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PROCESSES USED BY MANAGERS TO ACQUIRE SKILLS, KNOWLEDGE AND ATTITUDES

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A research report submitted to the Faculty of Management, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements of the degree of Master of Management.

Johannesburg

(February, 1999)

ABSTRACT

This research report investigates the processes used by middle managers to acquire skills, knowledge and attitudes. An understanding of the processes that best develops each of these is important since each has an impact on managerial effectiveness. The literature review revealed that very little research has been undertaken to discover how middle managers acquire these necessary abilities to become effective managers.

The research methodology comprised the self-completion of questionnaires. The sample consisted of 111 respondents, all of whom had at least two years experience in middle management. The respondents were all students currently studying at the Wits Business School.

Respondents rated various training techniques and learning styles and indicated whether each best developed skills, knowledge or attitudes. Quantitative data analysis such as two variable chi square tests, frequency distributions, means, and modes were used.

The results revealed that skills, knowledge and attitudes are acquired differently. Furthermore, the research revealed that sector and gender did not influence the learning methods. A list of best practices for the development of skills, knowledge and attitudes was developed.

DECLARATION

I declare that this research report is my own, unaided work. It is submitted in partial fulfilment of the requirements of the degree of Master of Management in the Faculty of Management, University of the Witwatersrand, Johannesburg. It has not been submitted before for any other degree or examination in this or any other University.

_____

This is the _____ day of February, 1999

DEDICATION

This research is dedicated to my parents: my mother Charlet Alfreda Butcher, and memory of my father, Patrick Cromwell Butcher who died three months before the research was completed.

Your interest, encouragement and sacrifices over the years have enable me to get this far: for this I thank you.

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CHAPTER ONE

INTRODUCTION

1.1 Background

South Africa has rejoined the global village. For the first time in decades, business has to contend with global competition. Survival requires that capital, technology, human and natural resources are managed optimally-this is the task of managers. Heller (1985, p386) states that: "Without management, without the interven ion of organised willpower, the desired result simply cannot be obtained."

The development of management skills is key to national and global competitiveness. De Geus (1988, p74) argues that:"..... the only competitive advantage that the company of the future will have is its managers' ability to learn faster than their competitors."

An understanding of how managers learn to become managers is therefore fundamental for accelerating the development of managers. Appropriate strategies for developing middle managers will ensure that suitably skilled managers will

be able to enhance competitiveness in the shortest possible time.

Heller (1984) explains why the manager's role is so important. Heller (1984, p 387): "Today, getting performance out of people has become a complex problem, and the choices of solution are innumerable. The men and the women cannot be administered anymore. They have to be managed."

Understanding how managers learn best and how they acquire the necessary skills, knowledge and attitudes, can increase competitiveness. Implementing the best practices for the acquisition of skills, knowledge and attitudes is a business imperative.

Meyer & Semark (1996, p100) argue that: "Learning is essential if individuals are to compete effectively in modern society. The ability to deal with knowledge, concepts, values and behavioural norms, both at cognitive and affective level is essential in a continuously transforming organisational and societal context."

Newstrom (1994) also stresses the importance of adult learning. Newstrom (1994, p1149) argues that: "The importance of adult learning cannot be overestimated. A literate, educated, inquisitive, problem-solving work force is essential to the survival and competitiveness of firms and industries in every country of the world. A labour force that has learned how to learn and continues doing so can give a firm a powerful competitive edge. Therefore, organisations must discover and use what is known as adult learning to upgrade the capacity of their employees to make new contributions to the success of the firm."

1.2 Scope of this Study

The purpose of this research is to discover from middle managers how they learnt to become managers. More specifically, how they acquired the necessary skills, knowledge and attitudes to function effectively as managers.

Managers will be asked to rate the perceived effectiveness of a number of training and development

techniques. They will be asked to identify whether each technique best develops skills, knowledge or attitudes.

1.3 Definition of Terms Used

The term middle managers, learn, skills, knowledge and attitudes are used to convey a specific meaning in the research. For this reason, each of these terms is defined below. These terms are not intended to be prescriptive generally.

A middle manager is construed to mean a manager above the level of supervisor, but in a non executive position.

The Oxford dictionary (1978, p489) defines the word learn as: "Get knowledge of (subject) or skill in by study, experience, or being taught." For the purpose of this research, it was assumed that knowledge, skills and attitudes can be learnt.

The Oxford dictionary (1978, p852) defines skill as: "Expertness, practised ability, facility in an action or in doing or to do something." Management was assumed to encompass many different, but specific skills.

Newstrom provides a useful definition of skill. Newstrom (1994, p 1150) states that:" (Skill is) the capacity to use knowledge, a method or a technique. Skill-oriented learning attempts to develop a persons behavioural abilities to perform while drawing upon underlying knowledge and experience."

The Oxford dictionary (1978, p477) defines knowledge as: "Knowing, familiarity gained by experience, theoretical or practical understanding (of language, subject)." For the purpose of this research, it was assumed that managers require specific knowledge in order to function effectively. This knowledge encompasses not only different management theories and practices, professional subject knowledge, but knowledge of diverse and extraneous factors that impinge on the environment of business.

For the purpose of this research, Newstrom's definition of knowledge was used. Newstrom (1994, p1150) states that: "(Knowledge is) the acquisition, modification, and storage of a body of relevant data and information. Knowledge-oriented learning may focus on a learner's needs to recognise some things, compare items one with

another, correlate simultaneous multiple events, connect new facts with previous data, or extend previous information by creating projections of the future."

The Oxford dictionary (1978, p46) defines attitude as: "Settled behaviour as showing opinion, settled way of thinking. Newstrom (1994, p1150) states that: "(Attitude is) the feelings, emotions, values, interests, or preferences that a person has. Attitudes generally represent predispositions towards a certain type of behaviour, and therefore can be important elements for employers to consider in the development of overall adult learning programmes." For the purpose of this research, it was assumed that attitudes impact on the effectiveness of managers.

The Oxford dictionary (1978, p272) defines the word effective as: "Making a striking impression, powerful in its effect." For the purpose of this research effective management was construed to mean management that achieves that accomplishes what it sets out to do. Effective therefore is construed to mean impactful at the highest possible level of performance.

1.4 Essential Issues Proposed

It is proposed that based on an investigation of which techniques are perceived by middle managers to be the most effective for developing skills, knowledge and attitudes, separate lists of best practices will be developed for each.

It is also proposed that the range of techniques that are considered to be the most effective for the development of skills, knowledge and attitudes will be influenced both by industry and by gender.

1.5 Assumptions

This research is based on a number of assumptions:

- Skills, knowledge and attitudes impact on the performance of managers.
- Knowledge, skills and attitudes can be learnt.
- Management selection presupposes a readiness for the job, or the possession of appropriate qualities that can be developed.

- Knowledge of their own learning style helps individuals to select the most appropriate learning opportunities for their own development.
- Middle managers play an important role in increasing organisational effectiveness.
- Effective middle managers provide a competitive advantage.
- Management development is an on-going process.
- For a manager to be able to develop, the organisational climate must be supportive.

1.6 Relevance of the Topic for Management in South Africa

1.6.1 South Africa's Uncompetitiveness

South Africa is desperately short of management skills. Woods (1992, p20) states that "South Africa is faced with an alarming shortage of trained managers- needing as many as 100 000 new managers before the end of this decade. Our ratio of managers to managed is in the region of 1:40. By the year 2000 this could deteriorate to 1:70, unless we take urgent steps to remedy this situation. If

we are to meet the challenges that lie ahead, we must enhance the effectiveness, skills and expertise of existing managers at all levels."

The brain drain and Apartheid are major contributors to the shortage of skilled managers in South Africa. Mc Neil (1996) estimates that in 1995 alone, there was a net loss of 1000 well qualified ('executive') managers. These figures do not include professionals who may have held management positions but who have listed their qualifications under their 'professional' rather than 'managerial' category.

An on-going brain drain remains a real threat for business in South Africa. Based on an analysis of the results of a Sunday Times survey published on September 13 1998, Gill (1998, p5) reports that 74% of the 11 000 respondents were considering emigrating. Of the group that were considering emigrating permanently, 20% were drawn from middle management and 10% from the ranks of senior management. Most alarming is the fact that 60% of the respondents were drawn from professional and management jobs. The threat of the skills pool being denuded further through emigration remains a real threat.

Gill (1998,p5) concedes that: "...the survey does not represent the demographics of the country, but indicates the attitudes to emigration of one of its scarcest resources-skilled and well qualified workers."

A shortage of management skills is undoubtedly a contributing factor to South Africa's consistently poor performance in the World Competitiveness Report published every year by the Institute for Management Development (IMD). The purpose of the IMD research is to establish how conducive or detrimental a country's environment is to the domestic and global competitiveness of organisations operating in that country. South Africa has consistently performed very poorly overall as can be seen in Figure 1 on the next page.

South Africa's rating overall for the period 1993-1998. (Derived from the 1997 and 1998 World Competitiveness Report).

Figure 1: South Africa's Rating on the World Competitiveness Report

1993	1994	1995	1996	1997	1998
32	35	38	40	37	38

The 1997 World Competitiveness report concluded that South Africa had not resolved the co-habitation of the small, efficient part of its economy and the challenge of developing the skills and the competencies of the vast majority of the country.

Reviewing the 1997 World Competitiveness Report, Asbury, Vice President of Gemini Consulting (1997, p3), poses the following question: "Why is management development not a national obsession?... Few enterprises do enough of the pragmatic, no-nonsense, on-the-job management training that is required. The World Competitiveness Yearbook brings home the simple truth: the success of our economy

and the future of our country depends on how we develop management for our firms, large and small."

Another clear indicator of South Africa's poor performance on the global stage is the findings of The World Economic Forum Survey in 1997. The survey was conducted by Morgan Stanley analysts to determine which companies world-wide have a sustainable competitive advantage. Of the 238 companies surveyed world-wide, only one South African company made the listing - South African Breweries.

1.6.2 Enhancing National Competitiveness through the Implementation of Best Practices for Management Development

South Africa needs to become more competitive in order to survive the pressures of globalisation. Implementing the best and therefore the most effective techniques for developing middle managers would enhance South Africa's global competitiveness.

Wick & Leon (1993) argue that the performance gap that develops between companies that seemingly face the same

opportunities, is the ability and passion to learn. Managers who have the ability to learn quickly are the key to competitiveness and enhanced performance.

Surprisingly, although a substantial theory base exists on the skills, knowledge and attitudes required to become effective middle managers, very little research has been undertaken to discover how middle managers acquire the necessary skills, knowledge, and attitudes to become effective managers.

Very little research seems to have been undertaken to establish whether some techniques for the training and development of middle managers are more effective than others. There is no evidence in the literature to indicate that comparative studies have been undertaken to evaluate the success of different techniques for the development of managers.

Furthermore, the literature does not indicate that research has been undertaken to establish whether skills, knowledge and attitudes are acquired differently. If skills, knowledge and attitudes are developed differently, cognisance should be taken of this fact in

the design of learning, training and development programmes. By adopting the most effective techniques, management development can be accelerated.

Moreover, if individual managers know how they learn (best), and which techniques have been the most effective in their development, they will be able to apply focused and appropriate techniques for the development of their skills, knowledge and attitudes. By so doing, they will be able to accelerate their own development.

In practical terms, this means that time and resources will not be wasted. Most importantly, an enlarged pool of skilled middle managers will be available sooner. Managers that are highly skilled, equipped with up to date knowledge, and who have a positive attitudes, are key to national competitiveness.

The research highlights some of the most effective techniques and processes for the training, learning and development of middle managers. These insights will assist organisations to evaluate the techniques they are currently deploying for the development of middle managers.

Where the research indicates that sub-optimal techniques are being used to develop skills, knowledge and attitudes, organisations will be able to review their middle management training programmes and incorporate the insights provided by middle managers who have experienced the different training and development techniques.

Organisations will thus be able to revise their training, learning and management development strategies and implement best practices where necessary. Implementing best practices for the acquisition of skills, knowledge and attitudes will accelerate the development of middle managers, thereby enhancing the human resource assets with organisations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This research is based on the premise that skills, knowledge and attitudes are acquired differently and that very little research has been undertaken to establish which processes for acquiring management skills, knowledge or attitude are the most effective.

The first part of the chapter examines what it is that the manager does that make the manager's role important. This is followed by an exploration of some of the diverse tasks that managers perform. By understanding how multifaceted the manager's role is, a better understanding is gained of the skills, knowledge and attitudes that a manager requires in order to function effectively.

The next section examines some of the pressures that compel managers to update their skills, knowledge and attitudes on an on-going basis. This is followed by a section which addresses the issue of who is responsible

for learning in the workplace. Different opinions are highlighted and the concept of self-learning is introduced.

The following section defines skills, knowledge and attitudes and identifies some of the skills, knowledge and attitudes which management theorists consider are important for contemporary managers. Twenty techniques frequently used to develop skills, knowledge or attitudes are listed and where possible, the advantages or disadvantages of each as a training technique is discussed.

Insights into how individuals learn are provided in the next section. This is followed by a discussion of some of the approaches in the literature to different learning styles. Critical success factors for learning are isolated. This section ends with a conclusion as to why it is essential to understand learning and to apply the best techniques for developing skills, knowledge and attitudes.

2.2 Why is the Manager's Role Important?

Cronje, Neuland and van Reenen (1987) and Robbins (1991) concur that the manager's role is important since managers get things done. Robbins (1991, p4) explains: "Managers get things done through other people. They make decisions, allocate resources, and direct the activities of others to attain goals."

Although management theorists agree that the manager's role is important, they place a different emphasis on the most important tasks that managers perform. Dale (1994, p30) states that: " The real role of a manager is to work with and through others, on objectives that are far too big for one person to achieve alone. This is done by the use of appropriate processes and techniques - and by treating colleagues and staff as respected individuals who each have a distinct and valued contribution to make."

Spoelstra & Pienaar (1996, pv) argue that: "Managers...are essentially negotiators. They have to influence and motivate, as part of their daily activities, a diversity of people, often different language groups and cultures,

and have to balance the conflicting aspirations of individuals and groups".

The manager's role is clearly multifaceted. Knowledge of the different tasks and activities performed by managers provides an insight into some of the types of skills, knowledge and attitudes required by middle managers in order to function effectively.

2.3 Why do managers Need to Acquire Skills, Knowledge and Attitudes?

Skills, knowledge and attitudes have a direct bearing on managerial performance: each is a management tool that can be used to enhance managerial effectiveness. As management levers, it is important that each is used optimally. Unfortunately in the rapidly changing environment of work, skills, knowledge and attitudes become out of date and need to be updated constantly.

Robbins (1991, p535) argues that employees will not remain competent forever: "Their skills can deteriorate; technology may make their skills obsolete; the

organisation may move into new areas, changing the type of jobs that exist and the skills necessary for them."

Managing in a rapidly changing environment makes management learning essential. Salaman & Butler (1994, p35) argues that: "Management learning is important because managers are under-qualified and must be exposed to relevant learning, at a time when circumstances demand that there are many new things that they have to learn - even those who are qualified."

Wick & Leon (1993) take the argument further; they argue that the ability of smart managers and their companies to learn faster, provides a competitive edge. If the ability for managers to learn quickly enhances competitiveness, the importance for understanding which processes best develops skills, knowledge and attitudes in managers is clearly very important.

There is the recognition world-wide for the need for life-long learning. Toffler (1991, p4) warns that :
" The illiterate of the future are not those who can't read and write but those who cannot learn, unlearn and re-learn."

2.4 Who is Responsible Overall for Learning in the Workplace?

Management theorists differ in their assessment of whether learning in the workplace is an individual, a management or a joint responsibility. Robbins (1991) argues that as far as learning in the workplace is concerned there is a lot of stake and that managers therefore play an active role. Robbins (1991, p103) argues that: "Because learning takes place on the job as well as prior to it, managers will be concerned with how they can teach employees to behave in ways that most benefit the organisation. When we attempt to mold individuals by guiding their learning in graduated steps, we are shaping their behaviour."

Kirkpatrick (1994) argues that there are three levels of responsibility for management development: each manager is responsible for his or her own growth and development; every executive is responsible for the development of subordinates; every organisation is responsible for the growth and development of all managers.

Responsibility for learning in the workplace was faced squarely on the shoulder of the individual learner when the concept of self-managed learning was introduced in the 1970's. In this approach the individual learner diagnoses his or her own learning needs, negotiates learning goals, and controls the pace of learning.

Undoubtedly the emphasis on life-long learning requires buy in from all stake-holders. Furthermore, a workplace environment needs to be created that supports learning. Wick *et al.*, (1993, (p xii) argue that: "learning cannot survive in a bell jar. It needs the support and immediacy of everyday application or it quickly suffocates."

2.5 What are the Broad Skills, Knowledge and Attitudes that Managers Require to Manage Effectively?

2.5.1 Skills

Newstrom (1994, p1150) defines skill as: "The capacity to use knowledge, a method, or a technique. Skill-oriented learning attempts to develop a person's behavioural abilities to perform while drawing upon underlying knowledge and experience." As technology has advanced,

the range of skills that the manager has to be adept in, has become increasingly sophisticated.

Management writers have identified a number of important skills. Wheatley (1994, p38) argues that: "We will need to become savvy about how to build relationships, how to nurture growing, evolving things. All of us will need better skills in listening, communicating, and facilitating groups, because these are the talents that build strong relationships."

Cronje *et al.*, (1997) stress the importance of managers acquiring the necessary conceptual, interpersonal and technical skills. Viedge (1998) identifies the ability to build international networks as an important management skill.

Cook (1998) cites a number of skills as important for contemporary managers. These skills include: emotional intelligence, self awareness, empathy, listening skills, the ability to give feedback and to form and expand networks, the ability to identify what is critical, to spot trends, and IT skills as important skills for contemporary managers.

2.5.2 Knowledge

Newstrom (1994, 1150) defines knowledge as: "The acquisition, modification, and storage of a body of relevant data and information. Knowledge-oriented learning may focus on a learner's needs to recognise some things, compare items with one another, correlate simultaneous multiple events, connect new facts and previous data, or extend previous information by creating projections of the future.

We live in a knowledge age: it is important therefore that managers are up to date in terms of the thinking and developments in their discipline. Naisbitt (1984, p6) succinctly states that: "... we now use mass-produce knowledge and this knowledge is the driving force of our economy". Knowledge is becoming increasingly important.

2.5.3 Attitudes

Newstrom (1994) defines attitude as: "The feelings, emotions, values, interests or preferences that a person has." Because attitude generally represent predispositions towards a certain type of behaviour, they

are important considerations for employers in the development of adult learning programmes. Attitudes can hinder or increase managerial effectiveness: the development of a positive attitudes enhances managerial effectiveness.

2.6 Techniques Commonly Used to Develop Skills, Knowledge and Attitudes

2.6.1 Introduction

A plethora of learning, training and development techniques are available to equip middle managers skills, knowledge and attitudes that they require in order to function effectively. However, there is no consensus as to which techniques are the most effective, nor whether specific techniques best develop skills, knowledge or attitudes.

Parsloe (1995) argues that adults learn to do their job by reading textbooks and by studying theories about how people behave at work. Parsloe (1995, p17) cautions that theories on their own: "can get in the way when people

are faced with the complicated, muddled reality of doing the job at work."

Parsloe (1995) cites another frequently used learning technique in the workplace as trial and error. He cautions however that unless there is some intellectual learning that accompanies trial and error, obvious improvements in skills are not always developed.

Another popular learning technique Parsloe (1995) cites is learning by observation. Parsloe (1995)argues that many people learn how to become managers by observing how they are managed.

Parsloe (1995) identifies thrusting individuals into the deep-end as another technique that is frequently used to develop managers. Parsloe (1995) argues that this technique can be disastrous: if the individual fails, he or she may not have the confidence to try again.

..anagement theorists are also divided whether training should be conducted on the job or off the job. Kirkpatrick (1994) looks at the advantages and the disadvantages. He cites three advantages for in-house

training as: cost effectiveness, tailor-made content, and the fact that managers relate well to managers in their own organisation.

Kirkpatrick (1994) cites possible advantages of outside programmes as the exposure to a choice of leaders, the opportunity to share problems and ideas with managers from other organisations, and the ability to concentrate since there are no job distractions. Disadvantages include higher costs and inconvenient scheduling.

Whetten & Clark (1996) argue that no single method of teaching management skills has emerged as the best. For example, Miner , Das and Gale (1984) taught three different sections of the same course, one using experimental methods, another using the case method, and the other relying on lectures. They found no significant differences on various measures of students comprehension or satisfaction with the teaching method.

In another study, McEvoy and Cragun (1987) compared the effectiveness of behaviour modelling and an experiential exercise approach. The results were inconclusive: students exposed to the modelling approach yielded higher

behavioural and cognitive skills learning, but their class attendance was lower, and they reported less satisfaction with class-related activities. Whetten & Clark (1996) stress the need to discourage reliance on one method at the expense of the other.

Mumford (1971, p 53) argues that: "The best learning situation is not one or the other, but the appropriate combination to meet the situation and the need, and particularly the combination which allows for practice after process to be learned has been described."

Twenty popular training and development techniques identified in the literature review will be discussed. Where the literature highlights advantages or disadvantages of a particular technique, these will be discussed.

2.6.2 Techniques

2.6.2.1 Coaching

Parsloe (1995) argues that coaching takes place almost daily in every work situation: people ask their

colleagues and managers for advise on how to do certain aspects of their job, or to do their job better. Since middle managers have a number of years of work experience, coaching is assumed to be Socratic: the coach relies almost entirely on questioning to enable learners to develop their own improvement plan.

Burdett (1994) cautions that coaching must be based on an identification of what needs to change. He stresses that the learner changes not because the manager wants him or her to change, but because there is an overwhelming rationale for change. Burdett argues that that coaching is a function that the majority of managers do not perform well.

2.6.2.2 Mentoring

Parsloe (1995, p73) defines a mentor as: "....someone who acts as a guide, advisor and counsellor at various stages in someone's career from induction, through formal development to top management position." Whereas coaching is concerned with an immediate improvement of performance and development of skill by a sort of tutoring, mentoring is not a direct line management function and is concerned

with the longer-term acquisition of skills by a form of counselling.

Robbins (1991) argues that the mentors role goes beyond telling. Robbins (1991, p109) argues that: "Proteges learn to convey the attitudes and behaviours that the organisation wants by emulating the traits and actions of mentors. They observe and they imitate. Top managers who are concerned with developing employees who will fit the organisation and in preparing young managerial talent for greater responsibilities should give careful attention to who takes on mentoring roles."

2.6.2.3 Action Learning

First developed by Revans (1985), action learning is premised on the belief that managers are able to learn from their experience, are able to share their experience with others, and are able to take advice, and review with colleagues the action taken and the lessons learnt.

Margerison (1994) argues that action learning has to be centred around a specific project, the task must be complex and take between 1-18 months to complete.

2.6.2.4 Assessment Centres

Assessment centres began as a selection device for officers in the military. They were subsequently adapted for the selection of managers in civilian organisations. Assessment centres typically last for two to five days. During this time individuals are involved in a variety of group and individual activities. Their behaviour is carefully monitored by trained observers.

Cook (1996, p67) describes the process: "In their original form, assessment centres were a somewhat daunting prospect for candidates who would arrive knowing little about the process. Expert assessors would place them in demanding situations, in which the candidates would have to perform tasks without knowing the basis on which they were being evaluated. There would be little or no feedback during the centre. A formal report would be issued some time after the centre, which the participant might or might not see."

2.6.2.5 Stretch Assignments

Also called planned delegation, stretch assignments extend the learner beyond his or her previous capacity and provide learners with an opportunity to learn and practice new skills and arts. Mumford (1971) argues that delegation is that stage of training after coaching.

2.6.2.6 Junior Boards

This method of training, cited by Tracey (1994) as a management development technique, is also called multiple management. Promising candidates for management positions are selected and assigned to groups that meet regularly to consider proposals related to the management of the enterprise.

Mumford (1971) argues that although some success has been claimed for this approach, a company considering such an approach should weigh up the frustrations involved since the individuals have neither power nor responsibility, and the unreality of the exercise, against the extension of knowledge and possibly increased sympathy for the real Board.

2.6.2.7 Networking

This training technique Tracey (1994) argues encourages managers and professionals to exchange advice, information, assistance, contacts and referrals with their counterparts inside and outside the organisation.

2.6.2.8 Attending Professional Meetings and Conferences

Tracey (1994) argues that attending technical meetings, conferences, trade shows and exhibitions is an effective training technique. Tracey (1994) argues that this approach provides a stimulating and interesting means for individuals to remain current in their profession or technical discipline.

2.6.2.9 Professional Reading

Tracey (1994) argues that professional reading is an effective training technique which enables the individual to remain current in his or her profession.

2.6.2.10 Understudy Assignments

Also known as assistant-to-training, this method closely resembles job rotation, however the learner remains in one job only. By being placed in temporary assignments, the individual is exposed to many areas of managerial practice.

For this training technique to succeed, Tracey (1994) argues the training and coaching must be tailored for the individual. Furthermore, frequent guidance and immediate feedback are necessary to enhance skills development.

2.6.2.11 The Case Study Method

Mumford (1971) argues that the case study method this is a good learning method since it challenges in a relatively safe environment the individuals ability to analyse, argue and decide. Fulmer (1997) criticises the case study method for usually reflecting what could have been done in the past.

2.6.2.12 Job Rotation

Mumford (1971) argues that job rotation is an excellent technique for assessing the potential for general management rather than as a general scheme to give a large number of people experience of more than one department. Mumford (1971) argues that used selectively it is an economical and sound method of learning.

2.6.2.13 Business Games

Mumford (1971) argues that one of the benefits of using business games as a training technique is the fact that business games provide a dynamic learning process. Furthermore, Mumford (1971, p122) argues that: "(the business game) is often able to bring into play a number of factors - finance, planning, marketing, decision taking, the working of groups - which have been covered separately on the course.

2.6.2.14 Adventure Training

Adventure training uses the challenge or adventure of the outdoors combined with facilitated participant

examination of the process to improve employee workplace performance. All activities involve three parts: framing, implementation and debriefing. Miner (1994) attributes the success of adventure training to the fact that it involves all the senses in learning.

Adventure training has been criticised because the situations are not easily transferable to the workplace. Miner (1994) counters this argument by stating that the design and skill of the facilitator makes the training directly applicable to the workplace.

2.6.2.15 Teleconferencing

Tracey (1994) argues that an advantage of teleconferencing as a training technique is the fact that it is efficient, accessible, and immediate. Teleconferencing also provides a solution to providing training to large numbers when there are only a few experts in the field. Disadvantages are the fact that the initial costs of equipment and maintenance are high.

2.6.2.16 Off-the-Shelf Training Programmes

These are training packages that are available commercially. They may not fit the organisation or the industry precisely but they are considered a reasonably good fit. They are packaged in a variety of audio-visual formats. Leatherman (1994) argues that six factors should be considered when considering off the shelf programmes: the programme's content, teaching processes, facilitator's aids, media, participant's aids and the supplier.

2.6.2.17 Correspondence Study

Correspondence study uses a variety of media: books, manuals, tests, audio and videocassettes. Correspondence study is distinguished by the fact that the learner and the lecturer are separated by geographic distance.

Lamprecht & Welch (1994) argue that the historic strengths of this approach are: convenience, portability and flexibility. They predict that the future of this approach is assured since increasingly large numbers of

people will not be able to report to classrooms for learning.

Tracey (1994) argues that the main disadvantage with correspondence study is that trainees have to be sufficiently motivated to pursue learning on their own.

2.6.2.18 Attending Lectures

Whetten & Clark (1996, p156) argue that: " Lectures are often used as an information dump of principles an conclusions that the teacher or text has previously distilled from the management literature."

2.6.2.19 Syndicate Groups

Syndicate groups are typically used by universities and business schools to enable students to learn from one another. Mumford (1971) argues that the success of this method is dependent on the ability and the willingness of individuals to learn from one another. An advantage of this approach Mumford (1971) argues is the fact that syndicate discussions provide feedback which enables the learner to check what he or she has learnt.

2.6.2.20 Simulation

For the purpose of management development, simulation is construed to mean exercises which simulate the real task, for example role play, in tray exercises, mock interviews. Mumford (1971) argues that the great advantage of simulation techniques is the fact that they suffer less from the effects of the transfer problem since they emulate most closely real-life. Mumford (1971,p124) argues that: "The well devised simulation is therefore an excellent teacher.

2.7 Designing Training Programmes for Adult Learners

In the world of work, scant attention is generally paid to the process of learning. Seldom is the question asked as how do people learn best? By neglecting the process of learning, trainers are diluting the effectiveness of their training programmes. They may not necessarily be optimising learning opportunities.

Of particular importance, is a recognition of the fact that adult learners differ from younger learners. Newstrom (1994) alerts trainers to the fact that because

adult learners are older, better developed physically, mentally and emotionally, learning programmes for adults have to take cognisance of these factors.

Newstrom (1994) argues that one of the distinctive factors about adult learners is that they are more capable of being in charge of themselves: they are able to make their own decisions and are capable of living with the consequences.

2.8 How do We Know that Learning has Taken Place?

Hergenhahn (1982) provides a useful definition for learning. Hergenhahn (1982, p8) defines learning as: "...a relatively permanent change in behaviour or in behavioural potentially that results from experience and cannot be attributed to temporary body states such as those induced by illness, fatigue or drugs." A failure to pay attention to the learning process, can lead to a waste of both time and resources.

Mumford (1971) provides additional insights to establish whether learning has taken place. Mumford (1971) argues that for learning to have taken place, the learner must

have acquired a new item of knowledge or skill; the learner must have acquired a new understanding by relating existing and new knowledge; the learner exercises his new knowledge, skill or understanding in a new ability.

2.9 How do People Learn?

2.9.1 The Process of Learning

Learning is often crudely divided into an inductive/ deductive framework. Inductive emphasises thinking, whereas deductive emphasises doing. Deductive learning tends to be based on theory and is structured, whereas inductive learning tends to be based on problems and experience, and builds theory. Inductive and deductive learning are often referred to as cognitive or thinking processes. Many educators, for example Herron & Tomasello (1992), concur that learning is enhanced when a doing component is added.

A very practical approach to learning has been developed by Mumford (1971). Mumford (1971) argues that the methods of learning are all variants on four themes listen,

observe, read, do. Mumford (1971) argues that the appropriate type of learning depends on the particular circumstances.

Berger & Nixon (1981) identify three stages to learning. They argue that the first stage is a goal setting (self assessment) stage, this is followed by skills development (learning new concepts, increasing assertiveness etc,). The last phase is the application of learning (planning and implementing new ideas and skills).

2.9.2 Different Learning Styles

Parsloe (1992) argues that everyone has a preferred learning style. Parsloe (1992) categorises learners as holists, serialists, visualisers and verbalisers. Holists prefer to adopt an holistic view when learning, serialists prefer to work step by step to build a big picture, visualisers like ideas to be presented visually, whilst verbalisers prefer to listen, talk and discuss.

Honey & Mumford (1986) categorise learners into four learning styles: activists, reflectors, theorists and pragmatists. Activists involve themselves fully and

without bias in new experiences; reflectors like to stand back to ponder experiences and observe them from many different perspectives; theorists adapt and integrate into complex but logically sound theories; pragmatists are keen on trying out ideas and techniques to see whether they work in practice.

Honey *et al.*, (1986) argue that people will learn more effectively if they can choose learning opportunities to suit their strongest preferences. Furthermore, they argue that people in certain types of jobs have preferred learning styles.

Kolb, Rubin & McIntrye (1984) concentrate on the individual role of the learner. Kolb *et al.*, (1984) argue that it is useful to combine the characteristics of learning, which is usually considered passive with the characteristics of problem solving, which is usually considered active. Based on this passive/active combination, Kolb (1984) has developed a four stage learning cycle. Within this context, individuals can work out their own learning style. The four styles of learning are: concrete experience, reflective observation, abstract conceptualisation and active experimentation.

Kolb (1984) argues that no specific profile is best, but the ability to learn is the ability to be competent in each mode when this is appropriate. Knowledge of their own learning style enables individuals to select the most appropriate learning opportunities for themselves. Kolb (1984) argues that a complete learning experience should incorporate two different orientations to learning: doing versus thinking, and induction versus deduction.

Whetten & Clark (1996) differ from Kolb in the matter of sequencing. They argue that the order of learning activities has an impact on the quality of learning. Whetten *et al.*,(1996) propose a five activity learning process: experience, understand, practice, reflect and apply. Their teaching approach is organised into two complementary and interconnected teaching cycles: assimilation and application. They argue that there has to be the need to learn (assimilate) and the motivation to change (apply).

Viedge (1998) stresses the importance of taking cognisance of the individual's preferred learning style. Viedge (1998) argues that age profiles also have a role to play. He points out that at different ages people

learn and retain information differently. In devising management training and development programmes therefore, cognisance has to be taken of whether the learner wants knowledge in his or her head, or whether the individual wants to be able to access information.

2.9.3 Critical Success Factors for Good Learning

Before learning can take place, Berger & Nixon (1981) argue learners must recognise a need to learn. For this to happen, the individual learner must be dissatisfied with some aspects of his or her present performance.

Berger *et al.*, (1981) argue that the tutor plays a key role in building a readiness to learn. Berger *et al.*, (1981) argue that the tutor needs to recognise that each individual is different: some will require more support, whilst others will require more pushing. Furthermore, they argue that unless there is a connection between training and the work setting, the transfer of learning is unlikely.

Mumford (1971) isolates eight critical success factors for effective learning: motivation, activity, feedback,

methods must be relate to the people, situation and needs, and there is also the need to practice the new learning.

Cook (1998) adds an interesting dimension to the importance of feedback: Cook argues that not only is feedback crucial for learning to take place, but it requires that the individual learner has sufficiently strong self-esteem to accept feedback.

Mumford (1994) argues that the best approach for management development is to ensure that carefully design l processes integrate with the real world. Mumford (1994) advocates action learning as the most advanced version of this type of learning.

Newstrom (1994) argues that the following ten factors must be in place for optimal learning to take place: there must be feedback, reinforcement, practice, involvement, relevance and practicality, personal gain, providing behavioural models, providing a supportive environment, respect for self esteem, and the use of methods and visual aids that match the objectives of learning.

Other critical success factors include the need for learners to be involved in the learning process, Carl Rogers (1969); for learning to tie in with strategic business needs and for learning to be linked to the real world of work, Wick *et al.*, (1993); the need for any education for managers is to provide something which they can take away from the course and use in their lives.

2.9.4 Conclusion

An understanding that adult learners are different from younger learners, coupled with an appreciation that people have different learning styles, and a recognition that there are critical success factors to optimise learning, should ensure that more effective training and management techniques are adopted.

Parsloe (1995, p23) argues that: "Understanding and being able to explain, how different people learn is essential if you are to guide people towards their most effective development route." Given the serious management skills shortage in South Africa, and taking cognisance of South Africa's uncompetitiveness, understanding learning is

imperative if South Africa is to compete in the global village.

Viedge (1998) cautions however that there are limits to what can be achieved within a management development programme. Viedge (1998)argues that: "To be a good manager requires a good management profile. Managers cannot be contrived!"

CHAPTER THREE

RESEARCH QUESTIONS

3. Research Questions

Based on the literature review, the research undertook to answer six research questions. The research questions are listed below:

3.1 Research Question One

Are skills, knowledge and attitudes acquired differently?

3.2 Research Question Two

Which five techniques are most frequently used to acquire skills?

3.3 Research Question Three

Which five techniques are most frequently used to acquire knowledge?

3.4 Research Question Four

Which five techniques are most frequently used to acquire attitudes?

3.5 Research Question Five

Based on gender, do individuals acquire skills, knowledge and attitudes differently?

3.6 Research Question Six

Based on industry or sector, do individuals acquire skills, knowledge and attitudes differently?

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

In this chapter the methodology used in this research report will be described. The design of the questionnaire and the selection of the research sample will also be discussed.

4.2 Research Methodology

This research seeks to establish the processes middle managers use to acquire skills, knowledge and attitudes needed to function effectively as middle managers.

The most effective way to obtain the data required for the research was to approach middle managers directly. The rationale is that no one is better placed than the individual middle managers themselves to explain which techniques based on their personal experience, are considered to be the most effective for the acquisition of skills, knowledge and attitudes.

The instrument that was used to collect the data was a self-administered questionnaire. Leedy (1997, p191) states that: "Data sometimes lie buried deep within the minds or the attitudes, feelings, or reactions of men and women. As with oil beneath the sea, the first problem is to devise a tool to probe the surface. A commonplace instrument for observing data beyond the physical reach of the observer is the questionnaire." Given the fact that the research dealt with perceptions, personal experience and attitudes, the researcher considered the questionnaire the most appropriate instrument for obtaining this data.

4.3 Questionnaire Design

The questionnaire used in the research was designed in several phases, using various sources of information. An example of the research questionnaire can be found in Appendix A.

4.3.1 Literature Review

In order to generate a list of techniques that are frequently used to develop skills, knowledge and

attitudes, a selection of the pertinent literature was reviewed. The techniques most commonly cited in the literature for developing managers were noted and twenty popular techniques were included in the research questionnaire.

The literature review revealed that although a plethora of management training and development techniques exist, very little research has been undertaken to establish whether these techniques best develop skills, knowledge or attitudes.

For practical purposes, and given South Africa's 3rd World context, it was considered appropriate to list those techniques that are most likely to be commonly used. The number of techniques (variables) was limited to twenty. Wegner (1993, p3) defines a variable as: "any characteristic being measured or observed."

4.3.2 Interviews

The list of techniques drawn from the literature review was supplemented by a series of semi-structured interviews. The semi-structured interview format was used

as this technique permitted probing questions to be added to obtain additional information. A summary of the interviews can be found in Figure 2 and in Appendix B.

Two groups of people were targeted for the interviews: academics and practising middle managers. The names and designations of the interviewees appears in Appendix C.

4.3.2.1 Academics

The first group consisted of two white male academics. Both are trained psychologists. Both have many years of experience in management and people development. They were approached to provide 'expert' input.

4.3.2.2 Practising Middle Managers

The three middle managers that were targeted have all worked their way through the ranks. Two of these managers are male graduates, both have postgraduate qualifications, whilst the third is a female undergraduate. The third manager is currently studying for a degree by correspondence.

Practising managers were chosen to balance academic theory with hands-on experience.

The selection of middle managers was not random: managers from different economic sectors were deliberately chosen. One interviewee is a black male Human Resources Manager from a manufacturing background, another is a white female Treasury Manager, and the third is a white male from a Management Training background in the Financial Services Sector. It was hoped that by interviewing managers from diverse backgrounds, rich insights would be obtained for the questionnaire.

The method of conducting these interviews was identical to the method that was used to interview academics. The interviews provided valuable material to add to the list of training techniques for the research questionnaire.

On the top of the next page, Figure 2 sets out the perceptions of all the interviewees except for the interviewee from the Financial Services Sector. Since his input was industry and company specific, it was not included in Figure 2, but can be found in Appendix B.

Figure 2: Training Techniques Obtained from the Interviews

	Manager One	Manager Three	Academic One	Academic Two
Skills	Are developed by: observation; reading; modelling myself on superiors; discussion; and by attending seminars.	Skills, knowledge and attitudes are acquired in the same way. The best technique for developing each of these is to appoint the individual to a development area.	Skills, knowledge and attitudes are acquired differently. Skills are developed hands-on: they can be taught.	
Knowledge	Knowledge is developed by reading management magazines and the business sections of newspapers.			Mentorship.
Attitudes	Attitudes are determined by environment and role model.		Attitudes are developed through mentorship. Mentorship is useful if it is outside the company. Mentorship does not work in the South African situation because of white-black issue as well as other dynamics.	Attitudes are malleable when not related to core values. Rather than learn new attitudes, people display the attitudes necessary to function optimally.

The list of techniques used in the questionnaire was based on the techniques frequently cited in the literature review: this was supplemented by the responses compiled from interviewing three middle managers and two academics.

The following twenty techniques were chosen to include in the questionnaire as techniques used to develop skills, knowledge and attitudes in middle managers:

- Coaching
- Mentoring
- Action Learning
- Assessment Centres
- Stretch Assignments
- Junior Boards
- Networking
- Professional Meetings and Conferences
- Underst dy Assignments
- The Case Study Method
- Job Rotation
- Business Games
- Adventure Training

- Teleconferencing
- Off the Shelf Training Programmes
- Correspondence Study
- Lectures
- Syndicate Groups
- Simulation

4.4 Questionnaire Construction

Leedy (1997, p193) argues that: "The questionnaire should be as brief as possible and should only solicit those data essential to the research process." Given that the questionnaires were to be administered during lecture time, it was imperative to ensure that the questionnaire was short and focussed.

Care was taken in the design of the questionnaire to ask respondents for information that had a direct bearing on the research: biographical detail was kept to the barest minimum. The questionnaire consisted of nine questions. For reasons of brevity, the questionnaire was not divided into categories and the administrative detail was limited. A four line introduction explained the purpose

of the questionnaire and guaranteed respondents anonymity. The respondent administered the questionnaire personally and for this reason a covering letter was not included.

4.4.1 Structure of the Questionnaire

Question one was a close-ended question: respondents were asked to indicate their sex. This question tied up with the research question five which asked whether based on gender, individuals acquire skills, knowledge and attitudes differently.

Question two, again a close-ended question served as a filter: respondents were asked to indicate rounded off to the nearest year, their number of years experience in middle management. Where respondents indicated that they had one year or less experience as a middle manager, they were excluded from the sample, but noted for research purposes. This was done since the researcher believes these responses will reflect an opinion which is not be grounded in experience. It was assumed that a minimum of two years experience as a middle manager is a

prerequisite for being able to meaningfully evaluate management training and development techniques.

For the purpose of this research, a middle manager was defined as a manager above the level of a supervisor, but in a non-executive position. In addition to the question serving as a filter in rms of the number of years experience, the definition would exclude respondents from the sample who indicated that they are in a supervisory position or that they are in executive positions, such as a Chairman.

Two years work experience was used as the benchmark since respondents with less than two years experience as a middle manager, were likely to have limited personal exposure to a wide range of training techniques used to develop middle managers.

Question three asked the respondents to note the sector in which they are currently employed. Six industries or sectors were listed. To cater for respondents who did not fall into any of these categories, an option, 'other', was provided. Respondents who answered 'other' were asked to specify the industry in which they are employed. Where

possible, additional sectors would be added. Other would be noted as a category for purposed of analysis.

Question four provided respondents with four options which provide optimal conditions for their individual learning. This question was included to provide an insight into how individuals perceive they generally learn best. Respondents were not asked to differentiate between situations which provide the best conditions for acquiring skills, knowledge and attitudes.

Question five is based on Kolb's four learning styles. A brief explanation was provided for each learning style. Respondents were asked to designate which of Kolb's four learning styles they personally found the most effective for acquiring skills, then knowledge, and then attitudes. The purpose of this question was to establish whether respondents in their experience found that skills, knowledge and attitudes were acquired differently.

Question six an open-ended question required respondents to indicate, unprompted, and based on their personal experience which technique was they found best for developing their skills, knowledge and attitudes. No

examples of techniques were provided since the researcher wanted to obtain a spontaneous and an unsolicited response. A definition for skills, knowledge and attitudes was provided to assist respondents to understand how these three concepts differ.

Question seven served as a filter: respondents were asked to provide their job title. If respondents indicated that they were in a supervisory or executive position, they were excluded from the sample. Given that this question is potentially sensitive or threatening if the respondent is in a relatively low ranking job, this question was deliberately asked far into the questionnaire. Pirow (1997,p 99) cautions that the researcher should: "Put sensitive and embarrassing questions fairly late in the questionnaire).

Question eight listed twenty different techniques identified in the literature and by the interviewees as techniques commonly used to equip managers with skills, knowledge and attitudes. The respondents had to indicate by means of ticking 'yes' or 'no' whether or not they had personally used the technique. The 'yes' or 'no' served as a filter. If the respondent indicated that he or she

had not personally used the technique the respondent moved on to the next question. The filter question thus ensured that respondents did not attempt to rate a technique they had not personally used.

If the respondent indicated that he or she had personally used the technique, the respondent had to indicate whether the technique best developed skills, knowledge or attitudes. Because there was the potential for respondents to indicate that each of the 20 technique could develop each of skills, knowledge and attitudes, the researcher specified that the emphasis was on which of the three the technique best develops.

Question nine was an open-ended question. Respondents were asked to indicate whether they know of any technique not mentioned in the questionnaire, that they have personally used and have found to be particularly effective. If the respondent answers yes, the respondent is required to name the technique and to identify whether it best develops skills, knowledge or attitudes.

When the questionnaire was distributed, the researcher emphasised the importance of answering all the questions

in order to ensure that the questionnaire could be used for research purposes.

4.5 Pilot study

Before piloting the questionnaire the researcher checked the questionnaire for ease of reading and completion, logic, relevance, jargon, for leading questions and a check was made to assess whether the questionnaire would be completed within a ten minute time frame. Once the researcher was satisfied that the above criteria had been met, arrangements were made to pilot the questionnaire.

Prior to distributing the questionnaire a pilot study was conducted to highlight any weaknesses that needed to be corrected. Leedy (1997) states that all questionnaires should be pre-tested on a small population.

The questionnaire was administered to three middle managers. A convenience sample was used: a friend of the researcher in middle management was asked to complete the questionnaire and to approach two colleagues in middle management to assist with the pilot study.

Based on feedback and an analysis of the questionnaire minor adjustments were made. Respondents experienced difficulty answering question five since Kolb's learning styles appeared not to be commonly known. In view of this, a brief description of each learning style was added to the final questionnaire.

In the original questionnaire learning centres were cited as one of the techniques used to develop managers. Respondents were not familiar with the concept of learning centres and equated these with any commercial college that provided a business course. In the light of this feedback, learning centres were replaced with assessment centres.

Based on t siderable range of techniques that were used by ifferent respondents, the researcher decided to ad question to the questionnaire- that of job title. In addition to differences in terms of training techniques used in the different sectors, the respondent believed that an analysis based on broad job categories might also prove enlightening.

After the necessary revisions were made, the questionnaire was distributed for completion to current part-time first and second year students studying on the Master of Business Administration (MBA) programme, second year Postgraduate Diploma in Management (PDM)part-time students, and Management Advancement Programme, (MAP 39) part-time students. All these students were completing courses at the Wits Business School (WBS). These students were chosen as the target sample because they were likely to occupy middle management positions, and they were also in full time employment.

4.6 The Population

Wegner (1993, p4) defines the population: "(as) the collection of all observations of a random variable under study". The population comprises all middle managers working in Gauteng in all business sectors.

4.7 The Sample

Wegner (1993, p170) defines sampling as: "...the process of selecting a representative subset of observations from a population to determine the characteristics (i.e. the

population parameters) of the random variable under study."

Time, logistic and financial constraints made it impossible to survey all middle managers in South Africa. Even a survey of all middle managers in Gauteng would be beyond the scope of this research report. For this reason the researcher used non probability sampling.

Cognisance was taken of the limitations of this sampling method. Leedy (1997, p204) cautions that: "In non probability sampling, the researcher has no way of forecasting, estimating, or guaranteeing that each element in the population will be represented in the sample."

The specific type of non probability sampling that was used was convenience sampling. The sample consisted of students registered at the Wits Graduate School of Business on MBA part-time 1st and 2nd year programme, MAP 39, and PDM Business Administration 2nd year part-time courses.

Questionnaires were administered to a total of 160 students. The breakdown of students in terms of classes was as follow: questionnaires were administered to 40 Master of Business Administration (MBA) first year part-time students, 47 Master of Business Administration (MBA) part-time second year students, 47 Management Advancement Programme (MAP) students and 26 Postgraduate Diploma in Management (PDM) second year part-time students.

Historically these students have tended to hold positions in middle management, for this reason they were deemed a suitable sample for conducting research on how middle managers acquire the skills, knowledge and attitudes to become middle managers.

Since convenience sampling was used, the sample was not representative of a population, and therefore the findings cannot be generalised to the general population of middle managers.

No attempt was made to control bias in the selection of the sample.

4.8 Questionnaire Administration

4.8.1 Questionnaire Distribution

To ensure a high response rate, permission was obtained from course convenors and lecturers at the Wits Business School to administer the questionnaire during lectures. In order to do so, details of time-tables, venues and dates had to be obtained and arrangements made with the lecturers to administer questionnaires.

Based on student numbers, it was decided that the sample should consist of two Master of Business Administration (MBA) classes, one Management Advancement Programme (MAP) class, and one Postgraduate Diploma in Management (PDM) part-time class. It was decided to only use part-time students since they are in full-time employment.

Full-time students are somewhat removed from the workplace and for this reason, MBA, and PDM full-time students were not included in the sample. In the case of PDM full-time students, it was also unlikely that they would meet the criterion of 2 years experience in middle

management since most had recently completed their first degree.

The researcher negotiated times that were convenient for the lecturer to administer the questionnaire. Questionnaires were either administered at the start of the lecture or just before the tea break. The researcher addressed the class, explained the topic of research and asked students to each complete a questionnaire. Anonymity was guaranteed and the process was voluntary. The importance of answering each question on the questionnaire was emphasised.

Questionnaires were handed out to the class for respondents to complete during the lecture session: this guaranteed a high response rate. Questionnaire were collected personally by the researcher once they had been completed.

A total of 160 questionnaires were handed out of which 111 could be used for the research. Questionnaires were excluded because they were incomplete: for example the number of years work experience or gender had not been filled in. Another reason for rejecting questionnaires

was because the respondent had less than two years middle management experience. Questionnaires were also excluded if the respondent occupied a position that was clearly lower than middle management, for example the respondent indicated that they were a supervisor.

4.9 Questionnaire Analysis

The questionnaires were vetted to check whether they could be included for the research on the basis of completeness and meeting the requirements for being included as a respondent, for example a minimum of two years middle management experience.

Once this was done, the questionnaires were numbered and encoded and the data was captured on Microsoft Excel. The data was analysed using the Number Cruncher Statistical System (NCCS, 1984). This system was used to calculate various descriptive statistics such as the median, the range, the mode, frequency tables, and one and two variable chi square tests.

4.9.1 Chi Square Tests

The researcher used the non parametric two variable Chi Square tests. This test is well suited to analyse data that is expressed as frequencies. The data for questions 1-9, was all expressed as frequencies.

Langley (1968, p269) explains that: "(the chi square test will compare) matched observations made on a single random sample group, for evidence of association between 2 qualities (such as brains and beauty), when at least one of these qualities is divided into 3 or more categories (such as beautiful average and ugly).

The two variable Chi-Square test was used to test whether results obtained in the samples agreed with expected frequencies. This test was used to test Question One. Question One asks: "Are skills, knowledge and attitudes acquired differently?" Two variable chi square tests were run for each of the twenty techniques in Question Eight of the Questionnaire for the variables skills, knowledge and attitudes.

The two variable chi square test was used to test the independence between the two variables: the technique considered best for the development of skills, and the sector in which the respondent is employed. This test was run to find the answer for Research Question Six: "Based on industry or sector, do individuals acquire skills, knowledge and attitudes differently?"

The two variable chi square test was used to test the independence between the way in which individuals acquire skills, knowledge and attitudes and gender. This test was conducted to find the answer for Research Question Five. Research Question Five asked: "Based on gender, do individuals acquire skills, knowledge and attitudes differently?"

A 5% level of significance was used. This meant that there is a 95% probability that the result covers the true population parameter. The results are discussed fully in Chapter Five.

4.10 Limitations of the Research

The fact that the sample consisted of middle managers attending Management Advancement Programme (MAP39), Master of Business Administration (MBA) or Postgraduate Diploma in Management (PDM) programmes at the Wits Business School limited the generalisibility of the research results. One cannot assume that middle managers in the population of middle managers attend such programmes.

Cognisance was also taken of the fact that the sample may be skewed in terms of gender, race, age and industry. No attempt was made to control bias.

It is believed that the timing of the questionnaire limited the efficacy of the research. Since respondents would have already attended lectures for some months at the Wits Business School, training techniques that are used on the Master of Business Administration (MBA), Management Advancement Programme (MAP) and Postgraduate Diploma in Management (PDM) programmes may be top of mind. If this is the case there might be a bias towards lectures, syndicate groups, and the case study method.

Finally, another limitation was the fact that because respondents were not asked to indicate the size of the company, the turnover, or the number of individuals that reported to them, it is not possible to assess whether the middle managers in the sample were typical of medium sized organisations, or whether most of them were employed in blue chip companies. Clearly, an individual in a so-called middle management position in a small company might have far less responsibility and even decision making powers than a middle manager in a large company or even a multinational.

CHAPTER FIVE

RESEARCH RESULTS

5.1 Introduction

This chapter discusses the methods used to capture the information from the questionnaire and the various statistical tests that were carried out on the data.

5.2 Data Capturing

All the questionnaires were numbered and the information in the questionnaire was captured on an Excel spreadsheet. The first three columns reflect the questionnaire number.

Each question on the questionnaire was given a code number. Responses for each question were captured in columns 4-51. Responses for each question were coded, and the code number was entered in the relevant cell of the spreadsheet.

For question one, which corresponded with column four of the coded print out, the code 1, was used to designate that the respondent was male, and a code 2 was used to indicate that th respondent was female.

For question two, which corresponded to columns five and six, the code number for the respondents number of years experience as a middle manager, was reflected as years. These ranged from 2-18. The code reflected the number of years rounded off to the nearest year. Respondents with less than two years experience were rejected: for this reason, two is the lowest number reflected in columns five and six.

Question three, which corresponded to column seven, asked respondents to identify the business sector in which they were currently employed. Six broad sectors were provided: financial services, manufacturing, mining, retail, government/parastatal and professional practice. An additional category, 'other', coded as seven, was provided.

Where respondents indicated 'other', and specified the industry, and this happened to fit into the six broad

categories that were provided, these respondents were slotted into the appropriate category.

Code 1 for example was used to designate the financial services, 2 manufacturing, 3 mining, 4 retail, 5 government or parastatal, 6 professional practice, and 7 other.

Question four corresponded with column 8 of the print out. The four learning styles were coded from 1-4. For example, "I am given an holistic view of learning" was coded 1; "I can work step by step to build a big picture" was coded 2; "Ideas are presented visually," was coded 3; "I can listen, talk and discuss," was coded 4.

Responses for question five are reflected in columns 9 - 11. A coding system from 1-4 was used to reflect Kolb's different learning styles. Concrete experience was coded 1; reflective observation 2; abstract conceptualisation 3; and active experimentation 4.

Because some respondents indicated that more than one learning style was most effective in developing skills, knowledge, or attitudes, another category, 'mixed', coded

5 was added. In the category 'mixed' there was no way of discerning which of the two or more learning styles cited were the most effective overall.

Column 9 captured the learning style that was the most effective for acquiring skills, column 10 reflects the learning style that was perceived as the most effective for acquiring knowledge, and column 11, the style best used for acquiring attitudes.

Skills, knowledge and attitudes were coded from 1-3. A fourth category, 'mixed' was added to take cognisance of instances where more than one learning style was cited as most effective for developing skills, knowledge or attitudes.

Responses for question six and seven do not appear on the print out since this information could not be coded. Frequency distribution table were drawn up. Questions six and seven are discussed under 5.3.4 in this chapter.

Responses for question eight are captured in columns 12-51 of the print out. The even numbered columns, for example, 12, 14, 16 and so on capture whether the

respondents has used a particular technique. The code 1, indicates 'yes', while a 2 indicates 'no'. The odd numbered columns, for example, 13, 15, 17, 19 and so on reflect each of the twenty techniques cited in question eight. The techniques appear in chronological order. For example, column 13 corresponds with coaching, column 15 with mentoring, column 17 with action learning and so on.

A coding system of 1-3 was used to indicate whether each of the techniques develops skills, coded 1, knowledge, coded 2, or attitudes, coded 3. Because some respondents indicated that a particular technique best develops more than one of skills, knowledge or attitudes, provision was made for a fourth column, 'mixed' coded four.

Where respondents indicated they had not used a technique, they were not required to rate the technique. A '2' in the response column would thus be followed by a blank column in which no responses were registered.

In the case of questions six, seven and nine, frequency distributions were tallied manually. Personal judgement was used to cluster the responses under appropriate headings. For question seven, jobs were clustered into 20

broad areas which represented specific functional areas. In some instances, jobs were clustered into sectors, for example financial services or insurance. A print out of the coded results appears in Appendix D. An explanation of the coding system appears in Appendix E.

5.3 Sample Description

5.3.1 Gender

Gender, sector and years experience are expressed as frequency distributions. Spiegel (1972, p27) argues that: "When summarising large masses of raw data it is often useful to distribute the data into classes or categories and to determine the number of individuals belonging to each class, called the class frequency."

A breakdown of the sample in terms of gender is expressed in the Table 1 below:

Table 1: Gender Distribution

Males	Females
91	20

5.3.2 Sector

Seven categories were provided, this included a category called 'other'. In instances where 'other' corresponded to given sectors, these respondents were placed in the appropriate sector.

The distribution of the sample in terms of sector is provided in the Table 2 below:

Table 2: Frequency Distribution for the Different Sectors

Financial Services	Manufacturing	Mining	Retail	Government/ Parastatal	Professional	Other
21	25	3	3	13	3	43

Examples of 'other' include respondents from the medical field, researchers, business consultants, entrepreneurs, stockbrokers and the IT field.

5.3.3 Years Experience

Collectively the sample of 111 middle managers had a total of 560 years experience. The number of years experience ranged from 2 years experience in middle

management to 18 years experience. The mode for the sample was 2 years experience in middle management. The mean for the sample was 5,04 years experience. Respondents who had less than 2 years middle management experience were rejected. Similarly questionnaires in which the respondent did not specify how many years experience they had in middle management were discarded.

The decision was taken to categorise the number of years experience into periods of five years. Cognisance should be taken of the fact that respondents were only included in the sample if they had a minimum of 2 years experience in middle management. The results are reflected in the Table 3 below:

Table 3: Number of Years Experience in Middle Management

Number of Years Middle Management Experience	Number of Respondents
Up to Five Years Experience	75
6-10 Years Experience	28
11-15 Years Experience	7
16-20 Years Experience	1

5.3.4 Job Titles

Question seven of the questionnaire asked respondents to provide their job title. A total of 88 job titles were obtained. For ease of analysis, it was decided to categorise respondents according to broad functional areas. The respondents were classified according to 20 broad employment categories. The list of 20 broad categories appears in Table 4 on the next page:

Table 4: Broad Categories of Employment

Category	Number of Respondents
Medical Profession	7
Engineers	8
Information Technology	10
Accounting, Actuarial, Auditing	9
Insurance	1
General Management (Industry Unspecified)	9
Financial Services	5
Sales/ Marketing	11
Stockbroker	1
Mining	3
Construction	1
Technical	5
Consultants (Field Unspecified)	6
Managers (Area of Management Unspecified)	16
Researchers	2
Entrepreneurs	2
Human Resource Management	1
Legal Profession	1
Other	5
Unknown	2

There was no order or ranking for these categories. For example, managers who perform an HR function were categorised under HR managers, managers who perform marketing type activities were broadly classified as Marketing managers, and so forth. The sample was wide

ranging and substantial, hence enhancing the generalisabilty of the findings.

5.4 Descriptions of Learning Styles

5.4.1 The Best Learning Styles Based on Gender

Question four of the questionnaire asked respondents to select one of four learning styles commonly mooted in the literature as appropriate for optimal learning to take place. A cross tabulation report was completed to establish which learning styles were preferred by the male and female respondents. The results appear in Table 5 below:

Table 5: The Best Learning Styles Based On Gender

Optimal Conditions for Learning	Male	Female	Total
Holistic	25	4	29
Can Build a Big Picture	16	3	19
Ideas are Presented Visually	10	4	14
I Can Talk, Listen and Discuss	40	9	49

Thereafter, a two variable chi square test was run to establish whether there is a difference in the way in which males and females learn best. Langley (1968, p138) explains that: "… the effects of chance must be taken into account for every piece of research." For the purpose of this research, a 5% significance level was used. The results appear below:

Chi square test result

Chi-Square	1.473938
Degrees of Freedom	3.000000
Probability Level	0.688298

Accept Ho

Warning: at less one cell had an expected value less than 5.

The null hypothesis stated that there was no difference in the way in which males and females learn best. Based on the two variable chi square test result, the decision was taken to accept the null hypothesis: there is no difference in the way in which males and females learn best.

5.4.2 The Best Learning Styles Based on Sector

A cross tabulation report based on sectors was completed to compare whether within the different sectors, there were preferred learning styles. The results appear in the cross tabulation report in Table 6 below:

Table 6: The Best Learning Styles Based on Sector

Sector	Holistic	I Can Build a Big Picture	Ideas are Presented Visually	I Can Talk, Listen and Discuss	Total Number of Respondents
Financial Services	5	4	3	9	21
Manufacturing	8	6	2	9	25
Mining	1	0	1	1	3
Retail	0	0	0	3	3
Government/ Parastatal	2	2	0	9	13
Professional Practice	1	0	2	0	3
Other	12	7	6	18	43

Thereafter, a chi square test was run to establish whether there is a difference based on sector, in the way in which respondents from the different sectors believe they learn best. A significance level of 5% was used. The results appear on the next page:

Chi-Square	20.551620
Degrees of Freedom	18.000000
Probability Level	0.302635

Accept Ho

Warning: at less one cell had an expected value less than 5.

Based on the chi square test result, the null hypothesis was accepted: there is no difference based on sector, in the way in which middle managers perceive that they learn best.

5.5 Kolb's Learning Styles

5.5.1 What Kolb's Learning Styles Best Develop

Respondents were asked to indicate which of Kolb's four learning styles, concrete experience, reflective observation, abstract conceptualisation and active experimentation are the most effective for acquiring skills, knowledge and attitudes.

An additional category, 'mixed' was added to capture instances where respondents believed more than one category is most effective for acquiring skills,

knowledge or attitudes. Where 'mixed' is indicated, there is no way to indicated which of the 2 or more categories mentioned are the most effective. The assumption is that there is no ranking when more than one technique is cited.

The number of responses for each of Kolb's four learning styles and an indication of what each best develops, appears on Table 7 on the next page:

Table 7: What Kolb's Learning Styles Best Develop

Learning Style	Skills	Knowledge	Attitudes	Total
Concrete Experience *(Hands on Approach)*	81	8	*8	97
Reflective Observation *(View Situations from Many Different Points of View)*	4	40	46	90
Abstract Conceptualisation *(Put Information into a Concise Logical Form)*	11	46	14	71
Active Experimentation *(Act on Gut Feel Rather than Logical Analysis)*	11	9	42	62
Mixed *(More than One Learning Style has Been Noted)*	4	8	0	12

* In the category attitudes, one row had one missing value.

A chi square test was run to establish whether based on Kolb's learning style, there was a difference in the way in which learning styles are used. In other words, that skills, knowledge and attitudes, use different learning techniques cited in Kolb's learning styles.

The results of the chi square test appear below:

Observed chi square is	217.0648
Critical value is	15.507
Degrees of Freedom	8
Probability Level	0.302635
Reject Ho	

Degrees of freedom 8
Caution: three cells with expected frequencies less than 5
Critical value at 5% and at 1%.

Reject the null hypothesis: the acquisition of skills, knowledge and attitudes, and the preferred learning style are therefore not independent.

5.5.2 Kolb's Learning Styles and the Acquisition of Skills

A cross tabulation report based on Kolb's learning styles was completed to provide an insight into which of Kolb's four learning styles males and females in middle management use to develop skills. The results appear in the cross tabulation report in Table 8 below:

Table 8: Gender, and the Acquisition of Skills Using Kolb's Learning Styles

Kolb's learning styles	Males	Females	Total
Concrete Experience	64	17	81
Reflective Observation	4	0	4
Abstract Conceptualisation	10	1	11
Active Experimentation	9	2	11
Mixed	4	0	4

A chi square test was run to establish whether based on gender, there was any difference using Kolb's learning style in the way in which males and females acquired skills. The results of the chi square test appear on the next page:

Chi-Square	2.835
Degrees of Freedom	4.000000
Probability Level	0.585725

Warning: at least one cell had an expected value of less than 5.

Accept Ho

Based on the chi square test result, the decision was taken to accept the null hypothesis: there is no relationship based on gender in the way in which males and females acquire skills.

5.5.3 Kolb's Learning Styles and the Acquisition of Knowledge

A cross tabulation report, Table 9, based on Kolb's learning styles explains which learning styles males and females find the most effective for acquiring knowledge, appears on the next page:

Table 9: Gender, and the Acquisition of Knowledge

Kolb's Learning Styles	Males	Females	Total
Concrete Experience	6	2	8
Reflective Observation	35	5	40
Abstract Conceptualisation	37	9	46
Active Experimentation	7	2	9
Mixed	6	2	8

A chi square test was run to establish whether based on gender, there was any difference using Kolb's learning styles, in the way in which males and females acquired knowledge. The results of the chi square test appear below:

Chi-Square	1.534780
Degrees of Freedom	4.000000
Probability Level	0.820463

Accept Ho

Warning: at less one cell had an expected value less than 5. Based on the chi square test result, the decision was

taken to accept the null hypothesis: there is no relationship based on gender in the way in which males and females acquire knowledge. Males and females acquire knowledge in the same way.

5.5.4 Kolb's Learning Styles and the Acquisition of Attitudes

A cross tabulation report based on Kolb's learning styles was completed to understand which learning styles males and females find the most effective for acquiring attitudes. The results appear in the cross tabulation report in Table 10 below:

Table 10: Gender, and the Acquisition of Attitudes

Kolb's Learning Style	Males	Females	Total
Concrete Experience	6	2	8
Reflective Observation	36	10	46
Abstract Conceptualisation	10	4	14
Active Experimentation	38	4	42

A chi square test was run to establish whether based on gender, there was any difference using Kolb's learning style in the way in which males and females acquire attitudes. The results of the chi square test appear below:

Chi-Square	3.773579
Degrees of Freedom	3.000000
Probability Level	0.286974

Accept Ho

Warning: at least one cell had a value less than 5. Based on the test result, there is no difference in the way in which males and females acquire attitudes.

5.6 The Most Effective Training Techniques Based on Personal Experience

5.6.1 Skills

Question six, an open ended question in the questionnaire, asked respondents based on their personal experience, which training techniques they have found best develops their skills, knowledge and attitudes. All the responses were recorded and tallied. Where

appropriate, this information was clustered under twenty headings.

As there was duplication the original list of 40 techniques, the information was condensed into a list of 20 techniques. For example some respondents referred to 'being open and honest with others,' others spoke about 'being exposed to new ideas.' These responses were slotted under the heading 'discussion.' This information is presented in the frequency distribution Table 11 on the next page:

Table 11: The Techniques Best for Developing Skills

Techniques	Number of Respondents
Hands-on	79
Stretch Assignments	7
Experimentation	6
Formal Training	6
Case Study	5
Observation	4
Mentoring	3
Discussion	3
On the Job Training	3
Simulation	3
Lectures	2
Role Playing	2
Seminars	2
Academic Study	2
Feedback	2
Workshops	1
Internship	1
Publishing Articles	1
Reading	1
Coaching	1

As far as open-ended responses cited best for developing skills is concerned, overwhelmingly, a 'hands-on approach' cited by 79 respondents came out tops. A 'doing' component is clearly a very important consideration when designing courses that develop skills.

5.6.2 Knowledge

In the case of knowledge, all the techniques named by the respondents were listed, and where appropriate, the information was slotted under a suitable heading since there was duplication. For example, the Socratic method was slotted under discussion, and participation was slotted under 'hands-on-experience.' The original list of 65 techniques was thus condensed to 20 techniques.

This information is presented in the frequency distribution Table 12 on the next page:

Table 12: The Techniques Best used to Develop Knowledge

Technique	Number of Respondents
Reading	26
Hands-on Experience	24
Academic Study	18
Discussion	16
Formal Training	9
Problem Solving	7
Case Study	4
Lectures	3
Stretch Assignments	3
Listening	3
Research	3
Experimentation	2
Observation	2
Role Play	1
Off the Shelf Training	1
Workshops	1
Seminars	1
On the Job Training	1
Mentoring	1
Asking Questions	1

Reading was rated tops by 26 respondents, followed by 'hands-on-experience', cited by 24 respondents, and then Academic Study. It was interesting that 'hands-on-experience' was rated higher than Academic Study as a technique for developing knowledge. A 'hands-on' approach is frequently associated with skills development rather

than the acquisition of knowledge. Furthermore, people frequently cite the reason for academic study as the desire to improve their knowledge.

Seekers of knowledge in this instance fit into Honey and Mumford's (1986) categorisation of learners as "activists". These learners like to involve themselves fully and without bias in new experiences. This approach is implicit to a 'hands-on-experience'.

5.6.3 Attitudes

All the techniques provided by the respondents for acquiring attitudes were listed, and where appropriate, the information was clustered under a suitable heading since there was duplication in the naming of the techniques. The original list of 62 techniques was condensed to 20. The list of 20 techniques is provided in Table 13 on the next page:

Table 13: The Techniques Best Used to Develop Attitudes

Technique	Number of Respondents
Job/ Life Experience	26
Open Discussion	21
Understanding of Self/Self Development	12
Interaction with Others	8
Observation	5
Workshops	5
Mentoring	4
Active Listening	4
Action Learning	4
Learning About Diverse Cultures	3
Role Model	3
Coaching	2
Team Building Courses/Teamwork	4
Attitudes of Superiors	2
Feedback	2
Meditation	2
Feedback	2
Case Study	2
Reading	3
Role Play	2

Job/Life experience was rated 'tops' as the technique most effective for developing attitudes. As in the case of skills and knowledge, a heavy emphasis was placed on 'real' or 'hands-on experience'. Open discussion was rated second, and an understanding of self/self

development, third among the unprompted responses for techniques that are best for developing attitudes.

The fact that understanding of self/ self development was rated third seems to lend support to the notion that if learners know how they learn best, they can add value in playing a role in designing their own development programmes.

5.7 Training Techniques

5.7.1 Twenty Training Techniques and What They Best Develop

Question eight of the questionnaire provided 20 training techniques. Respondents were asked to indicate whether they had personally used the techniques. If the answer was yes, they had to indicate whether the technique best developed skills, knowledge or attitudes. A number of respondents indicated that specific techniques best developed more than one of skills, knowledge and attitudes. For this reason, an additional column, 'mixed' was added in the interpretation of the results. The results appear in Table 14 on the next page:

Table 14: A List of Techniques, and What Each Technique Best Develops

Technique	Have You Used the Technique?		This Technique Best Develops:			
	Yes	No	Skills	Knowledge	Attitudes	Mixed
a) Coaching	89	22	58	15	9	7
b) Mentoring	84	27	30	21	24	9
c) Action Learning	66	45	45	13	4	4
d) Assessment Centres	28	83	10	9	8	1
e) Stretch Assignments	34	77	10	17	4	3
f) Junior Boards	7	104	1	1	3	2
g) Networking	87	24	9	47	25	6
h) Professional Meetings and Conferences	102	9	9	69	9	15
i) Professional Reading	102	8	11	78	6	8
j) Understudy Assignments	38	73	11	20	2	5
k) The Case Study Method	93	18	28	47	5	13
l) Job Rotation	51	60	32	6	6	7
m) Business Games	35	76	17	2	12	4
n) Adventure Training	25	86	6	0	18	1
o) Teleconferencing	29	82	4	18	4	3
p) Off the Shelf Training Programmes	41	70	16	24	0	1
q) Correspondence Study	49	62	10	34	1	4
r) Lectures	105	6	16	75	2	12
s) Syndicate Groups	100	11	16	37	27	20
t) Simulation	51	60	32	13	5	6

The results have been broken down further into the top five techniques for the development of skills, knowledge and attitudes. The results for skills development appear in Table 15 below:

Table 15: The Top Five Techniques for Developing Skills

Techniques	Number of Respondents
Coaching	58
Action Learning	45
Job Rotation	32
Simulation	32
Mentoring	30

The results for the 'top five' techniques for developing knowledge appear in the Table 16 below:

Table 16: The Top Five Techniques for Developing Knowledge

Techniques	Number of Respondents
Professional Reading	78
Lectures	75
Professional Meetings and Conferences	69
Networking	47
The Case Study Method	47

Cognisance is taken of the fact that a convenience sample was used. This may account for bias in the sample and explain why lectures and syndicate groups, techniques used on the MBA, PDM and MA programmes were so highly rated as techniques best for developing knowledge.

The results of the top five techniques for developing attitudes appear in Table 17 below:

Table 17: The Top Five Techniques for Developing Attitudes

Techniques	Number of Respondents
Syndicate Groups	27
Networking	25
Mentoring	24
Adventure Training	18
Business Games	12

In an assessment of these results, the fact that syndicate groups were rated as the top technique for developing attitudes may be attributable to the fact that the respondents in the sample were all students on programmes which use syndicate groups extensively. The possible bias in this result must be noted.

5.7.2 A short-list of the Eight Training Techniques Most Commonly Used

To provide an overview, the eight techniques from the list of twenty techniques that have been most commonly used by the respondents, appear in order of reported usage, from highest to the lowest in Table 18 below:

Table 18: the Eight Most Popular Training Techniques

Technique	Number of Respondents
Lectures	105
Professional Reading	103
Professional Meetings and Conferences	102
Syndicate Groups	100
The Case Study Method	93
Coaching	89
Networking	87
Mentoring	84

Caution must be exercised in evaluating lectures as the most popular training technique cited by respondents since all respondents are currently exposed to the lecture technique. This response may indicate bias.

5.7.3 Gender, And The Use of The Top Eight Techniques

In order to establish whether males and females use the eight most popular techniques differently i.e. that males and females do not use these techniques to develop the same things - skills, knowledge or attitudes, two variable chi square tests were run on the top eight techniques.

The results appear below:

Lectures

Chi-Square	0.011640
Degrees of Freedom	1.000000
Probability Level	0.914083

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which males and females use lectures to develop skills, knowledge or attitudes.

Professional Reading

Chi-Square	1.661273
Degrees of Freedom	1.000000
Probability Level	0.197432

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which males and females use professional reading to develop skills, knowledge or attitudes.

Professional Meetings and Conferences

Chi-Square	0.329422
Degrees of Freedom	1.000000
Probability Level	0.566000

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which males and females use professional reading to develop skills, knowledge or attitudes.

Syndicate Groups

Chi-Square	2.178218
Degrees of Freedom	1.000000
Probability Level	0.139976

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which males and females use professional reading to develop skills, knowledge or attitudes.

The Case Study Method

Chi-Square	0.163690
Degrees of Freedom	1.000000
Probability Level	0.685781

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which males and females use the case study method to develop skills, knowledge or attitudes.

Coaching

Chi-Square	0.552583
Degrees of Freedom	1.000000
Probability Level	0.457264

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which males and females use coaching to develop skills, knowledge or attitudes.

Networking

Chi-Square	0.223675
Degrees of Freedom	1.000000
Probability Level	0.636254

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which males and females use networking to develop skills, knowledge or attitudes.

Mentoring

Chi-Square	0.103529
Degrees of Freedom	1.000000
Probability Level	0.747635

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which males and females use mentoring to develop skills, knowledge or attitudes.

5.7.4 Sector and the Use of the Top Eight Techniques

A cross tabulation report was completed to establish according to sector, which techniques were most commonly used. The results appear in Table 19 on the next page:

Table 19: The Use of the Top Eight Techniques by Sector

Techniques	Financial Services	Manufacturing	Mining	Retail	Government Parastatal	Professional Practice	Other
Lectures	19	24	3	2	13	2	42
Professional Reading	19	24	3	2	12	3	40
Professional Meetings and Conferences	20	22	3	3	12	3	38
Syndicate Groups	17	24	3	2	13	2	40
The Case Study Method	17	20	3	2	13	2	39
Coaching	13	23	3	3	7	2	38
Networking	17	20	2	3	7	2	35
Mentoring	18	20	2	2	9	2	32

Thereafter, chi square tests were conducted to establish whether there was a relationship between the 'top' eight most popular techniques and each of the different sectors. The chi test results appear below:

Lectures

Chi-Square	12.737261
Degrees of Freedom	6.000000
Probability Level	0.047403

Warning: at least one cell had an expected value less than 5.

Reject Ho

Based on the test result, there is a difference in terms of sector, in he way in which lecuures are used to develop skills, knowledge or attitudes.

Professional Reading

Chi-Square	4.432262
Degrees of Freedom	6.000000
Probability Level	0.618392

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which the different sectors use professional reading to develop skills, knowledge or attitudes.

Professional Meetings and Conferences

Chi-Square	3.753194
Degrees of Freedom	6.000000
Probability Level	0.710034

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which the different sectors use professional reading to develop skills, knowledge or attitudes.

Syndicate Groups

Chi-Square	8.380885
Degrees of Freedom	6.000000
Probability Level	0.211505

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which the different sectors use professional reading to develop skills, knowledge or attitudes.

The Case Study Method

Chi-Square	6.364578
Degrees of Freedom	6.000000
Probability Level	0.383612

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which the different sectors use the case study method to develop skills, knowledge or attitudes.

Coaching

Chi-Square	14.792354
Degrees of Freedom	6.000000
Probability Level	0.021935

Warning: at least one cell had an expected value less than 5.

Reject Ho

Based on the test result, there is a difference in the way in which the different sectors use coaching to develop skills, knowledge or attitudes.

Networking

Chi-Square	5.016455
Degrees of Freedom	6.000000
Probability Level	0.541704

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which the different sectors use networking to develop skills, knowledge or attitudes.

Mentoring

Chi-Square	3.205245
Degrees of Freedom	6.000000
Probability Level	0.782681

Warning: at least one cell had an expected value less than 5.

Accept Ho

Based on the test result, there is no difference in the way in which the different sectors use mentoring to develop skills, knowledge or attitudes.

5.8 Other Techniques that are Particularly Effective

Question nine was an open-ended question in which respondents were asked to name any technique not mentioned in the list in question eight which they found

particularly effective for developing skills, knowledge and attitudes. They were also requested to specify whether the technique best develops skills, knowledge or attitudes. The responses are reflected in the Table 20 on the next page.

Table 20: Other Techniques for Developing Skills, Knowledge and Attitudes

Techniques	Number of Respondents Who Say the Technique Develops Skills	Number of Respondents Who Say the Technique Develops Knowledge	Number of Respondents Who Say the Technique Develops Attitudes
Being Thrown Into the Deep End	1	1	
Meditation			1
Feedback	1		
Experimentation		1	
Psychotherapy			1
Role Play	3		
Computer Simulation		1	
Brainstorming			1
Self Discovery	1		
Computer Based Training	1		
Self-Managed Learning		3	
Video	1	1	1
Providing Ownership of a Project	1	1	1

Self-managed learning was cited by 3 respondents as important for developing knowledge. For self-managing learning to succeed, it implies that the respondent knows his or her learning style best. Arguably if this is the case, management development can be accelerated if the respondent is consulted on the design of training programmes to accelerate his or her individual learning.

CHAPTER SIX

INTERPRETATION OF THE RESULTS

6.1 Introduction

This chapter focuses on the meaning of the results. The research set out to discover the processes used by managers to acquire skills, knowledge and attitudes. Six research questions were posed. Each question will be discussed separately with reference to the preceding literature. In addition to answering the six research questions, general findings that arose from the research will be interpreted.

6.2. Research Question One

Are skills, knowledge and attitudes acquired differently?

6.2.1 Skills

Question five of the questionnaire was used to establish whether respondents believed that skills, knowledge and attitudes are developed differently. Respondents had to

indicate which of Kolb's four learning styles - 'concrete experience,' 'reflective observation,' 'abstract conceptualisation' or 'active experimentation,' in their experience was the most effective for developing each of skills, knowledge and attitudes.

The results in Table 7 show that the majority of the respondents, 81 of the sample of 111, were of the opinion that skills were best developed by 'concrete experience.' 'Concrete experience' is construed to mean a 'hands-on approach.'

Although the literature does not state that a 'hands-on approach' is best for developing skills, a number of management theorists stress the importance of a 'doing' component for learning to take place. Mumford (1971) cites 'doing' as one of the methods of learning. Heron & Tomasello (1992) argue that learning is enhanced when a 'doing' component is added. Whetten & Clarke (1996) also stress experience and apply, 'doing' activities as important for quality learning. The results showed that 'doing' was critical for skills development.

Honey and Mumford (1986) categorise learners into four learning styles: 'activists' who involve themselves fully and without bias in new experiences; 'reflectors' who like to stand back to ponder experiences and observe them from many different perspectives; 'theorists' who adapt and integrate into complex but logically sound theories; and 'pragmatists' who are keen to try out ideas and techniques to see whether they work in practice.

Using Honey & Mumford's model, for the acquisition of skills, learners seem to conform to what they call 'pragmatists'. Further research might indicate that for the acquisition of skills, there is also an element of what they term the 'activist' learning style.

6.2.2 Knowledge

It was interesting to note that when it came to the acquisition of knowledge, the results were relatively close for two learning styles. Table 7 shows that 46 respondents believed that knowledge was developed by abstract conceptualisation (putting information into a concise logical form) , whilst 40 respondents believed knowledge was developed through reflective observation

(by viewing situations from different points of view). It was not surprising that a 'cerebral' rather than a hands-on approach was mooted for the development of knowledge.

Active experimentation (acting on gut feel) was chosen by only 9 respondents whilst concrete experience (a hands-on approach) was selected by 8 respondents as optimal for the development of knowledge. It was interesting to note that whilst concrete experience was given the strongest vote of confidence for skills development, (cited by 81 respondents), the results indicate that it was considered unsuitable for the development of knowledge.

Only 8 respondents indicated that concrete experience was important in the development of knowledge. The results thus indicated that respondents perceived that skills and knowledge are developed differently. Knowledge was a more 'cerebral' activity, whilst skills development was perceived to be more 'hands-on'.

The research findings show that middle managers stress the importance of putting information into a concise, logical form, and also of viewing situations from many different points of view in order to acquire knowledge.

Clearly the processes used by managers to acquire knowledge are different from those for acquiring skills. The acquisition of knowledge appears to combine two learning styles: reflectors, and theorists. Honey & Mumford (1986) coined the term 'reflectors' for learners who like to stand back and ponder experiences and observe them from many different perspectives. He termed the phrase 'theorists' for learners who adapt and integrate into complex and logically sound theories.

6.2.3 Attitudes

As far as attitudes was concerned, Table 7 indicates that reflective observation (viewing situations from many different points of view), was cited by 46 respondents as the most effective technique overall for developing attitudes. This was closely followed by active experimentation (acting on gut feel): 42 respondents cited this as the most effective technique for developing attitudes.

If one looks more closely at the 'top two' techniques for developing attitudes, abstract conceptualism and reflective observation, the one response is cerebral

whilst the other is emotive. It is interesting that these two seemingly contradictory techniques, reflective observation and active experimentation (gut feel) were cited as the two most important techniques for developing skills, knowledge and attitudes.

Newstrom (1994) argues that: "(Attitudes is) the feelings, emotions, values, interests or preferences that a person has." The development of attitudes though informed by emotive factors such as values, does however appear to have the capacity to be influenced by logical argument: by viewing situations from many different perspectives. A consideration of this aspect suggests that senior mangers have a very important role to play in developing and influencing attitudes within their organisations.

Only 8 respondents, the same number as in the case of the acquisition of knowledge, cited concrete experience as the most effective technique for developing attitudes. The acquisition of knowledge and attitudes would thus appear to have more in common in the way in which they are acquired than skills development.

6.2.4 Conclusion

A two variable chi square test was run based on the data in table 7 to establish whether based on Kolb's learning style, there was a difference in the way in which learning styles are used. Based on the chi square result of 217.0648, the null hypothesis was rejected: skills, knowledge and attitudes are not independent. In other words, there is a relationship between the preferred learning style and the acquisition of skills, knowledge and attitudes.

The chi square test findings were substantiated by an interpretation of the frequency distribution table 7: concrete experience is the preferred learning style for the acquisition of skills; abstract conceptualisation is the preferred learning style for the acquisition of knowledge; and reflective observation is the preferred learning style for the acquisition of attitudes.

Clearly a 'one size fits' all approach is not appropriate. The research shows that skills, knowledge and attitudes are acquired differently. Cognisance should be taken of the different processes used to develop each

of the above, when designing management development courses.

Management development course designers would do well to heed the advice of Parsloe (1995,p23) who argues that: "Understanding and being able to explain, how different people learn is essential if you are to guide people towards their most effective development route."

6.3 Research Question Two

Which five techniques are most frequently used for acquiring skills?

The results in Table 15 indicated that the top five techniques for developing skills are coaching, action learning, job rotation and simulation jointly in 3rd place, and lastly, mentoring. Overall, 58 respondents cited coaching as the most effective technique for developing skills, 45 cited action learning, 32 job rotation, 32 simulation, and 30 mentoring.

When these results are compared with the findings for research question one, which indicated that respondents

believed that skills are best developed by 'concrete experience'- a hands-on approach, the results come as no surprise. Action learning, job rotation and simulation all use a hands-on approach.

Like action learning, job rotation and simulation, coaching also uses a hands-on approach. Parsloe (1995) argues that coaching is an activity that takes place daily in the work place. It is not surprising therefore that coaching was cited as most effective technique overall, for developing skills. Parsloe (1995) also explains that coaching is essentially a Socratic approach based on questioning: this enables learners to develop their own improvement plan.

Action learning, cited as the second most important technique for developing skills is also a hands-on approach grounded in concrete experience. As Revans (1985) explains, the process is premised on the belief that managers can learn from their experience; are able to share their experience with others; and are able to take advice; and review with their colleagues the action taken and the lessons learnt. Action learning combines

the learning style of 'concrete experience', and 'reflective observation.'

'Reflective observation' was only cited by 4 respondents as a technique that best develops skills. This is clearly an integral part of the action learning approach since it requires viewing situations from different points of view. Such an activity cannot be construed as passive!

Job rotation was cited as the third most used technique for the development of skills. This high rating of the technique concurs with Mumford's view. Although Mumford (1971) did not isolate skills development as something that is best developed by job rotation, Mumford (1971) observes that this is an excellent technique for assessing the potential for general management rather than as a scheme for giving a large number of people experience of more than one department.

Tied in third place with job rotation, simulation is yet another 'hands-on' approach. This technique includes activities such as role play, in tray exercise and mock interviews. Respondents concur with Mumford's findings.

Mumford (1971, p124) argues that: "The well devised simulation is therefore an excellent teacher."

The technique that was cited fifth best overall for the development of skills was mentoring. Robbins (1991, p109) argues that: "Proteges learn to convey the attitudes and behaviours that the organisation wants by emulating the traits and actions of mentors."

Mentoring was chosen as one of the top 5 techniques for developing skills out of the total of twenty techniques that respondents could choose from in the research questionnaire. The literature indicated that mentoring played an important role in forming attitudes. For this reason, the high rating mentoring received as a technique for developing skills was somewhat unexpected. It must be pointed out however, that Parsloe (1995) cites mentoring as a type of counselling technique effective for the longer term acquisition of skills.

6.4 Research Question Three

Which five techniques are most frequently used for acquiring knowledge?

6.4.1.Knowledge

Table 16 shows the top five techniques for developing knowledge are: professional reading, lectures, professional meetings and conferences, networking and the case study method. Overall, 78 respondents cited professional reading as the best technique overall for developing knowledge, 75 cited lectures, 69 cited professional meetings and conferences, and 47 cited networking and the case study method.

The high rating for the case study method 47 respondents, and 78 respondents for lectures need to be treated with caution. It is possible that these results are biased since these two techniques are used extensively on all three courses from which the respondents were drawn - MBA, PDM and MAP programmes.

What is particularly interesting, is the fact that academics at the Wits Business School have always cited as one of their competitive advantages the fact that they produce South African case studies. It is interesting to note that their students regard the case study method as an important technique for the development of knowledge. Whether students view the South African content of many of their case studies as especially important, remains to be tested.

Mumford (1971) argues that the case study method is a good learning method since it challenges in a relatively safe environment the individual's ability to analyse, argue and decide. A point that is perhaps not stressed sufficiently in the literature, but seems to be implicit, is the fact that expressing an opinion or arguing a point in a syndicate group requires an element of risk taking.

For the case study method to be rated so highly, relatively high levels of trust must exist within the syndicate groups on the MBA, PDM and MAP programmes taught at the Wits Business School.

Professional reading was ranked the highest overall as the technique that best develops knowledge. Although one can merely speculate, it seems possible that professional reading is a technique that forms part of a middle managers daily routine, perhaps an activity that is part and parcel of keeping abreast with developments in his or her industry. Professional reading is therefore arguably an on-going activity that will continue even after the respondent has completed an MBA, PDM or MAP study programme.

Tracey (1994) argues that professional reading is an effective training technique that enables the individual to remain current in his or her profession. The results concur with this conclusion.

Professional meetings were rated as the third best techniques overall for developing knowledge. Tracey (1994) argues that professional meetings provide a stimulating and interesting means for individuals to remain current in their technical discipline or profession. When one considers the rapid tempo of change, and the rapidity with which knowledge becomes outdated, it is not surprising that professional meetings and

conferences are frequently used as a technique to acquire knowledge.

Networking was rated jointly fourth with the case study method as a technique that is considered effective for developing knowledge. Tracey (1994) argues that this technique encourages managers and professionals to exchange advice, information, assistance, contacts and referrals to counterparts within and without the organisation. The research results confirm that networking seems to be performing this function.

When the overall rating of the top five techniques, professional reading, lectures, professional meetings and conferences, networking and the case study method are compared with the results obtained for research question one, it is interesting to note that abstract conceptualisation came out tops, closely followed by reflective observation.

All five of these techniques, professional reading, lectures, professional meetings, networking and the case study method use reflective or abstract conceptualisation. Viewing situations from many different

points of view, and putting information into a concise logical form applies to each of the five techniques that were cited best for developing knowledge.

6.4.2 Conclusion

The results indicate that course designers of middle management development programmes should include in the learning design opportunities for the individuals to read and to use case studies. Trainers themselves should use the lecture method.

Unfortunately often overlooked, are the excellent opportunities to include activities that require networking as part of the course design. Learners should be compelled to confer with counterparts inside and outside the organisation as part of their learning programme. Attendance of conferences and professional meetings should also be incorporated into the course design as part of the learning experience.

6.5 Research Question Four

Which five techniques are the frequently used for acquiring attitudes?

6.5.1. Attitudes

Table 17 shows that the five techniques most commonly used to acquire attitudes are: syndicate groups, networking, mentoring, adventure training and business games. Each requires close interaction with others. None of these techniques can be practised or taught by reading. These findings back the findings for research question one.

Syndicate groups were rated by 27 respondents as the most effective technique overall for developing attitudes. Syndicate groups at the Wits Business School are extremely diverse in terms of age, culture, industry, and work experience. Exposure to a diverse group of people and different languages and cultures could conceivably play an important role in forming attitudes as individuals are now able to debunk myths and

misconceptions that they may have had about different cultures based on their syndicate interaction.

Arguably another positive role that syndicate groups could play in formulating attitudes is that through close interaction under enormous study workload pressures, could lead to a new gained respect for 'other' cultures and 'other' professions.

The second most highly rated technique was networking 25 respondents, followed by mentoring, 24 respondents, then adventure training, 18 respondents, and finally, business games 12, respondents.

The five techniques syndicate groups, networking, mentoring, adventure games and business games all rely heavily on viewing situations from different perspectives. There is also an element of 'gut feel', or experimentation. The ratings for question three concur with the findings for research question one: reflective observation, followed closely by active experimentation are clearly the best learning styles for the acquisition of attitudes. The techniques that the respondents use most frequently reflect this.

Caution must be exercised however in an assessment of syndicate groups. Syndicate groups are an integral part of the Wits Business School learning experience, and the fact that students are currently exposed extensively to this technique may mean that this technique is foremost in their minds.

It would be interesting to establish whether syndicate groups formed in an on-the job training situation would be rated as highly by respondents. It would also be interesting to contact past students a few years after they had completed their studies to assess which techniques stood out foremost in their minds as the most effective in their development during their studies at the Wits Business School.

6.5.2 Conclusion

Designers of programmes used to develop attitudes should emphasise inter-personal interaction. Activities should provide opportunities to view situations from many different points of view: they should also permit active experimentation. Syndicate groups, networking, mentoring, adventure training and business games provide outstanding

opportunities to develop the 'right attitudes' in middle managers. All of these techniques should be deployed in programmes designed to develop the 'right attitudes' in middle managers.

6.6 Research Question Five

Based on gender, do individuals acquire skills, knowledge and attitudes differently?

6.6.1 The Preferred Learning Style for Males and Females

The researcher attempted to find out whether there is any difference based on gender, in the way in which males and females learn. If males and females indicated a preference for a different learning style, this might indicate that males and females would probably acquire skills, knowledge and attitudes differently.

Question four of the questionnaire addressed this question. Respondents were required to select their preferred learning style from four learning styles

commonly cited in the literature as conducive for optimal learning.

The results in Frequency Table 5 in the previous chapter indicated that males and females both prefer a learning style in which they can 'talk, listen and discuss:' there was thus no difference based on gender in the way in which males and females learn.

The results indicated that the overwhelming majority of the males in the sample, namely 40 of the 91 males in the sample chose a learning style in which they can 'talk, listen and discuss' as their preferred learning style. The females in the sample concurred. Of the sample of 20 women, 9 indicated that their optimal learning style was one in which they could 'talk, listen and discuss.'

In addition to the frequency table, a chi square test was run.

Based on the chi square test result, of 1.473938, the null hypothesis was accepted: there is no difference in the way in which males and females learn best.

6.6.2 The Way in Which Men and Women Acquire Skills

The researcher investigated whether based on gender, there was any difference in the way in which males and females acquired skills. Table 8 in chapter five indicated that the majority of males, 64 and the majority of females in the sample, 17, cited 'concrete experience' as the most effective technique for the acquisition of skills. No technique was close in second place to contest this rating.

A two variable chi square test was run. Based on the chi square result of 2,835476, the null hypothesis was accepted. There is no relationship based on gender in the way in which males and females acquire skills. Males and females therefore acquire skills in the same way.

6.6.3 The Way in Which Men and Women Acquire Knowledge

Table 9 in Chapter Five indicated that the majority of males and females in the sample, 37 males and 9 females, a total of 46 individuals from the sample of 111, indicated that 'abstract conceptualisation' was their preferred learning style for the acquisition of

knowledge. The second most popular technique was cited as 'reflective observation', by 35 males and 5 females.

A two variable chi test was also run to establish whether based on gender, there was any difference in the way in which males and females acquired knowledge. Based on a chi square test result of 1.534780, the null hypothesis was accepted. The results revealed that males and females acquire knowledge in the same way.

Parsloe (1992) argues that everyone has a preferred learning style. The results from the research support this. It was interesting to note that of Parsloe's four learning styles: 'holists,' 'serialists,' 'visualisers' and 'verbalisers,' males and females in the sample said that they preferred to 'listen, talk and discuss,' a group of learners Parsloe labelled 'verbalisers'.

6.6.4 The Way in Which Males and Females Acquire Attitudes

Table 10 in Chapter Five indicates that the majority of males 36 and females 10, concurred that attitudes are acquired by 'reflective observation'. These results were

confirmed in a two variable chi square test which was run to establish whether there is any difference based on Kolb's learning styles in the way in which males and females acquire attitudes. Based on the chi square result of 3.773579, the null hypothesis was accepted: there is no difference in the way in which males and females acquire attitudes.

6.6.5 Conclusion

Designers of management development programmes should take cognisance of the fact that males and females cite their preferred learning style as one in which they can 'talk, listen and discuss'. Mumford (1971) argues that the methods of learning are all variants on four themes: 'listen', 'observe', 'read' and 'do'.

The research findings indicate that the 'listening' and the 'doing component' are critical. Furthermore, that 'listening' and 'doing' activities transcend gender and sector. These should thus be the cornerstones for designing any management development course. There is less clarity on observe and read, these are arguably more passive activities. 'talk, listen and discuss' suggests

that learning programmes should be designed to ensure a high level of participation and interaction.

When designing courses that provide skills training, knowledge or attitudes, course designers should take cognisance of the fact that males and females acquire skills, knowledge and attitudes in exactly the same way. Gender thus should not influence course design.

6.7 Research Question Six

Based on Industry or Sector, do Individuals Acquire Skills, Knowledge and Attitudes Differently?

6.7.1 Industry or Sector

Table 2 illustrates the spread in terms of industry of the sample. Six industries were provided, the seventh category, 'other' catered for those respondents that did not fit into any of the six given industries.

The cluster 'other' was the largest with 47 respondents: it was impossible to gauge the spread within this

cluster. However, the remaining 6 categories representing different sectors were extremely diverse. These categories represented the following sectors: Financial Services, Manufacturing, Mining, Retail, Government/Parastatal and Professionals.

Results in the cross tabulation report, Table 6 indicated that overall, 'I can talk, listen and discuss' was the preferred learning style across the sectors. This learning style corresponds with what Parsloe (1992) terms 'verbalisers'. Because the sectors were so diverse, if there were differences in learning styles for the acquisition of skills, knowledge and attitudes these would have shown up clearly in the results.

Table 4 provides additional information about the respondents. As can be seen from Table 4, the range of respondents was extremely broad: occupations ranged from medical to mining, and from insurance to entrepreneurs.

The cross tabulation report in Table 5 shows the respondents preferred learning styles based on sector. It was interesting to note that the majority of respondents, 49 from the sample of 111, noted a learning situation in

which they could 'talk, listen and discuss' as most conducive for their learning. 'verbalisers' were in the majority.

If one breaks down the sample into sectors, the results indicate that 9 respondents from the Financial Services, 9 from Manufacturing from, 9 from government/ parastatal 9, and 18 from the category 'other' cited a learning situation where they could 'talk, listen and discuss' as most conducive for their learning. 'These results supported the results for research question 3. Preferred learning style transcends gender and sector. Gender and sector thus do not influence the preferred learning style.

The 'holistic learning style' was the second most popular choice with 29 respondents citing this as their preferred learning style. Parsloe (1992) terms these learners 'holists'.

Third in popularity with 19 respondents citing this as their preferred learning style, was a learning style in which they could 'build a big picture'. Parsloe (1992)

terms these learners, 'serialists' since they like to work step by step to build a big picture.'

Least popular of all, was a learning style which stressed the importance of presenting ideas visually: only 14 respondents indicated that this was their preferred learning style. Parsloe (1992) termed these learners 'visualisers.'

A chi square test was also run to establish whether there is a difference based on sector, in the way in which respondents from the different sectors believe they learn best. A significance level of 5% was used. Based on a Chi-Square result of 20.551620, the null hypothesis was accepted: there is no difference based on sector, in the way in which middle managers perceive that they learn best.

6.7.2 Conclusion

Designers of management development courses need to take cognisance of the fact that irrespective of sector, the 'verbaliser' learning style is rated as the most effective overall for developing skills, knowledge and

attitudes. Management development programmes should thus be based on an approach which uses an 'I can talk, listen and discuss' approach.

Another important consideration in the design of training programmes for all sectors and to develop each of skills, knowledge and attitudes is an approach that provides an holistic view of learning. These two approaches should thus form the cornerstone of every programme to develop skills, knowledge and attitudes in middle managers.

6.8 General Findings

Table 18 revealed that lectures were regarded irrespective of sector, as the top technique overall. Caution must be exercised since a convenience sample was used and all respondents are currently part-time students: this could result in bias. Lectures may be cited as the most effective technique overall since this is the predominant teaching method at the Wits Business School, and all respondents are currently part-time students at the Wits Business School.

The second most popular techniques that was cited was professional reading. with 103 respondents citing this technique. The third most popular technique overall, rated by 102 respondents was professional meetings and conferences. Syndicate groups were rated fourth overall. As in the case of lectures, these findings may be biased based on the fact that the respondents are currently exposed to these 3 techniques extensively in the course of their studies at the Wits Business School.

The fifth most popular technique overall cited by 93 respondents was the case study method. This result may be biased. Caution should be exercised since this technique is also used extensively as a Wits Business School teaching method.

Coaching, networking and mentoring were cited as important. It is important therefore that in the field of management education, cognisance is taken of techniques that go far beyond 'chalk and talk', essentially an approach in which the lecturer 'tells' whilst the learners adopt a passive role in the learning process. The people component is clearly critical for the overall development of middle managers.

The research revealed that networking was an important technique for the development of knowledge and attitudes. This technique was cited as one of the eight most popular training techniques overall. It is rated highly for the development of knowledge and attitudes. Networking, Tracey (1994) argues, encourages managers and professionals to exchange advice, information, assistance, contacts and referrals with their counterparts inside and outside the organisation.

Within the Wits Business School context, it is fair to assume that a lot of networking takes place between students in the class, not confined to the syndicate groups only.

Syndicate groups are typically used by Universities and Business Schools to enable students to learn from one another. Mumford (1971) argues that the success of this method is dependent on the ability and the willingness of individuals to learn from one another. Syndicate groups was cited as the most important technique for the development of attitudes. This may come as a surprise to

many academics who may have expected this technique to be particularly useful for the development of knowledge.

Overall providing an holistic view and also an opportunity for individuals to 'talk, listen and discuss' appears to be the most important consideration when designing a course to develop skills, knowledge and attitude. Undoubtedly deploying the 'most effective techniques' for the development of skills, knowledge and attitudes will assist corporations, organisations and businesses in South Africa to accelerate the development of suitably skilled middle managers.

CHAPTER SEVEN

CONCLUSION

7.1 Introduction

South Africa is desperately short of management skills. Woods (1992,p20) states that: "South Africa is faced with an alarming shortage of trained managers- needing as many as 100 000 new managers this decade." A shortage of management skills is undoubtedly a contributing factor to South Africa's consistently poor performance in the World Competitiveness Report.

The urgency to develop managers in vast numbers and quickly has increased as a result of pressures of globalisation. Survival requires that capital, technology, human and natural resources are managed optimally-this is the task of managers. Heller (1985, p386) states that: "Without management, without the intervention of organised willpower, the desired result simply cannot be obtained."

Management skills enhance national competitiveness: the shortage of management skills thus makes it a business

imperative to accelerate the development of managers in this country. South Africa's global competitiveness can be enhanced by accelerating the development of middle managers.

If the designers of managing development courses understand the processes by which skills, knowledge and attitudes are developed optimally, the process of management development would be accelerated: time and resources would not be squandered since only the best practices for the development of each of these would be implemented. This last chapter draws together some of the main findings of the research effort.

As proposed in Chapter One, based on an investigation of the techniques which middle managers perceive to be the most effective for developing skills, knowledge and attitudes, separate lists of best practices have been developed. By implementing the best practices for the development of skills, knowledge and attitudes, optimal opportunities for the development of each of skills, knowledge and attitudes, will be created.

Topics for future areas of research are also explored, and the value of this research for management development is explained in the final conclusion.

7.2 Main Findings of the Research

The main findings of the research were that:

- Skills, knowledge and attitudes are acquired differently.
- Gender has no impact on the way in which skills, knowledge and attitudes are acquired.
- Industry or sector do not influence the way in which skills knowledge and attitudes are acquired.
- The acquisition of knowledge and attitudes appear to have more in common in the way in which they are acquired than either of them have with the development of skills.
- The techniques commonly used to develop skills, knowledge and attitudes can largely be termed 'traditional': the use of computer based training, videos, junior boards, teleconferencing, adventure training and assessment centres appears to be fairly limited.

7.3 Best Practices for the Acquisition of Skills, Knowledge and Attitudes

7.3.1 Skills

Table 21 below, illustrates the best practices for the acquisition of skills. The best practices take cognisance of Kolb's most appropriate learning style. Furthermore, a description of the learne ced on the literature review is provided and the best esses for the development of the skills, d critical components for course design are summarised.

Table 21: The Best Practices for the Acquisition of Skills

Kolb's Learning Style	Description of Learner	Best Processes or Techniques for Developing Skills	Critical Components for Course Design
Concrete Experience.	Conform to Honey & Mumford's 'Pragmatists' There Might be an Element of Honey & Mumford's 'Activists'.	Coaching, Action Learning, Job Rotation, Simulation, Mentoring.	A 'Hands-On', or Doing Component is Critical.

7.3.2 Knowledge

Table 22 illustrates the best practices for the acquisition of knowledge. The best practices take cognisance of Kolb's most appropriate learning style; a description of the learner based on the literature review is provided; the best processes for the development of the skills, and critical components for course design are summarised.

Table 22: The Best Practices for the Acquisition of Knowledge

Kolb's Learning Style	Description of Learner	Best Processes or Techniques for Developing Skills	Critical Components for Course Design
Abstract Conceptualisation and Reflective Observation.	Conform to Honey & Munford's 'Reflectors' and 'Theorists'.	Professional Reading, Lectures, Professional Meetings and Conferences, Networking, The Case Study Method.	'Cerebral' Approach: Knowledge Must be Put in a Concise, Logical Form.

7.3.3 Attitudes

Table 23 illustrates the best practices for the acquisition of attitudes. The best practices take cognisance of Kolb's most appropriate learning style; a description of the learner based on the literature review is provided; the best processes for the development of the skills, and critical components for course design are summarised.

Table 23: The Best Practices for the Acquisition of Attitudes

Kolb's Learning Style	Description of Learner	Best Processes or Techniques for Developing Skills	Critical Components for Course Design
Reflective Observation and Active Experimentation.	Conform to Honey & Mumford's 'Reflectors' and 'Pragmatists'.	Syndicate Groups, Networking, Mentoring, Adventure Training, Business Games.	Courses Need to Include a 'Cerebral' and an 'Emotive' Component.

7.4 Recommendations for Course Designers of Middle Management Programmes

The major recommendations are listed below:

- All middle management training and development programmes should be premised on a learning style which provides opportunities for individuals to 'talk, listen and discuss'. This would facilitate maximum learning.
- Designers of middle management courses should provide their 'students' with an holistic view of their course: this facilitates optimal learning.
- Designers of management development courses should take cognisance of the fact that a 'one size fits all' approach to management development and training is inappropriate.
- Before designing training courses to develop middle managers, the question should be asked: how do learners learn best? Thereafter careful consideration should be given separately to each of skills, knowledge and attitudes. Techniques that develop each optimally, should be deployed.

- Activities that require networking should be included where possible in the design of training courses for middle managers. The research shows that networking is an extremely effective technique for acquiring knowledge.
- Where possible, management development programmes should include attendance of conferences and professional meetings as part of the learning experience.

7.5 Topics for Future Research

The research surfaced a number of interesting topics for future research. Possible topics are listed below:

- In the WBS setting, syndicate groups have been rated as the best technique overall for developing attitudes. An interesting research topic would be to evaluate whether syndicate groups used in the work place, and as part of on the job training, would function as effectively as Wits Business School syndicates do as a technique for developing attitudes.

- In order for syndicate groups to function, there is an implicit need for high levels of trust. An interesting research topic would be to assess whether trust plays a role in the successful functioning of syndicate groups, or whether other variables such as expertise or dominant personalities play a role.
- Another interesting topic for future research would be to establish whether based on the age of adult learners, learners rate the top 8 techniques cited in the research o develop skills, knowledge and attitudes differently, based on age. Viedge (1998) state that people of different age learn to retain information differently.
- It would also be interesting to assess whether some of the 20 techniques tested in the research were more successful than others, in the longer term, as far as retaining skills, knowledge and attitudes is concerned.

7.6 Contribution to the Knowledge of Management

This research has made a valuable contribution to the body of knowledge about management since for the first time a list of best practices have been developed for the

development of skills, knowledge and attitudes based on the responses from a large and diverse sample.

For the first time academic institutions, training departments and training organisations have a yardstick with which to evaluate whether the training processes and techniques that they are currently using facilitate optimal learning. Where the research shows that sub-optimal techniques are being used to develop skills, knowledge and attitudes, these can be replaced with more effective techniques based on the collective experience of a large sample of diverse middle managers.

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APPENDIX A: RESEARCH QUESTIONNAIRE

THE PROCESSES USED BY MANAGERS TO ACQUIRE SKILLS, KNOWLEDGE AND ATTITUDES

The purpose of this questionnaire is to discover the processes used by managers to acquire skills, knowledge and attitudes. There are no right or wrong answers. What is important , is that respondents answers reflect their personal experience. To ensure anonymity, your name and the company you work for is not required.

---

1. Tick the correct answer.

   Male ❑ Female ❑

2. Write down your number of years experience as a middle manager. (For the purpose of this research, a middle manager refers to a manager above the level of supervisor, but in a non executive position. Round off your answer to the nearest year.

   _____

3. In which sector are you currently employed? Tick the correct answer:

   financial services ❑ government/parastatal ❑

   manufacturing ❑ professional practice e.g. lawyer ❑

   mining ❑ other, specify _____

   retail ❑

4. Tick the one response that best describes the way that you learn.
   I learn best when:

   a) I am given a holistic view of learning. ❑

   b) I can work step by step to build a big picture. ❑

   c) Ideas are presented visually. ❑

   d) I can listen, talk and discuss. ❑

Managers' abilities are made up of skills, knowledge and attitudes.

Skills are defined as: "The capacity to use knowledge, a method or a technique."

Knowledge is defined as: "A body of relevant data and information."

Attitude is defined as: "the feelings, emotions, values, interests or preferences that a person has."

5. Tick one learning style you find most effective for acquiring skills, one for knowledge and one for attitude.

Learning Style	Skills	Knowledge	Attitudes
concrete experience *(hands-on approach)*			
reflective observation *(view situations from many different points of view)*			
abstract conceptualisation *(put information into a concise, logical form)*			
active experimentation *(act on gut feel rather than logical analysis)*			

6. The purpose of this research is to discover which training techniques are the most effective for developing skills, knowledge and attitude.

Based on your personal experience, what training techniques have you found the best to develop:

a) your skills?

_____

b) your knowledge?

_____

c) your attitude?

_____

7. What is your job title?

_____

8. Tick whether or not you have used each of the 20 training techniques listed below for your acquisition of your management abilities. If the answer is no, move onto the next technique. If the answer is yes, indicate by means of a tick which of skills, knowledge or attitude the technique best develops.

Technique	Have you used the technique?		This techuique best develops:		
	Y	No	skills	knowledge	attitude
a) coaching					
b) mentoring					
c) action learning					
d) assessment centres					
e) stretch assignments					
f) junior boards					
g) networking					
h) professional meetings and conferences					
i) professional reading					
j) understudy assignments					
k) the case study method					
l) job rotation					
m) business games					
n) adventure training					
o) teleconferencing					
p) off the shelf training programmes					
q) correspondence study					
r) lectures					
s) syndicate groups					
t) simulation					

9. Is there any technique not mentioned in the list above that you have found to be particularly effective?

Name the technique

_____

This technique best develops:

skills ❑ knowledge ❑ attitude ❑

APPENDIX B

TRANSCRIPT OF INTERVIEW WITH MANAGER 2, IAN CUTLER

All interviewees were asked to respond to two questions:

1. Are skills, knowledge and attitude developed differently?
2. How are skills, knowledge and attitude acquired ?

Mr. Cutler provided a lot of input in general on the role of middle management in the future, and especially during a time of transformation and rapid change. Unfortunately, many of the comments whilst fascinating and most informative, are beyond the scope of the research report.

Many of the comments were specific and applicable only to the institution where he is employed and were discarded as being too industry specific and company specific to apply in a broader work context. Furthermore, Mr. Cutler has spent in the region of 17 years working for the same company and therefore it was felt therefore that his practical experience and exposure to a range of techniques was academic, rather than broadly based on experience.

SUMMARY OF KEY POINTS

1. Skills, knowledge and attitude are acquired in the same way: there is no difference in techniques that should be applied to develop each of these.
2. The best way to equip a middle manager with the necessary skills, knowledge and attitude is to appoint him or her in the position in a 'development area' in order for the individual to develop expertise in a specific field.
3. A competency based approach is the best approach for developing middle managers.
4. Individuals must understand what their own needs are- they need to move out of roles and develop as well-rounded managers.
5. Currently middle managers are still being developed as uni-dimensional managers.

APPENDIX C

Persons interviewed for input for the 20 techniques listed in the questionnaire:

A. Academics

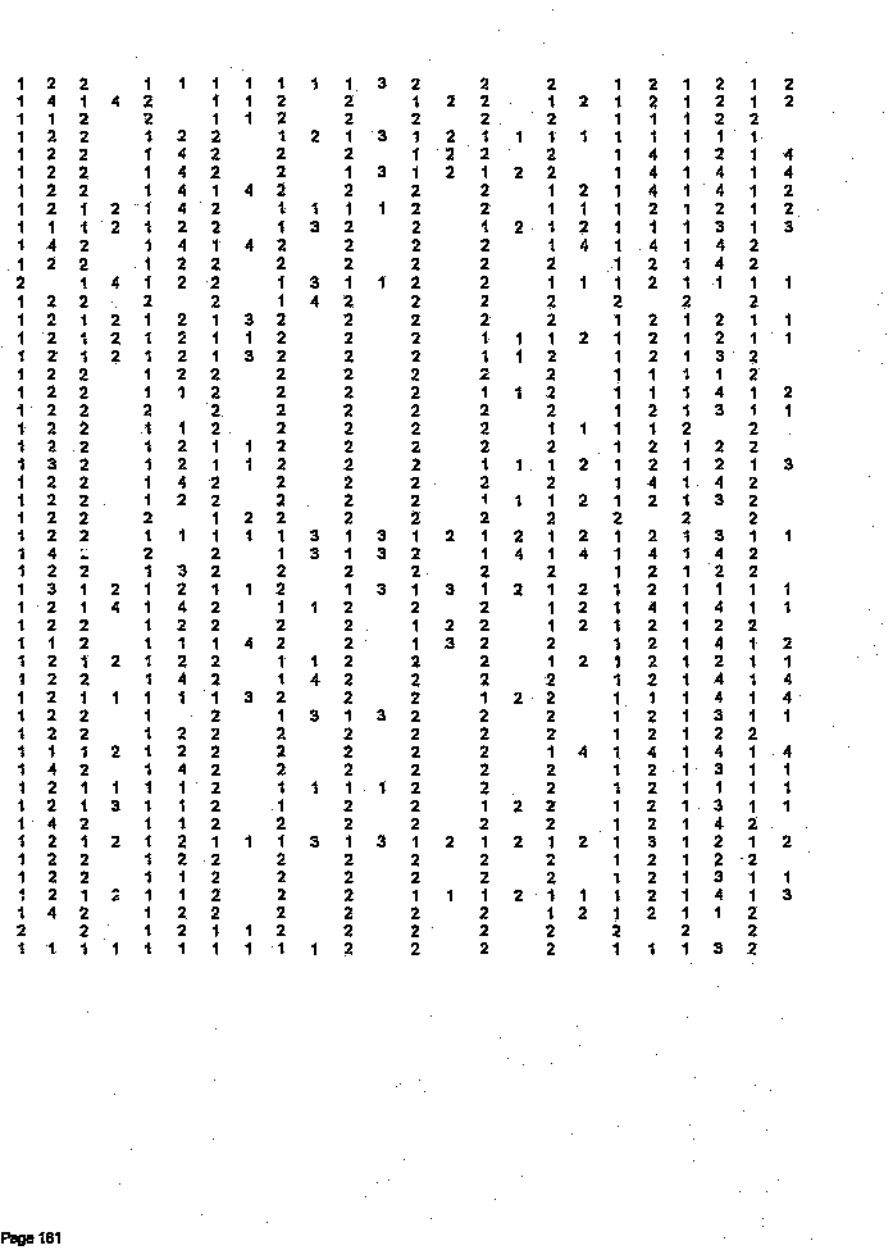
1. Mr. Johnathan Cook	Director, Management Development Unit, Wits Business School
Mr. Conrad Viedge	Senior Lecturer, Graduate School of Business Administration, Wits Business School

B. Managers

1. Ms Genevieve Walsh, Assistant Treasurer, Altron Group
2. Mr. Lucky Ndwalaza, Human Resources Manager Premier Food Division
3. Mr. Ian Cutler, Manager, Training, First National Bank

1 2 3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
001	1	0	3	7	2	1	3	4	2		2		2		2		2		2		2		1	3	1	2	2		1	2	2		2	
002	1	0	7	2	2	1	3	4	1	1	1	3	2		2		1	1	2		1	3	1	2	1	2	2		1	2	1	1	2	
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007	1	1	0	7	2	2	5	4	1	1	1	1	2		2		2		2		1	2	1	2	1	2	2		1	1	1		2	
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009	1	0	04	2	2	1	4	2	1	1	2		2		2		2		2		2		1	2	1	2	2		2		1	1	1	3
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052	1	0	5	3	4	4	2	1	1	1	2	2			2		2		2		1	3	1	2	1	2	2		1	1	2		2	
053	1	0	2	5	4	3	4	2	1	4	1		2		1	3	2		2		1	2	1	2	1	2	1	4	1	2	1	2	2	
054	1	0	2	7	1	2	1	4	2		2		2		2		2		2		1	1	1	2	1	2	2		1	1	2		1	3
055	1	0	2	3	1	1	2	3	1	3	2		1	1	2		1	2	2		1	2	1	2	1	2	2		1	3	2		2	
056	1	0	2	5	4	1	3	4	1	1	1	1	1	1	1	2	1	2	2		1	3	1	3	1	2	1	1	1	1	1	1	2	
057	1	0	2	7	3	1	2	4	1	2	2	0	1	2	2		2		2		1	1	1	1	1	3	2		1	2	2		2	
058	2	0	2	1	1	4	3	2	1	3	1	1	2	2			1	2	2		1	2	1	2	1	2	1	1	1	2	1	3	1	1
059	1	0	2	7	1	3	2	1	1	1	1	3	1	1	2		2		1	1	1	2	1	2	1	2	1	1	1	1	2		1	1
060	1	0	2	7	4	1	3	2	1	1	1	1	2		1	1	2		2		1	3	1	2	1	2	2		1	2	2		1	1
061	1	0	8	7	1	1	2	3	1	1	1	1	4	1	4		2		2		1	4	1	4	2		2		1	4	2		2	
062	1	1	0	7	3	1	2	4	1	1	2		1		1	4	2		1	3	1	3	1	1	1	2	1	2	1	4	1	1	1	4

063	1	0	7	2	1	1	4	2	1	1	1	3	1	1	2		2			2			1	3	1
064	1	0	4	2	4	1	2	4	1	1	1	3	1	4	2		2			2			1	4	1
065	2	0	3	2	4	1	2	3	1	2	1	1	1		1	3	2			2			1	2	1
066	2	0	5	7	4	1	3	2	1	3	1	2	1	1	1	2	2			2			1	3	1
067	1	0	2	7	4	5	2	4	1	4	1	4	2		2		1	2		2			1	3	1
068	1	0	7	2	2	1	3	2	1	1	1	4	2		2		1	2		2			1	2	1
069	1	0	2	2	1	4	2	3	1	2	1	3	1	1	2		2			2			2		1
070	1	0	2	5	4	4	3	2	2		1	2	1	1	2		1	4		2			1	3	1
071	1	0	2	7	4	1	3	2	1	1	2		1	2	2		1	1		2			2		2
072	2	0	2	5	4	1	4	2	2		2		2		2		2			2			2		1
073	1	1	1	3	3	1	5	4	1	1	1	2	1	1	2		2			2			2		1
074	1	0	4	7	2	1	2	4	1	1	1	3	2		2		2			2			2		2
075	1	0	5	6	1	1	5	2	1	1	2		2		2		2			2			2		1
076	1	1	0	2	4	1	3	4	1	1	2		1	2	2		2			2			1	3	1
077	1	0	3	1	2	1	2	4	2		1	1	1	1	2		2			2			1	2	1
078	1	0	5	7	2	4	2	1	1	1	1	3	2		2		2			2			1	3	1
079	1	0	5	2	4	3	1	4	1	1	1	3	2		1	3	2			2			1	2	1
080	1	0	3	7	4	1	2	4	1	2	1	1	1	1	2		2			2			1	2	1
081	1	0	7	7	1	3	3	2	2		1	1	1	1	2		1	1		1	3		1	3	1
082	1	0	4	1	2	1	3	4	2		2		1	2	2		2			2			1	3	1
083	1	0	6	5	4	4	3	2	2		1	1	2		2		2			2			2		1
084	1	0	3	1	4	5	3	2	1	1	1	1	2		2		2			2			1	2	1
085	2	0	4	7	3	1	1	2	1	2	2		1	4	2		1	2	1	2	4		1	3	1
086	2	0	7	1	1	1	3	2	1	1	1	3	1	1	2		2			2			1	2	1
087	1	0	4	2	3	1	2	3	1	2	1	1	2		2		1	1		2			1	2	2
088	1	0	3	5	2	1	2	4	1	1	1	2	1	1	2		2			2			2		1
089	2	0	5	1	2	1	3	2	2		1	4	2		2		1	4		2			2		1
090	2	0	5	1	4	1	4	3	2		1	2	1	1	2		2			2			2		1
091	1	0	3	7	4	1	3	2	1	2	1	3	1	1	1	1	2			2			1	3	1
092	1	0	3	7	4	1	2	4	1	3	1	1	1	1	2		2			2			1	2	1
093	1	0	2	2	3	3	2	4	1	1	1	1	1	1	2		1	2		2			1	2	1
094	1	0	8	7	4	1	3	4	1	4	1	4	1	2	2		1	2		2			1	2	1
095	1	1	8	5	2	1	3	2	1	2	2	1	1	1	2		2			1	2		2		1
096	1	0	2	7	4	1	2	2	1	4	2		1	1	2		2			1	4		2		1
097	2	0	2	7	2	1	2	1	1	1	1	1	2		1	2	2			2			1	3	1
098	1	0	2	1	4	4	1	2	1	1	1	2	1	1	2		2			2			1	2	1
099	1	0	2	7	1	3	2	1	1	1	1	3	2		1	1	2			2			1	2	1
100	1	0	3	2	2	4	2	3	1	4	2		1	1	2		2			2			1	4	1
101	1	0	3	5	4	4	2	1	2		2		2		2		2			2			2		1
102	1	0	2	7	4	1	2	3	1	1	1	2	1	1	2		1	3		2			1	2	1
103	1	0	2	2	1	1	3	2	2		1	3	1	1	2		2			2			1	2	1
104	2	0	3	7	3	1	3	2	1	4	1	4	1	1	2		2			2			2		1
105	1	0	3	1	4	1	4	2	1	1	1	2	1	1	1	3	2			1	3		1	2	1
106	2	0	3	7	2	1	1	4	1	1	2		1	4	1	3	1	4		2			1	4	1
107	1	0	4	1	4	1	3	4	2		1	1	1	2	2		1	3		2			2		1
108	1	0	2	2	4	3	1	4	1	2	1	3	2		1	1	1	2		2			1	1	1
109	1	0	2	7	1	1	3	2	1	1	2		1	1	1	2	2			2			1	1	2
110	1	0	2	1	1	1	5	4	1	3	1	3	2		1	1	2			2			1	2	1
111	1	0	2	5	4	3	2	4	1	1	1	2	2		2		1	2		2			1	2	1



APPENDIX E: THE CODING SYSTEMS

COLUMN	CODES	INTERPRETATION
1 - 3	1 - 111	Questionnaire number
4	1, 2	Gender: 1 male 2 female
5, 6	2 - 18	Number of years experience in middle management
7	1 - 7	Sector: 1. Financial Services 2. Manufacturing 3. Mining 4. Retail 5. Government/Parastatal 6. Professional practice 7 Other
8	1 - 4	Preferred learning style: 1. I am given an holistic view of learning 2. I can work step by step to build a big pictur 3. Ideas are presented visually 4. I can 'listen, talk and discuss'
9	1 - 4	Learning style for developing skills: 1. Concrete experience 2. reflective observation 3. abstract conceptualisation 4. active experimentation 5. mixed
10	1 - 4	Learning style for developing knowledge: (as above)
11	1 - 4	Learning style for developing attitude: (as above)

COLUMN	CODES	INTERPRETATION
12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50	1, 2	Has the respondent used the technique? 1. "yes" 2. "no"
15	1 - 4	Mentoring develops: 1. skills 2. knowledge 3. attitudes 4. mixed
17	1 - 4	Action learning develops: 1. skills 2. knowledge 3. attitudes 4. mixed
19	1 - 4	Assessment centre develop: 1. skills 2. knowledge 3. attitudes 4. mixed
21	1 - 4	Stretch assignments develop: 1. skills 2. knowledge 3. attitudes 4. mixed
23	1 - 4	Junior boards develop: 1. skills 2. knowledge 3. attitudes 4. mixed

COLUMN	CODES	INTERPRETATION
25	1 - 4	Networking develops: 1. skills 2. knowledge 3. attitudes 4. mixed
27	1 - 4	Professional meetings and conferences: 1. skills 2. knowledge 3. attitudes 4. mixed
29	1 - 4	Professional reading: 1. skills 2. knowledge 3. attitudes 4. mixed
31	1 - 4	Understudy assignments: 1. skills 2. knowledge 3. attitudes 4. mixed
33	1 - 4	The Case Study Method: 1. skills 2. knowledge 3. attitudes 4. mixed
35	1 - 4	Job rotation: 1. skills 2. knowledge 3. attitudes 4. mixed

COLUMN	CODES	INTERPRETATION
37	1 - 4	Business Games: 1. skills 2. knowledge 3. attitudes 4. mixed
39	1 - 4	Adventure training: 1. skills 2. knowledge 3. attitudes 4. mixed
41	1 - 4	Teleconferencing: 1. skills 2. knowledge 3. attitudes 4. mixed
43	1 - 4	Off-the-shelf training programmes: 1. skills 2. knowledge 3. attitudes 4. mixed
45	1 - 4	Correspondence study: 1. skills 2. knowledge 3. attitudes 4. mixed
47	1 - 4	Lectures: 1. skills 2. knowledge 3. attitudes 4. mixed

COLUMN	CODES	INTERPRETATION
49	1 - 4	Syndicate groups: 1. skills 2. knowledge 3. attitudes 4. mixed
51	1 - 4	Simulation: 1. skills 2. knowledge 3. attitudes 4. mixed

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