Chapter 4: The Creativity, innovation and opportunity finding training Model (CIO)

There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things -

Machiavelli 1520

4.1 Introduction

The University of Pretoria, South Africa, pioneered the field of Entrepreneurship training by introducing the first *Baccalaureus Commercii* (BCom) degree specialising in Entrepreneurship in Africa. The degree commenced in 1999 and operates on a full-time basis over a minimum time frame of three years. In spite of initial scepticism on the side of faculty members, the degree grew at an annual rate exceeding 150% in learner quantities. The growth figure is not only due to the current economic context but also is a result of a training model that focuses on the fundamental improvement of entrepreneurial performance.

The philosophy of the programme is based on the following multiplicative model (as discussed in Chapter 2): **E/P = M (E/S x B/S)**. The concepts contained in the training model are graphically illustrated as follows:

Table 17: Concepts of the training model

Entrepreneurial Performance (E/P)	Performance motivation (M)	Entrepreneurial skills (E/S)	Business skills (B/S)
▪ Establishment of own business	▪ Performance motivation	▪ Risk propensity	▪ General management skills
▪ Completion of first transactions		▪ **Creativity and innovation**	▪ Marketing skills
▪ Growth in net value of business		▪ **Opportunity identification**	▪ Legal skills
▪ Recruitment of employees		▪ Role models	▪ Operational skills
▪ Increasing productivity levels			▪ Human resource management skills
▪ Increasing profitability			▪ Communication skills
			▪ Business plan

(Source: Adapted from Antonites (2000:21))

The focus of this study is to illustrate specifically how three interrelated entrepreneurial skills namely creativity, innovation and opportunity finding is taught. The reason for this being the search for a CIO paradigm as urged by Carrier (1999). The training model for CIO forms part of a semester course, thus 60 (sixty) notional learning hours, and is conducted during the second year of study. The axiomatic outcome of the model is the development of a new product, service or process (innovation), as a result of creativity catalysation and based on feasible opportunities in the market or task environment. The following section will describe the CIO training model.

4.2.1 The entrepreneurial creativity, innovation and opportunity finding training model (CIO)

The developmental root of the model is a combination and integration of specific pedagogical training models and principles. Curriculum development was embedded on the theorem of Gibb (1993:11-34), who

distinguished between normal didactic methods of training and a more entrepreneurial approach.

Table 18: Differentiation between "didactic" and "entrepreneurial" training methods

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

(Source: Adapted from Gibb (1993:13)

The total CIO teaching model is based on the "enterprising" principles above. This enterprising model is applied directly and is also endorsed by the fundamental characteristics of action learning, although a certain level of theoretical intervention takes place within the framework of creativity, innovation and opportunity finding in a an entrepreneurial context.

Entrepreneurship as a subject is globally seen as an applied science and therefore requires a delivery mode that supports a more practical training approach. The CIO's educational framework and operational methodology is thus primarily based on a combination of the principles of action learning within an experiential learning framework, and will henceforth be discussed as background to the evolvement of the CIO training model.

4.2.2 Action learning

Howell (1994:15) quotes Morgan's definition directly: "Action learning is both a concept and a form of action which aims to enhance the capacities of people in everyday situations to investigate, understand and, if they wish, to change those situations in an ongoing fashion, with a minimum of external help. Action learning is concerned with empowering people in the sense that they become critically conscious of their values, assumptions, actions, interdependencies, rights, and prerogatives so that they can act in a substantially rational way as active partners in producing their reality."

McGill and Beaty (1992:17) defined action learning as a process where the learner learns through experience by thinking through past events, seeking ideas that make sense of the event and help them to find new ways of behaving in similar situations in future.

Koo (1999:89) extracts the definition of Smith (1997) that emphasises the "responsible involvement" of the learner in the process of problem solving, in order to change his or her behaviour and actions accordingly. The author also states/provides the core elements of the following definitions: An approach that differentiates between doing something himself/herself, and basic theory (Newton and Wilkenson 1995); a

process where the learner learns to ask relevant questions when a risk situation exists, instead of processes in which the answers already occur (Keys 1994); "...the ability to search the unfamiliar, and inappropriate programmed knowledge may inhibit this... learners learn as they manage and they manage because they have learned – and go on learning." (Dilworth 1996); and "...a process of reflection and action, aimed at improving effectiveness of action where learning is an important outcome" (Bourner *et al* 1996). Howell adds, by definition, the role of action learning in creating an "interrelationship" between the learner and his/her environment in order to become "active partners in producing their reality".

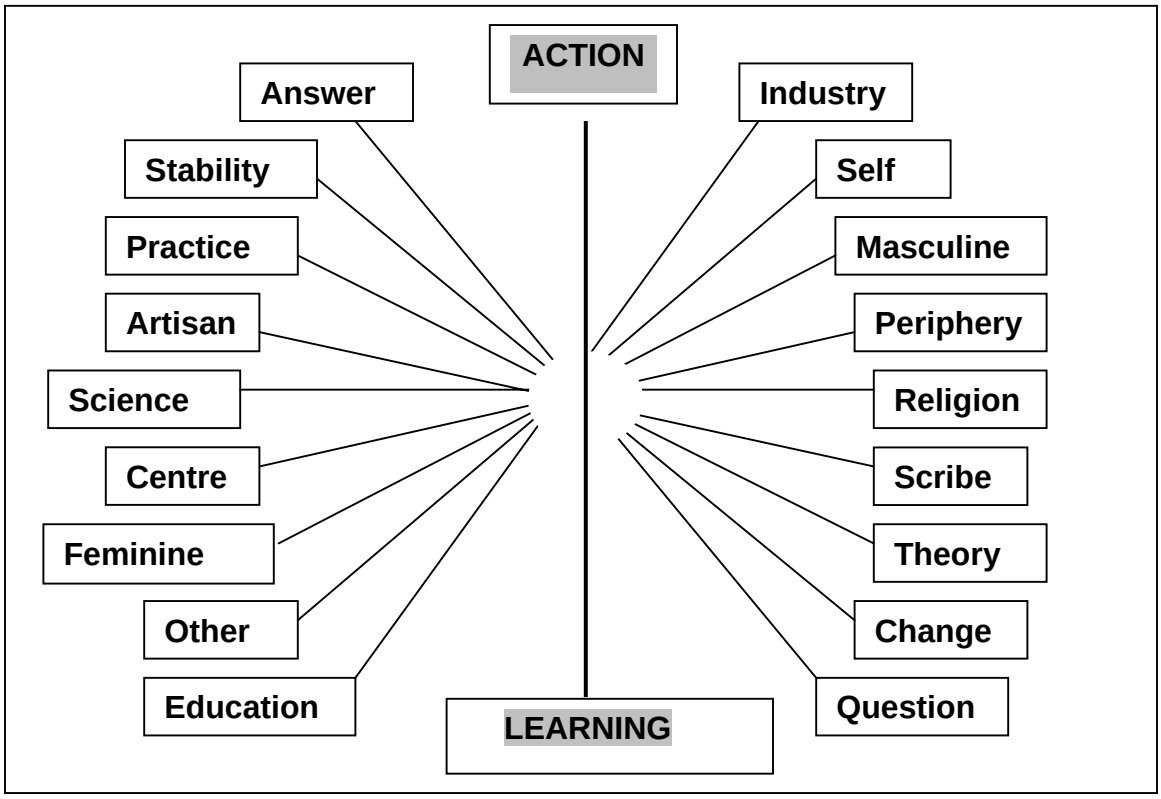
Smith (1998:246) located 900 articles written on the topic of "action learning" and refers to Revans as the pioneer in the field of action learning who started his research and application in the 1940s. Revans's work is stamped as a form of "exquisite simplicity" that represents enormous complexity. Leitch and Harrison (1999:92-93) cite Revans who distinguished between two interdependent learning variables namely P and Q. "P" portrays "programmed knowledge" that embraces facts, theories and existing models, which are normally integrative to conventional or traditional learning paradigms. The "Q" stands for "questioning insight" that resembles an alternative way of solving problems by means of questioning methods based on the existence of unknown solutions.

Revans (1987:19) categorises "P" learning as the traditional method (traditional instruction) by means of which occupations like engineers, surveyors, electricians, mechanics and other operators were educated in the past. "Q" learning suggests that the current state of affairs need to be questioned in an active mode of delivery. It also motivates the learner to question the programmed phase of learning. The equation L = P + Q

assumes therefore that effective learning, in an experiential learning context, will take place in a combined (P + Q) effort. The equation states that "learning by doing" engages with theoretical knowledge as a fundamental platform.

Lessem in Pedler (1991), described the evolution of Revan's work as the synthesisation of the following variables, contained in the field of polarity:

Figure 12: The field of polarity



(Source: As adapted from Pedler (1991:21))

Pedler briefly describes the variables as follows:

- **Scribe and artisan: Mind and body**

  Revans distinguished between the existence of “matter” (physical achievement) and “spirit” (conceptual attainment) in the development of the action learning paradigm, as important ingredients for development.

- **Education and industry: Ivory tower and colliery shaft**

  The continuous gap created between industry and education in terms of relevance and synchronisation formed a critical part of his synthesising process. The traditional thought was that education is responsible for theoretical intervention and industry for the practical implementation. This occurrence was unacceptable and the two environments should be moulded into one by means of an action learning approach.

- **Self and others: Miners and teachers**

  The transfer of skills (especially technical skills) can effectively take place by means of the participation of skilled individuals/employees in the learning of unskilled individuals. Emphasis is placed on problem situations encountered by the skilled during their learning process. Transferring the management or operational skills to solve comparable problems to the unskilled, formed a core element of action learning. (Revans applied these learning principles successfully in the mining industry.)

- **Centre and periphery: Industrial morale and size of unit**

  Revans cites that "... it is the big organisations that suffers, for it is in the big organisations that the centre of decisions and the periphery of action face the greatest of mutual misunderstanding." The author indicated that smaller groups are much more effective in problem-solving situations while information is assimilated easier, thus providing a more purposeful learning process.

- **Science and religion: Thought and action**

  The integrative nature of the analytical approach (science) and interpersonal relationships in the workplace played an important role in the development of his theory. Revans studied the differentiated values found in religions like: Christianity, Judaism, Buddhism, Master K'ung Ch'iu (Chinese), Bhavagad-Gita and Islam and applied some of the characteristics in an action learning framework. His work indicates that action learning integrates science (objective analysis) and religion (subjective commitment).

- **Action and learning: Changing system and self**

  The author postulated that "knowledge" is the consequence of "action". The learner procures knowledge while participating in any form of "action". Learners therefore should in order to "answer their work-questions they must, at the same time, explore their self-questions". Training in an action learning format thus suggests that the learner needs to incorporate his own questioning process to solve problems, and not only the existing set of solutions or theory. Pedler quotes Revan directly to support the latter "knowledge is the consequence of action, and to know is the same as to do, or the

underlying structures of successful achievement, of learning, of intelligent counseling, and of what we call the scientific method, are logically identical.”

- **Stability and change: Today and tomorrow**

The author postulates that learning should take place at a higher pace than “changes” in the environment. He therefore assessed that a “system” can only change if the individual transforms him/herself. “Our ability to adapt to change with such readiness that we are seen to change may be defined as learning”, describes this opinion clearly. The capacity of learners to identify and assess change is as an unconditional element of action learning.

- **The signs of our times: Masculine and feminine**

Revans illustrated the difference between P (programmed knowledge) and Q (questioning insight) by means of a push-and-pull comparison, where the Q represents a push factor (acquired theory through programmed learning) and Q a pull factor (action learning). The author directly quotes a metaphor that led to the foregoing, as compiled by Jantsch in the work Design and Evolution: “Where planning, the MASCULINE element, aims at stabilisation which in turn makes it possible to act out of power or focused energy; love, the FEMININE element, introduces the instabilities which elevate the plane of human action to ever new dynamic regimes, thereby ensuring the continuously renewed conditions for human creativity, for the life of human systems”.

Smith (1997:365) levels the criticism that Revans’ work supposed the relatively unimportant role of “P” – programmed knowledge in action

learning. Revans is stated in this regard: “In true action learning, it is not what a man already knows and tells that sharpens the countenance of his friend, but what he does not know and what his friend does not know either”. Smith pleads that “P” should form part of the process, especially when it can be related directly to the problem or issue to be solved by the learner. “P” can only be neglected if the learning process focuses merely on self-development. Robinson (2001:64-69) states that the integration of the traditional “didactic method” of training is supportive to action learning and shows empirical evidence in this regard. It thus provides a reason to integrate the theory of creativity, innovation and opportunity finding as part of the CIO training model.

Leitch and Harrison (1999:93) argue likewise that action learning is not necessarily a new paradigm in training, but rather a new and fresh approach. The authors observe the fact that the approach yields certain irregularities as stated by McLaughlin and Thorpe (1993):

- “Self-development” presupposes the fact that the learner can circumscribe his/her own learning needs. It is evident that guidance and direction is compulsory to achieve certain defining objectives, especially in the case of younger learners. The action learning process therefore supposed to provide specific structure for the learner, without affecting the “questioning insight” of the individual.

- “Theorists claim that there is no priori reason why a manager could not use the model to develop his/her manipulative techniques. However, they state that proponents of self-development techniques would argue that these tendencies are likely to be decreased rather than increased.”

- "Action learning encourages a desire to move on higher plains. Students who are thus challenged to take a broader view of the world may seek further enlightenment and ignore practical action."

- "The fear that cognitive knowledge may be dismissed completely, thus impoverishing the action learning experience indicates that " growth should thus continuously take place in the field of "P" and "Q".

Koo (1999:90) adds to the above argument and cites Cusins (1996), who recapitulates the behavioural impediments of an action learning approach on a more practical level, by providing the following examples:

- The bully (exhibiting excessive threatening behaviour towards others)
- The blocker (repeatedly blocking other people's ideas)
- The joker (continually using jokes to avoid real issues)
- The cop-out (excessive withdrawal from discussion, with implied disapproval)
- The rambler (talking on and on without getting to the point)

The author provides further evidence of other obstacles that may also occur:

- The action learning approach may be unsuccessful in cases where the learner is reluctant to participate in action.
- Action learning will not succeed where the environment only supports "teaching" and not "learning".
- The approach is normally and logically ineffectual if the learner is not the nucleus of the learning process.

The application of the CIO training model, that resembled an action learning approach, showed extremely high correlation with the behavioural evidence as described in the foregoing.

Bourner and Frost (1996:23) placed the problematic conditions surrounding action learning in a higher education context (the environmental context of CIO implementation):

- Higher education institutions set specific assessment, certification, teaching and learning criteria. The assessment of experiential learning or "emerging" learning concepts still needs to be researched and validated.
- The learner's principal objective is to obtain certification in order to obtain employment or further him/herself in the workplace. This fact hinders effective action learning processes.
- Higher education institutions require an "incremental" introduction of action learning principles that blend in with conventional "programmed learning" paradigms.
- The validation process of action learning programmes takes much more effort in order to be accepted in mainstream education.
- Facilitators need different skills than the normal teaching or "seminar" skills to facilitate the action learning process effectively.

The question arises in terms of why action learning is a beneficial learning process? O' Hara et al. (1996:) mention the following advantages of action learning:

- "Learning to learn" – the learner equips him/herself with the skill to learn on a continuous basis (life-long learning)

- "Self-management of learning" – the learner assesses his/her own outcome or way of thought and actions as well as the learning process of other learners
- "Self-awareness" – learners specifically take part in group interaction processes and therefore become aware of their abilities to engage in group cohesiveness and achievement
- "Learning with and through others" – the social nature of learning is integral to the action learning process.

McGill and Beaty (1992:17-34) support the work of O' Hara et al. and augments the following benefits:

- Learners learn to engage in a learning process that incorporates experience instead of just repeating previous patterns
- Action learning combines "the feeling of helping as much as receiving help – in the same session"
- The participating learners do not necessarily need to know each other in terms of group participation
- Action learning focuses on "real" problems and not quasi or made-up problem situations.

Leitch and Harrison (1999:95) acknowledge the effectiveness of management and entrepreneurship training, in the action learning context, by referring to Porter and McKibben (1988), Limerick and Moore (1991) and Harrison and Leitch (1994). Howell (1994) likewise provides empirical evidence in terms of actual and significant increases in work performance after the completion of an action learning process.

4.2.3 The CIO training model

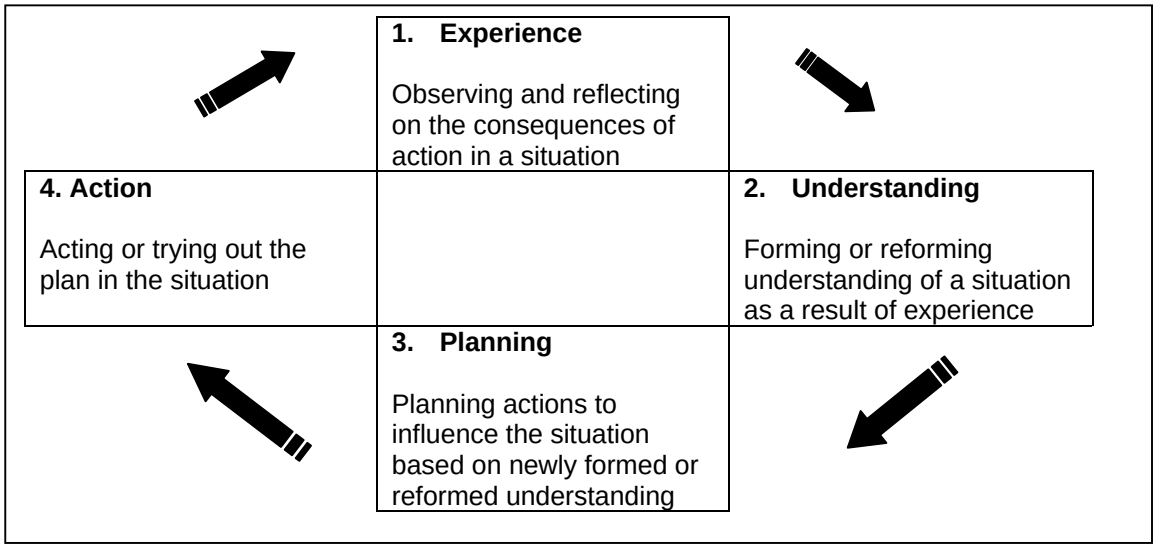
Harris et al. (2000:3) accentuate the argument of Gibb (1996) that entrepreneurship programmes should support the "know to" aspects more than the "know what" in terms of the learning process. Gibb also includes the fact that emphasis should be placed on the process rather than the content. The authors uphold the latter with the research done by Garavan O' Cinneide (1994) and Vesper (1982). The CIO training model utilises action learning that embraces a process approach with an emphasis on the "know to" within the field of entrepreneurship.

The initial decision to make use of the action learning approach was based on the opinion of Cusins (1996), who claims that action learning is the result or holistic augmentation of the following dynamics:

- Experiential learning
- Creative problem solving
- Acquisition of relevant knowledge
- Co-learner group support.

Two main characteristics that are emphasised in the CIO training model are thinking through reflection and action, supported by experience. The entrepreneurship learner is not only supposed to be linked closer to industry as such, but also become part of the hard reality of the entrepreneurial or business environment. McGill and Beaty (1992:25) cite the model developed by Pedler et al. (1986), as a way of capturing the principles of action learning.

Figure 13: Principles of action learning

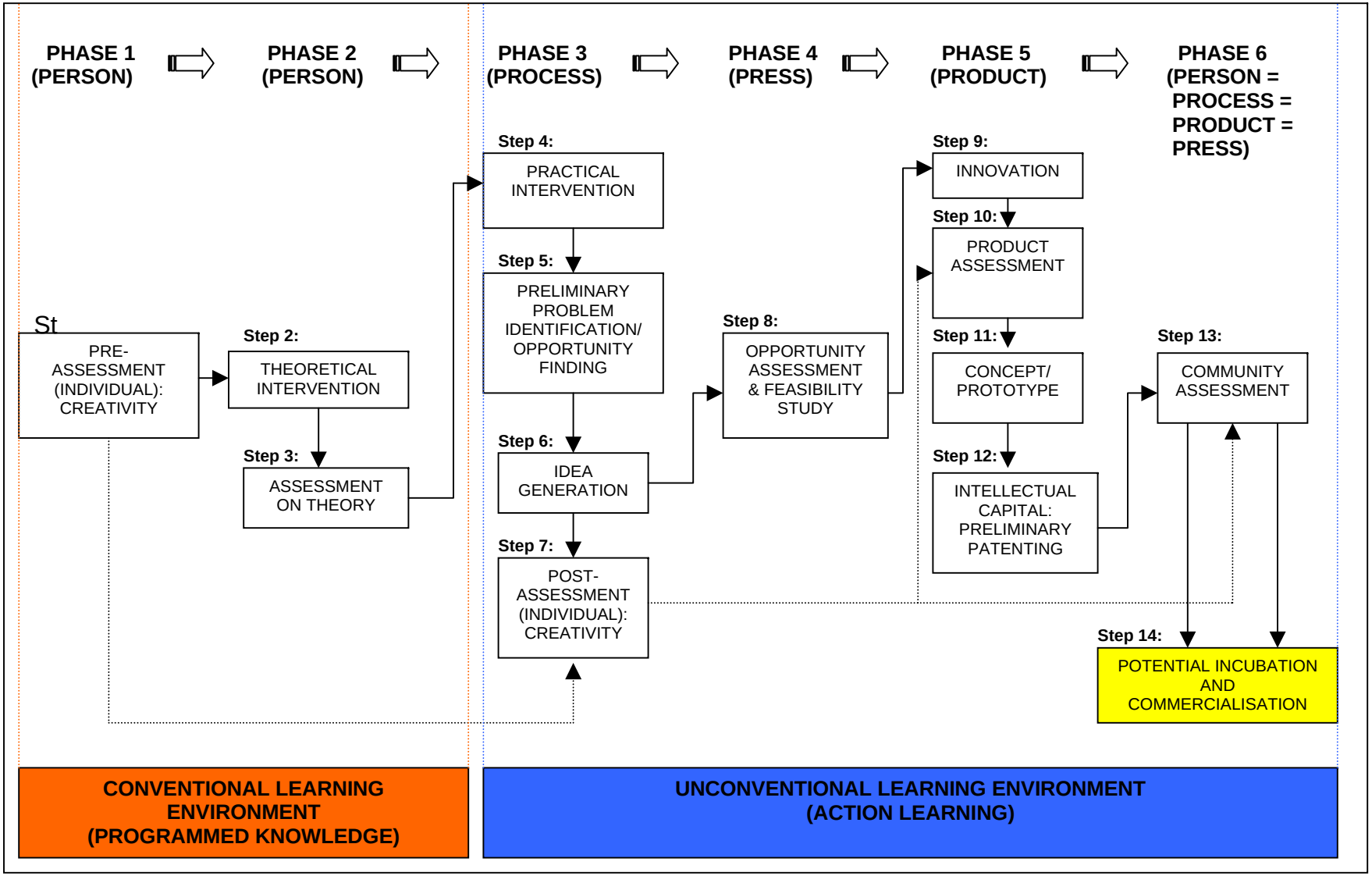


(Source: Adapted from McGill & Beaty (1992:27))

Pedler's model served as a platform in the development of the CIO model. The action learning and training method is furthermore enhanced by the application of certain entrepreneurial methods of training and learning, which forms an integral part of action learning.

The following illustration offers a graphic lay-out of the CIO training model. A detailed explanation will ensue the latter.

Figure 14: The Creativity, Innovation and Opportunity finding training model



The Creativity, innovation and opportunity finding training model consists out of the following six consecutive phases, structured into 14 steps:

1.2.3.5 Phase 1: The Person

Step 1: Pre-assessment of creativity level

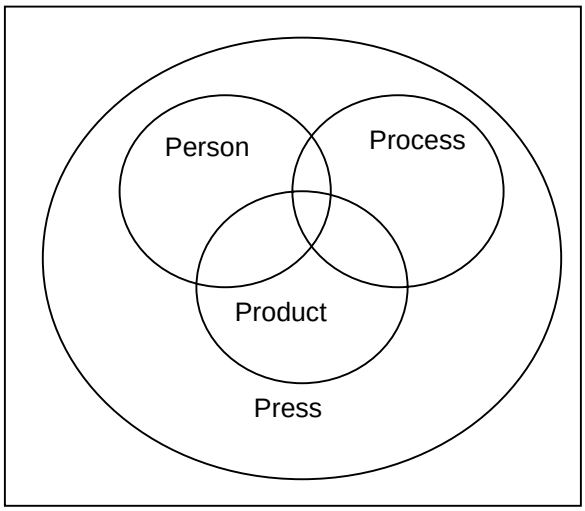
The learner assesses his or her own level of creativity before any training intervention is initiated. The questionnaire is developed by Williams (1999) and measures individual levels of creativity. The learners process and interpret their own questionnaire and the results are kept confidential and for his or her own benefit. A post-assessment is conducted in Step 7.

2.2.3.5 Phase 2: The person

Step 2: Theoretical intervention

The following step in the training process entails the acquisition of the theory on creativity and innovation. The 1995 textbook of J.D. Couger. *Creative Problem Solving and Opportunity Finding,* by Thompson Publishing, forms the theoretical platform for this step. Theory on creativity and innovation is furthermore based on the interrelated 4P model of Couger (1995). The structure is illustrated as follows:

Figure 15: Theoretical intervention



(Source: Adapted from Couger (1995:5))

The content of the Couger model is summerised in the following format:

- **Person**

All the psychological aspects of creativity are discussed with the learner and also synthesised accordingly. It is firstly important to investigate into what it takes to develop creativity for the person. How does a creative person look and is it possible to develop creativity? Amabile (1999:5) firstly explains the "person" side of creativity in terms of expertise, which includes all the knowledge, experience and talent a person can use to apply in a certain situation. This expertise could be acquired through his/her educational background, training interventions and even by means of daily interaction with others. The second aspect is the motivational component of the creative "person", which determines what the person will do and whether he/she will do it. The level of motivation could furthermore, in a certain sense, determine entrepreneurial

performance or success in the long run. Thirdly, creative-thinking skills, play an enormous role in the way the "person" will deal with a problem or idea and how he/she will associate unrelated components and combine them in a new or unique format. All these thinking skills are based on the principles of divergent thinking as compared to convergent thinking. The learner realises the difference between the latter on a theoretical level.

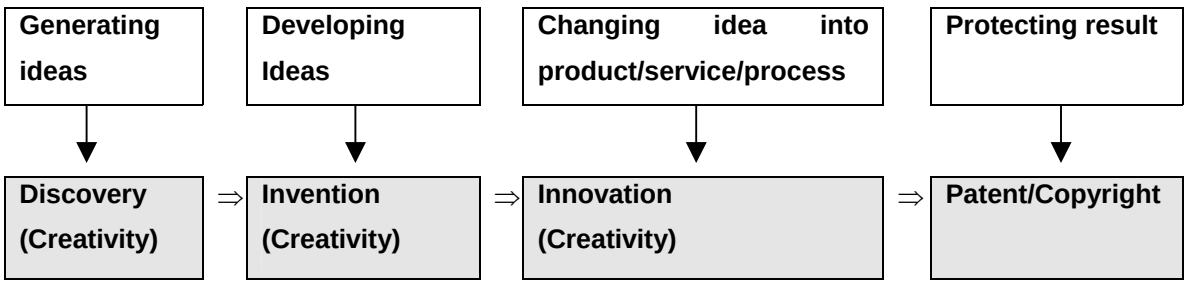
- **Process**

The creative process is assimilated by the learner and is based on the work of Nystrom (1979). The creative process generally follows these steps: Awareness and interest; Preparation; Incubation; Illumination (Insight) and Verification. Creativity techniques are introduced on a theoretical level only.

- **Product**

The learner learns that the new innovation or product is the direct result of the creative process mentioned above and therefore is a result of the creative-thinking process. The process as indicated by Couger (1995:18), indicates to the learner how creativity plays a catalysing role in the new product development process:

Figure 16: Creativity as a catalyst



(Source: Adapted from Couger (1995:18))

A critical differentiation is made between the terms creativity; discovery; invention and innovation. Practical examples of entrepreneurial innovations in the South African market environment, are used to illustrate this specific topic.

- **Press (environment)**

The learner is exposed to all the environmental barriers to creativity. Barriers are divided into perceptual, cultural, physical and psychological/Intellectual barriers. Specific emphasis is placed on the South African situation and context. Theory is also incorporated regarding the removal of these barriers.

Curriculum design

The curriculum design, in terms of the theoretical induction, is compiled and presented in the following format (as partly based on the textbook of Couger (1995). The learning content consists of the nine topics with accompanying learning outcomes:

SECTION A: SYNOPSIS OF CREATIVITY

Topic 1: Introduction to creativity

The learner is introduced to the world of creativity that will eventually lead to an innovation and new product development. Basic theoretical concepts are explored with an emphasis on secondary research and literature.

Learning outcomes

The learner must be able to:

- Understand trainability in order to become more creative, or increase his or her level of creativity.
- Define the concept creativity by means of existing definitions and the creation of his or her own definition.
- Know the relationship between creativity and intelligence.
- Discuss the conditions for creative thinking.
- Identify with the different measures of creative thinking ability.
- Recognises the personality traits and qualities of creative thinkers.
- Be familiar with the activities and actions in order to improve personal creativity.
- Distinguish creativity from innovation and invention.
- Identify the myths about creativity.
- Discuss the nature of the major creative entrepreneurial breakthroughs at a global level.
- Briefly assess the basic cost effectiveness of creativity.

Topic 2: Concepts and cost-effectiveness of creativity

The learner evaluates the structured and unstructured nature of creativity by means of specific creativity techniques that facilitate the process.

Learning outcomes

The learner must be able to:

- Distinguish between structured and unstructured creativity.

- Understand the examples of structured creativity techniques.
- Illustrate the use of creativity techniques by means of differentiating between analytical and intuitive techniques.
- Comprehend and apply the Progressive abstraction technique.
- Comprehend and apply the Interrogatories (5ws/H) techniques.
- Comprehend and apply the Force field analysis technique.
- Comprehend and apply the Associations/Images technique.
- Comprehend and apply the Wishful thinking technique.
- Comprehend and apply the Analogy/Metaphor technique.
- Describe when and where to use the different techniques.

Topic 3: Removing the barriers to creativity

The learner studies the existence of various blocks or obstacles that may prevent the individual from thinking and acting creatively.

Learning outcomes

The learner must be able to:

- Identify potential blocks to creativity.
- Discuss the role of perceptual blocks in creativity development.
- Discuss the role of emotional blocks in creativity development.
- Discuss the role of cultural blocks in creativity development in a South African context.
- Discuss the role of environmental blocks in creativity development, with specific reference to the entrepreneurial environment.
- Discuss the role of intellectual blocks in creativity development.
- Apprehend the concept “paradigm trap” and the role that certain paradigms play in creative thinking and decision making.

- Interpret the procedure for evaluating existing paradigms and developing new paradigms.
- Identify the principle causes of the loss of creativity.
- Conceive the different approaches for stimulating curiosity.
- Understand his/her style of creativity based on the Innovation Styles Profile ® developed by William Miller as adapted from Couger (1995:98)

Topic 4: Creative problem-solving methodology

The learners enables him/herself to determine how creative thinking can be used to solve problems in different situations, with specific emphasis on the entrepreneurial environment.

Learning outcomes

The learner must be able to:

- Distinguish among the problem solving theorem of Von Fange; Gregory; Bailey and Rossman.
- Understand the Osborn-Parnes creative problem-solving model.
- Describe the different phases of the Mandala of creativity as developed by Tatsuno.
- Illustrate the Isaksen/Treffinger CPS model that differentiates between divergent and convergent activities in creative problem solving.
- Briefly explicate the Couger Variant of the creative problem-solving model.
- Discuss the divergent and convergent quality of the creative problem- solving process.
- Comprehend the techniques to facilitate the divergent process.

Topic 5: Creative versus critical thinking

The topic covers all aspects relating to creative and critical thinking. The thought process forms the nucleus of the learning material.

Learning outcomes

The learner must be able to:

- Understand all the activities in the thinking and thought process.
- Briefly describe the physiological aspects of thinking.
- Give a concise description of the properties of memory.
- Identify ways to improve memory and thinking ability.
- Explain the characteristics of critical thinking.
- Apply the holistic thinking approach in a business context.

SECTION B: CREATIVE PROBLEM SOLVING AND OPPORTUNITY FINDING

Topic 6: Problem definition and opportunity delineation

The topic covers an application of creative thinking and problem-solving theory for the learner. The topic focuses on an essential component of problem solving, namely defining the problem as part of the identification of opportunities in the market place. The problem situation is correlated with the opportunity assessment process.

Learning outcomes

The learner must be able to:

- Understand the three-stage approach based on the Gap Analysis.
- Define the role of the problem statement as part of the whole process.
- Use creativity techniques to facilitate problem definition with specific reference to the Progressive Abstraction, Boundary examination, 5Ws/H and Wishful thinking techniques.
- Practically apply the theory in identifying and defining specific problem situations.

Topic 7: Compiling relevant information about the problem/opportunity

Data and information analysis form a critical part of the problem solving or opportunity finding process. The learner needs to identify and understand all the processes and procedures in gathering relevant data for sound decision making and problem solving.

Learning outcomes

The learner must be able to:

- Comprehend the reasons for data-gathering activities and the complete fact finding process.
- Describe the steps in the data gathering process.
- Identify all the possible sources of data.
- Understand the role of critical thinking in the data gathering and analysis phase.

- Apply the appropriate questioning and listening techniques in gathering data.
- Apply specific techniques in supporting the data gathering and analysis phase, with reference to the Lotus Blossom and Bug list techniques.

Topic 8: Idea generation

After the problem definition and data and information analysis process, the learner needs to generate ideas to solve the problem effectively or to exploit the identified opportunity.

Learning outcomes

The learner must be able to:

- Be on familiar terms with the feasibility characteristics of an opportunity.
- Discuss the different stages in the creative process: Preparation, incubation, illumination and verification.
- Understand the role of persistence and humour in idea generation.
- Apply techniques in facilitating creativity with specific reference to the: Brainstorming; Analogies/Metaphors; Interrogatories (5Ws/H); Problem reversal; Wishful thinking and Wildest idea techniques.
- Combine the different techniques to attain the multiplier effect.
- Comprehend the evaluation and prioritising of ideas.
- Differentiate between “dialogue” and the “discussion” in idea evaluation.
- Determine the idea evaluation criteria.
- Understand the different techniques for evaluating ideas, with specific reference to Advantage/Disadvantage; Battelle; Castle;

Creative evaluation; Decision balance sheet; Idea advocate; Panel consensus, Reverse brainstorming; Sticking dots and Combination techniques.

- Discuss the risk assessment phase of choosing the most suitable idea.
- Apply techniques for idea evaluation and prioritisation, with specific reference to the Force field analysis and Decomposable matrices techniques.
- Evaluate the creativity of products and services.

Topic 9: Developing an implementation plan

The learner has selected the most suitable idea to solve the problem or exploit the opportunity. The learner therefore develops a implementation plan in terms of eventually commercialising the unique product, service or process in line with the identified opportunity.

Learning outcomes

The learner must be able to:

- Develop an acceptance planning process.
- Understand the specific forms of intellectual property and the protection procedure.
- Apply the techniques relating to the facilitation of the action plan, with specific reference to the Problem reversal and Disjointed incrementalism techniques.
- Assess the potential resistance to change.
- Develop an action plan.

Step 3: Assessment on theoretical knowledge

A formal assessment of theory follows the completion of the theoretical intervention. It takes place in a normal test format which is focused on the theory of creativity (see addendum for a test example).

The first two phases are conducted in a conventional learning environment (e.g. the classical classroom situation). The "P" ("programmed knowledge") as part of Revans's (1987) calculation (L = P + Q) is therefore introduced in these two phases. The following four phases represents the "Q" ("questioning insight") as part of the action learning paradigm and training model. These phases are implemented in an unconventional learning environment (e.g. outside of the classical classroom situation).

4.2.3.3 Phase 3: The creative process

Step 4: Practical introduction

The actual practical creativity training process starts at this point in time. The learner obtained basic knowledge of creativity and innovation and the application thereof now commences. The first action taken is to remove the myths to creativity and allow the learner realise the impact of creativity.

The myths of creativity are analysed by De Bono (1996) and can be summerised under the following headings: Creativity is an innate skill and cannot be acquired by means of training; You need to be a rebel to be seen as creative; Artists are the only creative beings; You need to be "crazy" before creativity will kick in; Intelligence and creativity; All new products were accidental discoveries.

All the learners are assured - by means of De Bono's research - that each and every one of them have creative potential and that it is possible to develop and increase their levels of creativity. Critical studies done on the removal of the myths of creativity as conducted by Torrance (1995), are also added.

The physical environment in which the classes are presented is not conventional, they thus fall outside the standard academic environment and wherever the learner feels more creative and relaxed. Venues vary from restaurants, to private guesthouses the zoo, nature reserves and even on sports grounds.

The practical creative process starts with the "roots of creativity" sessions. These sessions include highly practical interventions that link the learner to constructs that are normally not inclusive to the business-learner's particular field of interest:

- Music
- Fine art
- Poetry
- Sculpturing.

It is vehemently stressed that the learners should realise their creative potential at this stage.

Step 5: Preliminary problem identification/opportunity finding

All the creativity techniques obtained in theory are applied in a real-life situation or context. The interventions are based on problem-solving issues related to the entrepreneurial context. The following techniques are applied: Random input; Problem reversal; 5Ws/H; Association

techniques; Discontinuity principles; Force field analysis; Wishful thinking and Analogy/Metaphor techniques. Learners start to identify general and specific problem situations in the market environment.

Step 6: Idea generation

The learner goes through an intensive idea generating process. This process is highly exhausting and unrelated objects are used to generate different purposes, uses and utilities. The opportunity finding process starts to evolve and the learner is introduced to industry related issues and problems on the surface. Idea generating skills are then utilised to identify and analyse opportunities in general. Specific scanning techniques are also introduced at this level. It is important to note that the processes above include individual and group development. The success indication of one of the groups is for example the generation of 120 uses for a paper clip in less than 20 minutes! During this stage the learners start to recognise what branches of industry tend to look attractive for business opportunities, based on various assessment techniques. Personal and group- related exploration, in terms of industry and opportunity assessment, takes place and an in-depth analysis of these opportunities forms part of the process.

Step 7: Individual assessment

The learner measures his/her level of creativity again by means of the same questionnaire (see step 1). The process is still confidential and individual. The learners can analyse their own improvement. Personal motivation seems to increase at this stage.

4.2.3.4 Phase 4: The Press (environment)

Step 8: The Opportunity assessment and feasibility study

The learner is continuously aware of the fact that the fundamental outcome of the course is the development of a new product or service or process. After the completion of the creativity process, a new phase starts where opportunity assessment is emphasised even more. It is of the utmost importance that the learners apply the different areas of construct knowledge they have gained, thus idea versus opportunity.

The assessment of opportunities takes place and the learner can choose any branch of industry that falls in his or her field of interest. A final critical industrial analysis (related to a due diligence process) follows and feasible opportunities in these industries are chosen. More specific industrial evaluations follow and all the general traits and trends in the chosen industry must be studied. After this session the learner must decide whether the opportunities are real-time opportunities.

The learner now steps into an incubation period, where he or she generates ideas to solve the problem in the industry and the need as derived from the opportunity analysis. Role models in the chosen industry can also play an enormous role at this stage (the learner is prompted to interview these role models). The entrepreneurship group normally operates on an individual basis, but entrepreneurial teams with less than three members are permitted. The incubation period stretches over a period of two weeks and the pressure strategy is applied here (see Gibbs' model). Emphasis is placed on *uniqueness* and *new* idea generation. The learner is furthermore exposed to the requirements of investors and or financing entities in terms of creating a realistic background to the development of the "feasible-new". The latter is included due to the fact that certain entrepreneurship learners tend to

develop an “idea-anxiety” frame of mind, which evolves into unrealistic concept development.

4.2.3.5 Phase 5: The product

Step 9: The innovation process

After the incubation period the process of innovation starts. The learner transforms his or her unique idea into a product or service or process. The latter must be directly in line with the opportunity as identified. It is not compulsory to create a physical product, but concept development must take place up and till the prototype phase.

Step 10: Concept/prototype

A physical example or prototype of the innovation is developed, if time permits. The majority of the learners developed their concepts on paper and the physical production potential (as part of feasibility) is also assessed, in terms of the development of tangible products. In terms of the development of intangibles or services, the learner should create an example of the service.

Step 11: Product Assessment (The Innovator ©)

After completing the prototype, the learner or entrepreneurial teams’ product market feasibility is assessed by means of The Innovator ©, a tool developed to enable innovators to assess the likely commercial success of their ideas and inventions. This tool also helps the learner to identify weaknesses and matters still needing attention as they proceed through the innovation process (Williams 1999). The measurement instrument includes the following evaluations: Effects on society

(legality; safety; environmental impact; societal impact); Business risk (technical/functional feasibility; production feasibility; stage of development; development cost; payback period; profitability; marketing research; research and development); Analysis of demand (potential market; product life cycle; potential sales; likely trend in demand; stability of demand; potential for product-line expansion); Market acceptance (learning; need; dependence; visibility); and Competitive advantage (appearance; function; durability; price; existing competition; new competition and protection). The *Innovator* © served as the measurement instrument to provide empirical evidence for this study (see Chapter 5 and 6)

Step 12: Preliminary patents

The learner applies for a preliminary patent if applicable and/or at the wish of the learner. It is furthermore important to note that the learners should undergo the patenting process themselves and therefore learn about the process and assure protection.

4.2.3.6 Phase 6: Final assessment (an integration of the 4P model)

Step 13: Community assessment

To add more realism to the process, an open community assessment is undertaken (instead of the conventional "examination on paper" evaluation methodology). The assessment community includes the future role players in the commercialisation process of the product:

- Financing institutions
- Venture capitalists

- Academics
- Industry specific specialists
- Successful entrepreneurs
- A large sample of potential customers (open invitation) and specific customers relations with the different market assessments.

The learner introduces his or her product or service or process to the community by means of a formal presentation. The community assessment's results are added to the test on theory and form the final mark of the module. The learner now has the opportunity to develop his or her product, conduct proper market research (an item omitted due to time constraints) and even commercialise the product.

Step 14: Potential incubation and commercialisation

This step does not form part of the formal training model, but potential products are developed (whether in conceptual or final phase). The potential entrepreneur can now move into a formal incubator to further the whole production process or venture out on its own. The formulation of a proper business plan (in line with investor and/or financing requirements) forms part of the following module of the second year of study and the product, as developed to date, serves as the core element of the plan.

4.3 Conclusion

The CIO training model must be seen in the light of the fact that firstly it is an integrated module in a formal entrepreneurship training program and secondly an experiential intervention that served as a platform for further development. It is, however evident that the outcome of the model proved to be successful in terms of the research results

presented in the following chapters. The module on creativity, innovation and opportunity finding is but only a concept of the broader entrepreneurial skills construct and does not spell indefinite entrepreneurial performance or success. The foregoing is still highly dependent on the individual's perseverance and the application of various other skill sets.