EMPLOYEE PERCEPTIONS OF THE IMPACT OF TRAINING AND
DEVELOPMENT ON PRODUCT QUALITY

BY

PREMLALL SOOKRAJ

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Supervisor: Professor K. Reddy
Co-Supervisor: Professor S. Brijball Parumasur

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APPROVED FOR FINAL SUBMISSION

……………………   ……………………

Professor K. Reddy   Date

B.Com LLB LLM LLD

………………………….   ……………………….

Professor S.B. Parumasur   Date

B. Admin, B. Admin. (Honours)

M. Admin. (Industrial Psychology)

D. Admin. (Industrial Psychology)

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DEDICATION

To my loving parents, the late Mr and Mrs Sumesur.

ABSTRACT

This study examines employee perceptions of the impact of training and development on product quality.

The study was undertaken on a sample of 106 individuals, drawn using the convenience sampling technique from a large manufacturing organisation situated in the Province of KwaZulu-Natal. The data was collected using a questionnaire. The questionnaire comprised of two (2) sections. The first section required the respondents to provide biographical data (*gender, age, grade and length of employment*). The second section explored the impact of training and development on product quality (*measured in terms of performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality*).

Data was analysed using descriptive and inferential statistics and the results were presented using tabular and graphical representation.

This study found that:

o   Significant intercorrelations exist among the dimensions of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality) as a result of training and development being conducted in the organisation.

o   There is no significant difference in the perceptions of employees varying in biographical data (gender, age, and length of employment) regarding the influence of training and development on the dimensions of product quality respectively.

Based on the findings of the study, a model was developed and presented. This model presents recommendations for enhancing product quality.

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CHAPTER 1

INTRODUCTION AND OVERVIEW OF THE STUDY

1.1 Introduction

A country's competitiveness is determined by the ability of its organisations to compete in the global market. However, much depends on the business environment in which they operate. More productive organisations require, amongst others, improved infrastructure, better suppliers, more advanced research institutions, and most importantly, more highly skilled individuals (Russell and Taylor, 2006).

1.2 Motivation for the Study

In the South African context though, Schenk (2003) points out that the lack of suitably skilled human resources is constantly identified as a main barrier in achieving economic growth targets. Hence, a major challenge for South African business is the shortage of skills (Matlhape and Lessing, 2002). Freeman (2003) mentions that for South Africa to compete and succeed in the international market, individuals must have the necessary skills. This would ensure that organisations become more efficient, productivity increases, the economy grows and jobs are created. This leads to a positive cycle of development and wealth creation.

Furthermore, macroeconomics has not given priority to quality as an important factor in determining the state of an economy (Brust and Gryna, 2002). Brust and Gryna (2002) also state that the cost of poor quality hinders economic growth. Gryna (2001), in response, maintains that an important part of any quality programme is extensive training. In their literature, Russell and Taylor (2006) claim that training results in enhanced product quality. This study therefore investigates employees' perceptions on the impact of training and development on product quality.

1.3 Problem Statement

The research problem of this study focuses on the current serious shortage of skilled workers in South Africa. According to the Institute of Management Development (IMD) 2005 World Competitiveness Yearbook, in South Africa, the weakest criterion under Business Efficiency is skilled labour. In this regard, South Africa ranks 60 out of 60 economies. Yet, in order to compete in today's economy, whether on a local or international level, organisations must provide a quality product or service. The implication is that training and development is required in order to enhance quality standards.

Hence, the problem statement is: What are employee perceptions of the impact of training and development on product quality?

1.4 Objectives of the Study

The research objectives of the study are as follows:

1.4.1 Main Objective

To determine the perception of employees regarding the influence of training and development on product quality.

1.4.2 Sub-Objectives

- To determine the relationship amongst the dimensions of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality) as a result of training and development being conducted in the organisation.
- To determine whether there is a significant difference in the perception of employees varying in biographical data (gender, age and length of employment) regarding the influence of training and development on the dimensions of product quality.

1.5 Hypotheses

The hypotheses to be tested by the study are:

o   There exists significant intercorrelations amongst the dimensions of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality) as a result of training and development being conducted in the organisation.

o   There is a significant difference in the perception of employees varying in biographical data (gender, age and length of employment) regarding the influence of training and development on the dimensions of product quality.

1.6 Limitations of the Study

The limitations of the study were as follows:

✓   In this study, a sample size of 106 was used. A larger sample size would improve generalisability of results.

✓   This research was restricted to a single manufacturing organisation. The time and cost factor did not allow the researcher to compare this manufacturing organisation with other manufacturing organisations located either within the province or within the country.

1.7 Outline of the Study

This study is divided into the following chapters:

1.7.1 Chapter 1: Introduction and Overview of the Study

This chapter presents the motivation for the research, the research objectives, the hypotheses to be tested, the limitations and outline of the chapters in the thesis.

1.7.2 Chapter 2: Organisational Performance

The literature search concentrates on the factors of production, components of human resource management, product quality, job and organisational design and organisational renewal.

1.7.3 Chapter 3: Training Management

A comprehensive literature search was conducted, focusing on training in South Africa, aspects of managing training in an organisation, a systematic approach to training, and management development.

1.7.4 Chapter 4: The Research Design

This chapter outlines the plan for the collection and analysis of data. The researcher discusses the sampling method, the data collection method and the data analysis techniques.

The sample will be drawn using a non-probability sampling technique, that is, convenience sampling which is considered suitable for the jurisdiction of the study. Data will be collected using a self-developed questionnaire which will assess the extent to which the eight dimensions of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality) are perceived to be enhanced as a result of training and development. The psychometric properties of the questionnaire (validity and reliability) will be tested using factor analysis and Cronbach's Coefficient Alpha respectively. Data will be analysed using descriptive and inferential statistics.

1.7.5 Chapter 5: Presentation of Results

Chapter 5 focuses on the analysis and presentation of the data. Descriptive and inferential statistics are used to understand the data and results were presented using tabular and graphical representations.

1.7.6 Chapter 6: Discussion of Results

This chapter provides a discussion on the results of the study. This chapter compares and contrasts the results of the research with the findings of other researchers in the area of training and development and product quality.

1.7.7 Chapter 7: Recommendations and Conclusion

Chapter 7 provides the recommendations and conclusion of the study. The chapter includes a model that presents the recommendations for enhancing product quality.

1.8 Conclusion

This chapter focuses on the motivation for the study, the objectives of the study, the hypotheses to be tested and the limitations of the study. A summary outline per chapter is also provided. Chapter 2 presents the literature review on organisational performance.

CHAPTER 2
ORGANISATIONAL PERFORMANCE

2.1 INTRODUCTION

The various needs of society and the objectives of organisations can only be met through productive activities. Production involves the physical production of goods and services, as well as all those activities which deliver them to the customer. There can only be productive activities if the different factors of production, namely, natural and human resources, capital and entrepreneurship, co-operate. During the production process they are combined and transformed into end products to satisfy needs and to ensure that the objectives of organisations are achieved (Marx, Bosch and Du Plessis, 1998).

2.2 FACTORS OF PRODUCTION

According to De Klerk (1997), the production factors are the essential inputs required to establish and maintain the business. Production factors comprise natural resources (raw materials), labour, capital and entrepreneurship. These are the four key factors involved in the manufacture of a product or rendering of a service (Jacobs, 1995; Cronje, du Toit and Motlatla, 2004). However, according to Ebert and Griffin (2005), information resources are currently considered as well.

2.2.1 Natural Resources

Natural resources are the resources that nature places at the disposal of mankind (Cronje et al., 2004; De Klerk, 1997). They include water, minerals, forests, and land (Jacobs, 1995). Marx et al. (1998) mention that the most important feature of natural resources is that, apart from forests and fishing for instance, the supply cannot be increased, or can be increased only with difficulty. Here, we are referring to the so-called irreproducible means of production. Hubner, Jacobs and Labuschagne (1999) state that natural resources are scarce as each country has a limited supply. Once these sources are exhausted, they cannot be replaced. Hence, these resources should be used with great care (Marx et al., 1998).

2.2.2 Capital

De Klerk (1997) states that the money that is required to fund the operation is called capital. Capital is that means of production which facilitates the production of goods and/or provision of services (Jacobs, 1995). It is needed to procure land, buildings, raw materials and machinery. There must also be money available to pay for, amongst others, salaries, transport, electricity, and water. An organisation has a limited amount of capital to spend and must then, budget carefully for all its activities (Hubner et al., 1999). Ebert and Griffin (2005) add that revenue from the sale of products is an important and ongoing source of capital once a business is in operation.

2.2.3 Entrepreneurship

Entrepreneurship refers to those persons in the community who accept the risks involved in providing products and services for society. Entrepreneurs are rewarded with profits for the risks they take and the initiative they show; however, they suffer losses for errors in judgement (Cronje et al., 2004). They are among the most important and influential people in the free market system and to a great extent determine a country's wealth (Marx et al., 1998). In their text, Ebert and Griffin (2005) write that most economic systems encourage entrepreneurs to start new businesses as well as to make the decisions that turn small businesses into larger ones, big enough to enter into new markets.

2.2.4 Human Resources

Human resources also known as the production factor of labour, includes the physical and intellectual contributions individuals make while engaged in economic production (Ebert and Griffin, 2005). According to Marx et al. (1998), in the national economy as a whole, human resources are separated into the working (economically active) population and the workforce. The workforce is the number of individuals who at any specific time are available for, and able to, work. The working population is that part of the workforce who are in fact working. Human resources are compensated with wages and salaries. Bonuses and profit-sharing are at times also used to reward human resources. Cronje et al. (2004) note that the size of the workforce of any country, and therefore, in a sense, the availability of that production factor, is determined, inter alia, by the size of the

population, the level of its education and training, the proportion of women in the workforce, and the retirement age. In order for the manufacturing sector of any country to prosper, its workforce has to be trained for specific periods and to certain levels of skill to be able to produce the products and services needed.

2.3 HUMAN RESOURCE MANAGEMENT (HRM)

Armstrong (2006:03) defines human resource management as "a strategic and coherent approach to the management of an organisation's most valued assets – the people working there who individually and collectively contribute to the achievement of its objectives".

2.4 COMPONENTS OF HRM

The components of human resources management are:

2.4.1 THE EXTERNAL ENVIRONMENT

According to Mondy, Noe and Premeaux (1999), factors that have an impact on an organisation's human resources from outside its boundaries make up the external environment. They affect organisational performance (Gomez-Mejia, Balkin and Cardy, 2001) but are beyond the control of any single individual (Carrel, Elbert and Hatfield, 2000), and are basically beyond management's control (Gomez-Mejia et al., 2001). Mondy et al. (1999) add that each factor, either individually or in combination with others, can place constraints on how human resource management tasks are carried out. Hence, managers need to monitor the external environment regularly for opportunities and threats and must also maintain the flexibility to react quickly to challenges (Gomez-Mejia et al., 2001). Van Dyk (2004) states that the external environment consists of four main sub-environments:

2.4.1.1 The Technological Environment

The technological environment includes all variables that contribute to the emergence of new products and services in the market (De Beer and Kritzinger, 1999). Many of the current changes within the business environment are the result of technological advances and innovation (Nieman, 2004). Cronje et al. (2004) point out that the most outstanding characteristic of technological innovation is that it continually accelerates the rate of change. An added characteristic of technological innovation that impacts on management is the fact that inventions and innovations are limitless. Mondy et al. (1999) note that one of the most challenging aspects of HRM will be training and developing employees to keep pace with rapidly advancing technology. If an organisation does not keep up with changes taking place on the technological front, it will soon find that its products are obsolete (De Beer and Kritzinger, 1999), and will have to give up their share of the market in the long term (Kritzinger, 1995). A further influence of the technological environment on the organisation is that provision should be made for research and development by way of funds set aside for this purpose (Kritzinger, 1995). Research and development provide the source of technological innovation; and new products, processes, methods and approaches to management stem from this (Nieman, 2004).

2.4.1.2 The Political Environment

The political environment includes complicated variables that are very difficult to control or predict (Nieman, 2004). Every organisation is managed according to laws and regulations, whether they originate at central, provincial, or local levels. These laws and regulations affect any organisation from its external environment, regardless of the nature of the business (Van Dyk, 2004).

On this subject, Cronje et al. (2004) inform us that the government intervenes in the macro-environment on a large scale and influences it by way of, amongst others, legislation, the annual budget, taxation, import control (or a lack of it), promotion of exports, import tariffs to protect certain industries against excessive foreign competition, price controls for certain goods and services, health regulations and incentives to encourage development in a specific direction. The political environment is very

important in the present South African context (Van Dyk, 2004). With South Africa's new democratic government, the HR profession has since 1994 felt the great effect of government policies and programmes. These include the implementation of the Labour Relations Act, No. 66 of 1995, the Mine Health and Safety Act, No. 29 of 1996, the Basic Conditions of Employment Act, No. 75 of 1997, the Skills Development Act, No. 97 of 1998, the Employment Equity Act, No. 55 of 1998 and the Skills Development Levies Act, No. 9 of 1999. All these laws have a great impact on the management of employees within organisations (Grobler et al., 2002).

Cronje et al. (2004) remind management that it is their duty to study the various and often complex activities of government, in addition to legislation and political developments, to determine their impact on the success of the organisation. Carrell et al. (2000) write that personnel decisions concerning hiring, disciplining, promoting, and discharging employees are subject to very strict rules.   Mistakes and failures usually result in expensive legal action. Virtually no HRM decisions remain unaffected by government (Ivancevich, 2001).

2.4.1.3 The Economic Environment

The economic environment is important from a free market (capitalistic) point of view. It refers to the external influences that have an effect on an organisation such as:

o   The availability of funds.
o   The current interest rates
o   The rate of inflation.
o   The level of employment (whether it is above or below national average) (Van Dyk, 2004).

Economic factors such as the business cycle, inflation and recession, affect the demand for goods and services by forcing consumers to reconsider their priorities in terms of consumer products. Each important economic change calls for appropriate reaction by the business (Nieman, 2004).

2.4.1.4 The Social Environment

According to Nieman (2004), the organisation is a creation of the social environment and functions within that environment. This environment reflects the demographics of the market and the social and cultural aspects of it that affect the market (De Beer and Kritzinger, 1999). Bosch and Marx (1998) advise organisations to carefully examine the demographic trends and developments of their markets, locally and internationally, since it is here where opportunities and threats originate. It is imperative that changing age profiles and family structures, population shifts, educational qualifications and population diversity are studied. Furthermore, the organisation must have knowledge of the culture, needs, preferences, purchasing patterns, nationality, religion and geographical location of consumers (Nieman, 2004). In order to prosper, Van Dyk (2004) stresses that the organisation must attain a fine balance between the needs of the employees and customers, and achieve its own organisational objectives.

2.4.2 THE ORGANISATION

According to Robbins (2005), an organisation is a consciously coordinated social unit, comprising two or more individuals that function on a relatively continuous basis to accomplish a common goal or set of goals.

The characteristics of an organisation are:

2.4.2.1 Structure

An organisational structure outlines how job tasks are formally divided, grouped, and coordinated. There are six key elements that managers need to focus on when they design their organisation's structure (Robbins, 2005). These are:

o   Work Specialisation

Work specialisation or division of labour relates to the extent to which jobs are specialised (Ivancevich, Konopaske and Matteson, 2005). Basson, Lyons and Joubert (2003) explain that the essence of work specialisation is that, rather than an entire job being completed by one person, it is broken down into many steps, each step being done

by a separate person. Hence, individuals specialise in doing part of an activity instead of the entire activity.

o   Departmentalisation

Departmentalisation refers to the way in which an organisation is structurally divided (Ivancevich et al., 2005). After jobs are divided through work specialisation, these jobs need to be grouped together so that common tasks can be co-ordinated. The basis by which jobs are grouped together is referred to as departmentalisation. One of the most common ways to group activities is by functions performed. A manufacturing manager might arrange his or her plant by separating engineering, accounting, manufacturing, human resources, and supply specialists into common departments (Robbins, 2005).

o   Chain of Command

Daft and Marcic (2004) teaches that the chain of command is an unbroken line of authority that links all individuals in an organisation and shows who reports to whom. It is related to two underlying principles. *Unity of command* means that each employee is answerable to only one supervisor. The *scalar principle* refers to a clearly defined line of authority in the organisation that includes every employee. If the unity of command is broken, an employee might have to deal with conflicting demands or priorities from a number of superiors (Basson et al., 2003).

o   Span of Control

The span of control refers to the number of employees directly reporting to an individual (Hellriegel, Jackson and Slocum, 2005). Kinicki and Kreitner (2006) add that spans of control can vary from narrow to wide. The narrower the span of control, the closer the supervision and the higher the administrative costs due to a higher manager-to-worker ratio. Wider spans form a flatter organisation with fewer hierarchical levels (Hellriegel et al., 2005). It also adds to greater worker autonomy and empowerment (Kinicki and Kreitner, 2006).

o   Centralisation and Decentralisation

The term centralisation refers to the extent to which decision-making is concentrated at a single point within the organisation. If top management makes the organisation's important decisions with little or no input from lower-level employees, then the organisation is centralised (Basson et al., 2003).

Daft and Marcic (2004) note that with decentralisation, decision authority is pushed towards lower organisation levels. It is an approach that needs managers to decide what and when to delegate, to select and train employees carefully, and to formulate adequate controls (Hellriegel et al., 2005).

o   Formalisation

Formalisation refers to the extent to which expectations concerning the means and ends of work are specified, written, and enforced (Ivancevich et al., 2005). Robbins (2005) points out that if a job is highly formalised, then the employee has a minimum amount of discretion over what is to be done, when it is to be done, and how he or she should do it. Where formalisation is low, job behaviours are relatively non-programmed and employees have a great deal of freedom to use discretion in their work.

2.4.2.2 Size

Some people have strong preference about the size of the organisation they want to work in (Van Dyk, 2004). In their contribution, Nelson and Quick (2005) explain that the total number of employees is the correct definition of size when discussing the design of organisational structure. According to them, individuals and their interactions are the elements of structure. Other measures such as net assets, production rates, and total sales are usually associated with the total number of employees but may not indicate the actual number of interpersonal relationships that are necessary to effectively structure an organisation.

A study by Terziovski and Samson (2000) examined the effects of organisation size on the strength of the relationship between TQM and organisational performance. They found that TQM does have a great and positive effect on business performance, operational performance, employee relations and customer satisfaction. The relationship weakened for defect rates and warranty costs when it was co-varied for organisation size. Hence, TQM tends to have a greater effect on reducing defect rates and warranty costs when implemented in larger firms than in smaller firms. They conclude that:

o   Organisation size hinders the implementation of TQM.

o   Larger organisations tend to obtain greater benefits from TQM than smaller firms. Overall, the findings show that a typical manufacturing organisation is more likely to achieve high organisational performance with TQM than without TQM, especially if the organisation is large, that is, over 100 employees.

Evans and Lindsay (2005) argue that the term TQM has almost disappeared from business language, and many people simply use TQ (Total Quality), which the writer will do in this study.

2.4.2.3 Technology

Technology is the method used to change organisational inputs into outputs (Hellriegel et al., 2005). It comprises of any equipment, tools, or operating methods designed to make work more efficient. Being aware of the effect of technology helps managers better facilitate human resource plans, make decisions faster, more clearly define jobs, and strengthen communications with both the external community and employees (DeCenzo and Robbins, 2005).

2.4.2.4 Human Resources (HR) Policy

HR policies are continuing guidelines on the approach the organisation intends to adopt in managing its employees. They define the philosophies and values of the organisation on how individuals should be treated, and from these are derived the principles upon which managers are expected to act when dealing with HR matters. HR policies therefore, serve as guidelines when employment practices are being developed, and when

decisions are being made about individuals. A procedure spells out exactly what action should be taken in line with the policy. HR or employment policies help to ensure that when dealing with matters concerning individuals, an approach in line with corporate values is adopted throughout the organisation. They provide frameworks within which consistent decisions are made, and promote equity in the way in which individuals are treated (Armstrong, 2006).

2.4.2.5 Culture

Kinicki and Kreitner (2008:459) refer to organisational culture as "shared values and beliefs that underlie a company's identity". Once established, these beliefs, expectations and values tend to be fairly stable and exert strong influences on organisations and those working in them (Greenberg and Baron, 2003). They add that among these influences lies a very important one, an organisation's tendency toward creativity and innovation. Martins and Terblanche's (2003) article presents, by means of a model, the determinants of organisational culture which affect creativity and innovation. The determinants are: strategy, organisational structure, support mechanisms, behaviour that encourages innovation, and communication.

2.4.3 THE WORK (JOB) ITSELF

The work itself refers to the extent to which the job provides the employee with stimulating tasks, opportunities for learning and personal growth, and the chance to be responsible and answerable for results (Miller, 2003).

A person joins an organisation by virtue of his/her potential for reaching personal goals in that organisation by supplying work and work potential. The basic motivation of a person (employee) in this situation is that he/she sees the opportunity of satisfying his/her intrinsic and extrinsic needs (Van Dyk, 2004).

According to Hall and Goodale, cited in Van Dyk (2004), among the main characteristics that directly affect employee performance and satisfaction are the degrees of challenge, variety and autonomy they offer to employees.

2.4.4 THE INDIVIDUAL EMPLOYEE

People are unique in terms of their skills, abilities, personalities, perceptions, attitudes, values and ethics. These are just a few of the ways people may be similar to or different from one another. Individual differences are a major challenge to management, since no two individuals are the same. Managers face the challenge of working with people who have a large number of individual characteristics, so the more managers understand individual differences, the better they can work with others (Nelson and Quick, 2005).

The factors which influence differences between individuals include:

✓ Ability

Ability is an individual's talent to perform a mental or physical task (Ivancevich et al., 2005).

✓ Values

Values are the conscious, affective desires or wants of individuals that guide behaviour (Ivancevich et al., 2005). Nelson and Quick (2005) state that values give us a feeling of right and wrong, good and bad. As people grow and mature, they learn values, which may change over the life span as a person develops a sense of self. Cultures, societies, and organisations influence values. Parents and others who are respected by the individual play important roles in value development by providing guidance about what is right and wrong. Values come to the forefront of an individual's development during adolescence, and many people stabilise their value systems during this life stage.

✓ Knowledge

Knowledge refers to the prior education and experience that a person needs as a prerequisite to succeed in a position (Saunders, 2002).

✓ Personality

Kinicki and Kreitner (2006) define personality as the combination of stable physical and mental characteristics that give a person his or her identity. It will also mean how

individuals affect others and how they understand and view themselves in addition to their pattern of inner and outer measurable traits and the person-situation interaction (Luthans, 2005).

Individuals are the important elements of any organisation. Their behaviour results in the outcomes that determine the success or failure of an organisation. Behaviour is anything that an individual says and does, including effort exerted. Examples of behaviour include setting a product on a shelf, capturing data, selling cars, problem-solving, decision-making, communicating, talking, and even thinking. Outcomes of behaviour comprise personal growth, relations with others, quantity, service, satisfaction, performance and quality (Amos, Ristow and Ristow, 2004). Russell and Taylor (2006) emphasise that employees have to be actively involved in the quality-improvement process and must feel a responsibility for quality. A total commitment to quality is needed throughout an organisation for it to be successful in improving and managing product quality.

2.5 PRODUCT QUALITY

In order to compete in today's economy, whether on a local or international level, organisations must provide a quality product or service. If organisations do not keep to quality standards, they would not be able to sell their product or service to customers (Noe et al., 2003).

2.5.1 Defining Quality

Wild (2002:356) defines the quality of a product or service as "the degree to which it satisfied customers' requirements". It is influenced by:

o   *Design quality* – the extent to which the specification of the product or service satisfies customers' requirements.

o   *Process quality* – the extent to which the product or service, when made available to the customer, conforms to specifications.

It is important to understand the different perspectives from which quality is viewed so as to fully appreciate the role it plays in the various parts of a business organisation:

o   Judgemental (transcendent) perspective

o   Product-based perspective

o   User-based perspective

o   Value-based perspective

o   Manufacturing-based perspective (Evans and Lindsay, 2005).

Sebastianelli and Tamimi (2002) examined the relationship between how a firm defines quality and what product quality dimensions it considers vital to its competitive strategy. In particular, they investigate empirically whether there is a relationship between the five definitions of quality and the eight dimensions of product quality. The study reveals some empirical support for the association Garvin proposed between his eight quality dimensions and the five multiple definitions of quality.

o   The user-based definition's emphasis on aesthetics and perceived quality.

o   The manufacturing-based definition's focus on conformance.

o   The product-based definition's stress on performance and features were supported by the data.

However, Garvin's proposed relationship between the product-based definition and durability, and between the manufacturing definition and reliability, found no empirical support (Sebastianelli and Tamimi, 2002). The results of the study show the user-based definition to be the most commonly used definition of quality among the manufacturing organisations surveyed.

2.5.2 Quality and Systems Thinking

A production system is made up of many smaller, interacting subsystems. These subsystems are connected together as internal customers and suppliers. Similarly, every organisation is composed of many individual functions, which are often seen as separate units on an organisation chart. However, managers must view the organisation as a whole and focus on the important organisational linkages among these functions. Successful management relies on a systems perspective, one of the main elements of total quality (Evans and Lindsay, 2005).

2.5.3 Quality in Manufacturing

Well-developed quality systems have existed in manufacturing for a while. However, Evans and Dean (2003) argue that these systems focused mainly on technical issues such as equipment reliability, inspection, defect measurement and process control. The change these days to a customer-driven organisation has caused major changes in manufacturing practices, changes that are particularly evident in areas such as product design, human resource management, and supplier relations.

2.5.4 Responsibility for Quality

The responsibility for quality commences with the determination of the customer's needs and continues until the product or service is accepted by a satisfied customer (Besterfield, 2001; Muhlemann, Oakland and Lockyer, 1992). The management functions for this process, together with their responsibilities are as follows:

2.5.4.1 Senior / Top Management

Top management has the greatest responsibility for quality. While establishing strategies for quality, top management must introduce programmes to enhance quality; guide, direct, and motivate managers and employees; and set an example by being involved in quality initiatives. Examples include taking training in quality, distributing regular reports on quality, and attending meetings on quality (Stevenson, 2007).

2.5.4.2 Marketing

This department has the task to:

o   Determine customer needs

o   Have a knowledge of the competitors' capabilities

o   Set product and service specifications

o   Analyse customer complaints, staff sales reports, warranty claims and product liability cases (Muhlemann et al., 1992).

2.5.4.3 Design Engineering

Design engineering translates the customer's quality requirements into operating characteristics, exact specifications, and appropriate tolerances for a new product or revision of an existing product (Besterfield, 2001).

2.5.4.4 Procurement

Using the quality requirements established by design engineering, procurement has the responsibility of purchasing quality materials and components (Besterfield, 2001).

2.5.4.5 Industrial Engineering and Process Design

Evans and Lindsay (2005) mention that the task of industrial engineers and process designers is to work with product design engineers to develop realistic specifications. They must select appropriate technologies, equipment, and work methods for manufacturing quality products as well. Industrial engineers are also responsible for designing facilities and arranging equipment to achieve a smooth production flow and to reduce the opportunities for product damage.

2.5.4.6 Production / Operations

Production / operations has to ensure that processes produce products and services that conform to design specifications. Monitoring processes and finding and correcting root causes of problems are crucial aspects of this responsibility (Stevenson, 2007).

2.5.4.7 Inspection and Test

If quality is built into the product properly, inspection should be needless except for auditing purposes and functional testing. Electronic components, for example, are put through extensive "burn-in" tests that ensure proper operation and eliminate short-life items. Inspection should be used to gather information that can be utilised to enhance quality, not only to remove defective items (Evans and Lindsay, 2005).

The aim of final product inspection is to judge the quality of manufacturing, to detect and help to resolve production problems that may arise, and to ensure that no defective items reach the customer (Evans and Lindsay, 2005).

2.5.4.8 Packaging and Shipping

This department must ensure that products are not damaged in transit, that packages are clearly labeled, that instructions are included, that all parts are included and shipping occurs in a timely manner (Stevenson, 2007).

2.5.4.9 After-sales and Technical Service

The responsibilities of this department, according to Muhlemann et al. (1992) are: product/service specification and performance assessment; pre-production/operation and prototype evaluations; analysis of customer complaints and claims.

2.5.4.10 Quality Assurance

Quality assurance is responsible for, amongst others, quality planning; quality advice and expertise; and investigation of customer complaints, warranty claims, and product / service liability cases (Muhlemann et al., 1992). Quality assurance have the direct responsibility to constantly assess the effectiveness of the quality system. It determines the effectiveness of the system, appraises the current quality, determines quality problem areas or potential areas, and aids in the correction or minimisation of these problem areas. The overall aim is the improvement of the product quality in co-operation with the responsible departments (Besterfield, 2001).

2.5.5 Dimensions of Quality: Manufactured Products

Garvin (1984) identified the following dimensions of product quality:
- Performance – the basic operating characteristics of a product.
- Features – the secondary characteristics added to the product's basic functioning.
- Reliability – the probability of a product's failing within a specified period of time.

- Conformance – the degree to which a product's design and operating characteristics meet pre-established standards.

- Durability – the amount of use one gets from a product before it physically deteriorates.

- Serviceability – the speed of repairs, and the courtesy and competence of the repair person.

- Aesthetics – how a product looks, feels, sounds, smells, or tastes.

- Perceived Quality – product evaluation based on image, advertising, or brand name.

Evans and Dean (2003) note that the majority of these dimensions revolve around the design of the product.

2.5.6 Product Design and Process Selection

Product design and process selection decisions are usually made together. They influence product quality, product cost, and customer satisfaction (Reid and Sanders, 2005).

2.5.6.1 Product Design

According to Telsang (2005), product design stipulates the functions to be performed, which materials are to be utilised, determines dimensions and tolerances, defines the appearance of the product and sets standards for performance of the product.

An effective design process:

o Matches product or service characteristics with customer needs.

o Ensures that customer needs are met in the simplest and least costly manner.

o Minimises the time required to design a new product or service.

o Minimises the modifications needed to make a design workable (Russell and Taylor, 2006).

Telsang (2005) outlines the design process. The steps are:

- Idea generation
- Screening ideas
- Feasibility study
- Preliminary design
- Pilot runs and testing
- Final design and process plans
- New product launch

2.5.6.2 Process Selection

Process selection refers to the strategic decision of choosing which type of production processes to have in the manufacturing plant (Chase, Jacobs and Aquilano, 2007). In this regard, Krajewski and Ritzman (2005) discuss the following:

o Project process
o Job process
o Batch process
o Line process
o Continuous process

2.5.7 Quality as a Management Framework

The ideas of Deming, Juran and Crosby, amongst others, have provided much guidance and wisdom in the form of "best practices" to managers around the world. The two frameworks that have had the most effect on quality management practices worldwide are the international ISO 9000 certification process and the U.S Malcolm Baldrige National Quality Award (Raturi and Evans, 2005).

The Malcolm Baldrige National Quality Award's Criteria for Performance Excellence creates a framework for integrating total quality principles and practices in any organisation (Evans, 2005). The criteria comprises of seven main categories that essentially define a set of high-performance management practices:

➢   Leadership

➢   Strategic planning

➢   Customer and market focus

➢   Measurement, analysis and knowledge management

➢   Human resource focus

➢   Process management

➢   Business results (Oakland, 2003; Raturi and Evans, 2005).

Evans (2005) adds that the seven categories establish an integrated management system.

2.5.7.1 Principles of Total Quality (TQ)

Total quality is based on basic principles. These are, amongst others:

o   Customer focus

o   Continual process improvement

o   Employee involvement and empowerment

o   Strategically based

o   Teamwork

o   Education and training (Goetsch and Davis, 2006).

2.5.7.2 Infrastructure and Practices

Infrastructure refers to the basic management systems required to function effectively and carry out the principles of TQ. It includes:

o   Customer Relationship Management

o   Leadership and Strategic Planning

o   Human Resource Management

o   Process Management

o   Information and Knowledge Management

Practices are those activities that take place within each element of the infrastructure to achieve high-performance objectives (Evans and Lindsay, 2005)

2.5.8 The Technical System

The technical system includes, amongst others, tools for process analysis and statistical process control.

2.5.8.1 Tools for Process Analysis

Basu (2004); Besterfield (2001) and Finch (2003) identify the following tools for process analysis:

o   Flowcharts
o   Check sheets
o   Histograms
o   Pareto diagrams
o   Cause-and-effect diagrams
o   Scatter diagrams
o   Control chart

2.5.8.2 Statistical Process Control (SPC)

SPC involves testing a random sample of output from a process to establish whether the process is producing items within a preselected range (Chase et al., 2007).

2.6   CHALLENGES TO HUMAN RESOURCE MANAGEMENT ENTERING A GLOBAL ERA IN ORGANISATIONS

Human resources management is an essential part of all business, which is currently experiencing an expansion of its environment into global markets. It is becoming increasingly common for organisations to export their products, build plants or subsidiaries in other countries, or merge with other organisations in foreign markets (Schultz and Nel, 2004).

There are, however, certain factors which pose challenges to human resource management in South African organisations:

2.6.1 Globalisation

Greenberg and Baron (2003) define globalisation as the process of interconnecting the world's individuals with respect to the cultural, economic, political, technological and environmental aspects of their lives.

The new global markets have brought major competitive changes in the country and South African organisations must now match foreign competition if they are to prosper. As foreign investors decide where to invest, workers in South Africa are continually measured against those of other countries, in terms of the products and services they produce, as well as in terms of their skills and motivation (Grobler et al., 2002).

Van Dyk's (2004) concern is that South Africa is not progressing, and labour issues which have lately turned into political issues are harming South African business and are responsible for a slow pace towards a larger share in globalised profits.

Tan, Kannan, Handfield and Ghosh's (2000) study examined the effect that changes in the global economy have had on North American organisations, and especially the role quality has played in responding to them.

The study has led the authors to conclude that:
- o There is confusion regarding the strategic use of quality and responses to global competition.
- o Survey results show that innovation and effective product development are essential to providing a response to global competition.
- o While organisations attempt to enhance the quality of their products, they cannot ignore the threat from organisations that have been able to reduce costs while maintaining high quality standards.
- o Overseas markets represent openings for North American organisations. However, as organisations from other advanced countries with established manufacturing infrastructures and competitive quality standards take advantage of

their absence, North American competitors will face added barriers in establishing a presence in these new markets.

2.6.2 Quality Improvement

South African workers are fully aware of the importance of quality in the workplace. As trade barriers come down, global competition will increase. Only organisations with the best quality will succeed. However, getting employees to support quality endeavors can be a major challenge (Grobler et al., 2002).

2.6.3 Health and Safety

According to Van Dyk (2001), health and safety matters will become a greater challenge for human resources management. The decline of the national health service over the past years has led to a massive increase in medical assurance for the employees of organisations. Both organisations and employees suffer financially under the current conditions. With South Africa having a large number of HIV/AIDS patients, and with the legislative requirements on organisations in this regard, it is difficult to predict what impact this will have on the future competitiveness of South African organisations.

2.6.4 Technology and Training

Technology consists of the intellectual and mechanical processes utilised by an organisation to change inputs into products or services that meet organisational goals. Managers face the challenge of rapidly changing technology and of putting the technology to best use in organisations (Nelson and Quick, 2005).

Technology has significantly increased the skills and training needed to perform many of the jobs in today's organisations. However, in South Africa, employers have to cope with fewer skilled workers entering the labour market and an increase in under-prepared workers (Grobler et al., 2002). The answer to this problem, according to them, is an increase in employee re-education and training programmes.

2.6.5 The Flight of Skills or 'Brain Drain'

The South African labour force, particularly that sector that possesses high intellectual capacity, is leaving the country and the national economy at an alarming rate. These individuals go to first world countries where they assist in continuing and expanding the globalised effort of such countries (Van Dyk, 2004).

According to the Institute of Management Development (IMD) World Competitiveness Yearbook 2004; 2005; 2006 and 2007, in South Africa, one of the weakest criterion under Business Efficiency is brain drain (well educated and skilled people). South Africa's ranking for the period 2004-2007 is as follows:

2004   58 out of 60 economies

2005   59 out of 60 economies

2006   61 out of 61 economies

2007   55 out of 55 economies.

2.6.6 Skilled Labour

South Africa has a shortage of skilled workers (Lotz, 1997; Bisschoff and Govender 2004; Amos et al., 2004; Postma, 2004).

According to the Institute of Management Development (IMD) World Competitiveness Yearbook 2004; 2005; 2006 and 2007, in South Africa, the weakest criterion under Business Efficiency is skilled labour. South Africa's ranking for the period 2004-2007 is as follows:

2004   60 out of 60 economies

2005   60 out of 60 economies

2006   61 out of 61 economies

2007   55 out of 55 economies.

Organisations have a vital role to play in building a nation's skill levels (Amos et al., 2004).

2.6.7 Knowledge Management

Greenberg and Baron (2003:70) define knowledge management as "the process of gathering, organising, and sharing a company's information and knowledge assets".

Competitiveness will henceforth be determined by how effective organisations are in managing their knowledge assets (Smit, 2000). South Africa though, faces a tremendous task considering its brain drain, shortage of skills of the workforce and an ineffective education system to compete effectively in the global market for knowledge as part of human capital assets. Human resources development personnel face a challenging task of managing scarce human resources that are generators of knowledge. New and dynamic approaches to retain this category of employees are becoming one of the main tasks of highly competitive organisations in South Africa (Erasmus et al., 2006).

Yahya and Goh's (2002) research examines the relationship between human resource management and knowledge management. The four sections of human resource management are training, decision-making, performance appraisal, and reward and compensation. The research indicates that the knowledge management organisation needs a different management approach as compared to the non-knowledge organisation. Yahya and Goh (2002) conclude that:

o   In terms of human resource training, emphasis is placed on developing individuals who are capable of utilising internal and external information and turning it into useful organisational knowledge. The training concentrated on leadership skills and change management, creativity, problem solving skills, and quality initiatives.

o   The design of a compensation and reward system should be on encouraging group performance, knowledge sharing, and innovative thinking.

o   The performance appraisal must be the basis of assessment of employee's knowledge management practices, and an input for directing knowledge management efforts (Yahya and Goh, 2002).

2.7 STAFFING THE ORGANISATION AND MAINTAINING PEOPLE

The staffing process matches individuals with jobs through recruiting and selection (Mathis and Jackson, 2004).

2.7.1 RECRUITING

Recruitment involves seeking and attracting a pool of individuals from which qualified candidates for job vacancies can be selected. An organisation may fill a particular post with someone already employed by the organisation (internal recruitment) or with someone from outside (external recruitment) (Byars and Rue, 2006).

2.7.1.1 Internal Recruiting

Internal recruiting means considering present employees as candidates for available positions (Ebert and Griffin, 2005). Mathis and Jackson (2004) mention that tapping into databases, job postings, promotions, and job transfers are ways that allow current employees to move to other jobs.

2.7.1.2 External Recruiting

External recruiting involves attracting individuals outside of the organisation to apply for posts (Ebert and Griffin, 2005).

External recruiting methods include:
o   Advertisements
o   Educational institutions
o   Electronic recruitment sites
o   Employee referrals
o   Private employment services (Cronje et al., 2004; Bohlander and Snell, 2004; Hellriegel et al, 2004; Noe et al, 2006).

2.7.2 THE SELECTION PROCESS

Schultz (2004) mentions that the selection process is a series of steps through which candidates pass. "These steps represent the 'tools', or methods of selection" (Schultz,

2004:234). The aim of the selection process is to gather from applicants information that will predict their job success and then to hire the applicants likely to be most successful (Ebert and Griffin, 2005).

In their literature, Bohlander and Snell (2004) state that the number of steps in the selection process and their sequence will differ, not only with the organisation concerned, but also with the type and level of jobs to be filled. Hence, each step should be assessed in terms of its contribution.

The steps that normally make up the selection process are:
o   Application form
o   Preliminary interview
o   Testing
o   In-depth interview/s
o   Reference checks
o   Physical examination
o   Offer of employment (Plunkett, Attner and Allen, 2005).

In their journal article entitled "A brief history of the selection interview: may the next 100 years be more fruitful", Buckley, Norris and Wiese (2000) conclude that:
➢   Until a new method is developed that allows employers the same benefits and freedom as the interview, the interview will continue to be used as a main hiring tool.
➢   After almost 100 years of research on the interview, little progress has been made towards creating a new and better selection tool to replace the interview.
➢   The interview as a selection tool will not disappear, but the quality and the effectiveness of the interview will diminish if innovative ideas are not developed and shared with employers.

➢ As the demands of the fast-paced global economy force organisations to hire highly-skilled employees quickly and economically, employers will be in search of new and innovative ways to interview candidates. Researchers must assist – by way of creativity and theory development.

Ahmad and Schroeder's (2002) study investigated the impact of quality management practices on plant competitiveness; and the moderating effect of an employee selection process on the relationship involving quality management practices and plant competitiveness. They discuss that, all too often, organisations focus on employees' technical skills without simultaneously assessing their behavioural skills. Their study highlights the importance of prospective employees' behavioural traits for the effectiveness of quality management practices. The findings of this study emphasise that checking employees' behavioural traits during the recruitment and selection process is critical for achieving superior plant competitiveness. Focusing on recruitment and selection is consistent with one of the basic principles of quality management, which is the idea that prevention is better than cure. They conclude that it is difficult to change negative behavioural traits of employees. Therefore, it is best to check for the required behavioural traits during the recruitment and selection process to prevent mismatch between the technical and social systems.

2.7.3 HUMAN RESOURCE MAINTENANCE

Managers and human resource management professionals have to maintain a workforce that has been recruited and developed. Maintenance of the current workforce involves:

o   Compensation management

o   Health and safety management (Schultz, 2004; Grobler et al., 2002).

2.8   THE QUALITY ASSURANCE APPROACH TO HUMAN RESOURCE MANAGEMENT

Quality assurance in human resources management endeavours to ensure quality performance from each individual employee regardless of position and title (Van Dyk, 2004).

From a human resource management perspective, this requires of employees at every level:

- Total commitment to the products or services of the organisation.
- Loyalty towards such products or services and to the organisation itself.
- Commitment to the goals and objectives of the organisation.

This demands special input from the human resources department in the motivation and empowerment of employees (Van Dyk, 2001).

2.8.1 Motivation

Greenberg and Baron (2003) define motivation as the set of processes that arouse, direct, and maintain human behaviour toward achieving some goal. Motivating employees is a vital managerial function (Werner, 2004).   It is an important factor in achieving organisational goals such as product quality and creating a quality workplace (Russell and Taylor, 2006).

Different things motivate workers (Werner, 2004). Money is one motivator (Hodgetts and Hegar, 2005). However, according to Russell and Taylor (2006), it is not the only factor and may not be the most significant. Hence, it is important for managers to understand the various motivational theories:

o   Maslow's Hierarchy of Needs
o   Herzberg's Two-Factor Theory
o   Expectancy Theory (Hellriegel et al., 2004; Hodgetts and Hegar, 2005).

o   McClelland's Theory of Learned Needs
o   Equity Theory
o   Goal Setting (Kinicki and Kreitner, 2008; Odendaal and Roodt, 2003).

o   Alderfer's ERG Theory (Greenberg and Baron, 2003; Luthans, 2005).

o   Reinforcement Theory (Hellriegel et al., 2004; Odendaal and Roodt, 2003).

The different motivational theories provide a framework for understanding employee behaviour and performance in the workplace. It is vital that a holistic view of motivation is taken instead of isolating one theory as the 'best' one (Werner, 2004).

Bassett-Jones and Lloyd's (2005) paper examines the issue of whether Herzberg's two-factor motivation theory still resonates nearly 50 years after it was first put forward. The area in which the theory is investigated is work-based suggestion schemes, and the question considered is "What motivates employees to contribute ideas?"

The results suggest that money and recognition do not appear to be main sources of motivation in stimulating employees to contribute ideas. In line with Herzberg's predictions, factors associated with intrinsic satisfaction play a more vital part. The paper shows that, in spite of the criticism, Herzberg's two-factor theory is still useful nearly 50 years after it was first developed.

The objectives of Lo's (2002) study were to understand and summarise local experiences in quality management system (QMS) implementations (within the construction organisations in Hong Kong), and to identify the barriers and the factors that will motivate the construction organisations obtaining accreditation and making commitment for quality. Lo (2002) discusses that there are negative feedbacks from the construction contractors maintaining that the QMS is a burden to the normal functioning of their business. After implementing the QMS for years, the quality of buildings had not improved as expected. Quality culture had not been well developed in the construction sector.

In Lo's (2002) study, two distinctive incentives for implementing the QMS are identified. The incentives are to enhance the organisation's quality image and to satisfy client's requirements, especially the government. Findings indicated that organisations are forced to implement the QMS instead of being motivated by top management. The author

concludes that motivation must come from within an organisation and is the only way of improving quality realistically.

The purpose of Prasada Rao's (2006) paper was to provide a useful motivational scheme for a practicing manager to enhance the performance of a manufacturing unit. In this paper, the main causes for the present low productivity of the manufacturing unit were examined and a multi-factor group incentive scheme was designed for motivating the employees with the intention of improvng the productivity of the manufacturing unit.

Prasada Rao (2006) concludes that:
o   The paper explains the use of a multi-factor incentive scheme to incentivise and recompense employees in a practical way. The amount of incentive earned by each employee is worked out, as per the scheme, each month and paid along with the salary.
o   The implementation of this scheme motivated the employees of the organisation to increase production levels, achieve better consumption of raw materials and hence, attain higher productivity.

2.8.2 Empowerment
Hodgetts and Hegar (2005) define empowerment as the process of giving employees autonomy over the way that their jobs are performed and holding them accountable for the results. Empowerment seeks to utilise the brainpower of all employees to find improved ways of doing their jobs and executing their ideas (Boone and Kurtz, 2005). Luthans (2005) stresses that empowerment must become entrenched in an organisation's cultural values.

Russell and Taylor (2006) list the following advantages of empowerment:
o   Increased respect and trust among workers.
o   More satisfying work.
o   Less conflict with management, and most importantly,
o   Added attention to product quality and the ability to fix quality problems quickly.

The quality assurance approach to human resources management has become more important due to the following reasons:

o   The quality of products or services is a direct result of the quality of the workers employed by an organisation.

o   Total quality management, of which quality assurance is the ultimate aim, needs different organisational structures and leadership styles to be successful.

o   The changing nature of the labour force.

o   The global approach of providing line and other human resources managers with management practices and techniques, which empower them to respond more proactively to the challenges facing organisations as regards their competitiveness position in the marketplace.

o   The accelerated pace of technological development requires organisations to adapt rapidly which, in turn, calls for more flexible human resources policies (Van Dyk, 2001).

Schultz (2004) expands on Van Dyk's (2001) work and writes that organisations that are successful focus on job and organisational designs.

2.9 JOB AND ORGANISATIONAL DESIGN

Globalised competition and technological innovation are changing the way organisations are run. Organisations that have successfully responded to these challenges have recognised the need to accept changes and have tested new job and organisational designs (Schultz, 2004).

2.9.1 JOB DESIGN

Job design details the work activities of an individual or group in support of an organisation's objectives (Reid and Sanders, 2005). Its aim is to develop job structures that meet the requirements of the organisation and its technology and that satisfy the jobholder's personal and individual requirements (Chase et al., 2007).

2.9.1.1 Approaches to Job Design

The following approaches to job design are available to managers:

- **Specialisation-Intensive Jobs**

According to Grobler et al. (2002), job specialisation (sometimes also called job simplification) is characterised by jobs with only a few tasks, tasks that are repeated frequently during the workday and require few skills and little mental ability.

- **Motivation-Intensive Jobs**

The category referred to as motivation-intensive jobs include the following approaches:

➢ Job enlargement – this process entails increasing the number of tasks each employee performs (Luthans, 2005).

➢ Job enrichment – refers to specific ways to add complexity and meaningfulness to an individual's work (Noe et al., 2006).

➢ Job rotation - is a process of shifting an individual from job to job (Mathis and Jackson, 2004). Kinicki and Kreitner (2008) explain that instead of performing only one job, employees are trained and given the opportunity to perform two or more separate jobs on a rotating basis.

- **Team Approaches to Job Design**

Another option for job design is utilising teams instead of individuals for certain tasks (Reid and Sanders, 2005). The four most common forms of teams are:

➢ Problem-solving teams

➢ Self-managed teams

➢ Cross-functional teams

➢ Virtual teams (Stander, 2003).

2.9.2 ORGANISATIONAL DESIGN

Greenberg and Baron (2003) define organisational design as the process of coordinating the structural elements of organisations in the most suitable way.

2.9.2.1 Design Options

As the world grows increasingly complex and fast-paced, organisations also continue to search for new forms of organisation that allow them to compete effectively. Among the most popular of these new forms are:

▪ **The Boundaryless Organisation**

The boundaryless organisation is one in which traditional boundaries and structures are minimised or removed completely (Ebert and Griffin, 2005).

▪ **The Team Organisation**

Basson et al. (2003) note that the main characteristics of the team structure are that it eliminates departmental barriers and decentralises decision-making to the level of the work team.

▪ **The Virtual Organisation**

Such an organisation comprises of a constantly developing network of companies that are linked together to share skills, costs and access to markets. They form a partnership to take advantage of their existing skills, pursuing common goals (Greenberg and Baron, 2003). Each partner contributes to the virtual organisation what it is best at – its main capabilities (Luthans, 2005; Greenberg and Baron, 2003).

▪ **The Learning Organisation**

Ebert and Griffin (2005) write that the most common goals of a learning organisation are improved quality, continuous improvement and performance measurement. A learning organisation works to promote the lifelong learning and personal development of every employee while continually transforming itself to respond to changing demands and needs.

Organisations that effectively manage change, in order to survive and prosper are masters of renewal (Sono and Nel, 2004).

2.10 ORGANISATIONAL RENEWAL

Organisational renewal involves organisational change and development.

2.10.1 Organisational Change

Greenberg and Baron (2003:587) define organisational change as "planned or unplanned transformations in an organisation's structure, technology and/or people". Changes should be implemented in organisations only if they will have direct impact on organisational performance. Change processes must contribute to the effectiveness and success of organisations (Swart, 2000).

2.10.1.1 Forces of Change

Kinicki and Kreitner (2008) state that organisations encounter various forces for change. These forces for change can originate from many sources. Some of these are external, stemming from outside the organisation, while others are internal, stemming from sources within the organisation (Quick and Nelson, 2009). Ivancevich, Konopaske and Matteson (2005) add that external forces are beyond management's control whereas internal forces are usually within the control of management.

▪ **External Forces**

In order for organisations to succeed, they must be able to adapt to the external demands that they encounter (Mullins, 2005).

The main external forces for change are employee demographics, government regulation, economic conditions, technological advancements, and competition (Greenberg and Baron, 2003; Van Daalen and Odendaal, 2003).

Highlighting technological advances, Hitt, Miller and Colella (2006) state that such advances can result in new and different ways in how services and products are designed, produced, and delivered.

Organisations must adapt to technological advances in order to prosper. Manufacturing organisations, for example, must adopt new manufacturing technologies that reduce costs, increase speed, and enhance quality. Organisations that intend gaining a competitive advantage should consider using computer-aided manufacturing, computer-aided design, and modern manufacturing resource planning (Hitt, Miller and Colella, 2006).

On this subject, Ivancevich, Konopaske and Matteson (2005) write that technological advancement is unavoidable in the business arena. As a force for change, it must always be given priority.

- **Internal Forces**

Internal forces can be subtle, for instance, low job satisfaction, or can manifest in outward signs, such as low productivity or high turnover and conflict. Internal forces for change originate from both human resource problems and managerial behaviour/decisions (Kinicki and Kreitner, 2008).

Ivancevich, Konopaske and Matteson (2005) add that internal forces for change generally, can be due to process and behavioural problems. The process problems include poor decision making and ineffective and inadequate communication. Low levels of morale and high levels of absenteeism and turnover, are signs of behavioural problems that must be identified.

2.10.1.2 Resistance to Change

Even though organisations face both internal and external pressures to change, they often come across strong resistance to needed changes (Hitt, Miller and Colella, 2006). Resistance to change refers to the tendency for organisational employees to be unwilling to accept changes either due to individual fears of the unknown or organisational barriers (Greenberg and Baron, 2003).

Hodgetts and Hegar (2005) discuss the most common causes of resistance to change. These are obsolescence of job skills, fear of the unknown, fear of economic loss, ego defensiveness, the comfort of the status quo, shortsightedness, peer pressure, lack of information, and social displacement.

In discussing fear of the unknown, Nelson and Quick (2005) stress that change often results in a great deal of uncertainty. Employees facing a technological change may oppose the change merely because it introduces uncertainty into their present comfortable situation. This can create a problem if communication regarding the change is ineffective.

2.10.1.3 Overcoming Resistance to Change

Resistance to change will by no means disappear, but mangers can learn to overcome its negative effects. The methods generally utilised for managing resistance to change are education and communication, participation and involvement, negotiation, and manipulation and co-optation (Hellriegel et al., 2004).

Quick and Nelson (2009) mention that communication about imminent change is necessary if employees are to adapt well. Employees need proper information. The reasons as well the details regarding the change should be given. Furthermore, they state that educating employees on new work methods is also beneficial.

2.10.1.4 Managing Change

A thorough knowledge of human behaviour at work is essential for the effective management of change. Individuals often feel threatened and unsettled by the challenge of change. Feelings such as uncertainty, frustration or fear are common reactions. As a result individuals often adopt a defensive and negative attitude, and show resistance to change (Mullins, 2005).

To assist, Sono and Nel (2004) list the following approaches to manage change:

o   Managers should be capable of identifying forces of change.

o   A common vision for change should be developed and should incorporate participation by every employee in the planning process.

o   Top management must be committed to the change and should visibly show support.

o   There must be ample resources for carrying out the change.

o   A thorough diagnosis and needs analysis should be conducted (Sono and Nel, 2004).

Mullins (2005) emphasises that the effective management of change is an important element of organisational performance and competitiveness, and should stem from upper management.

Competitive Intelligence (CI) is the process of collecting information about one's competitors that can be utilised as the basis for planning organisational change (Greenberg and Baron, 2003).

In their paper Viviers, Saayman and Muller (2005) cites a study conducted in 2001 that assessed the CI culture in South Africa and the manner in which South African organisations conducted CI (referred to as Project 1).

Some of the findings were:

➢   South African organisations showed a general lack of proper processes and structures for CI.

➢   There was little evidence that systems in organisations support the CI activities.

➢   Few organisations could claim that CI was well-established in the entire organisation.

➢   Little information sharing took place and individuals in the organisation generally did not know the reason for the intelligence activity.

The positive outcomes of the study included organisations in South Africa recognising that CI can enhance competitiveness and that it is regarded as a legal business activity. The overall conclusion was that South African organisations were not yet as well prepared to conduct good CI as compared to organisations in the USA, Japan, France, Sweden, Israel and Germany.

2.10.2 Organisational Development (OD)

Organisational development is a normative discipline which prescribes a specific model to effect planned change at every level within the organisation with the main purpose being to change behaviour and attain total organisational effectiveness (Botha, 2000).

2.10.2.1 Organisational Development Techniques

Robbins and Coulter (2005) discuss the following OD techniques for effecting change:

o   Sensitivity training – a method of changing behaviour by means of unstructured group interaction.

o   Team building – activities that assist team members to learn how each member thinks and works.

o   Intergroup development – changing the attitudes, stereotypes, and perceptions that work groups have regarding each other.

o   Process consultation – an outside consultant assists the manager to understand how interpersonal processes are affecting the way work is being done.

o   Survey feedback – a technique for assessing attitudes and perceptions, identifying discrepancies in these, and resolving the differences by utilising survey information in feedback groups.

2.11 CONCLUSION

Management is vital because organisations are so important. In an industrialised society where complex technologies dominate, organisations bring together knowledge, individuals, and raw materials to carry out tasks no person could do alone. Organisations permeate our society. The key task of managers is to achieve high *performance*, which is

the attainment of organisational goals by utilising resources in an efficient and effective manner (Daft, 2003).

The idea behind the practice of human resource management is that individuals are the organisation's main resource and organisational performance basically depends on them (Armstrong, 2006). Organisational performance is reflected in how effectively the products or services of the organisation are delivered to customers (Mathis and Jackson, 2004). They assert that the employees in organisations are designers, producers, and deliverers of those services. Hence, a goal of HR management is to establish activities that enhance organisational performance.

Training must be linked to improving organisational performance (Mathis and Jackson, 2004). They explain that the competitive pressures facing organisations these days require employees whose knowledge and ideas are current, and whose skills and abilities can deliver results. As organisations compete and change, training becomes even more crucial than before. Employees who must adapt to the numerous changes facing organisations must be trained regularly in order to maintain and update their capabilities. Furthermore, managers must have training and development to improve their leadership skills and abilities (Mathis and Jackson, 2004).

CHAPTER 3
TRAINING MANAGEMENT

3.1 INTRODUCTION

A large percentage of the country's population is unskilled. The official education system cannot handle these large numbers. Hence, organisations have a task to play a part in the effective training of their employees and thereby counter national illiteracy. A major challenge faced by any organisation is to train its employees in such a manner that they have the required knowledge, skills and attitudes to perform their tasks successfully. The need to keep pace with economic and technological change and remain competitive in the marketplace has turned training and retraining into supreme issues for both, employers and employees. Trainers should then, consider all factors that can affect training in an organisation (Erasmus and Van Dyk, 2003).

3.2 THE CONCEPTS OF TRAINING, EDUCATION, DEVELOPMENT AND OUTCOMES-BASED EDUCATION AND TRAINING

In order to look at the training and development process in organisations, we need to understand various concepts:

3.2.1 The Concept of Training

Noe (2008) refers to training as a planned attempt by an organisation to facilitate employees' learning of job related competencies. The author adds that these competencies include knowledge, skills, or behaviours that are essential for successful job performance.

Training tends to be used more often at lower levels of an organisation (Jones and George, 2008), and aims to enhance employee performance in an organisation (Erasmus and Van Dyk, 2003). According to Erasmus et al. (2006), a training system aims to:

o   Ensure that every learner passes the training course.

o   Provide additional support to employees who do not succeed at first.

o   Ensure that the pass standard is achievable.

o   Produce trained employees to fill positions within the organisation.

3.2.2 The Concept of Education

Buckley and Caple (2000:01) define education as "a process and a series of activities which aim at enabling an individual to assimilate and develop knowledge, skills, values and understanding that are not simply related to a narrow field of activity but allow a broad range of problems to be defined, analysed and solved". Education therefore, has to do with the development of sound-reasoning processes to improve one's ability to understand and interpret knowledge (Nel, 2004). Erasmus et al., (2006) also mention that the concept of education also includes the learning activities that take place in an organisation, particularly those that managers and both skilled and unskilled employees require. Unskilled employees could also receive education in the form of basic adult education to assist them acquire basic literacy and numeracy skills. Erasmus and Van Dyk (2003) note that in South Africa, official education is the responsibility of the state. We find educational courses in schools, colleges, universities and private training institutions.

In an article entitled "Poor education blamed for technical skills crises" (Khumalo, 2007), the Minister of Science and Technology in South Africa argues that the problem of the skills shortage was based on the poor level of high school education. He states that:

- The issue of skills shortage is being dealt with at various levels, but high schools continue to produce learners who cannot cope at higher institutions of learning.
- Three years ago, 52 percent of secondary school mathematics and science educators were under-qualified.

However, in the same article, the Minister's statement was criticised by Jimmy Manyi, the chairman of the Black Management Forum. Manyi failed to understand the relationship between under-qualified teachers and skills development. He states, "The teacher's job is to give education, not skills. Skills are acquired at the workplace".

Invest in education (2007) extends the Minister's view by arguing that without a substantial investment in education, the country will not progress due to a shortage of skills. The writer suggests that what is greatly needed is a coordinated, intelligent plan to remove educators who refuse to teach well, to motivate principals, upgrade educators and a planned refurbishment of schools.

Mcetywa (2008) in an article entitled "Teacher shortage puts pressure on pupils" informs us that a Human Sciences Research Council study estimated that in 2008 there would be a shortage of between 15 000 and 34 000 educators. Poor planning and HIV/Aids were amongst the reasons for the shortfall. According to Naidu (2007), education experts have warned that the country's schooling system will continue producing failures unless the government comes up with a plan to develop educators.

On the subject of education and globalisation, Wyllie (2007) writes that education is necessary for progress and development in the global economy. This requires educators to be aware of current affairs, modern technology, and even cultural trends on a global scale. It also calls for a dedicated and enlightened teacher base.

3.2.3 The Concept of Development

Development refers to formal education, job experiences, relationships, and assessments of personality and abilities that help employees perform effectively in their present or future job and company (Noe, 2008). It goes further than the skills required for the job and considers individual aspirations (Bloisi, 2007), and is involved with longer-term personal growth and career movement (Winterton, 2007). Jones and George (2008) add that development tends to be used more often with professionals and managers.

3.2.4 The Concept of Outcomes-based Education and Training (OBET)

The outcomes-based method concentrates on the mastering of knowledge and skills which are necessary to achieve a certain outcome. An outcomes-based education and training system has, as its basis, intended outputs (outcomes), rather than inputs of

traditional curriculum-driven education and training. An outcome is regarded as what an individual can do and understand (Nel, 2004).

Ernst (2003) states that the new system for education and training in South Africa, referred to as OBET, needs an integrated approach to education and training. Traditional education practices need to incorporate skills development and that traditional training practices need to incorporate education for the development of foundational knowledge and broader human capabilities.

3.3 A NATIONAL TRAINING STRATEGY FOR SOUTH AFRICA

3.3.1 Introduction

A national training and development strategy is of greatest importance if a country wishes to use its people as effectively as possible, and thereby experience economic growth (Erasmus et al., 2006). Erasmus and van Dyk (2003) discuss the objectives, vision, and core strategy of the national training strategy.

3.3.1.1 The Objectives of the National Training Strategy

The *objectives* of the national training strategy are to:

- Identify training problems.
- Highlight the importance of training in the restructuring of South Africa.
- Recommend an integrated future approach to education and training.

3.3.1.2 The Vision of the National Training Strategy

The *vision* of a national training strategy is to provide a human resource development system with an integrated approach to education and training, which has to provide for the economic and social needs of the country in addition to the development needs of the individual.

This vision requires a change from regarding education and training as two separate entities to the idea that learning is a life-long process.

3.3.1.3 The Core Strategy

A *core strategy* was defined as follows:

Education and training must, by way of a national qualifications framework, empower people, improve their quality of life, and contribute to the development targets in the national economic plan.

3.3.2 The National Qualifications Framework (NQF)

The NQF is the set of principles and guidelines by which records of learner achievement are registered to enable national recognition of acquired skills and knowledge, thereby ensuring an integrated system that promotes life-long learning (Department of Labour). It is based on a credit system for accomplishing learning outcomes. A learning outcome is an ability developed by the learner that shows an integration of knowledge and skill that can be transferred to different contexts. Qualifications can be obtained by way of full-time study, part-time study, distance education, work-based learning, or a combination of these, together with an assessment of prior learning experiences and general experience (Erasmus et al., 2006).

3.3.2.1 Why has SA chosen a National Qualifications Framework

Countries worldwide are seeking improved methods of educating their people and organising their education and training systems in order that they might gain an advantage in an increasingly competitive economic global environment. In addition, the world is an ever-changing place, politically, geographically and technologically. The rapid technological advances have placed education systems under tremendous pressure as they try to adapt and include these changes in an endeavor to produce more creative, effective and adaptable individuals. To succeed, South Africa requires a national education and training system that provides quality learning, is responsive to the ever-changing influences of the external environment and furthers the development of a nation that is committed to life-long learning.

In addition, learners will be more inclined to improve their skills and knowledge, as such improvements increase their opportunities for employment. The increased skills base has

a wider effect. It enhances the functional and intellectual capability of the nation, thus, increasing our chances for success in the international market (Department of Labour).

3.3.2.2 The Objectives of the NQF

The objectives of the NQF are to:

o   Establish an integrated national framework for learning achievements.

o   Ease access to, and mobility and progression within education, training and career paths.

o   Improve the quality of education and training.

o   Speed up the redress of past unfair discrimination in education, training and employment opportunities.

o   Contribute to the full personal development of every learner and the social and economic development of the nation at large (Department of Labour).

3.3.2.3 The NQF Structure

The NQF is a completely new approach to education and training in South Africa. The NQF comprises of a framework with eight levels and three identified bands. The *first* is General Education and Training (GET) with two sub-sectors, that is, formal schooling and Adult basic Education, culminating in Level 1. The qualification is the same as nine years of compulsory schooling and equivalent to the current grade nine at school. The *second* band is the Further Education and Training Band (FET) consisting of levels 2 to 4. Here many sectors can provide education and training. Level 4 is the same as grade 12 (standard 10) of schooling. The *third* band is the Higher Education and Training Band and consists of levels 5 to 8 (Erasmus and Van Dyk, 2003).

Figure 3.1 Structure of the NQF

NQF LEVEL	BAND	QUALIFICATION TYPE
8	HIGHER EDUCATION AND TRAINING	. Post-doctoral research degrees . Doctorates . Masters degrees
7		. Professional Qualifications . Honours degrees
6		. National first degrees . Higher diplomas
5		. National diplomas . National certificates
FURTHER EDUCATION AND TRAINING CERTIFICATE		
4	FURTHER EDUCATION AND TRAINING	. National certificates
3		
2		
GENERAL EDUCATION AND TRAINING CERTIFICATED		
1	GENERAL EDUCATION AND TRAINING	Grade 9 ABET Level 4 . National certificates

Department of Labour. (2007). NQF Objectives [online]. *Internet*. Available from: http://www.saqa.org.za/show.asp?main=about/nqfobjectives.htm [Accessed 21 June 2007].

3.3.2.4 Benefits of the NQF

The benefits of the NQF can be described as follows:

- It is a consistent approach to education and training highlighting quality standards and practices.

- There will be opportunity for industry, the professions and formal education to set their own standards but with the emphasis on national qualifications.

- In the process, training and nationally-based qualifications will be available.

- Learning will be able to take place on the job, at tertiary institutions, secondary schools as well as in private training institutions.

- The training industry will be better prepared to compete on the global market, and overseas employees will be able to have their qualifications assessed for equivalence against South African qualifications registered with the NQF.

- Detailed reporting of individual achievement will be available to all stakeholders (Erasmus et al., 2006).

Training is an important but expensive part of a business. It is therefore, imperative that any training that is conducted be recognised and accredited by the South African Qualifications Authority (SAQA) (Amos et al., 2004).

3.3.3 The South African Qualifications Authority (SAQA)

SAQA is a statutory organisation appointed by the Minister of Education in consultation with the Minister of Labour. SAQA is the highest qualifications authority in the country. It is responsible for establishing National Standards Bodies (NSBs), and the delineation of NSBs into sub-fields, each with a Standards Generating Body (SGB).

The main functions of SAQA are:

Standard Setting and Developing:

o Register and accredit bodies responsible for setting up education and training standards or qualification.

o Record national standards and qualifications.

o Monitor the observation of rules of combinations for qualifications.

o   Make sure that the standards registered are internationally comparable.

Quality Assurance:

o   Register and accredit Education and Training Quality Assurance (ETQA) bodies.

o   Audit the quality of education and training.

The SAQA Act is responsible for administering/overseeing the development and implementation of the National Qualifications Framework (Meyer, Opperman and Dyrbye, 2003).

The purpose of Smith et al.'s (2006) paper was to study the impact of the acceptance of nationally-recognised training by organisations in Australia. This study was conducted in order to gain a greater understanding of, amongst others, why organisations use nationally-recognised training for their existing employees.   Nationally-recognised training is training based on national training packages or courses/programmes that have been officially accredited through state or territory accreditation boards.   Existing employees means those that are not newly-recruited from outside.

They discuss:

Reasons for adopting nationally-recognised training:

o   A great need/demand for training.

o   Organisations often began to use this form of training more extensively after the initial success of such training at the operational level.

o   With its on-the-job nature, this form of training could be used to train large groups of employees quickly whilst at the same time ensuring that all those who received the training were operating at a nationally recognised level.

o   Meeting such great need/demand for training would have been extremely difficult using an in-company and off-the-job approach to training.

Problems with adopting nationally-recognised training:

o   The general nature of the training.

o   This form of training could not always meet all organisations' training needs.

o   With the focus for delivery being on-the-job, the training was normally conducted by the supervisors or trainers in the workplace.

The authors conclude:

o   The organisations that used nationally-recognised training noticed its benefits, and those that did not utilise this form of training were interested in using it but lacked the knowledge and networks to find out more.

o   The use of qualifications for employees seemed to be more useful for organisations that had large numbers of employees undertaking similar work, and where there were not rapid changes in technology or work organisation.

o   Once qualifications had been introduced for such staff, there was demand from both employees and managers for qualifications for staff in other areas of the organisation and at higher levels.

o   HR staff believed that nationally-recognised training improved skills levels and the quality of goods produced or services provided.

o   It also facilitated on the job delivery, meaning that employees need not always be brought together in groups for training.

o   HR staff was of the opinion that providing qualifications to workers increased motivation and retention in addition to attracting employees where there were labour shortages.

There is a view among Australian training policy groups that, by international standards, Australia is a poor performer in the provision of training (Smith, 2006). The purpose of Smith's (2006) paper is to examine the statistical evidence for the extent of employer training in Australia and to analyse this information in line with three major qualitative projects that have been undertaken into employer training since the mid-1990's. The paper opposes the current assumptions about the quality and quantity of training provided by Australian employers and shows that carefully framed government policy can have a

major impact on the level of employer investment in training. The results of these research projects track the development of employer training in Australian organisations over a ten-year period from 1994 to 2003.

The author discusses amongst others:

- The projects show a move towards a more integrated and strategic approach to training in Australian organisations over this period.

- The model of employer training research in the mid-1990's established a clear link between the provision of training at the enterprise level with the major processes of organisational change, in particular improvements to quality assurance.

- The development of a more integrated approach to training in Australian organisations demonstrated a link between training and individual career development and, more significantly, the development of a stronger link between training and business strategy.

- Organisations that provide nationally recognised training are not only providing more training for their employees, but they also ensure that training reaches the most under-trained groups in the workforce at the operational level in their organisations.

- These organisations are also integrating nationally recognised training with other human resource management systems such as performance management and selection/recruitment.

The paper concludes that the research evidence supports an increasing quality and quantity of training in Australian organisations. This increase in training activity has been partly supported by government policies intended at making nationally recognised training more available to employers and employees.

3.4 A NATIONAL SKILLS DEVELOPMENT STRATEGY (NSDS)

3.4.1 Introduction

Hattingh (2000) lists the following problems affecting South Africa's skills development:

o   A large number of workers who lack the skills base for meaningful employment, apart from menial jobs.

o   Low levels of productivity due to poor or inadequate training.

o   A large gap between the skills levels of Whites and previously disadvantaged groups.

o   Low investment in training, because it is seen as too expensive.

o   Many organisations do not provide any opportunities for training of their employees. Those who do, often have a disorganised approach to training to meet immediate needs at the lowest cost, or their training is specific. This restricts the overall employability and mobility of employees.

The Government has recognised these drawbacks (Hattingh, 2000), and according to Erasmus and Van Dyk (2003), the National Skills Authority has prepared a national skills development strategy which details certain priorities for skills development for South Africa. The government's commitment to addressing the stated problems is supported by the Skills Development Act, 1998 and the Skills Development Levies Act, 1999. These two Acts introduce new institutions, programmes and funding policies intended to increase investment in skills development.

3.4.2 Benefits of Skills Development

The benefits of skills development are:

✓   Increase effectiveness in accomplishing organisational, divisional and departmental goals.

✓   An important part of an Employment Equity plan to develop employees from designated groups and to retain and develop good performers in all groups.

✓   Measurable return on training investments.

✓   Focused skills development aimed at skills gap.

✓   Outcomes-based training that shows results on the job.

✓ Rebate on Skills Development Levy (Folscher, 2003).

3.4.3 Purposes of the Skills Development Act

The purposes of the Skills Development Act are:

- To develop the skills of the South African labour force.
- To enhance the levels of investment in education and training in the labour market and to improve the return on that investment.
- To encourage employers:
o To utilise the workplace as a place for learning.
o To provide employees with the opportunities to gain new skills.
o To provide opportunities for new employees to gain work experience.
o To employ individuals who find it difficult to be employed.
- To encourage employees to participate in learnership and other training programmes.
- To enhance the employment prospects of individuals previously disadvantaged by unfair discrimination and to redress those disadvantages through training and education.
- To ensure the quality of education and training in and for the workplace.
- To assist:
o Work-seekers to find employment.
o Retrenched workers to re-enter the labour market.
o Employers to find qualified workers.
- To provide and control employment services (Department of Labour).

The NSDS is seen by the South African workforce as a highly skilled, mature and proactive resource which can make South Africa as competitive as any first world country. It could bring about the redress of 40 years of failure by both government and employers to develop skills that could provide an important means to overcoming poverty and unemployment, and ensuring a healthy and active business environment (Folscher, 2003).

3.4.4 Vision, Mission, Principles and Objectives of the NSDS

3.4.4.1 Vision

The vision for the NSDS is skills for sustainable growth, development and equity.

3.4.4.2 Mission

The NSDS contributes to sustainable development of skills growth, development and equity of skills development institutions by aligning their work and resources to the skills needs for effective delivery and implementation.

3.4.4.3 Principles

✓ Support economic growth for employment creation and poverty eradication.

✓ Promote productive citizenship for all by aligning skills development with national strategies for growth and development.

✓ Accelerate Broad Based Black Economic Empowerment and Employment Equity. (85% Black, 54% women and 4% people with disabilities, including youth in all categories). Learners with disabilities to be provided with reasonable accommodation such as assistive devices and access to learning and training material to enable them to have access to and participate in skills development.

✓ Support, monitor and evaluate the delivery and quality assurance systems necessary for the implementation of the NSDS.

✓ Advance the culture of excellence in skills development and life-long learning (Department of Labour).

3.4.4.4 Objectives of the NSDS

• Prioritizing and communicating critical skills for sustainable growth, development and equity.

• Promoting and accelerating quality training for all in the workplace.

• Promoting employability and sustainable livelihoods through skills development.

• Assisting designated groups, including new entrants to participate in accredited work, integrated learning and work-based programmes to acquire critical skills to enter the labour market and self-employment.

- Improving the quality and relevance of provision (Department of Labour).

Hattingh (2000) advises organisations to use the skills development legislation to develop the labour force to enable them to meet organisational objectives. This, according to the author, will ensure that skills development strategies become an important vehicle for promoting organisational growth.

However, Folscher (2003) mentions that the NSDS faces many problems. Freeman (2003:16) expands on this statement and writes, "With skills development in South Africa; the fruits of initiatives are about ready for plucking but the thunderheads of politics are looming dangerously".

In her article, Folscher (2003) argues:

Many employers have:

o   A negative outlook towards government plans.

o   A negative mind-set towards skills development legislation.

o   A belief that it is merely a paper exercise to get a levy-rebate.

o   No idea of the possible advantages for them (Folscher, 2003).

Many line managers have:

o   A view that too much is being demanded of them.

o   Too much work and inadequate administrative support.

o   Poor skills to manage employee performance and a return on training investment.

o   No understanding of the benefits of skills development.

o   Insufficient training budgets (Folscher, 2003).

Many skills development facilitators have:

o   No knowledge of their role.

o   A simplistic approach to their function.

o   Poor consultation and communication skills.

o   An intention to use the system for their own gain (Folscher, 2003).

Many learners have:

o A view that their development is the responsibility of their employer.

o An attitude that they are too busy to attend training courses.

o A reluctance to do any work linked to training, such as workplace assignments.

o A reluctance to be held answerable for what they have learned (Folscher, 2003).

Many training providers have:

o A negative outlook towards government plans.

o A negative mind-set towards skills development legislation.

o A reluctance to align to unit standards.

o A reluctance to keep records of learners and to perform basic administration.

o A reluctance to assess learning and/or be held answerable for training outcomes (Folscher, 2003).

Many setas:

o Communicate poorly.

o Lack the skills to encourage participation in the new plans (Folscher, 2003).

Many etqas:

o Duplicate qualifications and unit standards (Folscher, 2003).

SAQA is often seen to be:

o Unreasonable and/or inflexible.

o Over-regulated (Folscher, 2003).

The Department of Labour is:

o Placing needless responsibility on employers.

o Unable to check compliance.

o Failing to consult properly, as with the recent amendments to the Skills Development Act.

o Lacking understanding of the 'real world' (Folscher, 2003).

In an article entitled "Workforce can't compete" (2007), the writer states that stringent labour laws and unskilled workers have left local manufacturers incapable of competing with cheap imports from China. According to the manufacturers, it is becoming increasingly difficult to manage an organisation in South Africa with an unskilled and expensive labour force.

In Cole's (2007) article, Harry Gazendam, the chairman of the Automobile Manufacturers Employer Organisation, in discussing the skills challenges in the automotive industry in South Africa, states:

- ✓ There are a large number of low-skilled, unemployed workers, yet vacancies existed in highly skilled positions.
- ✓ There is a shortage of artisans, engineers and technicians, in addition to middle to senior managers.
- ✓ Regarding graduates, the problem is not quantity, but the right quality. Some tertiary institutions accept large numbers of students instead of concentrating on quality.

According to another article by Cole (2007) entitled "Skills shortage hampering SA's construction industry", Mike Dladla of DLDMIC Holdings states that the industry needed to find creative ways to solve this issue, which included in-service training of artisans and even teaching literacy and business skills, not something usually taught on a construction site.

Nolte (2007) reported in her article that the Homecoming Revolution set out on a major drive to attract skills back to the country from the UK. A total of 44 organisations participated in a two-day event at London's Kensington Olympia exhibition centre, intended at showcasing job opportunities in South Africa and attracting expatriates back home. The majority were organisations hoping to find the skills to fill the increasing number of shortages in South Africa. Some of the exhibitors included Anglo Platinum, Sasol, RMB, Sappi, Toyota, Oracle, Netcare and Telkom Media.

Bisschoff and Govender's (2004) research investigated and recommended an effective internal management framework for training providers to enhance skills development in the South African workplace. This research problem was based on the argument that although the state provides a legislative framework for training providers to develop skills, it does not provide an effective internal management framework for the workplace training providers.

The proposed skills management framework was designed to assist training providers to successfully comply with the skills legislative framework while managing daily, practical, operational challenges. It is a combination of a 10-step approach to meet the requirements of the skills legislation, and the nine principles of the project management framework discussed. The recommended framework is a practical approach to deal with and manage the challenges of the changing workplace and the complexities of the current skills legislation.

Folscher (2003) mentions that all stakeholders should consider their roles and responsibilities and be prepared to contribute in making South Africa the highly successful economy it can be. In order to do this, she continues; they should, amongst others:

- Make a sincere effort to understand the context of the NSDS and the associated legislation.
- Make a sincere attempt to know the content and understand the objectives and values of the NSDS and the legislation.
- Identify and/or adapt proper systems, processes and strategies to align internal policies and procedures with the objectives of the NSDS and the legislation and regulations.

3.5 MANAGERIAL IMPLICATIONS OF THE NEW LEGISLATION

As a result of legislation, organisations are expected to take ownership of skills development in the workplace (Meyer, Opperman and Dyrbye, 2003). Amos et al. (2004) explain that:

o   Each organisation is required to nominate a skills development facilitator. This person can either be an internal employee or an external person appointed to assist the organisation. This individual's role is to ensure compliance with the relevant legislation and to assist with the people development in the organisation.

o   The employer must prepare and submit a workplace skills plan yearly. This plan provides administrative details to the seta, in addition to a profile of current skills in line with NQF bands, the gender and race categories, and occupational groups.

o   Employers can claim grants back, based on addressing specific skills shortages for a sector.

o   An ETQA-accredited method of assessing an individual's capability must be established. This includes compliance with the SAQA Act. In addition, the organisation will either have to train its own workplace assessors or pay for this service from an external organisation.

o   The organisation must ensure that adequate staff and financial resources are made available for assessment.

o   An effective system for quality assurance and control must be maintained. The organisation must establish clearly defined quality management policies, which clearly define what the provider wishes to accomplish in all of the development initiatives and which indicate how the achievements will be measured.

o   All training material must be accredited and recognised by the ETQA.

o   The organisation should explore the option of using learnerships for employee development. A learnership includes a practical and a theory component.

o   All training should be conducted by competent education, training, and development practitioners.

o   Learning or development plans should be drawn up for every employee.

o   The new legislation enables employees to acquire workplace qualifications, which may be equivalent to formal school, technikon, or university qualifications.

In an article entitled "National registration will match job seekers to vacancies" (2007), it is reported that employers in future must register vacancies and placement with the Department of Labour to enable government to provide for and control employment

services. It will ensure that the skills base and gaps of the South African labour force are in one central database. According to the Minister of Labour, Minister M. Mdladlana, this is in line with the objectives of the Skills Development Act. The registration process would enable the government to enhance an employment services system that would match applicants to available posts, skills development opportunities, and social insurance.

Hunter (2004) argues that it is unlikely that legislation and national goals will ensure positive results in training without the commitment of the management of the organisation wherein the training must be implemented. This management commitment to training is the focus of the (author's) study. This study examined the relationships between Chief Executive Officers' (CEOs') commitment to training, managers' commitment to training, employees' motivation to learn, and organisational performance. The research problem investigated was that due to a lack of transfer of training to the work situation, training is often not effective. Hunter (2004) also argues that there is a lack of research focusing on the commitment of CEOs and their managers to training. The author concludes that:

- Considering the influence that managers' involvement in training has on the employees' motivation to learn, CEO's should encourage their managers to become involved in training.
- This could be done by informing the managers that they are directly responsible for training in their departments and by including this responsibility into Management by Objectives, performance appraisal or performance management programmes.
- Furthermore, the managers could be trained in the management of training where necessary, and rewarded appropriately for attaining challenging training goals.

The results also suggest that:

- Managers should encourage their employees to learn and to apply what they have learned.

- Managers could discuss their employees' individual training needs with them on a regular basis, help them to set learning goals linked to performance goals, and coach them on an regular basis. This should apply irrespective of whether the training is conducted on-the-job or off-the-job and irrespective of whether the organisation employs a training specialist or not.
- In line with the findings of this study, managers should encourage trainees to learn and to request for help when they need it.
- Managers should also provide them with the necessary assistance and support with regard to proper information, equipment, funds, and the opportunity to apply what they have learned.

3.6 NEED FOR TRAINING

One of the aims of the Skills Development Act is to increase the levels of investment in education and training in the labour market (Hattingh, 2000; Folscher, 2003). Meyer et al. (2003) stress that it is the task of each and every training manager, human resource manager, or skills development facilitator to ensure compliance to national legislation. The globalisation of markets and the internationalisation of production are the main reasons that have led international organisations like the International Labour Organisation (ILO) and the Organisation for Economic Cooperation and Development (OECD) to highlight training and development (Winterton, 2007).

Citing Rothwell and Kolb, Goldstein and Ford (2002) discuss the following:
o There is an added emphasis on using training as a means for managing and anticipating the rapid market changes occurring in work organisations these days.
o Managers need to provide on-the-job training to integrate unskilled youth into the workforce. Also, jobs have become increasingly complex and national and international competition more intense.
o Technological developments added to the rapid changes in a knowledge society also require training systems that promote and deliver appropriate training.

Employees are trained in organisations because it benefits both the individual and the organisation. The benefits to the individual include:

- The individual is able to make better decisions and solve problems more effectively.

- Employees are able to handle stress, tension and conflict more effectively.

- Job satisfaction is increased and knowledge, communication skills and attitudes are enhanced (Erasmus et al., 2006).

Erasmus and Van Dyk (2003) note the following benefits to the organisation:

o   Training improves the job knowledge and skills of individuals at every level.

o   It leads to improved profitability and/or excellent service.

o   The morale of the workforce is enhanced.

o   The image of the organisation is enhanced.

o   It helps to reduce costs.

o   Training contributes to organisational development.

o   Relationships between superiors and subordinates are enhanced.

o   Training contributes to increased productivity and quality of work.

o   Staff are helped to adjust to change.

o   It enhances labour/management relations.

o   Training improves the organisational climate.

o   A positive climate for growth and communication is created.

Referring to them as challenges, Cascio (2003) discuss five reasons as to why time and money budgeted for training will increase:

1)   Increasingly sophisticated technological systems that will require employers to train and retrain their existing workforce. This is the *high-performance work systems challenge.*

2)   Constant requests to meet the product and service needs of customers. This is the *quality challenge.*

3)   The need, as more organisations move to employee involvement and teams in the workplace. This is the *interpersonal challenge.*

4)   Training needs arising from organisations expanding into global markets. Such needs involve the training of local nationals, in addition to preparing individuals from the home country to work in foreign markets. This is the *global challenge*.

5)   The number of unskilled and undereducated youth who will be required for entry-level jobs, as well as the need to train women and older workers. This is the *social challenge* (Cascio, 2003).

Newton's (2006) study aims to address the myths and age-related barriers that presently discourage employers from training workers of different ages. Newton (2006) discusses the relationship between age and being offered or undertaking work-related training and development. The author adds that there are three factors that help explain why training participation declines with age:

o   Older employees are less likely to be offered work-related training opportunities.

o   Older employees are less likely to take up the training activities that are offered because of low or over-confidence in their abilities.

o   For the youngest and oldest employees, there is a greater chance of training being offered by employers but then not delivered.

Newton (2006) discusses other trends too, for example:

o   The decline in training participation by age is greater among men than women.

o   Part-time employees receive less training with age than their full-time counterparts.

Newton found that:

There is a clear relationship between age and the amount of training offered to, and received by staff. Employees aged over 55 were less likely than other workers to be included in training, or to have been offered it. Older employees were also less likely than younger or mid-life workers to engage in any opportunity for training that were made available. In addition, older employees were more likely only to have received on-the-job training.

3.7 GENERALISED APPROACHES TO TRAINING INTERVENTIONS IN ORGANISATIONS

The various generalised approaches to training interventions are, amongst others:

3.7.1 The "learning by exposure" (sitting by Nellie) approach

The trainee is shown how to perform a task by an experienced employee and is then allowed to continue (McKenna and Beech, 2002). Mckenna and Beech (2002) add that the benefit of this method is that learning is directly related to the job. The disadvantages are that the experienced employee (who may not be a training expert) may have difficulty explaining things and empathising with the trainee, and errors made by the trainee could be costly. In addition, this method does not provide for the creation of structure in the learning process, neither does it provide proper feedback, which is essential for effective performance.

3.7.2 The "Systems" approach

The internal and external environment of the organisation provides the input for the training and development function. With regard to the external environment, the market and technological environment can influence training in the following ways: a decline in market share, the changing needs of consumers, increased competition, and the latest technology. Input from the internal environment of an organisation can be divided into two categories: technical input, and organisational functioning. The transformation process represents the training and development function and concerns those activities such as development of a curriculum, training and development activities, methods and techniques. The output is, amongst others, higher productivity, better quality products or service, lower labour and absenteeism costs, changing attitudes, and enhanced ability and skills (Erasmus et al., 2006). This positive output results in more satisfied clients, an improved market share, higher turnover and increased profit. A further characteristic of the systems approach to organisations is that the output provides the feedback that repeats the cycle of events (Erasmus and Van Dyk, 2003).

3.7.3 The "action learning" approach

Action learning means allowing managers to work full time on real projects, analysing and solving problems, usually in departments other than their own (Dessler, 2006). In this type of training, according to Noe et al. (2004), teams or work groups get an actual problem, work on solving it and commit to an action plan, and are responsible for implementing the plan. Weinstein (1999) points out that for trainers, facilitators and developmental managers, action learning can be a very good way of assisting individuals in organisations learn successfully while achieving a practical outcome for their organisation.

In his article, Farrington (2003) concludes that:

Action-centred learning (ACL) is a highly motivating and effective training and development solution that should be considered for inclusion in a training plan. It offers the employee a tailored, structured approach to their development. For the organisation, it offers the potential to deliver real business benefits whilst employees are being developed. The outputs are noticeable, and thus, capable of being objectively evaluated.

3.7.4 The "problem-centred" approach

This approach solves short-term problems and is informal in nature. It is dominated by operational problems that determine the requirements of the individual or the group. This approach is often very acceptable because it is practical in nature and funds are allocated for special operational needs. The success of this method rests on the identification of high-level skills and not the redefinition of an operational problem (Erasmus and Van Dyk, 2003).

Stonyer and Marshall's (2002) paper examines the industry-based engineering training in New Zealand (NZ). With a view to enhance the culture of training and learning in NZ organisations, a move from the standardised training approaches often linked to unit standards, to adopting a "problem-based learning" (PBL) model for workplace training is proposed. The importance of educating workplace trainers to deliver workplace training based on this model are also discussed.

Stonyer and Marshall (2002) conclude that:

o   If workplace training is to be effective then new workplace pedagogies must be developed.

o   To ensure a "highly skilled workforce, capable of continuous learning and able to adapt to change" requires a major change from an emphasis on "training" to an emphasis on "learning" in the workplace.

o   As part of this change, the proposed approach returns PBL back to the workplace, in a form capable of integrating with other forms of organisational learning presently in use onsite.

o   Such a shift requires changes in the training of workplace trainers. Trainers must be prepared to work within organisations to create and facilitate learning environments capable of producing science, engineering and technology practitioners who will have opportunities to develop the necessary skills and knowledge to contribute fully to "knowledge" enterprises.

3.7.5 Knowledge management system

Knowledge management involves storing and sharing the wisdom, understanding and expertise accumulated in an organisation about its processes, techniques and operations (Armstrong, 2006). This concept has grown fast with the development of information technology. A knowledge management system needs a well-planned and structured management information system in which information is stored. The information is then made accessible to those wishing to retrieve it. This information would assist them in personal development and work needs (Erasmus et al., 2006).

Knowledge management systems provide a new medium to effectively and efficiently spread knowledge, skill and expertise throughout an organisation (Muscatello, 2003). However, Muscatello (2003) argues that not much has been written about the use of knowledge to serve the training needs of the organisation. The purpose of his study is to combine the powerful competitive traits of a learning organisation with knowledge management traits to determine the positive effect the combined traits may have on an organisation. He elucidates the following:

- Knowledge management can be used as a temporary information source or a long-term knowledge and skill builder.

- The knowledge server affords a new and innovative way to access information for training.

- Information should be available in the knowledge server to be accessed by all employees who can benefit from it.

- A knowledge system reduces the amount of time needed to transfer knowledge from a master to an apprentice.

- A knowledge management training system can allow a member of staff to increase their training and education by working at their own pace after hours.

The study has led Muscatello (2003) to conclude that:

- Knowledge management has now established itself as an important competitive strategy that can give many advantages to an organisation. One of those advantages is training.

- Training in both the short-term and long-term can have a positive impact on the performance of an organisation.

- A knowledge server allows access to information at every level of an organisation and provides a medium for individuals to improve themselves in a formal and informal way.

- It can reduce the amount of structure required, eliminate excuses and de-politicise the organisation, while assisting individuals to learn on their own.

3.8 STRATEGIC TRAINING MANAGEMENT

3.8.1 Introduction

Strategic training requires an approach in which the main focus is to create an environment in which learning for all employees of the organisation is encouraged (Nel, 2004).

3.8.2 Business Strategy, HRM Strategy and Training and Development Strategy

To contribute to an organisation's success, training activities should assist the organisation to attain its business strategy. A business strategy is a plan that incorporates the organisation's goals, policies, and actions. The strategy affects how the organisation uses physical capital (for example, plants, technology, and equipment), financial capital (for example, assets and cash reserves), and human capital (employees). The business strategy helps manage the organisation's activities (production, finance, marketing, human resources) to achieve specific goals (Noe, 2008).

Erasmus et al. (2006) write that the training function in an organisation is an essential part of the human resource function and it is therefore, necessary that the broad human resource (HR) strategic plan should first be finalised. To attain HR goals, the HR planning process is to determine future HR needs. To determine the organisations HR needs, a demand forecast (for example, the number of people required at some time in the future and the profiles of those people required) should be drawn up and compared with the supply of HR (analysis of the skills levels) currently in the organisation. The differences between the demand and supply of HR indicate the HR needs. When an oversupply of workers exists in the organisation, employees may have to be transferred to different jobs or eventually, be retrenched. If there are posts available, staff must be recruited and employees retrained and developed to satisfy the job requirements.

Strategic training management therefore, concentrates on all those activities involving the training and development of individuals in the organisation to manage the oversupply and under-supply of employees in the organisation (Erasmus et al., 2006).

3.8.3 The Strategic Training and Development Process

Figure 3.2 shows a model of the strategic training and development process with examples of strategic initiatives, training activities, and metrics.

Figure 3.2 The Strategic Training and Development Process

Business Strategy	Strategic Training and Development Initiatives	Training and Development Activities	Metrics That Show Value of Training
. Mission	. Diversify the Learning Portfolio	. Use Web-based Training	. Learning
. Values	. Improve Customer Service	. Make Development Planning Mandatory	. Performance Improvement
. Goals	. Accelerate the Pace of Employee Learning	. Develop Websites for Knowledge Sharing	. Reduced Turnover
	. Capture and Share Knowledge	. Increase Amount of Customer Service Training	. Employee Satisfaction

Noe, R.A. (2008). *Employee Training and Development*. 4th ed. New York: McGraw-Hill/Irwin. p. 51.

Figure 3.2 illustrates that the process starts with identifying the business strategy. Next, strategic training and development initiatives that support the strategy are selected. Translating these training and development initiatives into concrete training and development activities is the next step of the process. The final step involves identifying

measures or metrics. These metrics are used to ascertain if training helped to contribute to goals related to the business strategy (Noe, 2008).

Employee training represents a significant expense for most organisations, yet, for many, it fails to achieve the desired results (Daniels, 2003). Daniels (2003) argues that training is too often viewed tactically rather than strategically. The organisation's leaders are often unclear about their objectives and thus, fail to link training with the overall organisational goals and strategy. She further states that training should not be considered as a luxury to be undertaken when time and budgets allow. In a successful programme, the training department acts as an agent of change. The training department understands the organisation's strategic direction and can design and implement creative ways of moving individuals in that direction. Erasmus et al. (2006) mention that the focus of strategic training management is to include training and development in the strategic planning agenda of organisations and to deliver the required knowledge, skills and attitudes to ensure success.

Training is not a panacea. However, it can provide extraordinary improvements in an organisation (Daniels, 2003). The means to receiving the best return on investment from training is to view it strategically rather than tactically (Daniels, 2003).

3.9 THE STRATEGIC APPROACH TO HR DEVELOPMENT

There is a serious shortage of skilled human resources in South Africa, which must be attended to if the country is to become globally competitive. Strategic human resources development helps implement strategic business plans and human resources plans by developing the skills of employees or changing the knowledge and skills of stakeholders outside it (Nel and Werner, 2004).

Armstrong (2006) notes that strategic HRD takes a broad and long-term view about how HRD policies and practices can support the attainment of business strategies.

The HRD strategy must be aligned with the total business strategy. The HRD strategy empowers management and the labour force through training, education, and

development to pursue organisational goals in the most efficient and effective manner (Van Dyk et al., 2001). Van Dyk et al. (2001) present a model of the SHRD process with seven steps:

o   Explain the purpose of the HRD effort.

o   Assess present conditions.

o   Scan the external environment.

o   Compare present strengths and weaknesses to future threats and opportunities.

o   Decide on a long-term organisational strategy for HRD.

o   Implement organisational strategy for HRD.

o   Evaluate HRD.

The primary aim of strategic HRD is to improve resource capability in line with the idea that the employees of an organisation are the main source of competitive advantage. It is about ensuring that the right quality of individuals are available to meet present and future needs (Armstrong, 2006). This, according to Armstrong (2006), is achieved by producing a broad framework for developing people.

Armstrong (2006) stresses that the specific objectives of strategic HRD are to develop employees and promote organisational, team and individual learning by creating a learning culture – an environment in which individuals are encouraged to learn and develop and in which knowledge is managed systematically. He further states that even though strategic HRD is business-led, its policies have to allow for individual aspirations and needs. The importance of increasing employability outside and within the organisataion is an important HRD policy consideration.

The key assumptions in implementing Strategic Human Resource Development (SHRD) are:

•   There should be an overall purpose statement for the organisation, and the Human Resources Development (HRD) effort should be linked to it.

•   Every major plan of the organisation should be considered in terms of the skills available to implement it, and alternative ways of acquiring those skills.

- Individuals at every level in the organisation's chain of command should share responsibility and accountability for HRD.

- There should be a formal, systematic, and holistic planning process for the organisation, personnel department, and HRD (Nel, 2004).

3.10 NEED FOR A TRAINING AND DEVELOPMENT POLICY

A training and development policy is based on specific assumptions and principles which manifest themselves in the form of a philosophy (Nel, 2004). According to Van Dyk et al. (2001), every organisation should base its training and development philosophy on a combination of job content training with management skills and leadership training in line with career levels. In their literature, Erasmus and Van Dyk (2003) state that the training and development policy of an organisation creates the broad framework for its training plan. The plan, in turn, communicates the priority training interventions of an organisation and the strategies to be followed during a certain period of time.

Training policies are developed for four main reasons:

o   To define the relationship between the aims of the organisation and its commitment to the training function.

o   To provide operational guidelines for management.

o   To provide information for staff.

o   To improve public relations (Erasmus et al., 2006).

Erasmus and Van Dyk (2003) mention that the training policy of an organisation refers to all employees and aims at:

- Providing induction training for all new employees and for those transferred to new departments.

- Providing day release facilities (a system whereby employees are released for training) at the discretion of the appropriate departmental manager in consultation with the organisation training officer.

- Ensuring that proper training is available to enable employees to reach and maintain satisfactory performance in their jobs.

- Providing the training required by employees selected for promotion so that they are properly prepared for their new responsibilities.
- Providing information, instruction and training to ensure the health and safety of every employee.

Furthermore, an organisation's training policy is expected to cover the following points:

o The organisation's underlying philosophy/beliefs concerning the value of training.

o Who is eligible for training – new employees, those recently or about to be promoted or transferred, those facing redundancy, members of designated training schemes, managers, supervisors, or all employees.

o The process for identifying training needs.

o Types of training available and on what basis.

o What the balance should be between on- and off-job training and between the use of internal and external resources, and on what basis such decisions should be made – cost, cost-effectiveness, urgency.

o What forms of learning/learning outcomes are preferred – self-study or IT assisted learning or short courses, or courses leading to academic, vocational or professional qualifications, or distance learning.

o Whether individuals can appeal against decisions affecting their training – and if so, to whom and on what basis (Hackett, 2005).

In the same way that a business policy has a goal and a way to achieve the goal, a training policy should also have targets and measures (Wills, 1999).

Garcia's (2005) paper examines the relationship between training policies and business performance. The research focused on Spanish organisations that had an average staff of 100 workers or more. The author states that this organisation size was chosen because most studies related to HRM work with a similar number of employees. The author concludes that training programmes directed towards employee development will have a positive impact on organisational performance and, in particular, will help to keep all stakeholders involved in the organisation content.

3.11 A SYSTEMATIC APPROACH TO TRAINING

3.11.1 Introduction

The decision to use a systematic approach to training is made when the trainer is certain that training is the most appropriate way to overcome a current or anticipated shortfall in performance (Buckley and Caple, 2000). Figure 3.3 illustrates the four phases of the training process. According to Mathis and Jackson (2004), using such a process reduces the possibility that unplanned, uncoordinated, and haphazard training efforts will take place.

3.11.2 Model for Systematic Training

Figure 3.3 illustrates the four phases of the training process.

Figure 3.3 A Basic Model of a Systematic Approach to Training
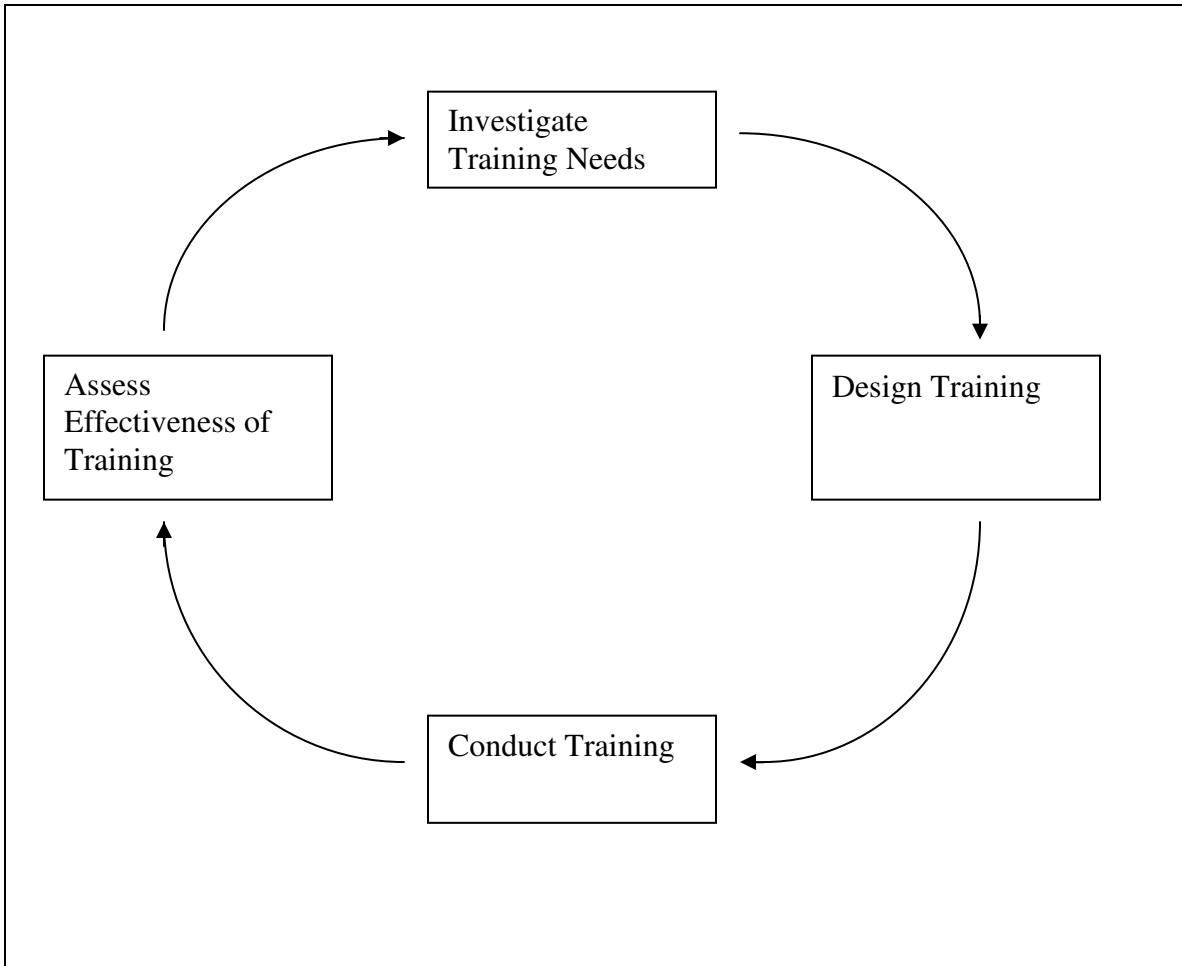
Buckley, R. and Caple, J. (2000). *The Theory and Practice of Training*. 4th ed. London: Kogan Page Limited. p. 18.

3.11.3 Stages In a Systematic Approach To Training

The stages in a systematic approach to training are:

▪ **Investigate Training Needs**

A needs assessment is conducted to determine which individuals need training or development and what type of skills or knowledge they need to obtain (Jones and George, 2008). It usually involves organisational analyses, person analyses and task analyses (Noe, 2008). *Organisational analyses* – has to do with, amongst others, an examination of organisational goals, resources of the organisation, transfer climate for training, and internal and external constraints present in the environment (Goldstein and Ford, 2002). *Task analyses* – identifies the main tasks and knowledge, skill, and behaviours that need to be highlighted in training for employees to complete their tasks (Noe, 2008). *Person analysis* – concentrates on whether the individual employees need training and exactly what training is required (Goldstein and Ford, 2002).

Wexley and Latham (2002) note that:

o   These analyses require time and staff to be conducted correctly.

o   It is a procedure that needs repeating when the organisation's products, services, or technology changes.

o   The three analyses are usually performed concurrently since they relate so highly with one another.

Establishing Training Objectives and Priorities

After training needs have been identified, training objectives and priorities must then be established by identifying a gap analysis, which shows the distance between where an organisation is with its employee capabilities and where it wants to be. Training objectives and priorities are established to close the gap (Mathis and Jackson, 2004). Formally setting objectives for the training programme has a number of benefits, which include:

✓   A training programme based on clear objectives will be more focused and more likely to be successful.

✓ When trainers are familiar with the objectives, they can communicate them to the individuals participating in the programme. Employees learn best when they know what the training is intended to achieve.

✓ Establishing objectives provides a basis for measuring whether the programme was successful or not (Noe et al., 2004).

- **Design Training**

When training objectives have been determined, training design can be carried out (Mathis and Jackson, 2004). The appropriate design work can be done by members of the organisation's HR or training team or by an outside training provider or consultant. The choice of who carries out the design work will be determined by the type of training required, the target audience, the resources available and the timescales (Bailey, 1999). Mathis and Jackson (2004) stress that trainers must design training programmes for the highest possible transfer of training. They explain that this transfer occurs when trainees really use what they learned in training on the job.

Erasmus et al., (2006) discuss various factors that affect the design of a training programme and must therefore, be taken into consideration. These are:

o Behavioural characteristics that affect course development, such as, learning curves, plateau, degrees of difficulty of the subjects, saturation point and fatigue.

o Learning sequence.

o Imparting course content.

o Reception.

o Listening.

o Assimilation.

o Results of training.

- **Conduct Training**

As soon as training has been designed, the actual delivery of training can start (Mathis and Jackson, 2004). Mathis and Jackson (2004) recommend that the training be pilot-tested or conducted on a trial basis to make sure that the training meets the needs identified and that the design is appropriate.

Table 3.1 describes the main types of training that organiations provide (Robbins and Coulter, 2005).

Table 3.1 Types of Training

Type	Includes
Interpersonal skills	Leadership, coaching, communication skills, conflict resolution, team building, customer service, diversity and cultural awareness.
Technical	Product training and knowledge, sales process, information technology, computer applications.
Business	Finance, marketing, lean manufacturing, quality, strategic planning, organisational culture.
Mandatory	Safety, health, sexual harassment.
Performance Management	Any training to help an individual employee improve his or her work performance.
Problem solving/Decision making	Defining problems, assessing causation, creativity in developing alternatives, analysing alternatives, selecting solution.
Personal	Career planning, time management, wellness, personal finance or money management, public speaking.

Adapted from Robbins, S.P. and Coulter, M. (2005). *Management*. 8th ed. New Jersey: Pearson Education, Inc., p. 294.

A wide variety of methods are available for conducting training (Noe et al., 2004). These are, amongst others:

o   Practical exercises

o   Role plays

o   Case-studies (Hackett, 2005).

o   Informal learning

o   Apprenticeship training

o   Simulated training

o   Management games

o   Behaviour modeling (Dessler, 2006).

o   Lectures (Erasmus and van Dyk, 2003).

o   Cooperative training

o   Distance training/learning (Mathis and Jackson, 2004).

o   Sitting by Nellie

o   Coaching

o   Mentoring

o   Action learning

o   Outdoor courses

o   E-learning (Mckenna and Beech, 2002)

According to Noe et al. (2004), receiving training by means of the internet or the organisation's intranet is called e-learning or online learning. In their paper, Wild, Griggs and Downing (2002) discuss the following benefits of e-learning:

• E-learning provides the easily accessible, highly flexible form of training that organisations are in search of.

• Economic advantage from not having to transport employees to attend costly seminars and thus, lose important work time.

• E-learning allows for greater flexibility. Individuals can take courses around their schedules and at their own pace.

- By means of online training, organisations increase the possibility of getting training to individuals wherever they live or work, and thus, retain valuable employees longer.

Wild et al. (2002) also provide a framework for the e-learning process. They tie this framework to the processes in the knowledge value chain to show how e-learning can be utilised as an important tool in knowledge management. They conclude:

- The challenges of implementing e-learning are similar to those of conducting knowledge management and include, amongst others, the development of a technical infrastructure, paradigm shifts in organisational behaviour, design of a knowledge strategy, and economic investments.
- The importance of e-learning:
o It includes the traditional pedagogy of education with the advantages of technology to capture, distribute and share knowledge throughout an organisation.
o Knowledge management is considered to be an important principle of modern day business strategy.
o The frequency with which knowledge workers change positions and jobs highlights the urgency for organisations to capture and distribute knowledge to ensure organisational success.

However, according to Nisar (2002), there are some perceived disadvantages which need to be cleared up before e-learning can be seen as a mainstream training method for learning organisations. These disadvantages are:

- ✓ The initial high expenditure on computer and multimedia package.
- ✓ While on-the-job training is considered to be cost effective, warm, and personal, e-learning can be viewed as cold and impersonal.
- ✓ The fear of technology is still noticeable in many people, certainly for those over 40 years of age.
- ✓ People enjoy going away from work and socialising on training courses. They see value in the out-of-hours discussion (Nisar, 2002).

In his article entitled "Is e-learning delivering ROI", Young (2002) looks at the findings of a study conducted in 2001 amongst senior executives within United Kingdom (UK) public limited company (plcs). The findings are compared with a similar piece of research conducted in 2000 to establish how e-learning has developed. An important part of the survey was to determine whether the anticipated benefits of e-learning had been realised by those organisations which had implemented it.

Young (2002) explains that:

o   More than one third (35 per cent) of the organisations in their sample that have implemented e-learning are still in the evaluation stage. From the rest of the responses it is evident that almost all of the benefits expected, have been achieved.

o   Cost efficiency was one of the main reasons given by organisations for implementing e-learning and indeed almost one third (27 per cent) have seen this benefit. Almost one quarter (24 percent) have been able to organise their training across a wide geographic area and multiple sites, taking the learning to the staff wherever they are; and 16 percent cite e-learning as a more effective approach to training.

o   The majority of those questioned have experienced no difficulty when using e-learning programmes as a delivery method for training and development.

▪   **Assess Effectiveness of Training**

The effectiveness of training will ultimately be evaluated in terms of the organisation's success in attaining its goals and objectives (Bailey, 1999). Evaluation is about trying to assess whether or not training is really producing relevant and valued outputs through efficient and well-managed processes. It is itself a process of gathering information with which to make decisions concerning training activities (Hackett, 2005). Bramley (2003) emphasises that this be carried out carefully so that decisions can be based upon sound evidence. He further states that good decisions to introduce, retain or discard particular training activities can make a major contribution to the success of the organisation; poor decisions are likely to be costly.

There are several models available to review the inputs, outputs and outcomes of training (Clayton, 1999). The evaluation model that Kirkpatrick developed, referred to as "The Four Levels", can be highlighted. This model is most commonly used by organisations (Aragon-Sanchez, Barba-Aragon and Sanz-Valle, 2003), and most widely referenced in literature concerning this subject (Meyer et al., 2003; Santos and Stuart, 2003; Stern, 2004; Phillips and Stone, 2002; Bramley, 1999; Brown, undated; Clayton, 1999; McNamara, 1999; Phillips, 2003; Aragon-Sanchez et al., 2003).

According to Kirkpatrick (1998), the four levels are:

o   Reaction – evaluation on this level measures how individuals who participate in the programme react to it.

o   Learning – the extent to which individuals change attitudes, improve knowledge, and/or increase skill due to attending the programme.

o   Behaviour – the extent to which change in behaviour has occurred because the individual attended the training programme.

o   Results – the final results that occurred because the individuals attended the programme, for example, increased production, improved quality, decreased costs, reduced frequency and/or severity of accidents, increased sales, reduced turnover, and higher profits.

Return on investment (ROI) is a measure of the financial benefits gained by an organisation over a specified period in return for a given investment in a learning programme. It measures the effect of training on organisational performance metrics such as higher productivity, better quality products/services, reduced costs, lower labour turnover, reduced absenteeism and increased market share (Meyer et al., 2003). According to Phillips (2003), measuring the return on investment is becoming a worldwide issue. Organisations are concerned about the accountability of training and are looking at ways and techniques to measure the results of training.

To assist, Phillips (2003), like Meyer et al. (2003) and Phillips and Stone (2002), provide a process model to calculate ROI. The framework selected for Phillips (2003) and

Philips and Stone's (2002) process presented is a modification of Kirkpatrick's four levels and includes a fifth level – return on investment. ROI cannot be overlooked. In fact, it must be explored, considered, and eventually implemented in organisations (Phillips, 2003).

In their article entitled "The state of ROI training measurement in South Africa", Meyer and Bushney (2005) provide graphical information which show that the majority of South African organisations are applying the Kirkpatrick levels to a large extent, while ROI measurement has not received a great deal of attention. Tabular information reveal that the application of ROI is fairly new in South Africa and that not many organisations have been involved in ROI practices.

The most forgotten step in any training programme is the evaluation (Al-Athari and Zairi, 2002). The main objective of Al-Athari and Zairi's (2002) paper is identifying the training evaluation activities and challenges in Kuwait organisations. The study sample was five UK organisations (recognised as best practice organisations in their T and D activities) and 77 Kuwaiti organisations (40 government and 37 private). The authors conclude:

✓ The most regularly used model by Kuwaiti organisations is the Kirkpatrick model, while the most common level of evaluation for both government and private sector is reaction.

✓ The main challenges that discourage Kuwaiti organisations from carrying out sound evaluation were as follows: finding evaluation methods that suit a variety of courses, cost of doing evaluations well, translating evaluation results into top management's language and determining specific actions to take based on evaluation results.

✓ The study also revealed that the majority in both sectors face difficulty in obtaining the information required for evaluations.

Numerous hurdles exist, which prevent the implementation of effective training programmes with appropriate evaluation mechanisms (Tennant, Boonkrong and Roberts, 2002). In recognising this problem the authors have conducted a study of UK-based

manufacturing organisations, to identify the current practices and the main barriers which hinder effective training programmes for production operators. The goal was to develop a training programme measurement model that can be accepted as a framework for developing training programmes and evaluating learning outcomes, which could benefit the organisations. The research process took into account both academic and industrial inputs, in the form of a literature review, and a survey of UK-based manufacturing organisations. The respondents agree that even though evaluating training programmes is a vital aspect, it was not regarded as a priority by management. The respondents claimed that several additional barriers to effective training add to this. These were:

o   Resource and time restrictions.

o   Lack of ownership of the training programme by management.

o   Lack of training evaluation skills.

o   Training course aims and objectives not clear.

o   Lack of upper management commitment to a continuous training programme.

o   Lack of honesty by individuals in the area of training needs analysis.

o   Employees are too busy working to worry about training (Tennant et al., 2002).

Tennant et al. (2002) state that the survey findings from this research support the literature in many important areas. They discuss that:

o   Manufacturing organisations tend to recognise the need for, and potential benefits of, training programmes for production operators. This can be seen by the extent of training carried out, the practice of introducing induction training for new employees, and the budgeting for and use of external training providers where necessary. However, it is uncertain whether the depth of training is sufficient to attain the necessary benefits of behavioural change and skill development, which will lead to the organisation's success.

o   In many cases organisations cannot identify ineffective training programmes because they do not have proper measurement systems for evaluation. More appropriate evaluation mechanisms could bring about improvements in the quality and effectiveness of training programmes to prevent wasted efforts, and facilitate the quest for continuous improvement.

o   To be effective, the training programmes also need to be proactive and strategic in context.

o   The authors believe that the lack of top management commitment and visible strategic objectives is actually the most influential barrier.

o   The research has led the authors to believe that training programmes for production operators in the UK tend to be reactive and informal.

According to Tennant et al. (2002), this research has led to the development of a training programme measurement model, which can be used as a framework to enable organisations to measure the effectiveness of their training programmes for production operatives. The model was developed by combining elements of both the Kirkpatrick and the CIRO models, and including the authors' personal perspectives.

However, in his article, Hale (2003) argues that a number of myths have emerged as a result of an over-reliance on the Kirkpatrick levels of evaluation. These are:

o   Learning is the responsibility of the trainer.

o   Courses prove learning.

o   Good course evaluations mean learning.

The author also argues that it has proven an impracticable model and provides some suggestions for a new method and a change in the way we should look at evaluation. Hale (2003) proposes that learning should be seen as the responsibility of the participant and that proving learning is essential to the process of learning. In his second article, Hale (2003) extends his argument and states that the two main areas for future focus are mentoring and the accreditation of work-based action learning as the new form of evaluation.

Quality and Training

Organisations committed to total quality invest a great deal in training, knowing that such investments add value to organisational capabilities (Evans and Lindsay, 2005). Evans and Lindsay (2005) add that training generally includes, amongst others, quality awareness, leadership, project management, communications, teamwork, problem

solving, interpreting and using data, meeting customer requirements, process analysis, process simplification, waste reduction, cycle time reduction and error proofing.

As quality became a main focus of businesses throughout the world, various organisations developed standards and guidelines (Raturi and Evans, 2005). The ISO 9000 is a set of global quality standards that give an organisation a framework for showing customers how it tests its products, trains employees, keeps records and repairs defects (Grobler et al., 2002). Telsang (2005) writes that the ISO 9000 series of standards are generic in nature and scope. It can be modified to suit any organisation's needs. The ISO 9000 series of quality management standards, guidelines and technical reports was initially published in 1978 and is reviewed at least every five years (Telsang, 2005). Evans and Dean (2003) inform us that it was revised in 1994, and again in 2000. The most recent version is called the ISO 9000:2000 family of standards.

`Resource Management` is one of the four major sections the ISO 9000:2000 standards are structured into (Raturi and Evans, 2005). Under resource management is `human resource` which state: "personnel performing work affecting product quality shall be competent on the basis of appropriate education, training, skills and experience" (Telsang, 2005).

Quazi and Jacobs's (2004) exploratory study examined the impact of ISO 9000 certification on the training and human resource development activities of a small sample of organisations in Singapore. A survey research methodology was utilised for the study. A questionnaire was developed to address the questions. The organisations were requested to indicate the extent of their training and HRD activities three years prior to certification and three years after the certification. A total of 33 completed questionnaires (from 177) were received. Of these responses, 28 were usable for analysis. The final sample consists of 19 organisations from the manufacturing sector and the remainder were from the non-manufacturing sector.

Quazi and Jacobs (2004) discuss that:

o   In the manufacturing organisations, average training hours had increased for all category of employees. Approximately 50 percent of the respondents agreed or strongly agreed that this was due to the ISO 9000 certification.

o   Only 50 percent of the respondents agreed or strongly agreed that the certification helped enhance the training and development process.

o   Considerable improvements in training needs analysis, training design, training delivery, training evaluation and HRD activities were reported in the manufacturing organisations.

Adequate, appropriate training of quality managers is necessary for the development and implementation of effective quality management systems (Stewart and Waddell, 2003). Stewart and Waddell's (2003) study reports on a survey of 235 Australian quality managers to establish their perceptions of their training and development needs, the extent to which these were being met, and their views on the future of their discipline. The authors conclude that:

o   Australian quality managers seem to have a rather positive view of the future of quality management.

o   The majority did not see their training needs as different to that of other managers and most appeared satisfied with the value of the training they had undertaken.

o   Many managers seemed to be either unaware of their own training needs or believe that they did not require any future training.

o   The perceived lack of organisational support for training and development is of concern. While the quality managers themselves placed strong emphasis on training, they cited lack of time as one of the main constraints.

o   Australian quality managers seem to be getting the training and development they want, but this does not necessarily match up to the type of training and development they require to perform their tasks effectively (Stewart and Waddell, 2003).

3.12 MANAGEMENT DEVELOPMENT

Management development has to do with improving managers' performance in their current roles and preparing them for greater responsibilities in the future (Armstrong, 2006). According to Garrun (2008), management skills are listed as one of the critical areas in all studies of skills shortages in South Africa.

Effective management development passes on the knowledge and judgement required by managers (Mathis and Jackson, 2004). They explain that without proper development, managers may lack the capabilities to effectively organise and manage resources (including employees) throughout the organisation. Necessary capabilities include leadership, dealing with change, coaching and advising subordinates, controlling operations, and providing performance feedback.

Due to globalisation and increased competitiveness, it is more important these days for leader development programmes to be appropriate. Furthermore, the programme should be aligned to the organisation's strategy and goals (Dessler, 2006).

Amongst the objectives for a management development plan are the following:
o   Identify managers with potential and ensure they receive proper experience, training and development.
o   Set achievable goals for performance improvement.
o   Consider introducing a management succession scheme, which would be reviewed regularly (Mckenna and Beech, 2002).

Longenecker and Fink's (2005) paper explores the benefits of effective management training and the results of ineffective programmes. Seasoned managers (278) working in rapidly changing organisations were surveyed on matters related to management training.

Longenecker and Fink (2005) found that:
Managers in this study identified several important benefits that can be derived from effective managerial training programmes. These are:

- Training can expose the individual to new/improved ideas and business practices.
- These types of programmes help them develop and improve their skills and motivate them to improve performance (both their own and their department's).
- It assists managers to examine their leadership/management style, in addition to identifying specific problems related to employees who report to them.
- Effective training programmes can increase a manager's confidence and help reduce stress levels.

The results of poorly trained managers are:

✓ Greater difficulty in attaining performance goals.

✓ Decrease in employee productivity.

✓ No teamwork/cooperation/effective communication.

✓ Morale problems/increased stress.

✓ No focus on customer requirements and profitability.

✓ Increased cost/lost opportunities.

✓ Quality problems.

✓ Absenteeism and turnover problems.

✓ Broken policies and procedures/potential legal exposure.

Part two of Longenecker and Fink's (2005) paper aims to explore why organisations often direct little attention and resources on management training and provides a useful checklist of ways to close the managerial skills gap through training.

Longenecker and Fink (2005) list the following reasons why organisations are not successful in their management training efforts:

o Management training is not an upper management priority.

o Over-reliance on trial-and-error learning.

o Not willing to take the time to train/educate.

o Assume managers are already competent.

o No accountability for management development.

o Not willing to invest money.

o   Unclear management skill set.

o   Lack of a formal management training process .

o   Assume management training is the manager's responsibility.

o   Shortage of qualified trainers.

Longenecker and Fink (2005) emphasise that if organisations really intend closing the managerial skills gap, top management and HR managers must team up to identify organisational training problems and systems to improve training at all management levels.

Management development is vital for gaining and sustaining competitive advantage (Belling, James and Ladkin, 2004). Belling et al.'s (2004) article looks at management development programmes. A study in the United Kingdom was cited which surveyed 234 managers from 17 organisations who had undergone off-the-shelf and tailored management development either off site or on site. The UK study set out to address, amongst others, the barriers and reinforcements influencing learning transfer.

The top three barriers were short-term targets, workplace pressures and no time for planning. The top three reinforcements were individual commitment, understanding one's own strengths and weaknesses and tangible benefits from applying new learning.

According to Belling et al. (2004) the UK study reveals that designing training and ensuring its effective application within the organisation is a highly complex process. To obtain the benefits, organisations need to ensure that employees receive appropriate training. Furthermore, organisations and trainers need to spend as much time on the transfer of training as on the training itself.

Longenecker and Neubert (2004) conducted a survey in the USA in order to find out what do front-line managers really want when it comes to their development? Each manager was presented with a list of management development practices and asked to comment upon which practice they felt was vital when it came to improving their individual performance.

Longenecker and Neubert (2004) discuss that: we are experiencing a change in focus from formal training programmes to more hands-on, work-based development and that communication continues to be the basis of all good management development programmes. For an organisation to succeed the individual must be developed and that changes in the corporate environment must lead to changes in the practices of management.

3.13 CONCLUSION

Training and development is a vital human resource activity in an organisation (Amos et al., 2004). It ensures that employees acquire skills, abilities, knowledge and attitudes that help them perform more effectively in present and future jobs (Grobler et. al., 2002). According to Amos et al. (2004), an effective training and development process should be implemented within the organisation to ensure that the training and development has a positive impact on the individual. They stress that organisations not only concentrate on the training and development of non-managerial employees, but also the development of managerial staff as well. As such, training and development may be regarded as an investment in human resources that will provide many important benefits and returns to the organisation (Grobler et. al., 2002).

CHAPTER 4
THE RESEARCH DESIGN

4.1 Introduction

Marczyk, DeMatteo and Festinger (2005) define research as an investigation of the effects of one or more independent variables on one or more dependent variables. It is a systematic search for information – a process of inquiry (Graziano and Raulin, 2004).

In this chapter, the actual plan, in terms of how the researcher obtains research participants or subjects and thereafter collects data from them is explained. Firstly, the objectives of the study are outlined. A description of the target population, sample size, and sampling method related to this study is then provided. The data collection method, that is, the self-administered questionnaire is then discussed in detail. Finally, the data analysis techniques are also elucidated.

4.2 Problem Statement

The research problem of this study focuses on the current serious shortage of skilled workers in South Africa. According to the Institute of Management Development (IMD) 2005 World Competitiveness Yearbook, in South Africa, the weakest criterion under Business Efficiency is skilled labour. In this regard, South Africa ranks 60 out of 60 economies. Yet, in order to compete in today's economy, whether on a local or international level, organisations must provide a quality product or service. The implication is that training and development is required in order to enhance quality standards.

Hence, the problem statement is: What are employee perceptions of the impact of training and development on product quality?

4.3 Objectives of the Study

The main objective of the study is to determine the perceptions of employees regarding the influence of training and development on product quality. Training plays an important role in enhancing quality (Noe et al., 2003). Therefore, in order to investigate employee perceptions of the impact of training and development on product quality, this study will determine:

- The relationship amongst the dimensions of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality) as a result of training and development being conducted in the organisation.

- Whether there is a significant difference in the perception of employees varying in biographical data (gender, age, length of employment) regarding the impact of training on each of the determinants of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality) respectively.

After identifying the objectives of the study, the researcher designs the study in order to collect data in a systematic and logical manner. The design must meet strict research criteria to ensure that the results will be both valid and reliable (Perumal, 1999).

4.4 Research Design

Research is a systematic, methodical search for specific information on a precise, defined theme (Lotter, 2003). Cohen, Manion and Morrison (2007) explain that there is no single strategy for planning research. Research design is governed by the idea of "fitness for purpose". The objectives of the research determine the methodology and design of the research.

Research design is concerned with finding things out systematically (Rugg and Petre, 2007). It is a plan for the collection and analysis of data with the intention of answering the research question/s (Verwey, 2003). According to Kumar (2005), a research design has two key functions. The first relates to the identification and/or development of

procedures and logistical arrangements needed to undertake a study, and the second emphasises the importance of quality in these procedures to ensure their validity, objectivity and accuracy.

4.4.1 Sampling Technique and Description of the Sample

Often researchers are forced to limit their research to a part of the population, since it is physically impossible to gain information from the entire population (Fox and Bayat, 2007). Factors such as expense, time, and accessibility frequently prevent researchers from obtaining information from the whole population (Cohen et al., 2007). Maree and Pietersen (2007) add that since the aim of a survey is to use the sample to learn about the population, it is imperative that the sample be drawn in such a manner that it would be valid to generalise its results to the population.

4.4.1.1 Defining the Population

O'Leary (2004:102) defines a population as "the total membership of a defined class of people, objects, or events". It is the full set of cases from which samples are taken (Fox and Bayat, 2007). Uys and Puttergill (2003) stress that the researcher must know exactly what is included in the population that will be studied.

4.4.1.2 Reasons for Selecting Organisation

One of the tasks of the researcher is to identify and adequately describe the population to which the results are intended to apply (Black, 2002). For the purpose of this study, all employees in the selected organisation in grades 6 to 14 inclusive will make up the population. Employees in grades 1 to 5 being senior management were excluded. Due to their poor literacy levels, factory operatives (grades 17 - 19) were also excluded from this study. It must be noted that grades were only used in this study for the purpose of describing and delineating the sample and not for the purpose of conducting inferential statistics such as ANOVA.

The organisation uses the Peromnes Grading System. The Peromnes system comprises of 19 grades, of which 1 is the highest (Gerber and Van Dyk, 1998). Table 4.1 illustrates the Peromnes grade classification and description.

Table 4.1 The Peromnes Grade Classification and Description

GRADE	DESCRIPTION
1 - 3	Top executive management, most senior professional people and specialists.
4 - 6	Senior management, high-level professional people and specialists.
7 - 9	Middle management, superintendents and low level professional people and specialists.
10 - 12	Supervisors, high-level skilled workers and clerical personnel.
13 - 16	Low-level workers and clerical personnel.
17 - 19	Semi-skilled and unskilled workers

Gerber, P.D. and Van Dyk, P.S. (1998). Compensation Management. In: P.D. Gerber, P.S. Nel and P.S Van Dyk. *Human Resources Management*. 4th ed. Halfway House: International Thomson Publishing (Southern Africa) (Pty) Ltd.

This organisation was selected because:
▪   It is located in the Province of KZN.
▪   It represented a large manufacturing organisation faced with the challenges of quality improvement, technology, training and development, competition and globalisation.
▪   Their products are manufactured to the strict ISO 9002 quality standards and carry the E-mark, Europe's symbol for tyre excellence, the In-Metro stamp of Brazil and the USA's DOT mark of approval.
▪   Of their involvement in both, local and international markets.
▪   Of their commitment to on-going research.

- Of their recent upgrade which consist of the installation of two new R20 million high precision TR25 making machines, four new presses and the inclusion of an advanced R6 million x-ray quality control system onto the production line. The substantial investment has led to:

o   Rapid introduction of new products.
o   Increased production.
o   Improved product quality.

Russell and Taylor (2006) claim that increased training in job skills results in improved processes that enhance product quality. Training in quality tools and skills enable employees to diagnose and correct everyday problems pertaining to their jobs. This provides employees with greater responsibility for product quality and greater satisfaction for assisting in achieving quality.

It is against this backdrop that training and development and product quality is analysed within the selected organisation. The relationship amongst the dimensions of product quality as a result of training and development being conducted in the organisation will be determined.

4.4.1.3 Defining the Sample
Researchers seldom study populations directly. Instead, they choose a sample from an accessible population (Graziano and Raulin, 2004).

Sampling is the process of selecting a few (a sample) from a larger group (the sampling population) to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the larger group. A sample is a subgroup of the population that the researcher is interested in (Kumar, 2005).

Graziano and Raulin (2004) emphasise that researchers must be careful to choose a representative sample, that is, a sample that adequately reflects population characteristics, if they want to generalise their findings.

According to Graziano and Raulin (2004), sampling procedures fall into two key categories. These are:

- *Probability Sampling* – is the procedure in which the choice of respondents is guided by the probability principle, according to which every unit of the target population has an equal, calculable and non-zero probability of being selected (Sarantakos, 2005).

- *Non-probability Sampling* – non-probability sampling approaches are used when the researcher lacks a sampling frame for the population in question, or where a probabilistic approach is deemed to be unnecessary (Blaxter, Hughes and Tight, 2006).

The method employed by a researcher to select a sample from a population will determine just how *representative* of that population members of the sample group are (Black, 2002). For this study, the sample was determined using the convenience sampling technique. Uys and Puttergill (2003) and Leedy and Ormrod (2005) explain that when using this technique, the sample is chosen from respondents who are readily available.

Both managers and employees will be included in the sample in order to establish the influence of training and development on product quality, as this is the primary aim of the study. For the purpose of this study, 315 questionnaires were given to the training department of the selected organisation. The training officers were then responsible for handing them to employees in grades 6 to 14 inclusive who were easily accessible in their respective factories for completion.

4.4.1.4 Sample Size

In order to generalise from the findings of a study, the sample needs to be of an adequate size (Denscombe, 2007). Sarantakos (2005) mentions that sample size is directly related to two major factors: the paradigm that guides the research, and the nature of the target population.

O'Leary (2004) is of the view that the best way to come up with a number is to consider:

• Your aims.

• The parameters of your population (how large it might be and how easy it is to identify and find its elements).

• The type of data you intend to collect.

Maree and Pietersen (2007) provide a summary of factors that affect sample size. These are:

o Type of research

o Research hypothesis

o Financial constraints

o Importance of results

o Number of variables studied

o Methods of data collection

o Accuracy needed

o Size of population.

The target population consists of 315 respondents. The sample was determined using the convenience sampling technique. A total of 108 employees from the organisation selected responded to the questionnaire.   Two (2) questionnaires were rejected and not analysed as they were incomplete. This leaves 106 questionnaires as usable. A response rate of 34% was achieved.

4.4.1.5 Description of the Sample

The composition of the sample as shown in Table 4.2 comprises the biographical variables of the 106 employees who responded to the questionnaire. Each of the biographical variables of the sample is graphically illustrated and discussed (Figure 4.1 – Figure 4.4).

Table 4.2 Composition of Sample

Biographical Variable	Frequency	Percentage
Gender		
Male	91	85.8
Female	14	13.2
Total	**105**	**99**
Age		
20 – 29	21	19.8
30 – 39	30	28.3
40 – 49	34	32.1
50 – 59	19	17.9
60 +	1	0.9
Total	**105**	**99**
Grade		
Factory (Durban) 6 - 8	5	4.7
Factory (Durban) 9 – 14	32	30.2
Factory (Ladysmith) 6 – 8	5	4.7
Factory (Ladysmith) 9 – 14	27	25.5
Technical 6 – 8	4	3.8
Technical 9 – 14	13	12.3
Marketing and Sales 6 – 8	2	1.9
Marketing and Sales 9 – 14	4	3.8
Finance and Services 6 – 8	4	3.8
Finance and Services 9 – 14	5	4.7
Total	**101**	**95.4**
Length of Employment		
0 – 5 Years	28	26.4
6 – 10 Years	32	30.2
11 – 15 Years	15	14.2
16 – 20 Years	14	13.2
Over 20 Years	17	16
Total	**106**	**100**

Figure 4.1 Composition of Sample: Gender
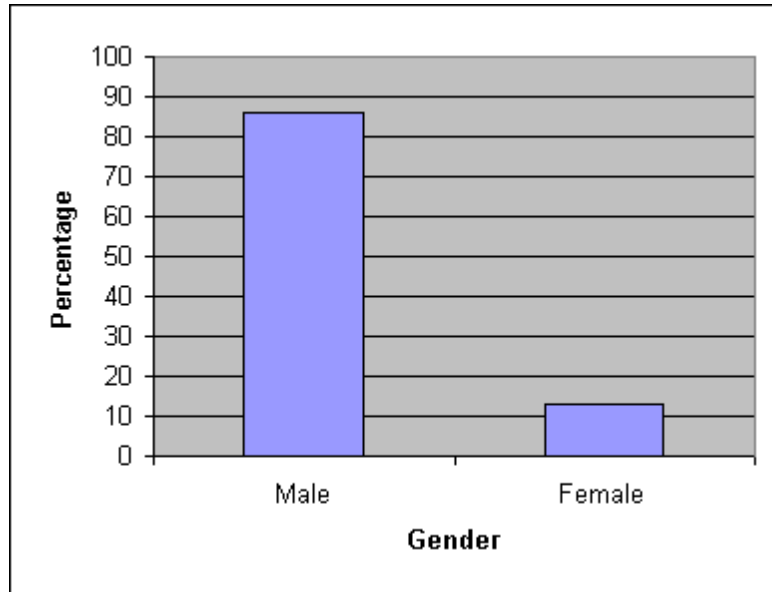
Figure 4.1 shows that 85.8% of the respondents are male and 13.2% are female. The type of industry that this organisation falls into calls for a male dominated environment. One employee (0.9%) did not complete this item.

Figure 4.2 Composition of Sample: Age
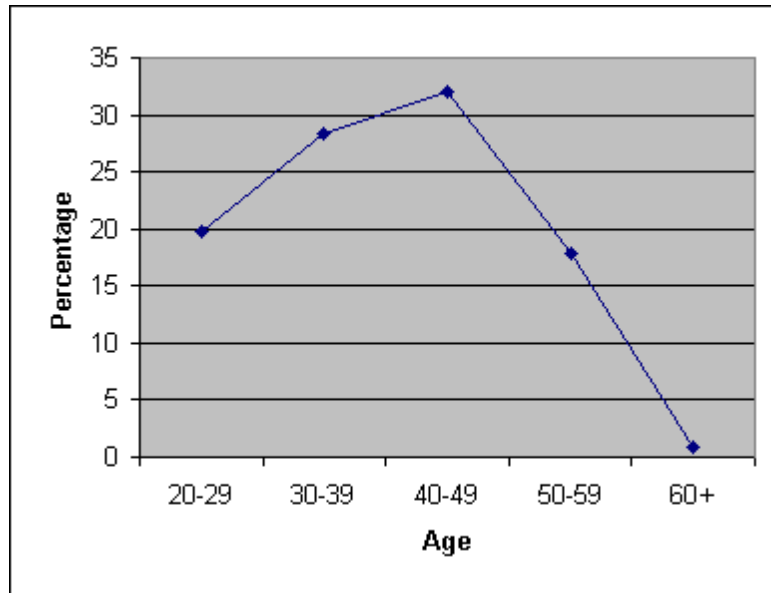
Figure 4.2 illustrates that of the total sample, 19.8% form the 20 – 29 age group, 28.3% were between 30 – 39 years, 32.1% fall in the age group between 40 – 49, 17.9% make up the 50 – 59 age group and 0.9% come from the 60+ age category. One employee (0.9%) did not complete this item.

Figure 4.3 Composition of Sample: Grade
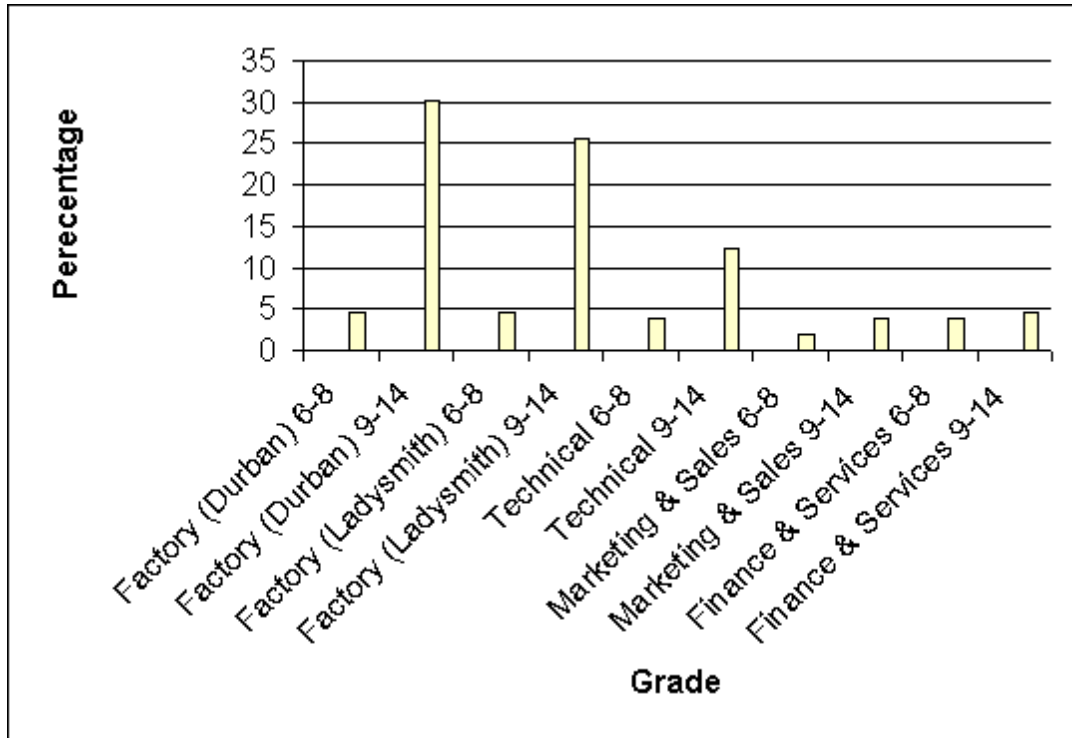
Of the total sample, 4.7% indicated Factory (Durban) 6-8 as their grade, 30.2% had Factory (Durban) 9-14, 4.7% had Factory (Ladysmith) 6-8 and 25.5% indicated Factory (Ladysmith) 9-14. The figure also shows that 3.8% of the respondents fall in grade Technical 6-8, 12.3% in Technical 9-14, 1.9% in Marketing and Sales 6-8, and 3.8% in grade Marketing and Sales 9-14.   Grades Finance and Services 6-8 and Finance and Services 9-14 made up 3.8% and 4.7% of the total respondents respectively.   Five respondents (4.7%) did not complete this item.

Figure 4.4 Composition of Sample: Length of Employment
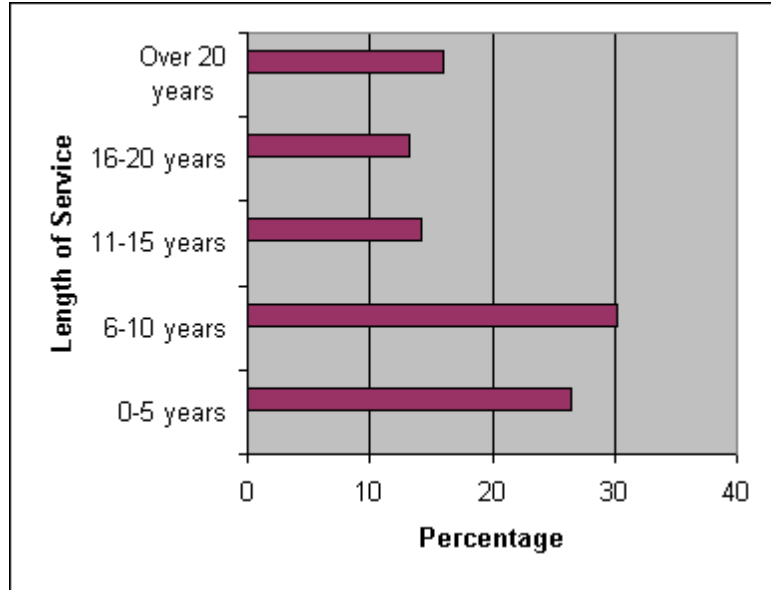
Figure 4.4 shows that 26.4% of the respondents have between 0-5 years service, 30.2% have service of between 6-10 years, 14.2% have been employed for 11-15 years, 13.2% are in the organisation for between 16-20 years, and 16% have service in excess of 20 years.

4.5 Data Collection

Data collection involves decisions and action regarding the collection of the information needed to address the research questions (Sarantakos, 2005).

The most widely used survey research techniques are telephone surveys, personal interviews and questionnaires (Fox and Bayat, 2007). Walliman (2004) stresses that as a method of data collection, the questionnaire is a very flexible tool; however, it must be used carefully in order to fulfill the requirements of a particular piece of research. In this study, data will be collected using a self-developed, pre-coded questionnaire.

4.5.1 Questionnaires

A questionnaire is a written list of questions, the answers to which are noted down by respondents (Kumar, 2005). Respondents can answer these questions either in their own words or by choosing from a set of responses that have been prepared in advance (Rugg and Petre, 2007). Booysen (2003) explains that questionnaire-based survey research is extensively used. It is regarded as an appropriate method of research if the individual is the unit of analysis. It often provides irreplaceable ways of determining attitudes, opinions, perceptions and reports of individual behaviour.

4.5.1.1 Questionnaire Design

According to Fox and Bayat (2007), a poorly designed questionnaire can nullify any investigation/study. Therefore, when designing a questionnaire the researcher needs to take cognisance of the following:

- Appearance of questionnaire
- Question sequence
- Wording of questions
- Response categories (Maree and Pietersen, 2007).

The purpose of a study is to achieve the research objectives. Therefore, the questionnaire needs to be concise, asking just those questions which are critical to the research (Denscombe, 2007).

In this study, the questionnaire was divided into two (2) sections. Section A comprised of the biographical data items and Section B consists of items to determine the perceptions of employees regarding the influence of training and development on product quality.

4.5.1.2 Questionnaire Format

The questionnaire format refers to the order in which questions are arranged within the context of the questionnaire (Sarantakos, 2005). Sarantakos (2005) writes that questions can be divided into two types: open-ended and closed-ended questions.

In this study closed-ended questions were used for the biographical questionnaire. Maree and Pietersen (2007) list the following advantages of closed-ended questions:

- They are simple and quick to answer.
- Coding and statistical analysis are straightforward.
- Sensitive questions are answered without difficulty.

The design of the questionnaire was guided by Garvin (1984) who identified eight dimensions of product quality:

o   Performance
o   Features
o   Reliability
o   Conformance
o   Durability
o   Serviceability
o   Aesthetics
o   Perceived quality.

With this in mind, the researcher structured Section B of the questionnaire as follows:

Table 4.3 Dimensions of Product Quality and Corresponding Question Numbers

Dimensions of Product Quality	Question Number
1. Performance	1 – 6
2. Features	7 – 12
3. Reliability	13 – 16
4. Conformance	17 – 23
5. Durability	24 – 27
6. Serviceability	28 – 32
7. Aesthetics	33 – 36
8. Perceived Quality	37 – 41

Table 4.3 illustrates the dimensions of product quality and their respective question numbers.   Multiple items were used to measure perceptions of employees of the dimensions of product quality in order to gain clear and complete insight.

Scales

A very common and useful approach in survey research of measuring how respondents feel or think about something is by using scales (Maree and Pietersen, 2007). In this study, a nominal scale with pre-coded option categories was used for the biographical data in Section A. In addition, the 5 point Likert scale was used for Section B. Likert scales present items in a continuum that covers the whole range of possible responses, allowing respondents to select the answer that fits their opinion (Sarantakos, 2005), ranging from strongly disagree (1) to strongly agree (5). Table 4.4 shows the content and response format of the questionnaire.

Table 4.4

Questionnaire Content and Format

Section	Type	Question	Question Number
Section A	Nominal Scale	Biographical	1 - 4
Section B	Likert Scale	Dimensions of Product Quality	1 - 41

4.5.1.3 Administering Questionnaires

There are several ways in which questionnaires can be administered (Blaxter, Hughes and Tight, 2006).

The basic methods of delivering questionnaires are by post and personally (Walliman, 2004). With regard to personal delivery, Dawson (2002) states that the researcher has to decide whether the questionnaire is to be interviewer administered or is to be self-administered. Cohen et al. (2007) explain that there are two types of self-administered questionnaires: those that are completed in the presence of the researcher and those that are filled in when the researcher is not in attendance.

In this study, a self-administered questionnaire without the presence of the researcher was used. The absence of the researcher is helpful in that it allows respondents to complete the questionnaire in private, to devote as much time as they wish to its completion, to be in familiar surroundings, and to avoid the potential threat or pressure to participate caused by the researcher's presence. It can be economical to operate, and is more anonymous than having the researcher present (Cohen et al., 2007).

To overcome the possibility of the need for clarification, a covering letter detailing what the study is about was attached to the questionnaire and within the measuring instrument clear instructions were given on how to respond in each section.

4.5.1.4 In-house Pre-testing and Pilot Testing

Pre-tests and pilot studies are two instruments utilised by (quantitative) researchers before the actual data collection begins. They are trial studies used to ensure that the planning of the main study and its study tools are correct, suitable, reliable and valid (Sarantakos, 2005).

Pre-testing: Pre-tests are small tests of single elements of a research instrument that are mainly used to check its "mechanical" structure (Sarantakos, 2005).   In this study, the questionnaire was pre-tested by the study supervisor and the training and development manager from the selected organisation.

Pilot testing: A pilot study is a trial run of an investigation carried out on a small scale to establish whether the research design and methodology are relative and effective (Fox and Bayat, 2007).   In this study, a pilot study was undertaken by administering the questionnaire to a group of 10 members of the population using the same protocols and procedures that were used to draw the larger sample.

4.5.1.5 Validity and Reliabilty

Validity refers to the degree to which the measuring instrument measures what it is intended to measure (Uys, 2003).

Reliability refers to the capacity of measurement to produce unvarying results (Sarantakos, 2005). In this study, the validity and reliability of the questionnaire will be statistically analysed.

4.6 Data Analysis

Little sense can be made of a huge collection of data; therefore, an important part of research is the analysis of data. This analysis must be conducted in relation to the research problem (Walliman, 2004).   For this study, data will be analysed using descriptive and inferential statistics and will be presented using tabular and graphical representation.

4.6.1 Descriptive Statistics

Descriptive statistics are used to describe and present data (Cohen et al., 2007). The term descriptive statistics is a collective name for a number of statistical methods that are utilised to organise and summarise data in a meaningful way. This serves to improve the understanding of the properties of the data (Pietersen and Maree, 2007).

4.6.1.1 Frequencies and Percentages

- *Frequencies*

For most nominal and ordinal data, statistical simplification entails computing frequencies, that is, the number of participants who fall into each category (Graziano and Raulin, 2004).

- *Percentages*

Percentages are frequently used to interpret data. There are three kinds of percentages: 'row', 'column' and 'total' (Kumar, 2005). Row percentages are the cell frequencies stated as a percentage of their respective row total. Column percentages are the cell frequencies stated as a percentage of their respective column total. Total percentages are the frequencies in the cells stated as a percentage of the sample size (Pietersen and Maree, 2007).

4.6.1.2 Measures of Central Tendency

Measures of central tendency clarify the typical or average score. They are called measures of central tendency since they provide an indication of the centre of the distribution, where most of the scores tend to cluster (Graziano and Raulin, 2004).

There are three measures of central tendency:

- *Mean*

The mean is the most frequently used measure of location and is calculated as the arithmetic average of all the data values (Pietersen and Maree, 2007).

- *Median*

The median is the mid-point of a range. To determine the median you simply arrange the values in ascending (or descending) order and find the middle value. This measure is usually used in ordinal data, and has the advantage of nullifying the effect of extreme values. This can also be a limitation since extreme values can be important to a study (O'Leary, 2004).

- *Mode*

The mode is the value that occurs the most often in a set of values (Marczyk, DeMatteo and Festinger, 2005).

4.6.1.3 Measures of Dispersion

There are a number of ways to calculate dispersion that vary in levels of precision (O'Leary, 2004).

o *Range*

The range is the easiest way to calculate dispersion, and is simply the highest minus the lowest value. While this measure is simple to calculate, it is dependent on extreme values alone, and ignores intermediate values (O'Leary, 2004).

o *Standard deviation*

The standard deviation is the square root of the variance (Marczyk, DeMatteo and Festinger, 2005).

o *Variance*

The variance is the average squared distance from the mean, and is calculated by summing the squared distances from the mean and dividing by the degrees of freedom (equal to the number of scores minus 1) (Graziano and Raulin, 2004).

4.6.2 Inferential Statistics

Inferential statistics are often used to evaluate mean differences between groups (Graziano and Raulin, 2004). The aim of inferential statistics is to draw conclusions that extend beyond the immediate data. Inferential statistics can be utilised to estimate characteristics of the population from sample data, or to test various hypotheses about the relationship between different variables. It allows one to assess the probability that an observed difference is not just a chance finding. Inferential statistics is about carrying out statistical tests that can show statistical significance (O'Leary, 2004). There are a number of tests for evaluating mean differences between groups. These are:

4.6.2.1 Correlation

A correlation enables a researcher to establish whether, and to what extent, there is a degree of association between two variables (Cohen et al., 2007). In this study, correlations will be used to determine whether there is a degree of relationship amongst the dimensions of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality) respectively.

4.6.2.2 T-test

The t-test is used under the following circumstances:

o   When two independent groups need to be compared based on their average score on a quantitative variable, for instance, average IQ of males and females.

o   When the average scores on two quantitative variables need to be compared in a single sample, for instance, pretest and posttest in the experimental group.

o   When the average of a quantitative variable needs to be compared with a specified constant value in a single sample, for instance, comparing the average IQ of mathematics higher grade learners to a specified value of 120.

There are three values computed and displayed with every t-test that are usually reported by researchers. These values are the test statistic (t-value), the degrees of freedom (n-1 in one-sample cases and n-2 in two sample cases) and the p-value (Pietersen and Maree,

2007). In this study, the T-test will be used to establish whether there is a significant difference in the perceptions of employees varying in gender.

4.6.2.3 ANOVA

When testing for mean differences among more than two groups, an analysis of variance (ANOVA) is the correct test (Graziano and Raulin, 2004). The ANOVA works by comparing the differences between group means instead of the differences between group variances. The name "analysis of variance" comes from the way the procedure uses variances to determine whether the means are different (Marczyk, Dematteo and Festinger, 2005). In this study, Anova will be used to determine whether there is a significant difference in the perceptions of employees varying in age and length of employment.

4.7 Statistical Analysis of the Questionnaire

Statistics refer to the science of collecting and processing data with the intention of producing information (Willemse, 1994). Blaxter, Hughes and Tight (2006) mention that one of the goals of analysis is to seek explanation and understanding.

In this study, the psychometric properties of the questionnaire (validity and reliability) will be statistically determined.

4.7.1 Validity

Validity refers to whether the approach to measurement used in the study in fact measures what it is supposed to measure (Marczyk, Dematteo and Festinger, 2005). In this study, the validity of the measuring instrument will be assessed using Factor Analysis.

The purpose of factor analysis is to establish which items "belong together" in the sense that they are answered similarly and therefore measure the same dimension or factor. Given that the factor is common to the items measuring it, this technique is also known as common factor analysis (Pietersen and Maree, 2007).

4.7.2 Reliability

Reliability is the extent to which a measure, procedure, or instrument provides the same result on repeated tests (O'Leary, 2004). In this study, the reliability of the questionnaire will be determined using Cronbach's Coefficient Alpha, which is used to measure the internal reliability of an instrument and is based on the inter-item correlations. If the items are strongly connected with each other, their internal consistency is high and the alpha coefficient will be close to one. Conversely, if the items are poorly formulated and do not correlate strongly, the alpha coefficient will be close to zero. Guidelines for the interpretation of Cronbach's alpha coefficient have been proposed and the following seem generally accepted by researchers:

- 0.90 – high reliability
- 0.80 – moderate reliability
- 0.70 – low reliability (Pieteren and Maree, 2007).

4.8 Conclusion

In order to achieve the aims of the study and to gain knowledge about the research problem, a research design was developed. The first aspect addressed in the research design was the selection of the sample. In this study, the convenience sampling technique was used. Thereafter, the research design focused on data collection. In this study, data are collected by means of a questionnaire. The aspects of questionnaire design, such as, content and format were emphasised.

Having discussed the various statistical tools that were used in this study, the following step is to analyse the data and use the statistical tools to interpret the information in a meaningful manner. In other words, statistical analysis is undertaken to make sense of what has been collected so that the researcher can obtain information that will eventually lead to the knowledge that he/she had planned to gain in the first place (Fox and Bayat, 2007).

CHAPTER 5
PRESENTATION OF RESULTS

5.1 Introduction

The data collected by means of a self-developed, pre-coded questionnaire was captured onto a Microsoft Excel computer programme. It was then checked to ensure that it was captured correctly. The data was then processed using the Systat computer package. This chapter focuses on the analysis and presentation of the data as discussed in chapter 4.

5.2 Results of the Study

This chapter uses descriptive and inferential statistics to understand the data and to determine the relationship between training and development and product quality and biographical data respectively.

5.2.1 Descriptive Statistics

Descriptive statistics refers to several methods and techniques where numerical data is collected, displayed and analysed scientifically, and from which logical decisions, conclusions and recommendations can be made (Fox and Bayat, 2007).

As per table 5.1 descriptive statistics in the form of means, medians, variances, standard deviations, minimum and maximum values and ranges were calculated for each of the dimensions of product quality.

For the purpose of this study, respondents were requested to respond to a five (5) point Likert scale, which ranges from strongly disagree (1), to disagree (2), to neither agree nor disagree (3), to agree (4), and to strongly agree (5). The statements, and hence the responses relate to training and development and the dimensions of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality). This allows the researcher to determine the relationship between the

two. The greater the mean score value, the greater the extent to which each dimension is perceived by the respondent as being fulfilled in the organisation.

Table 5.1 Descriptive Statistics of the Dimensions of Product Quality

		Performance	Features	Reliability	Conformance	Durability	Serviceability	Aesthetics	Perceived Quality
Statistic Mean		3.4811	3.5645	3.5425	3.3814	3.3656	3.3925	3.4198	3.3755
95% Confidence Interval for Mean	Lower Bound	3.3345	3.4317	3.3888	3.2371	3.2258	3.2341	3.2370	3.2042
	Upper Bound	3.6277	3.6973	3.6961	3.5257	3.5053	3.5508	3.6026	3.5467
Median		3.5000	3.6667	3.7500	3.5714	3.5000	3.6000	3.7500	3.6000
Variance		0.580	0.475	0.636	0.562	0.526	0.676	0.901	0.791
Std. Deviation		0.76127	0.68952	0.79767	0.74940	0.72553	0.82204	0.94903	0.88917
Minimum		0.00	1.00	1.00	0.86	1.75	1.00	0.00	1.00
Maximum		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Range		5.00	4.00	4.00	4.14	3.25	4.00	5.00	4.00

The mean score values for the dimensions of product quality (Table 5.1) reflect that features has the highest mean of 3.5645, followed by reliability with a mean of 3.5425, performance with a mean of 3.4811, aesthetics with a mean of 3.4198, serviceability with a mean of 3.3925, conformance with a mean of 3.3814, perceived quality with a mean of 3.3755 and lastly, durability with a mean of 3.3656. The analysis of the product quality dimensions as shown in Table 5.1 indicate that whilst these are being attained to a fair extent, there is tremendous room for improvement when we compare these mean values to a maximum attainable score of 5. These are depicted in Figure 5.1 and the gap between the mean score value and 5 depicts the area for improvement for each dimension of product quality.

Figure 5.1 Mean Values For The Dimensions of Product Quality
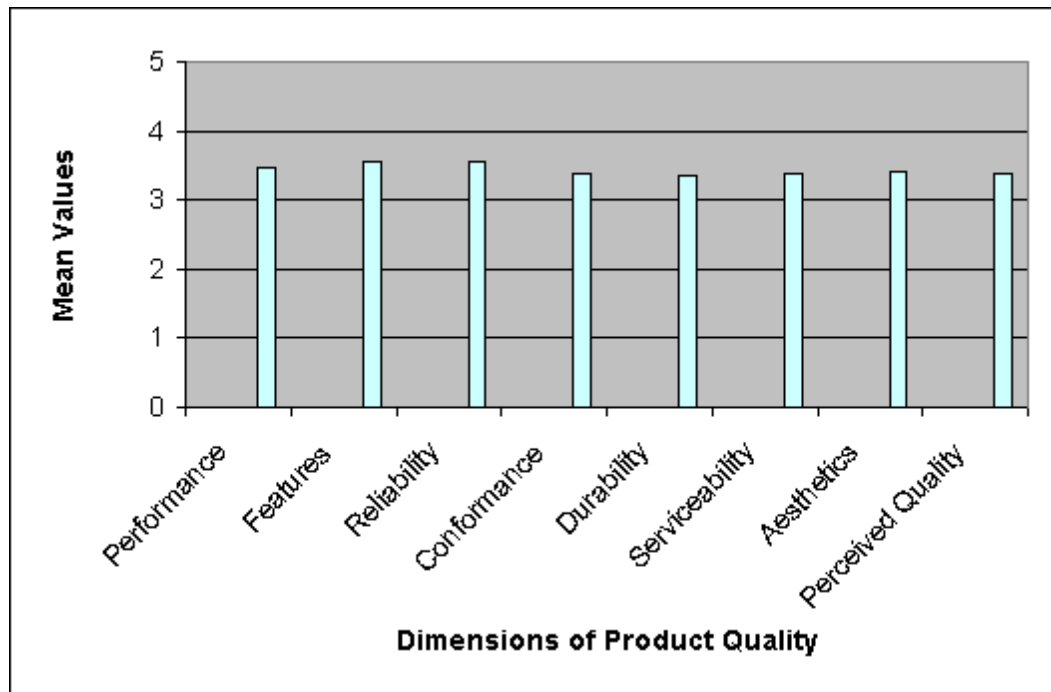
In order to assess these dimensions in depth, frequency analyses were conducted for each.

In terms of performance:

o   50.9% of the respondents agreed and a further 18.9% strongly agreed that when their organisation trains employees they are able to perform better, thereby enhancing the performance of the product.

o   51.9% of the respondents agreed and a further 9.4% strongly agreed that training needs analysis is undertaken in line with enhancing the performance of the product to ensure utmost return on investment.

o   However, 16% of the respondents disagreed and a further 7.5% strongly disagreed that employees are adequately/appropriately trained and developed to enhance product performance so as to gain a competitive advantage.

In terms of features:

➢   51.9% of the respondents agreed and a further 26.4% strongly agreed that training and development provides them with greater skills to produce a product with more sophisticated features, thereby making the organisation more competitive.

➢   49.1% of the respondents agreed and a further 19.8% strongly agreed that training and development provides the design staff with greater design skills thereby ensuring more tailor-made product features that fulfill specific customer needs and expectations.

➢   46.2% of the respondents agreed and a further 24.5% strongly agreed that training and development provides the marketing staff with greater skills and ability to conduct and analyse market research so as to enhance the features of the product.

➢   31.1% of the respondents neither agreed nor disagreed that employees engaged in design are well trained to ensure that customer requirements in terms of product features are met in the simplest and least costly manner, thus ensuring enhanced product quality.

➢ However, 22.6% of the respondents disagreed, and a further 3.8% strongly disagreed that in their organisation, since employees receive proper training and development, product features are enhanced.

In terms of reliability:

• 50.9% of the respondents agreed and a further 13.2% strongly agreed that training and development provides employees with greater skills and ability to enable them to produce products with greater reliability.

• 50.9% of the respondents agreed and a further 24.5% strongly agreed that training and development provides manufacturing employees with greater skills and ability to ensure that the product meets with specifications thereby enhancing product reliability.

• However, 34% of the respondents neither agreed nor disagreed that employees engaged in design are well trained to ensure that components/parts used will enhance the reliability of the product.

In terms of conformance:

o 43.4% of the respondents agreed and a further 22.6% strongly agreed that there is a decrease in defect rates when employees are adequately trained.

o 52.8% of the respondents agreed and a further 23.6% strongly agreed that training and development provides employees with greater skills and ability to detect defects in products.

o 30.2% of the respondents neither agreed nor disagreed that in order to ensure superior conformance, employees are well trained to ensure that machines operate at specified levels.

o However, 20.8% of the respondents disagreed and a further 6.6% strongly disagreed that employees engaged in manufacturing are well trained in order to ensure that their skills are maximised so as to gain a competitive edge.

In terms of durability:

➢ 56.6% of the respondents agreed and a further 12.3% strongly agreed that training and development provides employees with the skills and ability to produce products with superior durability.

➢ 31.1% of the respondents neither agreed nor disagreed that in order to enhance durability, training and development is structured/conducted in a manner that ensures close cooperation between design and purchasing staff.

➢ However, 17.9% of the respondents disagreed and a further 6.6% strongly disagreed that employees engaged in design are well trained to ensure that components/parts used will enhance the durability of the product.

In terms of serviceability:

▪ 51.9% of the respondents agreed and a further 11.3% strongly agreed that in order to enhance serviceability, service employees are well trained to ensure that *customer requests* are handled in a professional manner.

▪ However, 31.1% of the respondents neither agreed nor disagreed that in order to enhance serviceability, service employees are well trained to ensure that *customer queries* are handled in a professional manner.

▪ 34.9% of the respondents neither agreed nor disagreed that employees are well trained to ensure that defective products are replaced within a reasonable time.

▪ 34% of the respondents neither agreed nor disagreed that in order to attain service excellence, their organisation ensures that field representatives receive appropriate training and development.

In terms of aesthetics:

o 52.8% of the respondents agreed and a further 13.2% strongly agreed that training and development provides the marketing staff with greater skills and ability to carry out and analyse market research so as to improve aesthetics of the product.

o However, 16% disagreed and a further 8.5% strongly disagreed that in order to enhance product aesthetics and thus gain a competitive advantage, employees in their organisation receive appropriate training and development.

In terms of perceived quality:

➢ 41.5% of the respondents agreed and a further 16% strongly agreed that in order to strengthen the *brand name* and thus enhance customer perceptions, their organisation ensures that employees are well trained to produce high quality products.

➢ However, 31.1% of the respondents neither agreed nor disagreed that in order to enhance customer perceptions, their organisation ensures that marketing employees are well trained to design effective advertising.

➢ 30.2% of the respondents neither agreed nor disagreed that in order to enhance customer perceptions, marketing employees are well trained to plan and administer the advertising programme.

➢ 32.1% of the respondents neither agreed nor disagreed that in order to enhance *product image* and thus customer perceptions, their organisation ensures that employees are well trained to produce a high quality product.

5.2.2 Inferential Statistics

Inferential statistics goes further than describing the characteristics of data and the examination of correlations between variables. It is used to make predictions through inference, based on the data analysed. It is also utilised to test statistically based hypotheses (Walliman, 2004). Fox and Bayat (2007:126) state: "A hypothesis is a statement of a predicted outcome, which will either be supported or disproved by the research".

Intercorrelations were conducted amongst the dimensions of product quality to determine the extent to which they relate to each other when training and development is conducted in the organisation.

Hypothesis 1

There exists significant intercorrelations amongst the dimensions of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality) when training and development is conducted in the organisation respectively (Table 5.2).

Table 5.2 Correlations

Dimensions of Product Quality	r/p	Performance	Features	Reliability	Conformance	Durability	Serviceability	Aesthetics	Perceived Quality
Performance	r	1							
	p								
	N								
Features	r	0.735	1						
	p	0.000**							
	N	106							
Reliability	r	0.677	0.786	1					
	p	0.000**	0.000**						
	N	106	106						
Conformance	r	0.605	0.714	0.660	1				
	p	0.000**	0.000**	0.000**					
	N	106	106	106					
Durability	r	0.522	0.624	0.660	0.634	1			
	p	0.000**	0.000**	0.000**	0.000**				
	N	106	106	106	106				
Serviceability	r	0.502	0.615	0.613	0.616	0.652	1		
	p	0.000**	0.000**	0.000**	0.000**	0.000**			
	N	106	106	106	106	106			
Aesthetics	r	0.420	0.586	0.529	0.484	0.603	0.675	1	
	p	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**		
	N	106	106	106	106	106	106		
Perceived Quality	r	0.432	0.537	0.525	0.596	0.540	0.658	0.716	1
	p	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	
	N	106	106	106	106	106	106	106	

** Correlation is significant at the 0.01 level (2-tailed).

Table 5.2 indicates that:

- ➢   Performance significantly correlates with features, reliability, conformance, durability, serviceability, aesthetics and perceived quality, respectively, at the 1% level of significance.

- ➢   Features significantly correlates with reliability, conformance, durability, serviceability, aesthetics and perceived quality, respectively, at the 1% level of significance.

- ➢   Reliability significantly correlates with conformance, durability, serviceability, aesthetics and perceived quality, respectively, at the 1% level of significance.

- ➢   Conformance significantly correlates with durability, serviceability, aesthetics and perceived quality, respectively, at the 1% level of significance.

- ➢   Durability significantly correlates with serviceability, aesthetics and perceived quality, respectively, at the 1% level of significance.

- ➢   Serviceability significantly correlates with aesthetics and perceived quality, respectively, at the 1% level of significance.

- ➢   Aesthetics significantly correlates with perceived quality at the 1% level of significance.

Hence, it is evident that the dimensions of product quality which are influenced by training and development, significantly correlate with each other. Therefore, hypothesis 1 may be accepted at the 1% level of significance.

Hypothesis 2

There is a significant difference in the perceptions of employees varying in biographical data (gender, age and length of employment) regarding the influence of training and development on the dimensions of product quality respectively.

Table 5.3 T-Test: Gender

Dimensions of Product Quality Influenced by Training and Development	Equal Variances Assumed t-test for Equality of Means		
	t	df	p
Performance	0.546	103	0.586
Features	-0.251	103	0.802
Reliability	0.174	103	0.862
Conformance	0.069	103	0.945
Durability	-1.090	103	0.278
Serviceability	0.520	103	0.604
Aesthetics	-0.527	103	0.599
Perceived Quality	-0.448	103	0.655

Table 5.3 indicates that there is no significant difference in the perceptions of males and females regarding the influence of training and development on the dimensions of product quality respectively.

Table 5.4 ANOVA: Age

Dimensions of product Quality Influenced by Training and Development		F	p
Performance	Between Groups	0.735	0.533
Features	Between Groups	0.758	0.520
Reliability	Between Groups	0.279	0.841
Conformance	Between Groups	0.287	0.835
Durability	Between Groups	0.454	0.715
Serviceability	Between Groups	0.692	0.559
Aesthetics	Between Groups	0.894	0.447
Perceived Quality	Between Groups	0.781	0.507

Table 5.4 indicates that there is no significant difference in the perceptions of employees varying in age regarding the influence of training and development on the dimensions of product quality respectively.

Table 5.5 ANOVA: Length of Employment

Dimensions of product Quality Influenced by Training and Development		F	p
Performance	Between Groups	0.983	0.420
Features	Between Groups	0.251	0.909
Reliability	Between Groups	0.365	0.833
Conformance	Between Groups	0.699	0.595
Durability	Between Groups	0.494	0.740
Serviceability	Between Groups	0.518	0.722
Aesthetics	Between Groups	1.698	0.156
Perceived Quality	Between Groups	0.542	0.705

Table 5.5 indicates that there is no significant difference in the perceptions of employees varying in length of employment regarding the influence of training and development on the dimensions of product quality respectively.

Hence hypothesis 2 may be rejected.

5.3 Statistical Analysis of the Questionnaire

The psychometric properties of the questionnaire were assessed using Factor Analysis (validity) and Cronbach's Coefficient Alpha (reliability).

5.3.1 Validity

The validity of the questionnaire was measured using Factor Analysis. The results of the factor analysis are displayed in Table 5.6.

Table 5.6 Factor Analysis

Item	Component							
	1	2	3	4	5	6	7	8
B2	0.787	0.126	0.162	0.032	0.217	0.327	0.014	0.036
B8	0.783	0.054	0.227	0.153	0.266	0.087	-0.047	-0.095
B13	0.747	0.295	0.141	0.108	0.086	-0.008	0.140	-0.051
B6	0.724	0.016	0.216	0.204	0.179	0.310	-0.051	0.151
B12	0.689	0.108	0.278	0.181	0.073	-0.195	0.116	-0.069
B1	0.618	0.020	0.052	0.085	0.323	0.294	-0.017	0.223
B16	0.582	0.142	0.138	0.470	0.420	0.113	-0.057	0.034
B23	0.513	0.148	0.259	0.205	0.450	0.005	0.198	-0.222
B7	0.503	-0.029	0.105	0.281	0.345	0.500	-0.044	0.244
B10	0.167	0.832	0.099	0.100	0.003	0.183	0.090	-0.090
B9	0.253	0.818	0.130	-0.046	0.107	0.136	0.195	-0.082
B11	-0.002	0.783	0.188	0.140	0.081	-0.021	0.051	0.134
B19	0.180	0.731	-0.043	-0.021	0.314	0.167	0.269	0.099
B15	0.108	0.679	0.238	0.158	0.183	0.069	0.364	-0.046
B34	-0.042	0.658	0.422	0.274	-0.057	0.125	-0.239	-0.075
B14	0.362	0.657	-0.058	0.217	-0.194	0.029	0.034	-0.192
B25	-0.070	0.637	-0.031	0.177	0.277	-0.049	-0.121	0.118
B38	0.182	0.045	0.823	-0.037	0.222	0.003	0.096	0.123
B39	0.122	0.001	0.805	0.083	0.268	0.074	0.109	0.185
B37	0.248	0.219	0.767	0.225	0.145	-0.091	-0.134	-0.017
B35	0.295	0.087	0.684	0.376	0.115	0.104	-0.028	-0.165
B36	0.330	0.083	0.658	0.367	0.035	0.092	0.074	-0.286
B40	0.203	0.128	0.579	0.287	0.306	0.112	0.238	-0.283
B33	-0.106	0.522	0.555	0.400	-0.055	0.124	-0.141	-0.112
B31	0.383	0.182	0.529	0.414	-0.030	0.011	0.220	0.339
B41	0.272	0.073	0.491	0.317	0.352	0.205	-0.005	-0.218
B28	0.304	0.167	0.261	0.702	0.011	0.096	0.141	0.109
B27	0.015	0.181	0.099	0.656	0.252	0.136	0.056	-0.203
B32	0.196	0.149	0.489	0.618	0.066	-0.032	0.103	0.330
B26	0.471	0.107	0.207	0.593	0.169	0.027	-0.188	-0.106
B29	0.236	0.134	0.146	0.561	0.259	0.111	0.375	0.170
B30	0.131	0.217	0.375	0.561	0.291	0.049	0.103	-0.012
B24	0.422	0.184	0.212	0.476	0.421	0.039	-0.244	-0.105

Table 5.6 Factor Analysis (cont.)

Item	Component							
	1	2	3	4	5	6	7	8
B21	0.290	0.141	0.250	0.208	0.722	-0.130	-0.069	0.132
B20	0.436	0.042	0.318	0.018	0.715	0.075	0.180	-0.079
B22	0.381	0.104	0.188	0.122	0.710	0.078	-0.019	-0.072
B18	0.099	0.0189	0.134	0.382	0.653	0.228	0.089	0.065
B5	0.087	0.553	0.012	0.114	0.043	0.683	0.008	-0.043
B4	0.312	0.175	0.205	0.124	0.059	0.658	0.105	-0.162
B3	0.095	0.512	-0.145	0.053	0.010	0.524	0.128	0.322
B17	-0.013	0.319	0.096	0.145	0.012	0.077	0.807	-0.007
Eigen Value	6.026	5.753	5.458	4.288	3.804	2.113	1.584	1.093
% of Total Variance	14.70	14.03	13.31	10.46	9.28	5.15	3.86	2.67

Table 5.6 indicates that 9 (nine) items load significantly on Factor 1 and accounts for 14.70% of the variance in determining product quality. Three items each relate to performance and features respectively, two items relate to reliability, and 1 item relates to conformance. Since the highest average loadings relates to performance, Factor 1 may be labeled likewise.

Table 5.6 indicates that 8 (eight) items load significantly on Factor 2 and accounts for 14.03% of the variance in determining product quality. Three items relate to features, two items relate to reliability, and 1 item each relates to aesthetics, durability and conformance respectively. Since the highest loadings relates to features, Factor 2 may be labeled likewise.

Table 5.6 indicates that 9 (nine) items load significantly on Factor 3 and accounts for 13.31% of the variance in determining product quality. Five items relate to perceived quality, three items relate to aesthetics, and 1 item relates to serviceability. Since the highest loadings relate to perceived quality, Factor 3 may be labeled likewise.

Table 5.6 indicates that 7 (seven) items load significantly on Factor 4 and accounts for 10.46% of the variance in determining product quality. Four items relate to serviceability and 3 items relate to durability. Hence, Factor 4 may be labeled as serviceability.

Table 5.6 indicates that 4 (four) items load significantly on Factor 5 and accounts for 9.28% of the variance in determining product quality. All four items relate to conformance. Hence, Factor 5 may be called conformance.

Table 5.6 indicates that 3 (three) items load significantly on Factor 6 and accounts for 5.15% of the variance in determining product quality. All 3 items relate to performance and hence, Factor 6 may be labeled likewise.

Table 5.6 indicates that 1 (one) item loads significantly on Factor 7 and accounts for 3.86% of the variance in determining product quality. This item relates to conformance.

Table 5.6 indicates that 0 items load significantly on Factor 8 as it shares loadings with other factors. When an item loads significantly on two or more factors, only that item with the highest loading was considered.

It is evident from the results that two items load significantly on performance (item 1 and item 6) and two items load significantly on conformance (item 5 and item 7). Furthermore, none of the Factors are labeled aesthetics and reliability. This may be attributed to the fluidity in the interpretation of the items defining each of the dimensions of product quality such that a statement may be perceived by the respondent in varying dimensions.

5.3.2 Reliability

Cronbach's Coefficient Alpha was used to measure the reliability of the questionnaire (Table 5.7).

Table 5.7 Item – Total Statistics

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
B1	137.84	652.555	0.521	0.958
B2	137.71	649.409	0.659	0.957
B3	137.33	668.966	0.322	0.958
B4	137.62	656.599	0.522	0.958
B5	137.34	661.426	0.463	0.958
B6	137.84	646.726	0.650	0.957
B7	137.86	651.265	0.601	0.957
B8	137.74	650.463	0.666	0.957
B9	137.16	656.612	0.579	0.957
B10	137.37	656.273	0.548	0.957
B11	137.24	662.068	0.480	0.958
B12	137.82	653.539	0.568	0.957
B13	137.56	650.516	0.628	0.957
B14	137.58	659.466	0.438	0.958
B15	137.22	654.362	0.617	0.957
B16	137.86	642.485	0.759	0.956
B17	137.41	666.205	0.316	0.959
B18	137.87	648.859	0.615	0.957
B19	137.25	657.235	0.522	0.958
B20	137.75	650.777	0.655	0.957
B21	137.86	652.427	0.601	0.957
B22	137.99	651.476	0.611	0.957
B23	137.87	648.154	0.685	0.957
B24	137.81	648.231	0.694	0.957
B25	137.43	667.296	0.347	0.958
B26	137.92	649.869	0.649	0.957
B27	137.75	659.920	0.505	0.958
B28	137.72	653.481	0.652	0.957
B29	137.85	650.548	0.607	0.957
B30	137.78	651.410	0.667	0.957
B31	137.54	650.327	0.677	0.957
B32	137.62	649.171	0.648	0.957
B33	137.49	655.833	0.556	0.957
B34	137.50	658.557	0.523	0.957
B35	137.77	639.053	0.692	0.957
B36	137.93	640.691	0.672	0.957
B37	137.67	649.138	0.656	0.957
B38	137.76	655.306	0.534	0.957
B39	137.75	655.539	0.560	0.957
B40	137.77	645.453	0.681	0.957
B41	137.63	645.397	0.668	0.957

Table 5.7 indicates that the Cronbach's Alpha (if item deleted) ranges from 0.956 to 0.959, thereby indicating a high degree of inter-item consistency.

Table 5.8 Reliability Statistics

Cronbach's Alpha	N of Items
0.958	41

Table 5.8 indicates that the questionnaire has a high level of inter-item consistency of the items determining overall product quality and hence, reflects that the items reliably determine employee perceptions of the influence of training and development on each of the dimensions of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality) respectively.

5.4 Conclusion

In this chapter, the data collected by means of a self administered questionnaire was analysed using descriptive and inferential statistics and presented using tabular representations. This was done in order to understand the data and to determine the relationship between training and development and product quality and biographical data respectively.

CHAPTER 6
DISCUSSION OF RESULTS

6.1 Introduction

Researchers must communicate research findings (Fox and Bayat, 2007). According to Govender (2007), research is only valuable when one compares the results obtained with that of other researchers in the field. This chapter discusses the results of the research in relation to the findings of other researchers in the area of training and development and product quality.

6.2 Perceptions of Dimensions of Product Quality as a Result of Training and Development

Perceptions of employees regarding the influence of training and development on the dimensions of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality) were evaluated using descriptive statistics.

6.2.1 Features

In this study, the influence of training and development on features as a dimension of product quality had the highest mean of 3.5645. Employees strongly believe that training and development:

o   Creates a strong design staff that is able to enhance product features.

o   Provides employees with greater skills to produce products with more sophisticated features.

o   Provides design staff with greater design skills to ensure more tailor-made product features that fulfill specific customer needs and expectations.

o   Provides the marketing staff with greater skills and ability to conduct and analyse market research in order to enhance product features.

However, from the study it is evident that improvement is needed in order to further enhance product features. That is, proper training and development in this regard is required.

Furthermore, a number of respondents neither agreed nor disagreed that employees engaged in design are well trained to ensure that customer requirements in terms of product features are met in the simplest and least costly manner.

In a highly competitive environment, the timely design, developing and marketing of new products or services with sophisticated and innovative features are necessary for an organisation to succeed (Shen, Tan and Xie, 2000). The purpose of Shen et al.'s (2000) paper is to better understand customers' needs so as to satisfy them. The paper proposes a process model for innovative product development by combining Kano's Model and the quality function deployment (QFD) technique. Shen et al. (2000) conclude that the proposed approach has a positive impact on product features and product innovation. However, Shen et al.'s (2000) paper did not discuss the area of training and development.

On the other hand, Hughes, cited in Booker's (2003) study, emphasises that designers and managers must be educated about implementation issues, functions and benefits of techniques since there may be a major difference between understanding the process involved in a general sense, and understanding it from the view of the individual actually performing the task. This, according to Hughes (cited in Booker, 2003) can result in serious implementation problems.

Miguel's (2005) research examines the factors that contribute to successful QFD application. The paper presents the results of a study of the use of QFD in organisations operating in Brazil. With regard to Organisation A in the study: the organisation concentrates on translating market requirements to the product concept. This technique allows the organisation's marketing and research and development departments to work closely together (Miguel, 2005). Miguel (2005) refers to Cheng et al. who point out that one of the factors linked to successful QFD application is training.

Organisation A in the study indicated that training was very important to them. The organisation carries out training with the development team whenever a new project starts. Organisation A stress that the beneficial results from training are quite substantial (Miguel, 2005).

6.2.2 Reliability

This dimension has a mean value of 3.5425. Employees believe that training and development:

- Provides employees with greater skills and ability to produce products with greater reliability.

- Provides the design staff with the skills and ability to simplify designs to ensure product reliability.

- Provides manufacturing employees with greater skills and ability to ensure that the product meets with specifications thereby enhancing product reliability.

Furthermore, a number of respondents neither agreed nor disagreed that employees engaged in design are well trained to ensure that components/parts used will enhance reliability of the product.

On the topic of reliability, Tiku, Azarian and Pecht's (2007) paper aims to introduce a set of key practices that can be utilised to establish whether an organisation has the ability to design, develop and manufacture reliable electronic products. Failures in electronic products may stem from parts and materials supplied by second or third tier suppliers, or as a result of defects introduced during assembly and manufacture (Tiku et al., 2007). One of the key reliability practices highlighted in Tiku et al.'s (2007) study is training and development. The purpose is to:

✓ Improve the technical and specialised skills of individuals.

✓ Make sure that employees understand reliability plans for products.

✓ Develop techniques or methods that can enhance reliability (Tiku et al., 2007).

In their paper, Tiku et al. (2007) present details on one of the case studies. The study found that the organisation does not offer specific "in-house" training to its employees in areas of reliability. Only some of the employees have had outside training in quality. Therefore, Tiku et al. (2007) recommend in their study that the organisation should increase the education and training of employees responsible for reliability functions.

6.2.3 Performance

Performance has a mean value of 3.4811. Employees believe that:

➢ Design employees are well trained to produce quality designs.

➢ Training and development ensures a strong design staff that is capable of enhancing product performance.

➢ Training and development helps employees to perform better, thereby enhancing the performance of the product.

➢ Training needs analysis is undertaken in line with enhancing the performance of the product to ensure utmost return on investment.

➢ Training and development provides the design staff with greater skills and abilities to effectively manage the design process, thus ensuring high performance and enhanced product quality.

However, from the study it is evident that further improvement is needed in order to enhance product performance so as to gain a competitive advantage. That is, appropriate training and development in this regard is required.

The Taiwanese Government has developed a national strategy aimed at promoting, amongst others, the development of products with higher levels of added value (Woodcock and Chen, 2000). Woodcock and Chen's (2000) paper looks at the involvement of manufacturing managers in supporting this plan for product development. Porter, cited in Woodcock and Chen (2000), mention that the concept of "value" is a combination of price, quality and availability of the product and service, in addition to the product's performance and capability. The paper shows that numerous problems exist within the industry selected that hinder progress and that there was a poor response to the

Government's call to manufacture more sophisticated, added-value products. Furthermore, Taiwanese manufacturing managers did not give this matter much priority and had only limited systems and procedures to assist them in this task (Woodcock and Chen, 2000). Woodcock and Chen (2000) conclude that there must be closer links between the actions taken at the organisational level and the objective set by the Government. If Taiwan is to emerge as a leader in the global market, as desired by its government, its leaders must promote the development of skills and competencies in the area of manufacturing management.

Manufacturing organisations in the United Kingdom usually embrace some kind of quality assurance programme in order to improve product quality (Booker, 2003). In his paper however, Booker (2003) argues that certification does not guarantee product quality, and, although beneficial, places very little emphasis on quality improvement and increasing competitiveness. He further states that the reduction of failure costs is one of the main ways of improving business competitiveness. In order to attain the goals of improvement in the quality of design and the reduction of failure costs, Booker (2003) mentions that organisations must implement current methods in design for quality (DFQ). To support his argument, Booker (2003) cites Swift, Raines and Booker's study which found that 75% of product faults stem from the early development and planning stages and about 80% of faults are not detected until final test or when the product is in use with the customer. This, according to Booker (2003), results in product performance not meeting requirements. Hence, attempts are now being made to include the analysis and prediction of product quality as one of the key design engineering functions (Booker 2003). In his paper, Booker (2003) discusses the various techniques in support of DFQ. For successful implementation of these techniques, Booker (2003) highlights the importance of training. He states that a thorough understanding of the organisation's products, its designer's background and working environment is useful before carrying out any training. He also emphasises that training is a long-term process and must be systematically delivered until everyone has the required mind-set.

6.2.4 Aesthetics

The dimension aesthetics has a mean value of 3.4198. Employees believe that:

- Training and development provides the marketing staff with greater skills and abilities to carry out and analyse market research so as to improve product aesthetics.

- Training and development provides the design staff with greater skills and abilities to enhance aesthetics of the product thus ensuring enhanced product quality and maximum customer satisfaction.

- They receive regular training and development in order to enhance product aesthetics.

However, it is evident from the study that improvement is needed to further enhance product aesthetics so as to gain a competitive advantage. That is, appropriate training and development in this regard is required.

Due to a shortage of research in this area, that is, training and development and product aesthetics, no comparative research was found.

6.2.5 Serviceabilty

This dimension has a mean value of 3.3925. Employees believe that training and development:

o   Ensures that service employees handle customer requests in a professional manner thereby enhancing serviceability.

o   Ensures that service employees maintain good customer relationships thereby enhancing serviceability.

Furthermore, a number of respondents neither agreed nor disagreed that:

o   Service employees are well trained to ensure that customer queries are handled in a professional manner.

o   Employees are well trained to ensure that defective products are replaced within a reasonable time.

o   In order to attain service excellence, field representatives receive appropriate training and development.

Total Quality (TQ) is playing a significant role in assisting organisations to become more competitive in the international markets (Motwani, 2001). One of the aims of Motwani's (2001) study is to identify the critical factors that play a role in total quality (TQ) success. Talha (2004) adds that TQ includes the concept of product quality. Amongst others, Motwani (2001) highlights the areas of customer satisfaction and employee training. With regard to customer satisfaction, Motwani (2001) explains that a customer service programme should include providing customers with timely information and quick response to complaints, reducing the number of queries or complaints while recognising all successful attempts by employees in providing exceptional service. With this in mind, Motwani (2001) emphasises that proper employee training should comprise details of overall company operations and product quality specifications.

6.2.6 Conformance

This dimension has a mean value of 3.3814. Employees believe that training and development:
o   Decreases the defect rates.
o   Provides employees with greater skills and abilities to detect defects in products.
o   Ensures precision in assembly and hence, superior conformance.
o   Ensures that manufacturing employees produce products that meet with specifications.
o   Programmes are developed and presented in line with definite training needs, thereby ensuring superior conformance and enhanced product quality.

However, further improvement is needed to maximise manufacturing employees' skills so as to gain a competitive advantage. That is, proper training and development in this regard is required.

Furthermore, a number of respondents neither agreed nor disagreed that employees are well trained to ensure that machines operate at specified levels. Schiffauerova and Thomson (2006) caution that any determined effort to enhance quality must consider the costs involved in achieving quality, since these days, it must be done at the lowest possible cost. Schiffauerova and Thomson's (2006) paper assesses the quality costing practices at four large successful multinational organisations. Schiffauerova and Thomson (2006:543) refer to Crosby who sees quality as "conformance to requirements" and hence, defines the cost of quality (CoQ) as "the sum of price of conformance and price of non-conformance". The price of conformance is the cost associated with making sure that things are done right the first time and the price of non-conformance is the cost when work fails to conform to customer requirements.

Schiffauerova and Thomson (2006) found that although quality is considered today to be a critical success factor for achieving competitiveness, the CoQ approach is not fully understood by organisations, and only a few of them use formal quality costing methods. Schiffauerova and Thomson (2006) discuss that CoQ should be included in all quality management courses. The method is simple and is well documented. The authors also stress that further education is necessary for managers to better understand the CoQ concept so as to fully appreciate the benefits of the approach, to increase their ability to implement a CoQ measurement system and to reduce cost.

Omachonu, Suthummanon and Einspruch"s (2004) paper examines the components of quality cost for two main manufacturing inputs, materials and machines. The concept is also explained for the organisation as a whole. Omachonu et al. (2004) refer to Gryna who states that quality cost is a measure of appraisal, prevention and failure costs involved in achieving product quality. Quality in this instance means conformance to requirements. More specifically quality costs are:

o   The costs of appraising a product for conformance to design requirements and to market specifications (for example, product inspection and design qualification).

o   The cost as a result of failure to meet requirements (for example, redesign, rework, scrap and warranty costs), and,

o   The cost of preventing failures (for example, design reviews, vendor qualification and process capability studies).

Omachonu et al. (2004) conclude that human input is a key factor for an organisation to enhance quality. However, their paper did not study human input separately from material input and machine input due to limitations in the data. They also state that there is much bias in assessing the level of human quality. Omachonu et al. (2004) however, recommend in their study that future research should include human input as another factor to determine the relationship among quality cost, quality and productivity.

6.2.7 Perceived Quality

The dimension perceived quality has a mean value of 3.3755. Employees believe that training and development:

➢   Ensures that employees engaged in marketing use the most effective media channels for advertising.

➢   Ensures that employees produce high quality products, thereby strengthening the brand name.

Furthermore, a number of respondents neither agreed nor disagreed that:

o   Marketing employees are well trained to design effective advertising.

o   Marketing employees are well trained to plan and administer the advertising programme.

o   Employees are well trained to produce a high quality product in order to enhance product image.

The objective of Koksal and Ozgul's (2007) study is to look at the impact of marketing strategies on company and marketing performance pursued by Turkish organisations following the twin economic crises of 2000 and 2001. Koksal and Ozgul (2007) conclude that communication with consumers is of vital importance. Lost consumer

interest can be reacquired by means of promotion activities. Organisations can also attract floating customers to their brands, as consumers are more inclined to change their brand preferences more often during crises than at other times. They also stress that the most outstanding element in the promotion activities is advertising.

Likewise, Ang's studies (cited in Koksal and Ozgul, 2007) conclude that during the Asian recession, Singaporean businesses coped by increasing their promotion budget, in particular, the advertising budget. Ang also mentions that one of the key components of the promotional mix in these situations is media advertising. In their study, Koksal and Ozgul (2007) do not discuss training and development. However, the authors do acknowledge that company resources and skills affect strategic marketing decisions in such conditions, and they recommend in their paper that future studies should look at their effects on company performance as well. To support their recommendation, Koksal and Ozgul (2007) cite Bennett's study which found that organisations that did continue to train their marketing employees during recessions achieved improved company performance.

6.2.8 Durability

Durability has a mean value of 3.3656. Employees believe that training and development:

- Ensures that employees engaged in procurement purchase materials/components of high quality.
- Provides employees with the skills and abilities to produce products with superior durability.

However, it is evident from the study that further improvement is needed to ensure that employees engaged in design use components/parts that will enhance the durability of the product. In this regard, proper training and development is required.

Furthermore, a number of respondents neither agreed nor disagreed that training and development is structured/conducted in a manner that ensures close cooperation between design and purchasing staff.

Although great attempts have been made by the Chinese government to encourage organisations to implement TQ and enhance product quality, there has been very little progress. The country's product quality is still poor and numerous quality management problems still exist (Zhang, cited in Zhang, Waszink and Wijngaard, 2000). According to Zhang et al. (2000), many Chinese manufacturing organisations did not succeed in implementing TQ. Their research therefore aims at, amongst others, identifying TQ success factors.

Highlighting supplier quality management, Zhang et al. (2000) state that supplier quality management is an important part of TQ since materials and purchased parts are often a main source of quality problems. Zhang et al. (2000) refer to Garvin (1983) who found that organisations that manufacture the highest quality products have purchasing departments that note quality instead of cost minimisation as their main objective. Furthermore, Zhang et al. (2000) emphasise that education and training is imperative for TQ success. They stress that all employees including management personnel and supervisors should accept education and training in quality.

6.3 Relationship Between Training and Development and Product Quality

This study found that significant intercorrelations exist amongst the dimensions of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality) as a result of training and development being conducted in the organisation.

The purpose of Mandal, Love, Sohal and Bhadury's (2000) study was to examine the spread of quality management practices among Indian manufacturing organisations from 1980 to 1996. Their findings were, amongst others,

o   Indian manufacturers are actively working towards ISO-9000 certification.

o   Quality is becoming the responsibility of every employee in Indian organisations.

o   Ongoing training is one of the main activities identified amongst the responding organisations.

In their paper, Mandal et al. (2000) also cite a study conducted in 1995 amongst ISO-9000 certified organisations. The results of the study revealed that 49% of the organisations reported an improvement in their product quality.

Mandal et al. (2000) were of the view that in order for the Indian manufacturing sector to prosper, they should take advantage of the training and development opportunities that may exist within India and abroad. Organisations such as the Confederation of Indian Industries, Bureau of Indian Standards, National Productivity Council and Associated Chambers of Commerce are keen to assist the manufacturing industry. Many companies have benefited from these organisations with regard to their support and practical training on quality management practices. In addition, the authors state that the role of training providers is also of vital importance to the manufacturing industry, and this includes:

▪   Creating awareness and supporting industry efforts on quality and customer satisfaction.

▪   Identifying and increasing the industry's training and implementation of quality management practices.

For an organisation or country to compete effectively in the global market, its products must comply with certain quality standards. In India, service and industrial organisations are placing emphasis on the need to improve the quality of their services and products so as to keep pace with competition within and outside the country (Motwani, Mahmoud and Rice, 1994). The purpose of their study was to, firstly, identify critical factors that must be practiced to attain effective quality management in an organisation and secondly, to identify the extent to which quality management practices were present in Indian manufacturing organisations.

One of the critical factors identified was training. The study found that emphasis on quality training improves the level of quality. Furthermore, effective and efficient training programmes focusing on quality to managers and employees were present in all of the organisations studied. The majority of the respondents in the survey pointed out that the training programmes played an important role in improving the quality of the organisation's products and services (Motwani et al., 1994).

Continuous employee training helps organisations accomplish their goals by adding value to their human resources. The rapidly changing global economy calls for ongoing employee training. Hence, significant competitive advantage can be attained by having a skilled labour force (Papalexandris and Nikandrou, 2000). An aim of their article is to analyse the Greek "best practice firms" in training. Organisations participating in the survey report that one of the major effects to the firm as a result of employee training is an enhancement in the quality of products (Papalexandris and Nikandrou, 2000).

The aim of Vouzas and Gotzamani's (2005) paper is to explore the current status of the best practices in selected Greek industrial organisations pursuing business excellence through the European Quality Awards (EQA). These organisations have all received the European Foundation for Quality Management (EFQM) award for commitment to excellence and are all either certified, or under certification, to the ISO9000:2000 quality standard (Vouzas and Gotzamani, 2005).

A detailed investigation of the motives that lead the organisations to apply for the EQA was deemed necessary. According to the data collected, improving final product quality was one of the highest rated motivating factors (Vouzas and Gotzamani, 2005).

Regarding the results realised from the implementation of the EFQM model and the contribution of the revised ISO9000:2000, organisations claimed that they have made tremendous progress towards quality improvement. In particular, most of the respondents mentioned, amongst others, enhanced final product quality (Vouzas and Gotzamani, 2005).

However, in the study, the area of training and development was not emphasised. According to Vouzas and Gotzamani (2005:264), "human resource issues were not at the centre of the quality strategy formulation and implementation within the sample companies".

Indonesia exports quite a large amount of their products. However, export data from 1998 to 2000 show huge disparity in numbers (Amar and Zain, 2002). Deming, cited in Amar and Zain (2002:367), states that "without doubt, superiority in terms of quality of product or service is an extremely important element that could contribute positively in generating sales and hence strengthen the position of an organisation in its chosen market". Thus, the authors assume that poor product quality plays a part in the huge variation noticed in the country's export figures.

Amar and Zain's (2002) aim is to discover the reason for the difference in product quality, which in turn causes the instability of the export figures. In doing so, they focus on the hurdles faced by local manufacturers in their daily quality implementation. Their study therefore examines the obstacles faced by Indonesian manufacturing organisations in the implementation of total quality (TQ).

Amar and Zain's (2002) study reveal that a factor found to hinder successful TQ implementation is that of training. Also, management related training had not achieved organisational training targets amongst the respondents. They stress that training for all levels of an organisation is of vital importance and must be provided continuously.

To support their findings, Amar and Zain, (2002) cite Master's (1996) study which found the absence of continuous training and education as a barrier to effective TQ implementation. Likewise, Adebanjo and Kehoe (1998), who studied TQ implementation in United Kingdom manufacturing organisations found a lack of training programmes to improve employees' skills and participation in quality improvement activities (Amar and Zain, 2002).

According to Agus and Abdullah (2000), Malaysian manufacturers are aware that in order to compete in the international market, they must produce products and services of superior quality (Abdullah, Uli and Tari, 2008).

Abdullah et al.'s (2008) paper shows that strong and committed leadership in an organisation is necessary for successful quality programmes. Therefore, managers should play a key role in the entire organisation's quality improvement implementation. In order to develop an appropriate culture for continuous quality improvement, they must ensure that their employees are continually developed and given sufficient training and education to enhance their skills (Abdullah et al., 2008).

After China became a member of the World Trade Organisation (WTO) it became necessary for the organisations to adapt to a new competitive environment. In order to address the global challenge, many organisations have implemented plans to improve their competitiveness. Quality improvement has always been given priority (Lau, Zhao and Xiao, 2004). Their study investigates the current state of quality management implementation and practices in China using the Malcolm Baldrige National Quality Award (MBNQA) criteria as reference.

In discussing the various stages in the move towards quality, Lau et al. (2004) emphasise strategic quality management. In this stage, the strategic aspects of quality are accepted and incorporated by top management in the strategic planning process. Rather than viewing quality in a defensive, negative way, quality can now be utilised to maximise an organisation's competitive opportunities. Therefore, quality needs to be defined from the angle of market competition and customer expectation, as opposed to predetermined, internal standards or design specifications.

Considering this stage, Lau et al.'s (2004) findings suggest that only a few Chinese organisations were adopting a holistic approach to manage their product/service quality. They discuss that without a more developed and general understanding of contemporary quality management, Chinese organisations will continue to encounter hurdles in their

endeavour to promote the development of quality in China. Given the current state of quality management practices in China and the increasing global competitive pressures, Lau et al. (2004) are of the opinion that if Chinese organisations are to successfully continue their current quality development they must strengthen education and training in quality management (Lau et al., 2004). Furthermore, advanced training in quality management and strategy must be delivered to quality managers and professionals (Lau et al., 2004).

Implementation of TQ is fairly new in Hong Kong industries. Many managers are not familiar with TQ and the key factors that contribute to its successful implementation (Antony, Leung, Knowles and Gosh, 2002). Their paper examines the critical success factors for TQ in Hong Kong industries. The successful implementation of TQ strengthens the competitive advantage of an organisation. If TQ is successfully implemented, it will lead to enhanced customer satisfaction and quality products/services. This can bring about increased sales to attain the profit objectives and business growth (Antony et al., 2002). The results of the study show that training and education is the key factor for the successful implementation of TQ in Hong Kong industries. However, one of the main weaknesses found was the *lack of awareness of quality at the management level.* The results indicate that training is largely focused on the personal development of the employees. In many instances, management was unable to support the quality management practices. Hence, the personal development of managers is just as important as that of the employees (Antony et al., 2002). They emphasise that managers in Hong Kong organisations must to be trained and educated to be effective leaders in the drive towards TQ.

Since China instituted an open-door policy in 1978, its economic development has been remarkable, particularly with regard to comparison with the past and its economic growth rate. However, China is also faced with numerous problems. Poor product quality is one of them (Zhang, 2000). One of the aims of Zhang's (2000) paper is to discuss the reasons for poor product quality in China. In discussing the reasons for product quality problems in China, Zhang (2000) highlights employees. Zhang (2000) cites Green (1990) who

mentions that low-skilled employees is a significant factor contributing to product quality problems in China. Zhang (2000) refers to Wacker (1987) and Green (1990) who mention that employees on factory floors, in general, have little formal education or training. The shortage of well trained quality management personnel and the lack of extensive TQ education of the labour force have caused numerous product quality problems. Furthermore, the low educational level of the majority of employees also hinders effective TQ implementation (Zhang, 2000).

Zhang (2000) recommends that top management must provide sufficient resources for training employees. Top managers must develop the plans for quality and ensure their effective implementation through personal leadership. Employees must improve their commitment to quality, enhance their skills, continually accept TQ training, and actively participate in various quality improvement programmes.

Total Quality (TQ) has been one of the most important developments in the management field in the last two decades (Prajogo, 2006). Prajogo's (2006) paper aims to compare the level of adoption of TQ practices among Australian organisations over a period of time using two sets of data collected in 1994 and 2001. Prajogo (2006) found that managers are not investing a great deal in the training and development of employees. This according to him can create major problems. Prajogo (2006) cites Toner (2003) who emphasises that the persistence of this trend can result in skills shortages which will jeopardise the competitive position of Australian organisations, as skilled labour is associated with performance, including quality.

Mehra and Ranganathan (2008) refer to Zeithaml et al. (1990) who state that while stressing the importance of product quality, some have indicated that enhancing service and product quality is the most crucial challenge facing United States organisations. Improving quality is every employee's responsibility and must become regular practice. One movement which accentuated this belief was total quality (TQ) (Mehra and Ranganathan, 2008). The study of Mehra and Ranganathan (2008) aimed to investigate the role of total quality (TQ) towards enhancing customer satisfaction. Customer

satisfaction measures include product quality (Evans and Lindsay, 2005). Mehra and Ranganathan (2008) found that implementing TQ programmes in an organisation directly and positively effects customer satisfaction. Organisations that successfully implement TQ will gain from enhanced customer satisfaction.

Mehra and Ranganathan's (2008) paper also provided a set guidelines for managers to implement TQ practices. Firstly, organisations must understand their customers' needs. This calls for specific skills to be imparted to the organisational labour force. Such skills should be tailored for each organisation depending upon its products and services and the market in which it operates. Furthermore, as a result of the global nature of the markets, multi-cultural training becomes a necessity for all employees so as to effectively understand both the customers and the competition.

Morrow (2001) examined the role of training and development in the Northern Ireland clothing industry. The findings show that clothing organisations in Northern Ireland place very little emphasis on management development (Morrow, 2001). Respondents were also requested to identify those training areas they perceived to be important. In this regard, quality management was highlighted. Morrow (2001) explains that quality management is essential for the future success of the organisations as they can no longer compete on price. A number of clothing organisations in Northern Ireland now list the quality of their products as their strength.

Although considerable progress has been made by the Chinese government in enhancing service and product quality, some major problems continue to hamper progress. Product quality is poor and numerous quality issues persist (Li, Anderson and Harrison, 2003). The purpose of their paper is to provide an overview of the state of TQ in China. The findings indicate that private owned enterprises (POE's) are not investing much in quality training (Li et al., 2003). With regard to state-owned enterprises (SOE), however, although there was evidence of training, many product quality problems still remain (Li et al., 2003). In discussing the reasons for this, Li et al. (2003) state that a large number of organisations seek immediate profits or short-term benefits. As a result, most

organisations aim for quantity and speed of production, but overlook service quality, product quality, and even the requirements of customers (Li et al., 2003).

According to Hopkins, Nie and Hopkins (2004), for China (PRC) and Taiwan (ROC) to compete effectively in the international market, both countries will have to improve their product quality. The purpose of their study is to determine the differences between the two countries with regard to quality management issues. Hopkins et al. (2004) conclude that managers and employees in the PRC are not familiar with current quality management principles as compared to managers and employees in the ROC. The findings indicate that quality management is practiced to a greater extent in the ROC than in the PRC.

According to Hopkins et al. (2004), these results are due to the lack of training for managers and employees in quality improvement techniques. Hence, it becomes an important area for PRC organisations to concentrate on as they attempt making their products more competitive on the basis of quality.

Total Quality (TQ) has been a popular business approach for a lot of leading manufacturing organisations in Australian over the past 15 years (Sohal and Terziovski, 2000). Citing other studies, the authors state that empirical evidence from these studies suggest that TQ has a significant relationship with increased quality, together with enhanced customer satisfaction. Considering the large number of organisations reported in the literature that have failed with TQ implementation, their paper identifies factors that are deemed critical for successful implementation of a TQ plan (Sohal and Terziovski, 2000). One of the critical factors identified by Sohal and Terziovski (2000) was *leadership education and training*. They mention that managers in a leadership role must receive proper education and training in quality management principles and techniques. Without this, it would be difficult for mangers to provide the vision and leadership required to change the culture of the organisation. Leadership training must also be afforded to shopfloor employees so that they can effectively lead teams to continuously improve processes.

Zheng, Hyland and Soosay (2007) refer to Mathews (2002) and Taylor and Davies (2004) who note that effective employee training contributes to the enhancement of an organisation's service and product quality. It is also necessary for improving long-term employment and economic growth. With this in mind, Zheng et al. (2007) look at the range of training practices implemented by multinational companies (MNC's) operating in Asia. Their study found that MNC's invested considerably in training and that training was provided more in the service sector than in the manufacturing sector.

The purpose of Stavrou-Costea's (2005) study is to examine the human resource management challenges in Southern EU and its impact on organisational performance. One of the major challenges identified through Stavrou-Costea's (2005) study involves issues of training and development. According to Muhlemayer and Clarke, cited in Stavrou-Costea's (2005), the growth in the "quality" movement has led senior management teams to realise the importance of training and development. Training is a potential competitive factor. It is essential for the overall success of the organisation and must be given adequate management support (Stavrou-Costea, 2005). The author emphasises that for Southern EU organisations to deal with the identified challenges effectively, they as well as authorities at the national, regional and EU levels must give training and development of employees priority (Stavrou-Costea, 2005). Organisations must employ training and development to achieve excellent organisational performance (Stavrou-Costea, 2005).

Organisations in India have come under increasing pressure to improve their business performance, measure themselves against world class standards and focus their efforts on customers. To support this process, organisations have adopted various approaches. Total Quality (TQ) is one of them (Palo and Padhi, 2005). An objective of their study is to examine the strategic role played by the HR professionals at different stages of TQ implementation. Palo and Padhi (2005) found that the HR professionals in the organisation studied have played an important role at different stages of TQ implementation. One of the areas they assisted top management is in coordinating TQ

training programmes. In the organisation studied, a carefully planned training programme was in place to provide training to employees on TQ (Palo and Padhi 2005).

The above discussion and results confirm both Deming's (Evans, 2008) and Russell and Taylor's (2006) claim that training results in enhanced product quality.

6.4 Biographical Correlates

This study indicates that there is no significant difference in the perceptions of respondents varying in biographical data (gender, age, and length of employment) regarding the influence of training and development on the dimensions of product quality respectively.

6.5 Impact of Training and Development on Product Quality

Training and development impacts on the dimensions of product quality to varying degrees with the greatest impact being on features (Mean = 3.5645); followed by reliability (Mean = 3.5425); performance (Mean = 3.4811); aesthetics (Mean = 3.4198); serviceability (Mean = 3.3925); conformance (Mean = 3.3814); perceived quality (Mean = 3.3755); and durability (Mean = 3.3656) respectively, as shown in Figure 6.1.

Also, there is no significant difference in the perceptions of employees varying in biographical data (gender, age and length of employment) regarding the influence of training and development on product quality respectively as depicted in Figure 6.1.

Figure 6.1

See CorelDraw file (Anesh2) on disc.

6.6 Conclusion

In this chapter, the findings of the research were discussed and compared with those of other research in the field. The following chapter discusses the conclusions on the relationship between training and development and product quality. Also, recommendations for future research and recommendations based on the results of the study will be provided.

CHAPTER 7
RECOMMENDATIONS AND CONCLUSIONS

7.1 Introduction

The aim of this study is to determine the perception of employees regarding the influence of training and development on product quality. The dimensions assessed were performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality. Descriptive and inferential statistics were used to understand the data and results were presented using tabular and graphical form. This chapter provides recommendations and conclusions based on the results of the study.

7.2 Recommendations for Future Research

In this study, a sample size of 106 employees drawn from a South African manufacturing organisation was used. In order to improve the generalisability of results, future research should use a larger sample size.

Future research might seek to determine if a relationship exists between training and development and product quality as determined by market share. Research into this area of study will provide valuable information to managers as they attempt to enhance product quality within their organisations in order to gain an advantage in the highly competitive global market.

A comparative study between two South African manufacturing organisations, or between a South African organisation and an international organisation, may also be conducted with the intention of enhancing the generalisability of the results.

Comparison of South African training and development courses with training courses carried out by manufacturing organisations in other countries can be useful for both organisation and countries wanting to compete in the global market. Studies of such a nature would help identify training and development courses and methods that may lead to enhanced product quality.

7.3 Recommendations Based on the Results of the Study

In this study, some respondents indicated that employees are not adequately/appropriately trained and developed to enhance product performance so as to gain a competitive advantage. In order to gain and maintain market share in a highly competitive environment, the organisation should ensure that employees receive adequate/appropriate training and development in order to enhance product performance.

In this study, some respondents indicated that although employees receive proper training and development, product features are not enhanced. An important aspect to consider in any training programme is whether the participants will be able to transfer and apply the skills they learn to their work (Nikandrou, Brinia and Bereri, 2009). Therefore the organisation should consider the following factors, amongst others, to ensure increased training transfer:

o   The motivation of the individual to learn and transfer the skills to his work.
o   His personal career goals.
o   The planning of the training programme.
o   The availability of equipment at work.
o   The organisational culture.

Some respondents in this study indicated that employees engaged in manufacturing are not well trained in order to ensure that their skills are maximised so as to gain a competitive edge. It is imperative that employees engaged in manufacturing have the necessary skills to perform their tasks. Therefore, the organisation should ensure that they receive proper and adequate training and development.

In this study, some respondents indicated that employees engaged in design are not well trained to ensure that components/parts used will enhance the durability of the product. Design has a great impact on the quality of a product or service (Russell and Taylor, 2006). Therefore, the organisation should invest in the training and development of employees who are engaged in design.

Some respondents in this study indicated that employees in their organisation do not receive appropriate training and development in order to enhance product aesthetics. Emphasising the importance of this dimension, De Klerk and Lubbe (2008:38-39) state that, "aesthetics may, consciously or unconsciously, play an important role during the decision-making process and to such an extent that it could overshadow other factors that should also have a role in assessing the quality of the item". Therefore, with this in mind, the organisation should ensure that employees receive appropriate training and development in order to enhance product aesthetics.

Furthermore, a number of respondents neither agreed nor disagreed that training and development is structured/conducted in a manner that ensures close cooperation between design and purchasing staff. This either signals that training and development with regard to the above is either not structured/conducted such, or if training and development is being structured/conducted in such a manner, it is not being effectively communicated to all employees. Therefore, when planning training, the organisation must ensure that it is structured/conducted in a manner that ensures close co-operation between design and purchasing staff. If training and development is being structured/conducted in such a manner, then effective communication is needed.

A number of respondents neither agreed nor disagreed that:
o Employees engaged in design are well trained to ensure that customer requirements in terms of product features are met in the simplest and least costly manner.
o Employees engaged in design are well trained to ensure that components/parts used will enhance reliability of the product.
o Employees are well trained to ensure that machines operate at specified levels.
o Service employees are well trained to ensure that customer queries are handled in a professional manner.
o Employees are well trained to ensure that defective products are replaced within a reasonable time.

o   In order to attain service excellence, field representatives receive appropriate training and development.

o   Marketing employees are well trained to design effective advertising.

o   Marketing employees are well trained to plan and administer the advertising programme.

o   Employees are well trained to produce a high quality product in order to enhance product image.

This either signals that training and development with regard to the above is either not taking place, or if it is, it is not being effectively communicated to all employees. Therefore, the organisation should ensure that proper training and development is provided for employees. If proper training and development is provided, then effective communication is needed.

In addition, Garvin (1984, 1987) mentions that an organisation need not focus on all eight dimensions at once. Garvin (1984) suggests that a segmentation strategy be followed, whereby an organisation selects and concentrates on a few dimensions.

The abovementioned recommendations to enhance product quality are shown in Figure 7.1.

Figure 7.1

See CorelDraw file (Anesh3) on disc.

7.4 Conclusion

This study investigated employee perceptions of the impact of training and development on product quality.

This study found that:

o   Significant intercorrelations exist among the dimensions of product quality (performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality) as a result of training and development being conducted in the organisation.

o   There is no significant difference in the perceptions of employees varying in biographical data (gender, age, and length of employment) regarding the influence of training and development on the dimensions of product quality respectively.

Based on the findings of the study, a model was developed and presented. The model presents recommendations for enhancing product quality.   Implementing these recommendations will result in a skilled labour force capable of enhancing product quality as well as contribute to organisational success.

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ANNEXURE

Dear Sir / Madam

QUESTIONNAIRE: MTech.: QUALITY MANAGEMENT

My name is Mr Premlall (Anesh) Sookraj. I am a student at the Durban University of Technology, currently studying towards the Degree of Masters in Technology: Quality Management.

The research problem of my study focuses on the current serious shortage of skilled workers in South Africa. According to the Institute of Management Development (IMD) 2007 World Competitiveness Yearbook, in South Africa, the weakest criterion under Business Efficiency is skilled labour. In this regard, South Africa ranks 55 out of 55 economies.

Therefore, this study aims to investigate employees' *perceptions regarding the influence of training and development on product quality*.

This will be done using a questionnaire (attached) for data collection purposes. The questionnaire comprises of two (2) sections. The first for biographical data and the second explores the impact of training on product quality delivery (*measured in terms of performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality*).

I therefore make a humble appeal to you to spare a few minutes and kindly complete the attached questionnaire. Your participation in this regard will not only ensure successful completion of the project, but the results obtained will also add to the existing knowledge base.

Kindly take note that you are not forced to participate. Participation will be by choice and you will be allowed to withdraw from the process at any point in time that you please. Furthermore, confidentiality is assured at all times.

Please be informed that the questionnaire will be collected within two weeks (14 days) from date of distribution.

I would like to take this opportunity to thank you for your time and anticipated cooperation with regard to the above. Should you have any concerns or require further information regarding the above matter, please do not hesitate to contact me at the number below.

Thank you once again.

Yours faithfully

……………….
Mr. P. Sookraj

Section A

Biographical Data

Instruction

For each of the following, mark a cross (X) in the box that is applicable to you.

1. Gender

    Male   ☐ 1
    Female   ☐ 2

2. Age

    20 – 29   ☐ 1
    30 – 39   ☐ 2
    40 – 49   ☐ 3
    50 – 59   ☐ 4
    60 +   ☐ 5

3. Grade

    Factory (Durban) 6 – 8   ☐ 1
    Factory (Durban) 9 – 14   ☐ 2
    Factory (Ladysmith) 6 – 8   ☐ 3
    Factory (Ladysmith) 9 – 14   ☐ 4
    Technical 6 - 8   ☐ 5
    Technical 9 - 14   ☐ 6
    Marketing and Sales 6 – 8   ☐ 7
    Marketing and Sales 9 – 14   ☐ 8
    Finance and Services 6 – 8   ☐ 9
    Finance and Services 9 – 14   ☐ 10

4. Length of Employment

0 – 5 Years	☐	1
6 – 10 Years	☐	2
11 – 15 Years	☐	3
16 – 20 Years	☐	4
Over 20 Years	☐	5

Instruction

Indicate the extent to which you agree or disagree with each of the following statements using the scale below:

SD   -   Strongly Disagree (1)

D   -   Disagree (2)

NA / ND   -   Neither Agree nor Disagree (3)

A   -   Agree (4)

SA   -   Strongly Agree (5)

NO.	Statement	SD	D	NA/ ND	A	SA
	Performance					
1.	This organisation ensures that design employees are well trained to produce quality designs.	1	2	3	4	5
2.	In order to ensure a strong design staff capable of enhancing product performance, this organisation ensures that *design employees* receive proper training and development.	1	2	3	4	5
3.	In my experience, when my organisation trains employees they are able to perform better, thereby enhancing the performance of the product.	1	2	3	4	5
4.	In this organisation, training needs analysis is undertaken in line with enhancing the performance of the product to ensure utmost return on investment.	1	2	3	4	5
5.	Training and development provides the *design staff* with greater skills and ability to effectively manage the design process, thus ensuring high performance and enhanced product quality.	1	2	3	4	5
6.	In this organisation, employees are adequately/appropriately trained and developed to enhance product performance so as to gain a competitive advantage.	1	2	3	4	5
	Features					
7.	In this organisation, since employees receive proper training and development, product features are enhanced.	1	2	3	4	5

NO.	Statement	SD	D	NA/ ND	A	SA
8.	In order to ensure a strong design staff capable of enhancing product features, this organisation ensures that design employees are well trained.	1	2	3	4	5
9.	Training and development provides employees with greater skills to produce a product with more sophisticated features, thereby making the organisation more competitive.	1	2	3	4	5
10.	Training and development provides the *design staff* with greater design skills thereby ensuring more tailor-made product features that fulfill specific customer needs and expectations.	1	2	3	4	5
11.	Training and development provides the *marketing staff* with greater skills and ability to conduct and analyse market research so as to enhance the features of the product.	1	2	3	4	5
12.	In this organisation, employees engaged in design are well trained to ensure that customer requirements in terms of product features are met in the simplest and least costly manner, thus ensuring enhanced product quality.	1	2	3	4	5
	Reliability					
13.	In my organisation, training and development provides employees with greater skills and ability to enable them to produce products with greater reliability.	1	2	3	4	5
14.	Training and development provides the *design staff* with the skills and ability to simplify designs to ensure product reliability and hence, product quality.	1	2	3	4	5
15.	Training and development provides *manufacturing employees* with greater skills and ability to ensure that the product meets with specifications thereby enhancing product reliability.	1	2	3	4	5
16.	In this organisation, employees engaged in design are well trained to ensure that components/parts used will enhance the reliability of the product.	1	2	3	4	5
	Conformance					
17.	In this organisation, there is a decrease in defect rates when employees are adequately trained.	1	2	3	4	5
18.	In order to ensure superior conformance, employees in this organisation are well trained to ensure that machines operate at specified levels.	1	2	3	4	5

NO.	Statement	SD	D	NA/ ND	A	SA
19.	Training and development provides employees with greater skills and ability to detect defects in products.	1	2	3	4	5
20.	In order to ensure precision in assembly and thus ensure superior conformance, this organisation provides employees with appropriate training and development.	1	2	3	4	5
21.	In this organisation, employees engaged in *manufacturing* are well trained in order to ensure that products meet with specifications.	1	2	3	4	5
22.	In this organisation, employees engaged in *manufacturing* are well trained in order to ensure that their skills are maximised so as to gain a competitive edge.	1	2	3	4	5
23.	In order to ensure superior conformance and thereby enhance product quality, this organisation ensures that training programmes are developed and presented in line with definite training needs.	1	2	3	4	5
	Durability					
24.	In this organisation, employees engaged in *procurement* are well trained to ensure that materials/components purchased are of high quality.	1	2	3	4	5
25.	Training and development provides employees with the skills and ability to produce products with superior durability.	1	2	3	4	5
26.	In this organisation, employees engaged in *design* are well trained to ensure that components/parts used will enhance the durability of the product.	1	2	3	4	5
27.	In order to enhance durability, training and development is structured/conducted in a manner that ensures close cooperation between design and purchasing staff.	1	2	3	4	5
	Serviceability					
28.	In order to enhance serviceability, *service employees* are well trained to ensure that customer queries are handled in a professional manner.	1	2	3	4	5
29.	In this organisation, employees are well trained to ensure that defective products are replaced within a reasonable time.	1	2	3	4	5
30.	In order to attain service excellence, this organisation ensures that *field representatives* receive appropriate training and development.	1	2	3	4	5

NO.	Statement	SD	D	NA/ND	A	SA
31.	In order to enhance serviceability, *service employees* are well trained to ensure that customer requests are handled in a professional manner.	1	2	3	4	5
32.	In this organisation, *service employees* are well trained to ensure good customer relationships thereby enhancing serviceability.	1	2	3	4	5
	Aesthetics					
33.	Training and development provides the *marketing staff* with greater skills and ability to carry out and analyse market research so as to improve aesthetics of the product.	1	2	3	4	5
34.	Training and development provides the *design staff* with greater skills and ability to enhance aesthetics of the product thus ensuring enhanced product quality and maximum customer satisfaction.	1	2	3	4	5
35.	In order to enhance product aesthetics and thus gain a competitive advantage, employees in this organisation receive *regular* training and development.	1	2	3	4	5
36.	In order to enhance product aesthetics and thus gain a competitive advantage, employees in this organisation receive *appropriate* training and development.	1	2	3	4	5
	Perceived Quality					
37.	In order to enhance customer perceptions, this organisation ensures that *marketing employees* are well trained to *design* effective advertising.	1	2	3	4	5
38.	In this organisation, employees engaged in marketing are well trained to ensure that the most *effective media channels* for advertising are used, thereby enhancing customer perceptions.	1	2	3	4	5
39.	In order to enhance customer perceptions, marketing employees are well trained to *plan and administer* the advertising programme.	1	2	3	4	5
40.	In order to enhance product image and thus customer perceptions, this organisation ensures that employees are well trained to *produce a high quality product*.	1	2	3	4	5
41.	In order to strengthen the *brand name* and thus enhance customer perceptions, this organisation ensures that employees are well trained to produce high quality products.	1	2	3	4	5

Thank you for your time and co-operation.