury and disease Act 61 of 1997 (median score= 5)
- Consumer protection Act No. 68 of 2008 implemented in 2011 (median score= 5).

In fact the greater proportion of training in the legal skills was between 5 and 4, median, standard deviation of 0.55 and 0.56 which signals that training in legal skills will prepare students to become entrepreneurs.

The actual percentage presented in Table 5.10 confirms that legal skills on registration of logos, trademarks and designs, brand name and the business itself, Compensation for Occupational Injuries and Diseases Act No. 61 of 1997, Consumer Protection Act No. 68 of 2008 implemented in 2011, Labour Relations Act No. 66 of 1995, amended by Act 12 of 2002, and ethical behaviour are all areas where training in legal skills is strongly needed. Indeed some 51%, 52%, 54%, 54%, 51% of respondents respectively expressed the mentioned fields as strongly agreed to prepare students in order to become entrepreneurs.

Lastly, in general 66% of respondents strongly agreed that legal skills are essential to prepare students to become entrepreneurs, thereby expanding the SME sector of a country's economy as an engine for growth and job creation in any country.

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#### 5.4.4. Training in operational management

Question 3.4 in section 3 asked respondents to indicate the extent they agree that operational management skills are essential to prepare students to become entrepreneurs. Specific operational skills such as, prototype of the perceived product, how to manufacture the finished product, identifying wholesalers and retailers who will contribute to the sale of the product/services, skills in identifying the best raw materials and their suppliers, operations system, location of facilities of the business, problem solving and the process, decision making, process design, plant layout and material handling, production planning and control, quality control, and materials and maintenance management.

Finally to express their opinion on whether students who acquire training in operational management will be better prepared to become entrepreneurs, on a five-point Likert-scale ranging from 1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree. The results are presented in Table 5.11 and 5.12. In Table 5.11 results are delivered as mean, median, and standard deviation.

### TABLE 5.11

### TRAINING IN OPERATIONAL MANAGEMENT SKILLS

Areas of training in operational management	Mean	Median	Standard deviation
Training in the prototype of the potential product	4.22	<mark>4</mark>	<mark>0.60</mark>
Manufacturing the finished product	4.31	4	0.68
Identifying wholesalers and retailers who will contribute to the			
sales of the product/services	4.43	<mark>4</mark>	<mark>0.50</mark>
Skills in identifying raw materials and suppliers	4.49	<mark>5</mark>	<mark>0.53</mark>
Training in operational system	4.43	4	0.56
Training skills on location of facilities	4.51	5	0.50
Training in problem solving	4.67	5	0.47
Skills in problem solving process	4.63	5	<mark>0.52</mark>
Skills in decisions making in business	4.64	5	<mark>0.48</mark>
Skills in plant layouts and material handling	4.39	4	0.60
Training in process design	4.30	4	0.65
Training in production planning and control	4.45	5	<mark>0.63</mark>
Training skills in quality control	4.58	5	0.50
Training in materials management	4.58	5	<mark>0.53</mark>
Training in maintenance management	4.60	5	<mark>0.49</mark>
Operational management skills are essential to prepare students	4.66	<mark>5</mark>	<mark>0.51</mark>

Source: result obtained from the analysis of the empirical study

The results presented in Table 5.11 are provided as a table representing actual percentage in Table 5.12 as depicted below.

#### TABLE 5.12

#### EXTENT OF OPERATIONAL MANAGEMENT SKILLS

Operational management skills	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	TOTALS
Training on the prototype of the potential product	0	0	9	60	31	100
Manufacturing the finished product or service	0	3	3	54	40	100
Identifying wholesalers and retailers who will contribute to						
the sales of the product or services	0	0	0	57	43	100
Skills in identifying raw materials and suppliers	0	0	1	48	51	100
Training in the operations system	0	0	3	51	46	100
Training skills to locate the business facilities	0	0	0	49	51	100
Training on problem solving skills	0	0	0	33	67	100
Skills on problem solving process	0	0	2	34	64	100
Skills on decisions making	0	0	0	36	64	100
Skills on plant layouts and material handling	0	0	6	49	45	100
Training on process design	0	1	6	54	39	100
Training on production planning and control	0	1	3	45	51	100
Skills on quality control	0	0	0	42	58	100
Training on materials management	0	0	1	39	60	100
Training on maintenance management	0	0	0	40	60	100
Operational management skills essential to prepare students to become entrepreneurs	0	0	2	31	67	100

Source: results obtained from analysis of the empirical study

The results obtained from the analysis shows that the lowest mean score was 4.22 as indicated in table 5.11, which refers to prototype of the potential product to be sold. From table 5.11, the other low means are;

- Process design (mean score=4.30)
- Manufacturing the finished product/service (mean score=4.31)
- Plant layouts and material handling (mean score=4.39)
- Identifying wholesalers and retailers (mean score=4.43)
- Operational system (mean score=4.43)
- Production planning and control (mean score=4.45)
- Identifying raw materials and suppliers (mean score=4.49)

This was the lowest from the analysis. However even though it is low it is very close to the maximum/highest mean score of 5. This implies that respondents were of the belief that operational management skills are essential and when acquired will prepare students to become entrepreneurs.

The following attracted the highest mean score from table 5.11 above;

- Location of facilities (mean score=4.51)
- Quality control (mean score=4.58)
- Materials management (mean score=4.58)
- Problem solving process (mean score=4.63)
- Decisions making (mean score=4.64)
- Maintenance management (mean score=4.60)
- Problem solving (mean score=4.67).

Apart from the median score of 5, a mean score of 4.66, a standard deviation ranging from 0.47 low to 0.68 high was obtained for operational management skills for as low as 0.47 it, indicates that operational management skills are essential to prepare students in order to become entrepreneurs.

Again, the actual percentage in Table 5.12 supported the findings obtained from Table 5.11. Indeed, the following major skills in operational management were believed to be supported by certain percentages of respondents as being major skills to which they agree or strongly agree that it will prepare students to become entrepreneurs. These skills are;

• Identifying wholesalers and retailers (57%);

- Training on the prototype of the potential product (60%);
- Skills on problem solving process (64%);
- Skills on decisions making (64%);
- Training on problem solving skills (67%).

In general 31% and 67% of the total respondents agreed and strongly agreed that, when students are trained with general management skills they will be preparing themselves well to become entrepreneurs.

### 5.4.5. Project management skills

In question 3.5 in section 3, respondents were asked to express their opinion with the help of five-point Likert-scale type questions, ranging from 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree on the extent to which project management skills will prepare students to become entrepreneurs. The following skills in project management were required; project management as a science, that is being able to analyse information quantitatively by using charts, graphs and financial data, project management as an act, that is being able to deal with qualitative analysis such as negotiating, conflict resolution and interpersonal factors, technical skills, communicating skills – both verbal and nonverbal communication, conceptual skills and project management in general. The results are presented in Table 5.13 in the form of mean, median, and standard deviation and in Table 5.14 as percentages.

### TABLE 5.13

## PROJECT MANAGEMENT SKILLS

Areas of training in project management skills	Mean	Median	Standard
			deviation
Project management as a science (when students are able to analyse			
information quantitatively)	<mark>4.36</mark>	4	<mark>0.62</mark>
Project management as an art (when students are able to deal with			
qualitative analysis)	<mark>4.40</mark>	4	<mark>0.63</mark>
Technical skills (the skills to use management techniques,			
procedures and tools)	<mark>4.48</mark>	5	<mark>0.56</mark>
Communicating (both verbal and nonverbal communication that			
enable a project manager to convey project information in a way that it			
is received and understood by all project stakeholders)	<mark>4.69</mark>	5	<mark>0.47</mark>
Negotiating (the ability to obtain mutually acceptable agreements with			
individuals or groups)	<mark>4.52</mark>	5	<mark>0.50</mark>
Conceptual skills (refers to the ability to coordinate and integrate all			
the business projects efforts).	<mark>4.55</mark>	5	<mark>0.56</mark>
Project management skills in general.	<mark>4.64</mark>	5	<mark>0.51</mark>

Sources: results obtained from empirical study

The results presented in Table 5.13 are provided as a table representing actual percentage in Table 5.14 as depicted below.

#### **TABLE 5.14**

### EXTENT OF PROJECT MANAGEMENT SKILLS (IN PERCENTAGE)

Extent of project management skills	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTALS
As a science	0	1	3	54	42	100
As an art	0	2	3	49	46	100
Technical skills	0	0	3	46	51	100
Communicating	0	0	0	31	69	100
Negotiating	0	0	0	48	52	100
Conceptual	0	0	3	39	58	100
Project management skills in general	0	0	1	33	66	100

Sources: results obtained from the analysis of the empirical study

From Table 5.13 and 5.14 above, respondents indicated they strongly agree that project management skills will prepare students to become entrepreneurs. A percentage of 66% of respondents strongly agree and 33% agree from Table 5.14. Also from Table 5.13 a high median score was obtained for conceptual skills, technical skills, communicating skills and negotiating skills with a score of 5 each. Although project management as a science and art obtained a lower mean score of 4.36 and 4.40 respectively, it is closer to the score of 5.

### 5.4.6. Human resource skills

Question 3.6 of section three of the questionnaire asked respondents to indicate the extent they agree to the fact that, training to acquire human resources skills will prepare students to become entrepreneurs. On a five-point Likert-scale, respondents were asked to indicate the extent to which they 1=strongly disagree agree, 2=disagree, 3=neutral,

4=agree, 5=strongly agree to the following skills under human resources that will prepare students, which are; recruitment, job analyses, job specification, identifying and deciding on a recruitment source, designing and writing advertisement for the job, employee contract and worker satisfaction, orientation and training, and remuneration and benefits. The results are presented in Table 5.15 as mean, median and standard deviation and 5.16 in percentage.

#### **TABLE 5.15**

### HUMAN RESOURCE SKILLS

Areas of training in human resources			Standard deviation
Recruitment (finding and appointing new employees for the business)	<mark>4.55</mark>	<mark>5</mark>	<mark>0.56</mark>
Job analysis (a clear picture about the nature of the job to be performed by			
potential employee)	<mark>4.51</mark>	<mark>5</mark>	<mark>0.50</mark>
Job specification (the knowledge, skills and experience a person must have			
to be able to do the work as entailed in the job description)	<mark>4.52</mark>	<mark>5</mark>	<mark>0.50</mark>
Identifying and deciding on a recruitment source	<mark>4.48</mark>	4	<mark>0.53</mark>
Designing and writing advertisement for the job	<mark>4.57</mark>	<mark>5</mark>	<mark>0.53</mark>
Selection (choosing the best candidate for the job, based on the curriculum			
vitae submitted by applicants)	<mark>4.72</mark>	<mark>5</mark>	<mark>0.45</mark>
Employee contract and worker satisfaction	<mark>4.54</mark>	<mark>5</mark>	<mark>0.53</mark>
Orientation and training (this refers to orientating new employees into the			
business so as to start contributing to it)	<mark>4.61</mark>	<mark>5</mark>	<mark>0.55</mark>
Remuneration and benefits	<mark>4.69</mark>	5	<mark>0.47</mark>
Human resource skills are essential for a successful business	<mark>4.78</mark>	<mark>5</mark>	<mark>0.42</mark>

Source: obtained from the analysis of empirical results of the study

The results presented in Table 5.15 are provided as a table representing actual percentage in Table 5.16 as depicted below.

#### **TABLE 5.16**

#### EXTENT OF HUMAN RESOURCE SKILLS (IN PERCENTAGE)

Human resource skills	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTALS
Recruitment (finding and appointing new employees )	0	0	3	<mark>39</mark>	<mark>58</mark>	100
Job analysis (a clear picture on the nature of the job)	0	0	0	<mark>49</mark>	<mark>51</mark>	100
Job specification (the knowledge, skills and experience a person needs to be able to do the work)	0	0	0	<mark>48</mark>	<mark>52</mark>	100
Identifying and deciding on a recruitment source (internal						400
or external)	0	0	2	<mark>49</mark>	<mark>49</mark>	100
Designing and writing an advertisement for the job	0	0	2	40	<mark>58</mark>	100
Selection (choosing the best candidate for the job)	0	0	0	<mark>28</mark>	<mark>72</mark>	100
Employee contract and worker satisfaction	0	0	2	<mark>43</mark>	<mark>55</mark>	100
Orientation and training of new employees	0	0	3	<mark>33</mark>	<mark>64</mark>	100
Remuneration and benefits to employees	0	0	0	<mark>31</mark>	<mark>69</mark>	100
Human resource skills are essential for start-up business	0	0	0	22	<mark>78</mark>	100

Sources: results obtained from empirical study

From the Table 5.15, a higher mean score between 4.48 to 4.78 scores were obtained indicating that respondents strongly agree that human resource skills will prepare students to become entrepreneurs. In support of the median score of average 5 obtained, as well as a standard deviation of 0.42 indicating strongly that human resource skills will equip students to become entrepreneurs. The percentage analysis obtained also confirms that selection, orientation, training, and remuneration and benefits, are areas

where training is mostly needed to boost human resource skills. It indicated 72%, 64% and 69% respectively. In general context human resources skills were rated a strong 78% as a skill that will be needed by students.

#### 5.4.7. Financial management skills

In section 3, question 3.7 asked the respondents to rate the training needs of students on financial management on a five-point Likert-scale ranging from 1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 4=strongly agree. The results are presented in Table 5.17 and Table 5.18. In Table 5.17 results are delivered as mean, median and standard deviation, as depicted below.

<b>TABLE 5.17</b>	

## FINANCIAL MANAGEMENT SKILLS

			Standard
Areas of training in financial management	Mean	Median	deviation
Cash budget (controlling and managing the businesses cash).	<mark>4.60</mark>	<mark>5</mark>	<mark>0.49</mark>
Budget (this refers to a financial plan according to which			
resources for specific activities are issued).	<mark>4.60</mark>	<mark>5</mark>	<mark>0.49</mark>
Identifying source, forms and categories of capital (like			
permanent, working, fixed and expansion capital).	<mark>4.46</mark>	<mark>4</mark>	<mark>0.50</mark>
Debt financing (refers to the money one can obtain in the form of			
a loan and which must be repaid with interest).	<mark>4.34</mark>	<mark>4</mark>	<mark>0.57</mark>
Equity finance (refers to where funds are obtained for running a			
business in exchange for ownership).	<mark>4.37</mark>	<mark>4</mark>	<mark>0.62</mark>
Showing the main sources of debt and equity finance in South			
Africa (commercial banks, equipment loans and leasing)	<mark>4.39</mark>	<mark>4</mark>	<mark>0.65</mark>
Cash flow statement	4.52	5	0.53
Categories of cash flow from the business	4.54	5	0.56
Financial management in general.	4.70	<mark>5</mark>	<mark>0.46</mark>

Source: results obtained from the analysis of the empirical study

The results presented in Table 5.17 are provided as a table representing actual percentage in Table 5.18 as depicted below;

## **TABLE 5.18**

### EXTENT OF FINANCIAL MANAGEMENT SKILLS (IN PERCENTAGE)

Financial management skills	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	TOTALS
Cash budget (controlling and managing the businesses	0	0	0	40	60	100
cash).						
Budget (this refers to a financial plan according to which	0	0	0	40	60	100
resources for specific activities are issued).						
Identifying source, forms and categories of capital (like						
permanent, working, fixed and expansion capital).	0	0	0	46	54	100
Debt financing (refers to the money one can obtain in the	0	0	4	57	39	100
form of a loan and which must be repaid with interest).						
Equity finance (refers to where funds are obtained for	0	0	7	48	45	100
running a business in exchange for ownership).						
Showing the main sources of debt and equity finance in	0	0	9	43	48	100
South Africa.						
Cash flow statement (it refers to the inflow and outflow of	0	0	1	45	54	100
cash in business over the past financial year).						
Categories of cash flow from the business (operating,	0	0	3	40	47	100
financing and investment activities).						
Financial management are essential skills for the success	0	0	0	30	70	100
of a business.						

Source: results obtained from the analysis of the empirical study

The following areas in finance were rated as the strongest areas by respondents, where training will be needed to prepare students;

- Cash budget (mean score= 4.60 and standard deviation score(0.49)
- Budget (mean score= 4.60)
- Categories of cash flow from the business (mean score= 4.54)
- Cash flow statement (mean score= 4.52).

The following also obtain a moderate score as areas where training in finance is needed;

- Showing the main sources of debt and equity finance in South Africa (mean score=4.39)
- Equity finance (mean score=4.37)
- Debt financing (mean score=4.34).

Overall, human resource skills were seen as essential in preparing students to become entrepreneurs – a median score of 4 low and high as 5 were obtained. In addition a total of 70% of the respondents confirmed that human resource skills are essential to prepare students to become entrepreneurs.

#### 5.4.8. Business plan skills

Question 3.8 of section 3, requested that the 67 respondents rate on a five-point Likert-scale, the need for training in business plan preparation in preparing students to become entrepreneurs. The scale ranged from, 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. Table 5.19 and 5.20 presents the finding of question 3.8. In Table 5.19 results are provided as mean, median and standard deviation as shown below.

# TABLE 5.19

# **BUSINESS PLAN SKILLS**

Areas of training in a business plan	Mean	Median	Standard deviation
The cover page and index (which includes name of the business, the			
date, and the contact details of the business owner, title and page			
number of each subsection of the plan).	4.34	4	0.57
The executive summary (which is the summary of the entire business			
plan).	4.36	4	0.62
Description of the business - form of business ownership, organogram,			
long-term objectives, and the description of the product to be offered.	4.46	4	0.50
SWOT analysis - the strength, weakness, opportunity and threats of the			
potential business.	4.51	5	0.53
Marketing plan - the description of the 7ps of business namely, product,			
price, place, promotion, people, physical evidence and process.	4.51	5	0.50
Competition - identifying and stating businesses that sell the same or			
similar product/service.	4.49	4	0.50
Financial plan -refers to recording in details how much capital is			
required, how it will be raised from the business.	4.52	5	0.56
Management plan - which outlines who will be in charge of running the			
business.	4.54	5	0.53
Legal requirement - showing legal compliance to the stakeholders of the			
business.	4.46	4	0.56
Business planning is an essential skill for securing funds, which will			
prepare students to become entrepreneurs.	4.69	5	0.47

Source: results obtained from empirical study

The results presented in Table 5.19 are provided as a table representing actual percentage in Table 5.20 as depicted below.

# TABLE 5.20

## EXTENT OF BUSINESS PLAN SKILLS (IN PERCENTAGE)

Business plan skills	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	TOTALS
The cover page and index	0	0	4	57	39	100
The executive summary	0	1	3	54	42	100
Description of the business	0	0	0	46	54	100
SWOT analysis - the strength, weakness, opportunity	0	0	2	46	52	100
and threats of the potential business						
Marketing plan	0	0	7	48	45	100
Competition	0	0	0	51	49	100
Financial plan	0	0	3	42	55	100
Management plan	0	0	2	43	55	100
Legal requirement	0	0	3	48	49	100
Business plan is essential skill for securing funds	0	0	0	31	69	100

Source: results obtained from the empirical study

The median results ranges from 4 low to 5 high to which the expected highest rate of 5 has being obtained for business plan skills. Apart from the median score, a high mean score of the following were obtained;

- Financial plan (mean score=4.52)
- Marketing plan (mean score=4.51)
- SWOT Analysis (mean score=4.51)
- Description of the business (mean score=4.46).

This is an indication that these areas require more training as respondents have confirmed and strongly agree that this will prepare students to become entrepreneurs. A total of 69% of respondents from Table 5.20 observed that training acquired in business plan skills will prepare students to become entrepreneurs.

#### 5.4.9. Skills in innovation and creativity

In question 3.9 of section 3, respondents were asked using the five-point Likert-scale to indicate the extent to which training on innovation and creativity in business will prepare students to become entrepreneurs, on a scale of 1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree. The responses are presented in Table 5.21 as mean, median and standard deviation and Table 5.22 as a percentage. The 67 responses indicated a mean score of 4.40 low and 4.70 high from Table 5.21, in all higher mean scores were given for the following;

- Using thinking tools to generate ideas (mean score=4.51)
- Seeing business opportunities from ideas (means score=4.60)
- Converting opportunities into a product/services (mean score=4.61)

This confirms respondents strongly agree that training in creativity and innovation in business will prepare students to become entrepreneurs as supported by a total of 70% of respondents in Table 5.22. Table 5.21 and 5.22 are depicted below.

# TABLE 5.21 INNOVATION AND CREATIVITY SKILLS

Areas of training in innovation and creativity	mean	Median	Standard deviation
Using own imagination to generate ideas	<mark>4.40</mark>	<mark>5</mark>	<mark>0.78</mark>
Using thinking tools to generate ideas	<mark>4.51</mark>	<mark>5</mark>	<mark>0.68</mark>
Seeing business opportunities from ideas	<mark>4.60</mark>	<mark>5</mark>	<mark>0.52</mark>
Converting opportunities into a product/service	<mark>4.61</mark>	<mark>5</mark>	<mark>0.65</mark>
Innovation and creativity are essential for the success of a			
business	<mark>4.70</mark>	<mark>5</mark>	<mark>0.46</mark>

Source: results obtained from empirical study

The results presented in Table 5.21 are provided as a table representing actual percentage in Table 5.22 as depicted below.

# TABLE 5.22

# EXTENT OF CREATIVITY AND INNOVATION SKILLS (IN PERCENTAGE)

Extent of creativity and innovation	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	τοταίς
Using own imagination to generate ideas	2	2	4	40	52	100
Using thinking tools to generate ideas	0	1	2	40	57	100
Seeing business opportunities from ideas	0	0	2	37	61	100
Converting opportunities into a product/service	0	1	5	25	69	100
Innovation and creativity are essential for the success of a						
business.	0	0	0	30	70	100

Source: results obtained from empirical study

### 5.4.10. General view on the training model

Question 3.10, in section 3 was the final part of the questionnaire. Respondents were asked to express their opinion in general with regards to whether the creativity and innovation technique training model can prepare students who acquire training through it to become entrepreneurs, on a five-point Likert-scale that is, 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree. The mean scores are presented below and also in Table 5.23 as percentage. The final percentage scores are however converted into a pie chart in Figure 5.5 below.

- Mean (score=4.67)
- Median (score=5)
- Standard deviation (score=0.53)

### TABLE 5.23

# EXTENT OF TRAINING MODEL OF CREATIVE AND INNOVATIVE TECHNIQUE (IN PERCENTAGE)

STRONGLY	DISAGREE	NEUTRAL	AGREE	STRONGLY	TOTAL
DISAGREE				AGREE	
0	0	0	<mark>30</mark>	<mark>70</mark>	<mark>100</mark>

Source: results obtained from empirical study

The results presented in Table 5.23 are provided as a pie chart representing actual percentage of the highest respondents of 30% agree and 70% strongly agree to the model as depicted below.

# FIGURE 5.5 HIGHEST PERCENTAGE OF RESPONDENTS WHO BELIEVE THE MODELS WILL PREPARE STUDENTS



Source: Table 5.23 converted into pie chart

The pie chart above indicates that between 30% and 70% of respondents to the questionnaire agree and strongly agree respectively that the model of creative and innovative techniques will be useful in training students to become entrepreneurs. In addition, the model received the highest median of 5 from the analysis that it will prepare students. It also achieved a mean score of 4.67 and standard deviation of 0.53. This moreover indicates that the entrepreneurial experts, business studies/management teachers and business owners who responded to this view are of the opinion that the model of creative and innovative techniques will prepare students to become entrepreneurs.

#### 5.5. STATISTICAL SIGNIFICANCE BETWEEN SELECTED VARIABLES

To ensure an in-depth understanding of how a model of creative and innovative techniques will prepare final year students to become entrepreneurs, in the study a *t*-test

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will be realised. The research made use of the *t*-test in order to investigate a possible statistical significance between selected variables regarding the model's ability to prepare students to become entrepreneurs. On the one hand, a statistical significance will be established for demographic variables such as gender and age groups. On the other hand, factor analysis will be conducted to determine which questions that respondents answered, belong together in the sense that they are answered the same, to confirm that training in the skills will prepare students to become entrepreneurs.

The skills are; in question 3.1, general management, 3.2, marketing, 3.3, legal, 3.4, operational management, 3.5, project management, 3.6, human resource, 3.7, financial management, 3.8, business plan skills, 3.9, innovation and creativity. After the factor analysis is done, an internal reliability will be established through Cronbach alpha. Conclusion of the *t*-test will be made according to the p-value. All p-values less than 0.05 indicate a statistical significance between the means of the selected variables. Also conclusion on the factor analyses will look at a correlation coefficient below 0.3 shows a weak, 0.3 to 0.4 shows moderate relationship, a score above 0.5 indicates a strong relationship.

On Conbach's alpha coefficient the following will be used; 0.90-high reliability, 0.80-moderate reliability and 70-low reliability, below 0.60 is unacceptable; this will confirm the internal consistency or reliability of the research study. The results of this study are presented in Table 5.24, influence of gender on a model of creative and innovative techniques that will prepare final year students to become entrepreneurs; Table 5.25, influence on age groups on a model of creative and innovative techniques statistics indicating which item belongs to which factor; Table 5.27, correlation between scores of the questions relating to the model of creative and innovative techniques. Finally, Table 5.28 indicating internal reliability using Cronbach alpha of question 3.1, 3.2, 3.4, 3.5, 3.6, 3.7, 3.8, and 3.9.

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# 5.5.1. Influence of gender on the model of creative and innovative techniques that will prepare students to become entrepreneurs

The *t*-test was used to establish a statistical significance between the gender of respondents regarding a model of creative and innovative techniques that will prepare final year students to become entrepreneurs. The results are presented in Table 5.24.

## TABLE 5.24 INFLUENCE OF GENDER ON THE MODEL OF CREATIVE AND INNOVATIVE TECHNIQUES

A model of creative and innovative		Male	Female		<i>t-</i> test
techniques	Mean	Standard deviation	Mean	Standard deviation	p-value
Training in general management skills	4.60	<mark>0.42</mark>	4.59	<mark>0.33</mark>	<mark>0.9043</mark>
Training in marketing skills	4.65	<mark>0.38</mark>	4.57	<mark>0.35</mark>	<mark>0.3619</mark>
Training in legal skills	4.45	<mark>0.53</mark>	4.43	<mark>0.36</mark>	<mark>0.8712</mark>
Training in operational skills	4.53	<mark>0.35</mark>	4.46	<mark>0.35</mark>	<mark>0.4039</mark>
Training in project management	4.58	0.39	4.47	<mark>0.45</mark>	<b>0.2793</b>
Training in human resource skills	4.59	<mark>0.31</mark>	4.60	<mark>0.36</mark>	<mark>0.8494</mark>
Training in financial management	4.51	0.38	4.50	<mark>0.37</mark>	<mark>0.8972</mark>
Training in business plan skills	4.55	<mark>0.41</mark>	4.43	<mark>0.37</mark>	<mark>0.1963</mark>
Training in innovation and creativity	4.63	<mark>0.41</mark>	4.51	<mark>0.51</mark>	<mark>0.2714</mark>

Source: results obtained from the analysis of the empirical study

Table 5.24 above shows that all p-values are more that 0.05 which is the level of significance. It therefore indicates that there is no statistical significance between males and females regarding a training model of creative and innovative techniques that will prepare final students to become entrepreneurs.

# 5.5.2. Influence of age groups on a model of creative and innovative technique that will prepare final year students to become entrepreneurs

The *t*-test was used to establish a statistical significance between the age groups of the respondents regarding a model of creative and innovative techniques that will prepare final year students to become entrepreneurs. Ages were grouped ranging from 18 to 35 years for the first group and 35 years and beyond for the second group. Results are presented in Table 5.25 below.

#### TABLE 5.25

# INFLUENCE OF AGE GROUPS ON THE MODEL OF CREATIVE AND INNOVATIVE TECHNIQUES

A model of creative and innovative techniques	18-3	85 years	36 ye a	<i>t-</i> test	
	Mean	Standard	Mean Standard		<i>p</i> p-valu
		deviation		deviation	е
Training in general management skills	4.52	<mark>0.37</mark>	4.66	0.37	<mark>0.1175</mark>
Training in marketing skills	4.52	<mark>0.43</mark>	4.67	0.29	0.0967
Training in legal skills	4.38	<mark>0.50</mark>	4.48	0.39	<mark>0.3416</mark>
Training in operational skills	4.48	<mark>0.37</mark>	4.50	0.34	<mark>0.8627</mark>
Training in project management	4.47	<mark>0.48</mark>	4.56	0.38	<mark>0.4255</mark>
Training in human resource skills	4.62	<mark>0.33</mark>	4.57	0.34	<mark>0.5432</mark>
Training in financial management	4.55	<mark>0.37</mark>	4.47	0.38	<mark>0.3922</mark>
Training in business plan skills	4.56	<mark>0.38</mark>	4.44	0.40	<mark>0.2219</mark>
Training in innovation and creativity	4.53	<mark>0.50</mark>	4.59	0.45	<mark>0.6155</mark>

Source: results obtained from the analysis of the empirical study

Table 5.25 above indicates there is no statistical significance, even though training in

marketing skills pp-value nearly scored the 0.05 mark, the mark is however greater than 0.05, therefore since all the p-values are greater than 0.05, it means there is no statistical significance.

#### 5.5.3. Correlation between variables

Correlation analysis has been chosen to explore the relationships between two continuous variables – interaction/collaboration among the various skills that will prepare students to become entrepreneurs when training is acquired were used. Table 5.26 presents the results.

	General management	Marketing management	legal skills	Operational management	project management	human resource skills	financial management	business plan skills	innovation and creativity
General management	1.000	0.582	0.451	0.304	0.331	0.285	0.217	0.171	0.088
Marketing skills	0.582	1.000	0.716	0.623	0.514	0.514	0.527	0.418	0.417
Legal skills	0.451	0.716	1.000	0.545	0.522	0.514	0.494	0.441	0.342
Operational management	0.304	0.623	0.545	1.000	0.764	0.671	0.646	0.663	0.509
Project management	0.331	0.514	0.522	0.764	1.000	0.674	0.655	0.745	0.393
Human resource skills	0.285	0.514	0.514	0.671	0.674	1.000	0.588	0.691	0.408
Financial management	0.217	0.527	0.494	0.646	0.655	0.588	1.000	0.660	0.478
Business plan skills	0.171	0.418	0.441	0.663	0.745	0.691	0.660	1.000	0.454
Innovation and creativity	0.088	0.417	0.342	0.509	0.393	0.408	0.478	0.454	1.000

## TABLE 5.26 CORRELATION BETWEEN SKILLS

Source: results obtained from the analysis of the empirical study

From the table above the red indicates statistical significant correlation among the skills (p<0.05). With the interpretation of correlation the following scores are observed;

- < 0.3: Small/Weak
- 0.3 0.49: Moderate
- 0.5+: Strong/Large

This therefore implies that from Table 5.27 above general management skills strongly correlate to marketing skills with a score=0.582. Moreover it is moderately correlated to the following skills; legal skills (score=0.451), project management skills (score=0.331), operational management skills (score=0.304), and weakly related to human resource (score=0.285), financial management (score=0.217), business plan score=0.171 and finally innovation and creativity score=0.088.

Marketing skills are strongly related to the following skills;

- Legal skills score=0.716
- Operational management skills score=0.623
- Project management skills score=0.514
- Human resource management skills score=0.514
- Financial management skills score= 0.527

And moderately correlated to the following; business plan score=0.418, innovation and creativity score=0.417, there is no weak correlation. Legal skills strongly correlate with the following skills;

- Operational management skills scores=0.545
- Project management skills scores=0.522
- Human resource skills scores=0.514

It is however moderately correlated to financial management with a score=0.494, business plan skills, score=0.441, and lastly innovation and creativity, scoring= 0.342. The red figures indicated in Table 5.27, shows the statistical significance among the

various business skills and it confirms how, strongly, moderate and weakly one skill relates to the other, this shows that the various skills correlate to each other and are significantly relative and also shows positive relationship. These show that the model of creative and innovative techniques will prepare the students to become entrepreneurs.

#### 5.5.4. Reliability of the scale

One of the main aspects to check for reliability of the scale is the scale's internal consistency. The most important indicator for internal consistency is Cronbach's alpha coefficient, which ideally should be above 0.70. In this study the scale has good internal consistency with Cronbach's alpha value between 0.75 (lowest) and 0.90 (highest), therefore the scale can be considered reliable. Table 5.27 below indicates the scale levels for the various questions in relation to the models of creative and innovative techniques that will prepare final year students to become entrepreneurs.

ltem	Average inter-item Correlation	Cronbach alpha
Training in general management skills	<mark>0.28</mark>	<mark>0.75</mark>
Training in marketing skills	<mark>0.36</mark>	<mark>0.87</mark>
Training in legal skills	<mark>0.39</mark>	<mark>0.86</mark>
Training in operational skills	<mark>0.37</mark>	<mark>0.90</mark>
Training in project management	<mark>0.53</mark>	<mark>0.88</mark>
Training in human resource skills	<mark>0.38</mark>	<mark>0.85</mark>
Training in financial management	<mark>0.42</mark>	<mark>0.86</mark>
Training in business plan skills	<mark>0.49</mark>	0.90
Training in innovation and creativity	<mark>0.47</mark>	0.80

TABLE 5.27

ITEM-TOTAL S	TATISTICS
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Source: results obtained from the analysis of the empirical study.

#### 5.6. SUMMARY AND CONCLUSION

This chapter has presented the findings of the research survey. For this study, data was collected using structured questionnaires. The results of the survey were analysed using Excel Spreadsheets. Frequencies, means, medians, standard deviations, *t*-test, correlations coefficient and Cronbach alpha were used to present these results. In the next chapter, the findings of this research will be presented; this chapter addressed the main research problem (see chapter 1, point 3). The main research problem asked is, "How can students be enabled to use their own creative and innovative ideas to prepare themselves to become entrepreneurs?". According to the responses received from the questionnaire, it can be stated that the model of creative and innovative techniques tested positively and will prepare them to become entrepreneurs. Sub-problems (a), (b) and (c) were addressed in chapters two and three. In chapter six the achievement of objectives will be discussed and conclusion and recommendations given.

### CHAPTER SIX CONCLUSION AND RECOMMENDATIONS

#### 6.1. INTRODUCTION

Chapter Six encompasses a summary of the study as well as the most important findings of the literature review and the results of the empirical study presented in the previous chapters. Several recommendations will be made, the limitations of this study will be discussed and areas for further research will be suggested.

#### 6.2. SUMMARY OF THE STUDY

Chapter One presented the background of the research, followed by the statement of the research problem and sub-problems. Then the primary objectives and the secondary objectives were elaborated.

Chapter Two reviewed creativity and creative techniques to prepare students to become entrepreneurs. Further, sources of creativity, conditions of creativity, kinds of creativity, blocks to creativity, how to boost creativity, and basic attributes of highly creative students were discussed. Chapter Two identified creative techniques and tools as well as different types of models and techniques that expert's believe will prepare students to become entrepreneurs.

Chapter Three developed a model of creative and innovative techniques to prepare students. It reviewed further who an entrepreneur is, entrepreneur innovation, forms and types of innovation, innovation style and techniques, the link between creativity and innovation, a model of creative and innovative techniques and finally an implementation model to train students to become entrepreneurs.

Chapter Four focused on the empirical research methodology. The empirical study consisted of the primary data collected from a hard copy questionnaire that gathered quantitative data.

Chapter Five provided the results of the empirical study conducted on a model of creative and innovative techniques that will prepare final year students to become entrepreneurs. Descriptive statistics and inferential statistical analysis were used in the presentation of these results.

Chapter Six, which is the final phase of the research study, aims to apply the findings obtained from the literature and the empirical study as background to make recommendations to address a model of creative and innovative techniques that will prepare final year students to become entrepreneurs.

#### 6.3. ACHIEVEMENT OF RESEARCH OBJECTIVES

In this section the primary and secondary objectives are revisited. Thereafter, the findings of the research study are presented.

#### 6.3.1. The main research problem and sub-problem

The main research problem asked: "How can students be enabled to use their own creative and innovative ideas to prepare themselves to become entrepreneurs?".

Sub-problem (a) asked: "What does the literature reveal are creative and innovative techniques that will prepare a person to become an entrepreneur?".

Sub-problem (b) asked: "What innovative and creative techniques do successful entrepreneurs and other experts believe will prepare a person to become a successful entrepreneur?".

Sub-problem (c) asked: "How can the results obtained from the resolution of sub-problems 1 and 2 above be integrated into a model of creative and innovative techniques that will prepare a person to become a successful entrepreneur?".

It is concluded from the literature survey, as well as responses received from the questionnaire, that a model of creative and innovative techniques is extremely relevant to prepare final year students to become entrepreneurs and that when students acquire training in the model, it will help them acquire the necessary skills to startup their own

business and become owners/entrepreneurs.

These statements are supported by the findings of the literature survey (see paragraph 2.2.3, 2.3, 2.10 and 2.12) on creativity and techniques. Also in support are the review statements on paragraph 3.3, 3.3.1, 3.3.2, 3.4 and 3.6 which addressed on innovation and techniques. These results highlight creative and innovative techniques that will prepare final year students to become entrepreneurs.

#### 6.3.2. Sub-problem (1)

This sub-problem asked: "What does the literature reveal are creative and innovative techniques that will prepare a person to become an entrepreneur?"

The literature surveys in Chapter Two and Three revealed the following fundamental elements of creative and innovative techniques:

- a) Concrete creativity supporting techniques are developed to promote and generate creativity, to break fixed ideas, to stimulate imagination as well as to define the conditions in which creativity takes place (the creative environment or climate), (Sefertzi 2000:3).
- b) Creative thinking skills enable pupils to generate and extend ideas, to suggest hypotheses, to apply imagination, and to look for alternative innovative outcomes (The National Curriculum Handbook 1999:3).
- c) According to Amabile (1997:18), entrepreneurial creativity demands a combination of intrinsic motivation and certain kinds of extrinsic motivation – a motivational synergy that results when strong levels of personal interest and involvement are combined with the promise of rewards that confirm competence, support skill development, and enable future achievement.
- d) According to the literature, many techniques exist to stimulate creative thinking

and to prepare students to own their own businesses in order to become entrepreneurs. Most of us are not natural creative thinkers. Telling oneself and the team "to be creative" does not usually yield results. Some special techniques are required to help us use our brains in a different way to change our usual thinking process– this refers to creative techniques.

- e) According to innovative Style (2007:5), acknowledging the different ways we like to innovate is a key to working together successfully – in a team or in an organization or as individuals. Human beings have a solitary approach to meeting a creative challenge.
- f) Also as stated by Okpara (2007:4), creative techniques refers to how people approach problems and solutions and the capacity to put existing ideas together in new combinations.

#### 6.3.3. Sub-problem (2)

This problem presented the question: "What innovative and creative techniques do successful entrepreneurs and other experts believe will prepare a person to become a successful entrepreneur?"

The literature survey in Chapter Two and Three revealed the following creative and innovative techniques:

a. Brainstorming: Sefertzi (2000:7) observes that it is one of the business world group based creativity processes for problem solving. It is a method of getting a large number of ideas from a group of people in a short time. It can be used for generating a large number of ideas or solutions for well-defined strategic or operational problems, such as new product and business ideas to become entrepreneurs as individuals or in a group.

- b. Story boarding: This technique is for strategic and scenario planning based on brainstorming and used mainly by groups (Sefertzi 2000:8). It requires a leader, a secretary and takes place in a group of 8 to12 people. The leader arranges the ideas generated by brainstorming in a logical order on a white board, creating a story. This technique allows one to identify the interconnections of ideas and how all the pieces fit together. It can be used to identify issues, problems, solve a complex problem and determine ways to implement solutions.
- c. Table 2.2 (Higgins 1996:370-380) in paragraph 2.10.4, is Osborn's checklist, a creative technique used mainly for product improvement or modification. It involves applying a series of words, verbs, adjectives or phrases contained in checklists or tables to an existing product or service or its attributes. The checklist is the best known and includes the verbs: put to other uses, adapt, modify, magnify, minify, substitute, rearrange, reverse and combine. It is believed that if students use this checklist it will contribute in preparing them to become entrepreneurs.
- d. Morphological analysis: As a product improvement technique, this permits an in-depth analysis of products or processes (Sefertzi 2000:9). It involves applying a set of words to an item in another set of words. Normally, one set of words consists of verbs and the other set are attributes of the product. Another way is that one set of words would be components of the product (breaking the product down into its parts) and the other set of words would be alternative solutions. This will prepare students to create their own business ideas.
- e. Mapping process: According to Sefertzi (2000:9) the use of maps is useful in strategic management thinking in organisations, it helps to organise discontinuities, contradictions or differences, and brings pattern, order and sense to a confusing situation, acting as a spatial representation of a perspective. This will help students think creatively to generate own products ideas and become

entrepreneurs.

- f. Excursion technique: This is a useful technique for forcing a group to have new thought patterns to formulate strategies. According to Higgins (1996:380), it involves five steps as indicated in paragraph 2.10.7, when students follow these steps it will prepare them to become entrepreneurs.
- g. Computer-based creativity techniques: these stimulate the human creative process and have an immediate and pragmatic aim, which is the implementation of computational models (computer software) for generating and organising ideas for creative work (Sefertzi 2000:11). These are used more frequently in research planning, product design, knowledge acquisition, decision making, and motivation. This can prepare students to become entrepreneurs.
- h. Spatial representation tools: According to Fentem, Dumas and McDonnell (1998:418), certain representations use a specific notation, others use spatial proximity to indicate the relationship between objects (usually words relating to concepts) in the spaces, and others, used in marketing and design departments called "mood boards", use collections of images as metaphors that reflect the quality aspects of the product strategy. Techniques like; Kelly Repertory Grid technique, Spatial Information Systems, Spatial hypertext systems, as explained in paragraph 2.10.9.1, 2.10.9.2 and 2.10.9.3 respectively, are examples that students can use to generate their own product ideas when setting up a business as an entrepreneur.
- i. Mental provocation developed by Edward de Bono 2002: According to de Bono (2002:79), it involves using apparently contradictory statements to liberate oneself from traditional patterns of perception, so inducing a state of instability which may point the path to a new idea. It allows people to look at things from a different angle. It puts distance between you and your problem, and stimulates you to find out-of-the-ordinary solutions. This will prepare students to become entrepreneurs.

- j. According to Higgins (1996:370), apart from the creative supportive techniques, there is other stimulus that can extend perspectives to approach a problem; as is depicted in Table 2.3, this can help students generate their own creative ideas.
- k. Human beings have a solitary approach to meeting a creative challenge, when using a combination of the four Innovation Styles: Visioning, Modifying, Exploring, and Experimenting. To instill a healthy environment for innovation, each approach must be recognized, valued, and put to its best use while practicing versatility among all four approaches(Innovation Styles 2007:5). These tools will prepare students to become entrepreneurs.
- I. Finally as stated by the researcher in paragraph 3.6 and indicated in figure 3.3, in order for someone to become an entrepreneur requires the person to choose among the techniques to innovate and create. Prospective entrepreneurs should be in a position to identify which profile characteristics (modifying, visioning, experimenting, and exploring) will enable him/her to generate and produce product ideas.

# 6.3.4. The main problem and sub-problem (3) as addressed by the questionnaire

The main research problem asked: "How can students be enabled to use their own creative and innovative ideas to prepare themselves to become entrepreneurs?".

How can the results obtained from the resolution of sub-problems 1 and 2 above be integrated into a model of creative and innovative techniques that will prepare a person to become a successful entrepreneur?".

The following result obtained from section 3 of the questionnaire indicates that a model of creative and innovative techniques will prepare students to become entrepreneurs.

a) Training in general management skills is essential to prepare students in order to become entrepreneurs.

	Results:	Strongly disagrees 0%	19% Agree	79% Strongly agree
b)	Training in students to	marketing skills is essential become entrepreneurs.	as such bus	siness skills are needed by
	Results:	Strongly disagree 0%	Agree 28%	Strongly agree 72 %

c) Legal skills are essential to prepare students in order to become entrepreneurs.

**Results:** Strongly disagree 0% Strongly agree 66%

 d) Training in operational management is essential business skill to prepare students to become entrepreneurs.

**Results:** Strongly disagree 0% Strongly agree 67%

e) Project management skills are essential business skills to prepare students in order to become entrepreneurs.

**Results:** Strongly disagree 0% Strongly agree 66%

 f) Human resource skills are essential business skills to prepare students to become entrepreneurs.

**Results:** Strongly disagree 0% Strongly agree 78%

g) Financial management skills are essential business skills to prepare students to become entrepreneurs.

**Results:** Strongly disagree 0% Strongly agree 39%

h) Business plan skills are essential to prepare students in order to become entrepreneurs.

**Results:** Strongly disagree 0% Strongly agree 69%

 i) Innovation and creativity are essential business skills to prepare students in order to become entrepreneurs.

Results:	Strongly disagree 0%	Strongly agree 70%
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j) In general will the model of creative and innovative techniques prepare students to become entrepreneurs?

**Results:** Strongly disagree 0% Strongly agree 70%

It can be observed that an average of 70% strongly agree that the model of creative and innovative techniques will prepare final years students to become entrepreneurs.

#### 6.4. **RECOMMENDATIONS**

The primary objective of the study was to enable students to use their own creative and innovative techniques to generate own product ideas and prepare themselves in order to become entrepreneurs. This intent will boost the growth and productivity of South Africa's

economy; this is because more jobs will be created, there will be improvement in the private sector, youth unemployment will be reduced and finally minimising over-dependency on unavailable government jobs. Therefore based on the findings of the study the following recommendations can be made:

- Government through the Department of Education should come out with a special curriculum in the high schools that will teach students to be creative and innovative.
- There are several creative and innovative techniques propounded by experts that need to be taught by teachers. To do these, teachers should also be trained to be more knowledgeable on these techniques so they can teach learners to become creative.
- Government should set aside funds in support of student entrepreneurs, especially those in further education and training. This in turn will encourage students to create and innovate in order to set up businesses for themselves.

#### 6.5. LIMITATIONS OF THE STUDY

Although the current study has endeavoured to make significant contribution to the body of research relating to creativity and innovation techniques, several limitations were encountered. When interpretations and conclusions about the findings of this study are made, these limitations should be taken into account.

• Availability of the literature

There has not been much documented research on models that will prepare students to become entrepreneurs. Indeed, this has being a limitation during the theoretical part of this study, despite major points being raised.

#### • Sample coverage

The sample method proved to be a limitation. The convenience sampling method being less representative of the population provided several disadvantages; these include limited generalization of the results and potential sampling bias. This study was restricted to entrepreneurial experts, teachers of business management/studies and lecturers in the Sisonke District where 100 lists were identified. Therefore the findings of this study cannot be generalised beyond this population.

Besides, the unavailability of exhaustive entrepreneurial experts, teachers of business management and lecturers in the Sisonke District did not allow the research to draw on a larger representative sample. This was a limitation, since if more statistical analyses could have been obtained from the researcher, this would have secured more accurate findings.

Response rate

The use of a hard copy self administered questionnaire brought another challenge due to the fact that not all respondents had sufficient time to complete the questionnaire. Moreover some respondents found it difficult to go through all the pages of the questionnaire. In addition, many respondents declined to participate in the study mainly because of privacy reasons. Consequently a small percentage of questionnaires were not returned.

#### 6.6. AREAS FOR FURTHER RESEARCH

The following areas have been identified for further research:

• To determine from entrepreneurial experts' point of view, why in many cases Government, through several institutions set up funds for entrepreneurial and business establishment – but students fail to utilize these funds creatively.

- The growth of creative and innovative student entrepreneurs can increase SME's operations in an economy (South Africa).
- To determine from lecturers, business owners and experts whether an introduction of a special curriculum on creativity and innovation at the FET level will prepare students to set up their own businesses and become entrepreneurs.

#### 6.7. SUMMARY AND CONCLUSION

Creativity and innovation play an important role in building a nation's economy, industries and institutions. To ensure effective productivity, job creation and eradication of poverty, students should be trained on the best creative and innovative techniques to be able to generate their own business ideas and become entrepreneur. These are the main sources for the establishment of more SME operations which are seen as an engine for growth and development of a country. Recommendations have been presented in this study to aid students to prepare themselves well in order to become entrepreneurs and business owners.

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**Annexure A: Cover letter** 

#### PER HAND

Your opinion: A model of creative and innovative techniques that will prepare students to become entrepreneurs.

Dear respondent,

I am currently conducting a research about 'A model of creative and innovative techniques that will prepare students to become entrepreneurs'. It would be much appreciated if you could participate in the study by completing a short survey questionnaire.

This questionnaire is primarily addressed to students to acquire creative and innovation techniques through the model in order to prepare them to become entrepreneurs.

Your views and opinions as experts and teachers in the field of business management are needed to ascertain whether the model will prepare them to become entrepreneurs. The survey contains a brief Introduction, institution/company/business characteristics and finally questions on the model itself.

It would be appreciated if you could complete and submit the questionnaire by 15

<u>August, 2014.</u> Please note: your response will be entirely confidential and anonymous. The result will only be used on an aggregated level.

Your assistance and efforts would be most appreciated.

Best regards

Michael Boakye Yiadom (Masters Degree Entrepreneurship)

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#### Annexure B: Questionnaire

# QUESTIONNAIRE TO TEST A MODEL THAT WILL PREPARE A STUDENT TO BECOME AN ENTREPRENEUR

#### Instructions for the completion of the questionnaire:

- 1. Please be assured that the information gathered by the questionnaire will be used exclusively for research purposes and will at all times be treated as highly confidential.
- 2. In order for the study to be successful, participants will need to answer all questions.
- 3. Please answer all questions by filling an X in the suitable box provided or alternatively write your answer in the space provided
- 4. Some questions may give you the option of selecting one or more answers.
- 5. The questionnaire may be submitted only once

#### Section 1 - Demographic profile of respondent

1.1. Please indicate your gender

1.1.1 Male	1	1.1.2	Female	
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1.2. Please state your age range.

18-25	36-45	56-65	
26-35	46-55	66 & Above	

1.3. Please state your race.

1.3.1 African	<b>1.3.2.</b> Asian	<b>1.3.3</b> . Coloured	1.3.4. Indian	
1.3.5 White				

**1.4.** Please indicate your highest level of education achieved. If you select "other", please make sure that you tick in the box before writing your answer in the space.

1.4.1. Less than Matric	1.4.5.Bachelor degree		<b>1.4.9</b> . MBA	
1.4.2. Certificate	<b>1.4.6.</b> Honours		1.4.10. Doctorate	
1.4.3.National Diploma	<b>1.4.7.</b> Post Graduate		1.4.11. Other Specify	
	Diploma			
1.4.4. BTech	1.4.8. Masters (non-MBA			

#### Section 2- Company/ Business/Institution characteristics

**2.1**. Please indicate the name of your company/business/institution.

2.1.1.\_\_\_\_\_

## **3.1**. To what extent do you agree with the statements below?

To be a successful entrepreneur students need the following general management skills.

NO.	QUESTIONS	STRONGLY	DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY	AGRFF
3.1.1	Planning (looking into the future and making provision for it)							
3.1.2	Organizing ( a framework used to put a plan into implementation)							
3.1.3	Controlling (creating realistic standards to measure the performance							
	of employees)							
3.1.4	Leading (working with and through individuals and groups to							
	accomplish business goals)							
3.1.5	Motivation (the zeal in motivation and encouraging workers,							
	subordinates and all employees)							
3.1.6	Risk taking (the probability that an event could occur and that it will							
	have consequences which will impact negatively on the business							
	objectives thereby causing financial of physical loss)							
3.1.7	Change oriented (the ability to look out for opportunities to change							
	people's mindset so that newer, cheaper, fasters, safer - in short,							
	better - products find a place in the market)							
3.1.8	General management skills (planning, organizing, leading, control,							
	motivation), will prepare students to become entrepreneurs							

## **3.2.** To what extent do you agree with the statements below?

To be a successful entrepreneur students need the following marketing skills.

NO.	QUESTIONS	STRONGLY	DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
3.2.1	Target customers (who their potential consumers are)						
3.2.2	Using research tools (questionnaires, market surveys,						
	interviews, observation in collecting information)						
3.2.3	Knowing the marketing mix variables (product, price, place,						
	promotion)						
3.2.4	Choosing a unique, brand name, trademark, and logo.						
3.2.5	Pricing - how much a product is worth, methods and strategies						
	of pricing						
3.2.6	Place (where customers can buy the products. Looks also at						
	transport and strategy to deliver products to customers)						
3.2.7	Product (this refers to what will be produced or provided to						
	customers that will give them satisfaction)						
3.2.8	Promotion (how awareness about the business and its offerings						
	will be created).						
3.2.9	People (identifying potential market share of the business and						
	workers who will help the business succeed)						
3.2.10	Process - Talks about the production and sale of products or						
	services also include making follow up after sales						
3.2.11	Physical evidence (evidence or the environment which						
	customers experience, involves also following up with on-site						
	support centre, assisting in updates and up-grades)						
3.2.12	Treating consumers as kings						
3.2.13	Marketing skills are essential in preparing students to become						
	entrepreneurs						

## 3.10. To what extent do you agree with the following statements:

To be a successful entrepreneur students need the following legal skills.

NO.	QUESTIONS	STRONGLY	DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY	AGREE
3.3.1	Registration of logos trademarks and designs, brand name and the							
	business itself							
3.3.2	Form of business ownership (distinguish and choose the best							
	form of business ownership, example sole proprietor, partnership)							
3.3.3	Contractual law (an agreement between two or more persons to do							
	or not to do something, it can be oral, written, or implied)							
3.3.4	Ethical behaviour (a set of values that are morally acceptable in							
	society which defines right, fair, good and honest actions)							
3.3.5	Labour Relations Act No. 66 of 1995, amended by Act 12 of 2002							
	(which regulates the relationship between employees and their							
	unions on the one hand and employers and their organizations on							
	the other hand, to avoid labour disputes)							
3.3.6	Employment Equity Act No. 55 of 1998 as updated by notice No.							
	733 of 2009. This ensures that the same terms and conditions are							
	given for employees in the same company without discrimination.							
3.3.7	Basic conditions of employment Act No. 75 of 1997 as amended							
	by the Basic condition of employment amendment Act 2002, which							
	ensures fair labour practices are regulated							
3.3.8	Compensation for Occupational Injuries and Diseases Act No. 61							
	of 1997 as amended. (which ensures that compensation are given							
	to workers who are disabled, becomes ill, whiles employed)							
3.3.9	Consumer protection Act No. 68 of 2008 implemented in 2011.							
	Which prevents businesses to not offer unscrupulous and unfair							
	businesses practices to consumers							

3.3.10	In general, legal skills are essential to prepare students to become			
	successful entrepreneurs.			

## **3.4.** To what extent do you agree with the following statements?

To be a successful entrepreneur students need the following skills in operational management.

NO.	QUESTIONS	STRONGLY	DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY	AGREE
3.4.1	Prototype of the potential product (an original model from which later							
	forms are copied, developed or derived).							
3.4.2	Manufacturing the finished product/ service							
3.4.3	Identifying wholesalers and retailers who will contribute to the sales							
	of the product/services to the other sectors of the economy.							
3.4.4	Identifying raw materials and suppliers							
3.4.5	Operations system (where inputs are converted to provide outputs).							
3.4.6	Location of facilities (which deals with a question like, 'where the							
	business's main operations should be based).							
3.4.7	Problem solving (the ability to solve problems in a range of learning							
	contexts and use content knowledge in innovative and creative							
	ways)							
3.4.8	Problem solving process (which are problem definition, identifying							
	alternatives, evaluating alternatives, choosing the best alternative,							
	implement decision, evaluate final decision).							
3.4.9	Decisions making (decision on resources allocation, conflict							
	resolution, best negotiating skills, and using own imagination to							
	produce a product)							
2.4.10	Plant layouts and material handling (which is the physical							

	arrangement of the business, departments, work centers, and			
	equipment in the conversion process)			
3.4.11	Process design (where amacroscopic decision-making on the overall			
	process route to convert raw materials into finished goods are given)			
3.4.12	Production planning and control (refers to the production process,			
	setting route for items, fixing starting and finishing dates for each			
	item)			
3.4.13	Quality Control (refers to he system that is used to maintain a			
	desired level of quality in a product or service)			
3.4.14	Materials management (refers to the acquisition, control, and using			
	materials needed and the flow of goods and services connected to			
	the production process with an objectives in view)			
3.4.15	Maintenance management (which is maintaining equipment and			
	machinery in the business)			
3.4.16	In general, operational skills are essential/ important to prepare			
	students to become entrepreneurs			

## 3.11. To what extent do you agree with the statements below?

To be successful entrepreneurs students need the following project management skills.

NO.	QUESTIONS	STRONGLY	DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY	AGREE
	As a science (when they are able to analyse information							
3.5.1	quantitatively by using charts, graphs, financial data)							
3.5.2	As an art (when they are able to deal with qualitative analysis such							
	as negotiating, conflict resolution and interpersonal factors)							
3.5.3	Technical skills (the skills to use management techniques,							
	procedures and tools)							

3.5.4	Communicating (the verbal and nonverbal communications that		
	enable a project manager to convey project information in a way that		
	it is received and understood by all project stakeholders)		
3.5.5	Negotiating ( the ability to obtain mutually acceptable agreements		
	with individuals or groups)		
3.5.6	Conceptual skills (refers to the ability to coordinate and integrate all		
	the business projects efforts)		
3.5.7	In general project management skills are essential business skills for		
	students		

## **3.12.**To what extent do you agree with the statements below?

To be successful entrepreneurs students need the following human resource skills.

NO.	QUESTIONS	STRONGLY	DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY	AGREE
3.6.1	Recruitment (finding and appointing new employees for the							
	business)							
3.6.2	Job analysis ( a clear picture about the nature of the job to be							
	performed by potential employee)							
3.6.3	Job specification (the knowledge, skills and experience a person							
	must have to be able to do the work as detailed in the job							
	description)							
3.6.4	Identifying and deciding on a recruitment source (internal from							
	family members or external)							
3.6.5	Designing and writing an advertisement for the job							
3.6.6	Selection (choosing the best candidate for the job, based on the							
	curriculum vitae submitted by applicants)							
3.6.7	Employee contract and worker satisfaction (this regulates the terms							

	and conditions of the job between the employer and employee)		
3.6.8	Orientation and training (this refers to orientating new employees		
	into the business so as to start contributing to it)		
3.6.9	Remuneration and benefits (refers to the determination and		
	calculation of all salary-related amounts, deductions and payments		
	to SARS, pension fund, medical aid schemes and provident funds)		
3.6.10	Human resource skills are essential for a successful business		

# **3.7.** To what extent do you agree with the statements below?

To be successful entrepreneurs students need the following financial management skills.

NO.	QUESTIONS	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
3.7.1	Cash budget (controlling and managing the businesses cash)					
3.7.2	Budget (this refers to a financial plan according to which resources					
	for specific activities are issued)					
3.7.3	Identifying source, forms and categories of capital (like permanent,					
	working, fixed and expansion capital)					
3.7.4	Debt financing ( refers to the money one can obtain in the form of a					
	loan and which must be repaid with interest)					
3.7.5	Equity finance (refers to where funds are obtained for running a					
	business in exchange for ownership)					
3.7.6	Showing the main sources of debt and equity finance in South Africa					
	(commercial banks, equipment loans and leasing, government					
	agencies, and trade creditors)					
3.7.7	Cash flow statement (it refers to the inflow and outflow of cash in					
	business over the past financial year)					
3.7.8	Categories of cash flow from the business (operating, financing and					

	investment activities)		
3.7.9	Financial management are essential skills for the success of a		
	business		

## 3.8. To what extent do you agree with the statements below?

To be successful entrepreneurs students need the following business plan skills.

NO.	QUESTIONS	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
3.8.1	The cover page and index (which includes name of the business,					
	the date, and the contact details of the business owner and title)					
3.8.2	The executive summary (which is the summary of the entire					
	business plan)					
3.8.3	Description of the business (which involves the form of ownership,					
	organogram, long-term objectives, and the description of the					
	product or service to be offered)					
3.8.4	SWOT analysis (refers to the strength, weakness, opportunity and					
	threats of the potential business)					
3.8.5	Marketing plan (refers to the description of the 7ps of business					
	namely, product, price, place, promotion, people, physical					
	evidence and process)					
3.8.6	Competition (refers to identifying and stating businesses that sell					
	the same or similar product/service)					
3.8.7	Financial plan (refers to recording in details how much capital is					
	required, how it will be raised from the business)					
3.8.8	Management plan (which outlines who will be in charge of					
	running the business)					
3.8.9	Legal requirements (showing legal compliance to the stakeholders					

	of the business)			
3.8.10	Business plan is an essential tool for securing funds for a start-up			
	business			

**3.9.** Towhat extent do you agree with the statement below?

To be successful entrepreneurs students need the following innovation and creative skills.

NO.	QUESTIONS	STRONGLY	DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY	AGREE
3.9.1	Using own imagination to generate ideas							
3.9.2	Using thinking tools to generate ideas							
3.9.3	Seeing business opportunities from ideas							
3.9.4	Converting opportunities into a product/services							
3.9.5	Innovation and creativity skills are essential for the success of a							
	business							

#### 3.11. To what extent do you agree with the statement below?

Students who acquire training skills in the creative and innovation training model will become an entrepreneur.

STRONGLY DISAGREE	DISAGREE	STRONGLY AGREE		

#### 'THANK YOU FOR PARTICIPATING IN MY RESEARCH STUDY'