# AN ACTION LEARNING APPROACH TO ENTREPRENEURIAL CREATIVITY, INNOVATION AND OPPORTUNITY FINDING

#### **ALEXANDER JOSEF ANTONITES**

SUBMITTED IN THE FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

### **DOCTOR COMMERCII (BUSINESS MANAGEMENT)**

IN THE
FACULTY OF ECONOMIC AND MANAGEMENT
SCIENCES
AT THE
UNIVERSITY OF PRETORIA

PROMOTOR: Prof. J.J. van Vuuren

Pretoria, South Africa

November 2003

#### **ACKNOWLEDGEMENTS**

# A reflection in gratitude on the many individuals who contributed to the success of this study:

- Prof. Jurie van Vuuren: Igniting, sustaining and growing the field of Entrepreneurship. A privilege to receive mentorship and complete a study of this nature under your guidance
- The pioneering second year Entrepreneurship students of 2001 who formed the Experimental group 1. Creative beyond believe
- The Section: Entrepreneurship, Department of Business Management, University of Pretoria. Jurie van Vuuren and Giel Nieman, a grateful opportunity to develop a training model as part of a world standard degree in Entrepreneurship, a team never to be compared
- My mother Marie for a creativity induced childhood, and father Alex for facilitating academic excellence
- Ms Monica v.d. Merwe for the statistical analysis, Christel for editing and the Centre of Business Management, UNISA, for financial support in this regard
- My in-laws, Faan & Anne-Marie Louw, for continuous support
- My dear wife, Elbie, to whom this study is devoted to
- The Dear Lord for all the above and more

#### **SUMMARY**

# AN ACTION LEARNING APPROACH TO ENTREPRENEURIAL CREATIVITY, INNOVATION AND OPPORTUNITY FINDING

By

#### **ALEXANDER JOSEF ANTONITES**

**Promotor:** Prof. J.J. van Vuuren

**Department**: Business Management

**Degree:** Doctor Commercii

A generally accepted definition of an entrepreneur is an individual with the ability to realize a specific vision from virtually anything, a definite human creative action. A differentiating factor defining the true entrepreneur is represented by the entrepreneurial skills: creativity and innovation. The fundamental skill to "create", therefore generate an idea and transforming it into a viable growth-oriented business, forms an unconditional and integrated necessity in entrepreneurship training programs. Many researchers in this field emphasize the need for and the lack of training models regarding this intervention.

Courses offered by training institutions focus on training the traditional manager and not the entrepreneur. A lack of skills training for growth-oriented business is also evident. A critical deficiency in models directly addressing the Creativity, Innovation and Opportunity finding issues, as part of entrepreneurship training, creates a situation of minuscule

differentiation between a business idea and an opportunity, in a training context. It is furthermore apparent that a lack of tools, textbooks and approaches to cultivate creativity exist in the field. The latter generates stifling pedagogical paradigms in teaching business and entrepreneurship.

This study demonstrates a new action learning approach and model, developed to increase creative and innovative behavior and actions of the entrepreneurship learner. Three purposive samples were used, on the basis of an experimental design. Ratio data was obtained by means of a reliable measuring instrument (Chronbach's alpha on an acceptable level). ANOVA as well as a Discriminant analysis indicated statistical significant differences between the different groups.

This study illustrates that the proposed training methodology that was used enhance the level of creativity and innovation of the entrepreneurship learner on this program. Recommendations regarding future research in this exiting field of study are addressed.

#### **OPSOMMING**

# 'N AKSIELEER-BENADERING TOT ENTREPRENEURIESE KREATIWITEIT, INNOVASIE EN GELEENTHEIDSIDENTIFISERING

#### **Deur**

#### **ALEXANDER JOSEF ANTONITES**

**Promotor:** Prof. J.J. van Vuuren **Departement**: Ondernemingsbestuur

Graad: Doctor Commercii

'n Algemeen aanvaarde definisie vir die entrepreneur is 'n individu wat oor die vermoë beskik om 'n spesifieke visie uit bykans enige iets te laat realiseer. Hierdie is 'n menslik kreatiewe aksie. Die entrepreneuriese vaardighede: kreatiwiteit en innovasie is egter faktore wat die werklike entrepreneur onderskei. Die grondliggende vaardigeid om te "skep", 'n idee te genereer en omvorm tot 'n lewensvatbare groei-georiënteerde onderneming, vorm 'n integrale deel van entrepreneurskap-opleidingsprogramme. Die behoefte en gebrek aan opleidingsmodelle in die verband word deur verskeie navorsers bestempel as belangrik.

Die meerderheid opleidingskursusse fokus op opleiding van die tradisionele bestuurder en nie op entrepreneurskapsopleiding nie. Daar bestaan ook 'n algemene tekortkoming aan vaardigheidsontwikkeling vir die bestuur van 'n groeiende onderneming. 'n Kritiese leemte is verder

waarneembaar in terme van opleidingsmodelle wat Kreatiwiteit, Innovasie en Geleentheidsidentifisering direk aanspreek. Hierdie verskynsel het tot gevolg dat daar min tot geen onderskeid tussen die idee en 'n geleentheid, in 'n opleidingskonteks, getref word nie. Weinig instrumente, handboeke en benaderings wat kreatiwiteit kataliseer word waargeneem. Die voorafgaande problematiek veroorsaak dat uitgediende pedagogiese denkrame in die opleiding van sakebestuur en entrepreneurskap ontstaan.

Hierdie studie poog daarin om 'n nuwe aksieleer-benadering en model te ontwikkel, ten einde kreatiewe en innoverende gedrag en optrede by die entrepreneurskapleerder te vestig. Die studie beskik oor 'n eksperimentele ontwerp, waartydens drie doelbewuste steekproewe onderneem is. Vergelykende data is deur middel van 'n betroubare meetinstrument ingesamel (Cronbach Alpha op 'n aanvaarbare vlak). ANOVA ("Analise van Variansie") asook 'n Diskriminantontleding dui op statisties betekenisvolle verskille wat bestaan tussen die groepe.

Dié studie dui daarop dat die opleidingsmetodologie wat toegepas is wel die kreatiwiteits- en innovasievlakke van die entrepreneurskapsleerder verhoog. Voorstelle word gemaak aangaande toekomstige navorsing in dié veld.

# Index

Page

1	Chapter 1: Background and orientation of the	1
	problem	
1.1	Introduction	1
1.2	Problem statement	11
1.3	Research objectives	13
1.4	Propositions	13
1.5	Demarcation, scope and limitations of the study	15
1.5.1	Demarcation and scope of the study	15
1.5.2	Limitations of the study	16
1.6	Importance and benefits of study	16
1.7	Research design	18
1.7.1	Experimental design	18
1.7.2	Internal validity	19
1.7.3	External validity	19
1.7.4	Classification of experimental design	20
1.8	Programme of investigation	20
1.9	Conclusion	24
2	Chapter 2: Entrepreneurship training	25
2.1	Introduction	25
2.2	The Entrepreneur: Conceptualising and definition	27
2.2.1	Entrepreneurs are seen as the flagships of complete	27
	uncertainty and risk	
2.2.2	The Entrepreneur as "true" innovator	27
2.2.3	The Entrepreneur as conveyor of uncertainty, certain	28
	abilities and innovation	
2.2.4	Entrepreneurship in terms of perception and	29
	adaptation	
2.3	Research within the field of Entrepreneurship	30

2.4	Training within the field of Entrepreneurship	31
2.4.1	Entrepreneurship as a subject	33
2.4.11	Systematic theory development	34
2.4.1.2	Authoritarian and professional organisations	34
2.4.1.3	A professional culture	35
2.4.1.4	Entrepreneurship as a career	35
2.4.2	The Entrepreneurship training model	37
2.5	Entrepreneurial performance (E/P)	42
2.6	Motivation (M)	42
2.6.1	Motivation	43
2.6.1.1	Motivation towards competitiveness	44
2.6.1.2	Innate incentive	44
2.6.1.3	Acquired behaviour	45
2.7	Entrepreneurial skills (E/S)	54
2.7.1	Risk propensity	58
2.7.1.1	Time risk	58
2.7.1.2	Investment risk	59
2.7.1.3	Technical risk	59
2.7.1.4	Competitive risk	59
2.7.2	Opportunity identification	60
2.7.3	Role models	60
2.8	Creativity and innovation	62
2.9	Conclusion	63
3	Chapter 3: The concepts: Creativity, innovation	65
	and opportunity finding	
2.4		
3.1	Introduction	65
3.1	Introduction Historical background	65 66
3.2	Historical background	66

3.3.3	Psychodynamic approaches to creativity	73
3.3.4	Psychometric approaches to creativity	73
3.3.5	Cognitive approaches to creativity	74
3.3.6	Social-personality approaches to creativity	74
3.3.7	Confluence approaches to creativity	75
3.4	Creativity defined	76
3.4.1	The creative person	78
3.4.2	The creative process	82
3.4.3	The creative press (environment)	85
3.4.3.1	Existensionality: Openness to experience	87
3.4.3.2	Internal locus of evaluation	87
3.4.3.3	The ability to toy with elements and concepts	88
3.4.3.4	Barriers within the creative environment	89
3.4.4	The creative product	98
3.5	Myths of creativity	102
3.5.1	Creativity is an innate talent and cannot be taught	102
3.5.2	Creativity is a phenomena linked with the so-called	102
	rebel	
3.5.3	Right brain versus left-brain	103
3.5.4	Art, Artists and creativity	104
3.5.5	Exemption	104
3.5.6	Intuition	105
3.5.7	The need for "craziness"	106
3.5.8	The group versus the individual	106
3.5.9	Intelligence and creativity	107
3.6	Innovation	109
3.7	Opportunity identification	120
3.7.1	A needs-orientated paradigm	125
3.7.2	Changes	125
3.7.3	Change orientation	125

3.7.4	Component charts and gaps	126
3.8	Training and creativity, innovation and opportunity	127
	finding in and entrepreneurial context	
3.9	Conclusion	130
4	Chapter 4: The Creativity, innovation and	132
	opportunity finding training Model	
	(CIO)	
4.1	Introduction	132
4.2.1	The entrepreneurial creativity, innovation and	133
	opportunity finding training model (CIO)	
4.2.2	Action learning	135
4.2.3	The CIO training model	145
4.2.3.1	Phase 1: The Person	148
4.2.3.2	Phase 2: The Person	148
4.2.3.3	Phase 3: The Creative Process	159
4.2.3.4	Phase 4: The Press (environment)	162
4.2.3.5	Phase 5: The product	163
4.2.3.6	Phase 6: Final assessment (an integration of the 4P	164
	model)	
4.3	Conclusion	165
5	Chapter 5: Research procedures and	167
	Methodology	
5.1	Introduction	167
5.1.1	Internal validity	168
5.1.2	External validity	169
5.1.3	Classification of experimental design	169
5.2	Statistical Analysis	170
5.2.1	Descriptive statistics	170
5.2.2	Inferential statistics	170
5.2.3	Statistical Significance	170

	ADDENDUM	232
	Bibliography	214
7.4	Recommendation	211
iii	Comparison of results	209
ii	Demographic analysis	206
i	Factor creation and reliability of the Innovator©	205
7.3.2	Chapter 6	205
7.3.1	Chapter 5	205
7.3	Summary and findings of empirical investigation	205
7.2.3	Chapter 4	202
7.2.2	Chapter 3	201
7.2.1	Chapter 2	200
7.2	Summary and findings of theory	200
7.1	Introduction	198
7	Chapter 7: Summary and recommendations	198
6.5	Discriminant analysis	195
	Innovator©)	
	commercial success of an innovation ( <i>The</i>	
6.4	Comparing the test groups on the factors of the likely	189
6.3.1	Item analysis	185
6.3	Factor creation and reliability	185
6.2	Demographic profile of the sample	178
6.1	Introduction	177
6	Chapter 6: Analysis and discussion of results	177
5.2.8	Discriminant analysis	174
5.2.7	Effect sizes	173
5.2.6	Reliability and Validity	172
5.2.5	t-test ANOVA	172 172
5.2.4	t toot	470

# **List of Tables and Figures**

Tables:		Page
Table 1	South Africa's TEA in relation to the rest of the world	5
Table 2	Start-ups	8
Table 3	New firms	9
Table 4	Established firms	9
Table 5	Main obstacles experienced by entrepreneurs	10
Table 6	The Entrepreneurship training model	15
Table 7	The Entrepreneurship training model	41
Table 8	Entrepreneurial skills as part of the entrepreneurship training model	55
Table 9	Time frame of development	56
Table 10	Entrepreneurship training programmes: Entrepreneurial skills	62
Table 11	Creativity and innovation as part of the entrepreneurship training model	63
Table 12	Creativity history	72
Table 13	The creativity process	85
Table 14	Conceptions of creativity – an analytical simplification	95
Table 15	Nurturing and developing creativity – an analytical simplification	97
Table 16	Summary of factors having a positive effect on each of the three steps	111
Table 17	Concepts of the training model	133
Table 18	Differentiation between "didactic" and  "entrepreneurial" training methods	134
Table 19	Gender composition of the control and experimental groups	179
Table 20	Average age of respondents in the control and experimental groups	179
Table 21	Home language of respondents	180
Table 22	Degree enrolled for	182
Table 23	Year of study of the test groups	183

Table 24	Current entrepreneurial ventures	184
Table 25	Item analysis for the factor: Effect on Society	185
Table 26	Item analysis for the factor: Business Risk	186
Table 27	Item analysis for the factor: Analysis of demand	187
Table 28	Item analysis for the factor: Market Acceptance	187
Table 29	Item analysis for the factor: Competitive Advantage	188
Table 30	Chi-square test for differences between the three test groups in terms of gender	189
Table 31	Chi-square test for differences between the three test groups in terms of home language	189
Table 32	Comparing the language groups in terms of the factors	190
Table 33	Comparing the race groups African and Caucasian in terms of <i>The Innovator</i> © factors	191
Table 34	Comparison of the three test groups on <i>The</i> Innovator© factors – ANOVA	193
Table 35	Size of the effect: Eta Squared	194
Table 36	Comparison of the three test groups on <i>The Innovator</i> © factors – Independent t-test	194
Table 37	Descriptive statistics of factors	195
Table 38	Test of equality of Group Means	196
Table 39	Pooled Within-Groups Matrices (Covariance and correlation)	196
Table 40	Classification results	197

#### Figures:

**Page** Figure 1 International comparison of new firm rates and forecast economic growth for 2003-2004 Figure 2 The role of entrepreneurship education and 10 training Figure 3 The entrepreneurial process 38 40 Figure 4 Variables in the development of the entrepreneurial business A model for entrepreneurial motivation 51 Figure 5 Figure 6 The 4P model of creativity 78 Figure 7 The three-component model of creativity 81 Figure 8 Trait creativity and the environment 93 Figure 9 The influence of creativity in the creation of new 99 products Figure 10 The development of innovation 110 Figure 11 Analysis of opportunity 122 Figure 12 The field of polarity 137 Figure 13 Principles of action learning 146 Figure 14 The Creativity, Innovation and Opportunity 147 finding training model Theoretical Intervention Figure 15 149 Figure 16 Creativity as a catalyst 150 Figure 17 178 Gender composition of the sample Figure 18 Home language for the different groups 181 Figure 19 Race composition of the test groups 182 Figure 20 184 Extent of entrepreneurial activity Figure 21 192 Mean scores of the three groups on *The* Innovator© factors