

UNIVERSITY OF KWAZULU-NATAL

**JOB READINESS OF FURTHER EDUCATION AND TRAINING (FET)
MECHANICAL ENGINEERING GRADUATES**

**By
Sandesh Singh
210525251**

**A dissertation submitted in partial fulfilment of the requirements for the degree of
Master of Business Administration**

**‘College of Law and Management Studies’ and
‘Graduate School of Business & Leadership’**

Supervisor: Prof Anesh Maniraj Singh

2012

DECLARATION

I Sandesh Singh declare that:

- (i) The research reported in this dissertation/thesis, except where otherwise indicated, is my original research.
- (ii) This dissertation/thesis has not been submitted for any degree or examination at any other university.
- (iii) This dissertation/thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.
- (iv) This dissertation/thesis does not contain other persons' writing, unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, then:
 - a) their words have been re-written but the general information attributed to them has been referenced:
 - b) where their exact words have been used, their writing has been placed inside quotation marks, and referenced.
- (v) This dissertation/thesis does not contain text, graphics or tables copied and pasted from the internet, unless specifically acknowledged, and the source being detailed in the dissertation/thesis and in the References sections.

Signature:

ACKNOWLEDGEMENTS

No undertaking of such a project as this study is possible without the support and contribution of people. It is not possible to single out all those people who offered encouragement during times when this project seemed that it was not coming to an end. However, there are important people that need to be acknowledged for their contributions, without which this project would not have been finished.

I therefore wish to express my sincere appreciation and gratitude to:

- Lord Vishnu, for giving me the strength, knowledge and faith to successfully complete this study.
- My late father and mother Hurri and Madhay Singh. I miss both of you a lot and it is unfortunate that my success cannot be shared with you.
- Sadhana and Ashmita, for always giving me encouragement and taking care of me during my MBA study so that I was able to pursue this “journey” with success.
- My personal friend and colleague Dhanesh Rampersad who stood beside me and gave me exclusive support.
- My supervisor, Professor Anesh Maniraj Singh, for his guidance, motivation and encouragement.
- The various companies that gave me consent to carry out the research.
- All the respondents for taking time to complete the survey which has been valuable in completing this research.

ABSTRACT

The scarcity of skilled technical artisans is one of the major stumbling blocks to the economic growth of South Africa. To address the skills scarcity, the South African Department of Education has acknowledged Further Education and Training (FET) as the key driver to prepare graduates for the world of work. FET colleges were therefore placed at the centre of the national skills development strategy, to ensure that there is skills transfer from learning to the workplace. To drive the implementation of the skills development strategy, the Sector Education and Training Authority (SETA) system was developed in order to implement different sector skills plans. The Manufacturing, Engineering and Related Services Sector Education and Training Authority (MERSETA) identified a serious shortage of fitters, turners, welders and boilermakers in the metals and engineering sector, which is in urgent need of capacity building. Although FET colleges are producing mechanical engineering graduates, there has been a growing concern amongst metals and engineering companies in Durban, about the job readiness of these graduates. This study was conducted to determine if this phenomenon existed in the metals and engineering sector in Durban. The main aim of the study is to determine what job skills are required for FET graduates by the metals and engineering sector in Durban. The study focused on nine companies within the sector that trained FET graduates to qualify as artisans. The study also focussed on the skills required by the sector, the skill shortcomings of the graduates, the action by the companies to get new graduates job ready, and the activities required to rectify the skills shortage. A quantitative research approach modified by the use of a questionnaire was selected for use in the exploration of the study objectives. A probability sample of fifty-two foremen, who trained and developed FET graduates, was drawn from the nine companies which represented 86% of the total population of sixty foremen. The nine metals and engineering companies were chosen since they were in urgent need of technical skills, for capacity building, and competitiveness. Most respondents indicated concern about the development of the skills of their artisans, and about the job readiness (the capacity to fulfil the needs of a company as a business) of FET graduates. Based on the findings of the study it is recommended that more collaboration between government, FET colleges and industry, should take place, in order to ensure that skills development programmes adequately address the work-based element of training.

TABLE OF CONTENTS

Description	Page
Declaration	II
Acknowledgements	III
Abstract	IV
Table of contents	V
List of figures	X
List of tables	XI
List of acronyms and abbreviations	XII
 CHAPTER ONE	
Introduction	1
1.1 Introduction	1
1.2 The problem statement	1
1.3 The motivation for the study	3
1.4 The focus of the study	4
1.5 The research questions	4
1.6 The objectives	4
1.7 The methodology	5
1.8 The chapter outline	6
1.9 Summary	7
 CHAPTER TWO	
Literature Review	8
2.1 Introduction	8
2.2 Overview of unemployment	8
2.2.1 Definition of unemployment	9
2.2.2 Labour market indicators	9
2.2.3 Challenges to economic growth	10
2.3 Skills development	11
2.3.1 Defining the concepts	11

2.3.2	Historical perspective	13
2.3.3	Legislative framework	13
2.3.3.1	The NQF's relationship to the world of work	14
2.3.4	National mechanisms	15
2.3.4.1	The Human Resource and National Skills Development Strategy	15
2.3.4.2	National Skills Development Strategy II	17
2.3.4.3	Accelerated Shared Growth Initiative of South Africa and Joint Initiative on Priority Skills Acquisition	17
2.3.4.4	National Skills Development Strategy III	19
2.3.5	The Skills Development Act No. 97 of 1998	20
2.3.6	The Metals, Engineering and Related, Sector Education and Training Authority	20
2.3.7	Learnerships	22
2.3.7.1	The learnership system criticisms and challenges	23
2.3.7.2	Learnerships and apprenticeships	25
2.3.8	The nature of the skills shortage	27
2.4	Further education and training	28
2.4.1	The legislative framework	29
2.4.2	The role of the government	30
2.4.3	A critique of FET	31
2.5	Job readiness – local and global perspectives	32
2.6	Summary	35

CHAPTER THREE

Research Methodology	36	
3.1	Introduction	36
3.2	Aim of the study	36
3.3	Participation and location of the study	36
3.4	Research approach	37
3.4.1	Quantitative research	38
3.5	Sampling	39
3.5.1	Sampling design	39
3.5.2	Sampling size	40

3.6	Data collection	40
	3.6.1 The administration of the questionnaire	42
3.7	The development of the instrument	43
3.8	Pre-testing and validation	45
	3.8.1 The validity and reliability of the questionnaire	46
	3.8.2 Ethical consideration	47
3.9	Analysis of the data	47
3.10	Summary	48

CHAPTER FOUR

	Presentation and Discussion of Results	49
4.1	Introduction	49
4.2	Demographics	49
	4.2.1 The industrial sector	49
	4.2.2 The size of the organisations	50
4.3	Objective one:	
	To determine the reasons why the metals and engineering sector employs further education and training graduates	50
	4.3.1 The employment of FET graduates	51
	4.3.2 The recruitment of FET graduates	56
	4.3.3 Recruiting suitable graduates	57
	4.3.4 Difficulties in recruiting specific trades	58
	4.3.5 Rectifying the recruitment problem	60
4.4	Objective two:	
	To determine the skills shortcomings of FET graduates	61
	4.4.1 Artisan skills development	61
	4.4.2 The value of artisan skills development	62
	4.4.3 FET graduate's job skills	63
	4.4.4 The impact of skill deficiencies	65
	4.4.5 FET graduates' job performance	66
	4.4.6 The skills and attributes of graduates	66
4.5	Objective three:	
	To determine employers' actions to get the FET graduates job ready	67
	4.5.1 The provision of extra skills	68

4.5.2	Skills development initiatives	69
4.5.3	Training providers	70
4.5.4	Training costs	71
4.6	Objective four:	
	To determine the skills required by the metals and engineering industry in Durban	71
4.6.1	The ranking of workplace skills	72
4.6.2	The role of industry in skills development	73
4.6.3	Artisan skills shortage	74
4.7	Objective five:	
	To determine the activities required to rectify the skills scarcity	75
4.7.1	Rectifying the skills scarcity of artisans	75
4.8	Summary	77
 CHAPTER FIVE		
Conclusions and Recommendations		78
5.1	Introduction	78
5.2	Key findings and conclusions	78
5.2.1	Objective one	79
5.2.2	Objective two	79
5.2.3	Objective three	80
5.2.4	Objective four	80
5.2.5	Objective five	80
5.3	Recommendations to improve the current situation	81
5.3.1	Training and development incentives	81
5.3.2	The increased role of industry	81
5.3.3	The quality and relevance of Further Education and Training	82
5.3.4	Government's involvement in skills development	82
5.4	The limitations of this study	83
5.6	Recommendations for future studies	84
5.7	Summary	84
 REFERENCES		85

Appendix 1	Introductory letter	92
Appendix 2	Informed consent letter	93
Appendix 3	Questionnaire	94
Appendix 4	Ethical clearance	100

List of Figures

No.	Description	Page
2.1	The transition of legislation regarding skills development	16
2.2	The transition of legislation regarding further education and training	30
4.1	The reasons for recruiting further education and training graduates	57
4.2	The difficulty in recruiting suitable further education and training graduates	58
4.3	The occupational trade categories where recruiting difficulties were experienced	59
4.4	Action to rectify the recruiting problem	60
4.5	The importance of artisan skills development	62
4.6	The significance of artisan skills development	63
4.7	The impact of the skills deficiency	65
4.8	The provision of additional skills	68
4.9	The provision of extra training	69
4.10	The proportion of in-house versus external training	70
4.11	The funding of training initiatives	71
4.12	Workplace skills ranked from the most to the least important	72
4.13	The artisan skills shortage	75

List of Tables

No.	Description	Page
2.1	Labour force survey April 2012 to September 2012	10
2.2	Differences between learnerships and apprenticeships	26
3.1	Differences between qualitative and quantitative research	37
3.2	The Pros and cons of questionnaires	50
4.1	Industrial sector distribution	50
4.2	Company size distribution	51
4.3	FET graduates employed in different trades	52
4.4	Cross tabulation between company size and graduates employed as fitter and turners	53
4.5	Cross tabulation between company size and graduates employed as welders	54
4.6	Cross tabulation between company size and graduates employed as boilermakers	55
4.7	Cross tabulation between company size and graduates employed as tool and die makers	56
4.8	Cross tabulation between company size and graduates employed as millwrights	64
4.9	Description of graduates job skills	66
4.10	Graduates job performance	67
4.11	The skills and attributes of the graduates	61
4.12	Industry's role in skills development	73
4.13	Activities to rectify the skills scarcity	76

List of Acronyms and Abbreviations

ADEST:	Australian Department of Education, Science and Training
ASGISA:	Accelerated Shared Growth Initiative of South Africa
DoE:	Department of Education
DoL:	Department of Labour
DTI:	Department of Trade and Industry
FET:	Further Education and Training
GET:	General Education and Training
GDP:	Gross Domestic Product
HET:	Higher Education and Training
HRD-SA:	Human Resource Development Strategy for South Africa
HSRC:	Human Sciences Research Council
JIPSA:	Joint Initiative on Priority Skills Acquisition
KZN:	KwaZulu-Natal
KZNTI:	KwaZulu-Natal Tooling Initiative
MERSETA:	Metals, Engineering and Related, Sector Education and Training Authority
NQF:	National Qualifications Framework

NSA:	The National Skills Authority
NSDS:	National Skills Development Strategy
NVC:	National Vocational Certificate
RDP:	Reconstruction and Development Programme
SAQA:	South Africa Qualifications Authority
SEIFSA:	The Steel and Engineering Industries Federation of South Africa
SETA:	Sector Education and Training Authority
SDA:	Skills Development Act
SPSS:	Statistical Package for Social Sciences
TIKZN:	Trade and Investment Kwazulu-Natal
USA:	United States of America

CHAPTER ONE

Introduction

1.1 Introduction

The scarcity of skilled artisans in industry has the potential to offset the South African government's economic growth plan. South Africa faces a shortage of artisan skills which is likely to be a stumbling block, in the attempt to reach the goal of the six per cent Gross Domestic Product (GDP) growth per annum. Currently, the GDP averages 2.4%. Research studies carried out by the Department of Labour (DoL) and the Human Sciences Research Council (HSRC) in 2008, indicated that there was inadequate training and development of artisans in South Africa, and suggested that unless immediate action is taken to resolve this situation, South Africa will have difficulty in increasing the country's growth rate. To address the skills scarcity, and ensure that skills development is fast-tracked, the government has acknowledged, that further education and training (FET) is the key driver to prepare graduates for both higher education and the world of work (Mukora, 2008). The government has therefore focussed on FET colleges, to achieve the objectives of the National Skills Development Strategy, by acting as the confluence between higher education and the world of work (Akoorjee and McGrath 2008). The Sector Education and Training Authority (SETA) system was developed to drive the implementation of the skills development strategy with the aim of implementing different sectorial skills plans. This research project is an attempt to make a contribution to the thinking that informs the training of artisans, in the above context.

This chapter presents an outline of the research topic and the impetus behind the study. The problem statement and research questions are also presented. The aim and objectives of the research study are also clearly explained, after which the methodology is described and the topics dealt with in succeeding chapters are outlined.

1.2 The problem statement

The DoL has identified a strong need for the production of Fitters, Turners, Welders and Boilermakers, the artisans performing in occupational trades in the metal and engineering

sector, which is in urgent need of capacity building (Mukora, 2008). Although there is evidence of FET colleges producing Mechanical Engineering graduates, there is growing concern amongst engineering and manufacturing companies, about the job readiness of these graduates (Raftopoulos, 2006). Such FET graduates lack the relevant job readiness skills (Vorwerk, 2005). The MERSETA introduced apprenticeship training programmes in 2001 in order to bridge the gap between FET and work. FET colleges were not equipping graduate learners with the skills which were recognised as being necessary to meet the needs of industry (Wedekind, 2008). Employers require graduates who contribute to building their organizations, and have the relevant expertise to work efficiently (Elliot, 2006). This situation has negatively impacted on the competitive efficiency of the sector in employing the human resources to cater for their needs (Valodia and Velia, 2005). A study carried out by Janse van Rensburg (2009) found that organisations in the metals and engineering sector were experiencing difficulty in employing skilled artisans, and as a result, they were compelled to employ FET learners in positions that actually required highly skilled artisans. In some instances organisations selectively downsized their technical capability as the learners were not able to apply the skills needed for the jobs they were meant to be performing.

FET was recognised by the government as the means to equip graduates with the necessary skills for the job place. It was regarded as a crucial phase of learning, as it provided the critical middle-level skills for employment (The National Business Initiative Annual Report, 1998 – 1999). Wedekind (2008) argues that FET colleges have failed to create structured vocational education and training pathways into employment. Graduates exit the college system without being equipped for the world of work (Elliot, 2006). There is an on-going concern over the implementation of skills development through FET and the impact it has had on industry, as learners are not prepared for the job component of their training (Mukora, 2008). A further in-depth analysis of these issues is required in order to determine possible solutions to the problems, with the aim of enhancing skills development and promoting economic growth.

In order to investigate the phenomenon of the job readiness of FET mechanical engineering graduates, the following research question needs to be answered: “What skills do FET Mechanical Engineering College graduates possess to work in the metals and engineering sector?” The answers to this question will point to which factors have the most influence on

the business sustainability of metals and engineering companies.

1.3 The motivation for the Study

The scarcity of skilled technical artisans dilutes economic growth (Akoorjee and McGrath, 2008). The most critical constraints identified by government and that needing intervention in the fields of education and, skills development, with particular focus on the critical skill shortages, which are impeding economic growth (Naicker 2007). The government has therefore placed FET colleges at the centre of the national skills development strategy to act as the junction between basic education, higher education and the world of work, hence fast tracking skills development (Ngcuka, 2006). But according to Wedekind (2008), FET colleges have failed to address the fast-tracking of skills development, as their graduates do not have the relevant expertise to work efficiently, and contribute to building the organizations they work in.

It is evident that learners placed in apprenticeship training programmes, do not finally qualify as artisans (Mukora, 2008). This situation has negatively impacted on the competitive efficiency of manufacturing companies in Durban, who need to employ skilled staff to cater for their business needs (Valodia and Velia, 2005). This study will contribute to a greater understanding of industries requirements of job readiness for FET graduates, thereby enhancing skills development, and promoting economic growth.

The results of this study will benefit stake holders in the following manner:

-  Employers' perceptions of FET and workplace skills will assist training and education authorities in integrating education and workplace learning.
-  Employers', FET colleges and the MERSETA will have a better understanding of the basic skills that are required for the job.
-  The graduates will benefit from their personal development as they learn the skills that will enable them to do a better job.

The purpose behind this study is to provide metals and engineering companies, FET authorities and the government with relevant information necessary to stimulate skills development through the an improvement on the quality of FET.

1.4 The focus of the Study

KwaZulu-Natal is the second largest provincial economy, and it contributes approximately sixteen and a half per cent towards the GDP of South Africa (Statistics South Africa, 2011). Durban is host to metals and engineering companies which supply various products and services to both the domestic and the export markets, to the automotive, metals, plastics, and tyre sectors. The focus of this study is to determine the relationship of the concepts of unemployment, skills development, FET, and job readiness, with one another. This will serve to describe the job readiness of FET mechanical engineering graduates, and the value they add, to the organizations that employ them. The study will be located in Durban, with specific emphasis on nine metal and engineering companies that are in urgent need of technical skills, for capacity building and enhanced competitiveness. The companies represent the automotive, metals, and plastic industrial sectors.

1.5 Research Questions

The main research question- can be addressed through answering the following subsidiary questions:

- ✚ Why does the metals and engineering sector employ FET graduates?
- ✚ What are the skill shortcomings of graduates?
- ✚ What are employers' doing to get new graduates job ready?
- ✚ What are the skills required by the metals and engineering sector in Durban?
- ✚ What needs to be done to rectify the skills scarcity?

1.6 Objectives

The key objectives of this study are to determine:

- ✚ The reasons why the metals and engineering sector employs FET graduates.
- ✚ The skill shortcomings of FET graduates.
- ✚ What employees are doing to get FET graduates job ready.
- ✚ The skills required by the metals and engineering sector, in Durban.
- ✚ The actions needed to rectify the skills scarcity.

1.7 The Methodology

The study used the quantitative approach to collect and analyse research data. A self-administered questionnaire was utilized to gather numerical data, which was analysed and developed in statistical form. The numerical data was used to explain the research observations. This was a cross-sectional study, since all the data was collected at a single point in time over a four-week period.

The research focused on nine metals and engineering sector companies in Durban. Stratified sampling was used to collect data for the study in order to ensure that these organisations had an equal probability of inclusion in the sample. The necessary permission to carry out the study in Durban was obtained from the KwaZulu-Natal Tooling Initiative (KZNTI) which is part of Trade and Investment KwaZulu-Natal (TIKZN), since the organization was the provincial trade and investment promotion agency that encourages manufacturing and technical skills development. Under the auspices of the Department of Trade and Industry (DTI), the TIKZN drives manufacturing skills and expertise development in order to keep the manufacturing industry in KZN competitive. The organization had the necessary data-base and a network of relevant companies that could be contacted in Durban. The data-base formed the sampling frame, where key people were contacted telephonically and informed about the purpose of the study. Their interest and involvement was requested. Letters of informed consent were obtained from the companies that supported the research study. The questionnaire and the covering letter were set up on QuestionPro, an online survey system. The electronic link to the questionnaire was emailed to foremen who accepted to take part in the study. Once the respondents had completed the questionnaire, their responses were anonymously recorded on QuestionPro. In order to achieve a high response rate, follow-ups were carried out with respondents, encouraging them to complete the questionnaire.

The target population for this study consisted of sixty foremen involved in the training and development of FET graduates, from small, medium and large metals and engineering companies situated in the Durban area. A probability sampling design with stratified random sampling method was used to collect the research data. The sample size required for this research was fifty-two foremen.

The questionnaire comprised of five pages with twenty- one questions. A four- point Likert scale was used in order to minimize the tendency of error, and obtain more specific results. The questions posed in the questionnaire related to the intended measurement of each objective. The information captured on QuestionPro was downloaded into the Statistical Package for the Social Sciences (SPSS) for data analysis. Descriptive statistics were used to summarize the data, which included frequencies, the measurement of central tendencies and the measurement of dispersion. Bar graphs and tables were used to present the data. The research design and methodology is discussed in detail in Chapter Three.

1.8 The Chapter outline

The research consists of five chapters. The chapters are arranged in such a way as to provide an understanding of the research topic and the related empirical material, the analysis of the research data, and the recommendations to improve the skills of FET graduates.

Chapter One: This chapter introduces the research topic, states the problem, and discusses the importance and relevance of the study.

Chapter Two: The literature review provides the theoretical background of the complementary elements regarding unemployment, skills development, further education and training (FET), and job readiness. This is essential for it assists in demonstrating an awareness of the current body of knowledge that describes the job readiness of FET mechanical engineering graduates, and their relationship to the organizations that employ them.

Chapter Three: The research methodology describes how the research was carried out. The method of data collection, the sampling and the instrument used are discussed, with specific emphasis on data reliability, validity and ethical considerations. Quantitative data was collected using self-administered questionnaires to obtain responses from foremen who train and develop FET graduates in the metals and engineering sector.

Chapter Four: This presents the research results, and the analysis and discussion of the findings are laid out in this chapter. The data obtained from the completed questionnaires was analysed using descriptive and inferential statistics. The findings of the research data are used to discuss each objectives of the study.

Chapter Five: This chapter comprises of the recommendations to relevant stakeholders regarding the skills development and job readiness of FET graduates. Recommendations for further research and the conclusions derived from the research findings are also presented.

1.9 Summary

The competitiveness of the metals and engineering sector in Durban is dependent on the pool of talent from which the sector can draw. There is an urgent need to develop artisan skills in order to promote economic growth in South Africa. FET colleges have the responsibility of ensuring that FET graduates are developed with the necessary job readiness capabilities to, contribute to business growth and industrial competitiveness. Chapter One has presented the study approach adopted, stressing the focus of the study. The objectives, significance and benefit of the study were further outlined. The structure and content of each chapter of the study was briefly explained. The next chapter will describe the literature review.

CHAPTER TWO

Literature Review

2.1 Introduction

The scarcity of skilled technical workers prevents business and economic growth from taking place. According to the government's National Skills Development Strategy (NSDS), Further Education and Training (FET) has been recognized as the mechanism to fast-track skills development in the workplace. It is evident that FET colleges are not producing skilled graduates that can integrate into the workplace environment. This situation has become a serious concern for the manufacturing sector in Durban, as their FET graduates are not job-ready. This chapter will discuss additional and complementary elements regarding unemployment, skills development, further education and training (FET) and job readiness. This will serve to describe the job readiness of FET mechanical engineering graduates and their relationship to the organizations that employ them.

2.2 Overview of unemployment

South Africa's highest growth in GDP (Gross Domestic Product) was 5.6 per cent in 2006, and the lowest was -1.8 per cent in 2009. The drop in growth was as a result of the global financial and economic crisis in 2008 which affected all sectors, including the demand for exports (Development Indicator, 2010, p.3). South Africa recovered from the recession in the third quarter of 2009, and achieved a growth for the second quarter of 2010 of 2.8 per cent (South African Development Indicator, 2010, p.3). According to Knight (2006, as cited in Mohr and Fourie, 2009) although South Africa has achieved reasonable economic growth, great challenges lie ahead, such as the low level of education, skills, and the high levels of unemployment. Borat (2007) in support of Knight (2006) state that the most disconcerting feature of the South African labour market was the extremely high unemployment rate of 25.3%, which expressed the welfare and development challenges facing the country.

To address the high unemployment situation in the country, the government has developed the National Skills Development Strategy (NSDS) with the intention of exploiting the place of work as a learning environment, in order to promote self-employment and job prospects

for new entrants into the labour market (Paterson, Visser and Du Toit, 2007). Mohr and Fourie (2009) state that although unemployment is a term understood by most, it is difficult to define and measure.

Bhorat (2007) state that job creation is still a challenge for South Africa, and regardless of the achievements in macro-economic stability or increased employment, the growing labour force has outstripped the capacity of the labor market to absorb young people. The current state of South Africa's technical skills base is inadequate, a fact which impacts on the capacity of the economy to grow in an increasingly competitive global environment (Mukora, 2008). In this context, FET is viewed as an important mechanism for building the necessary intermediate technical skills to support key sectors of the economy (Janse van Rensburg, 2009). A study carried out by Gewer (2009) finds that FET colleges are ineffective in preparing graduates for the world of work, a fact that has an impact on the rate of employment. FET Colleges are not providing an effective route into employment as only 10% to 12.5% of FET College graduates get employed in fields that are relevant to their study.

2.2.1 Definition of unemployment

There are two definitions of unemployment in South Africa, namely the strict, and the expanded definition. Both definitions include people aged 15 or older who are not employed but are available for work (Bhorat, 2007). The requirement of the official (strict) definition is that an individual must have taken steps to find employment during the four weeks prior to a given point, while the expanded definition requires only that person has a desire to find employment (Development Indicator, 2010). Mohr and Fourie (2009) believe that the strict definition is officially used in South Africa since it is more representative of the unemployed population. This opinion has supported by Bhorat (2007) who state that the expanded definition is not generally recognised, since it omits taking cognisance of the steps taken to find employment. Only the official, strict definition of unemployment is used in this study.

2.2.2 Labour market indicators

Mohr and Fourie (2009) argue that unemployment is not a good thing, since skills are wasted when people are not in a position to use them. The unemployment rates published by

Statistics South Africa are generally accepted and used by researchers, Statistics South Africa provides recent statistics about the population (Mukora, 2008). It conducts quarterly labour force household based population surveys based on labour market activities of people aged between 15 to 64 years (such as the Quarterly Labour Force Survey, 2012). Table 2.1 illustrates the labour force survey conducted between April 2012 and September 2012.

Table 2.1 Labour Force Survey April 2012 to September 2012

	April to June 2012	July to September 2012	Variance
Population (15 to 64 years)	32 903	33 018	115
Labour force	17 916	18 313	397
Employed	13 447	13 645	198
Unemployed	4 470	4 667	197
Unemployment rate (%)	24.9	25.5	0.6

- **Figures are stated as thousands**

Source: Adapted from Statistics South Africa, 2012. *Labour Force Survey Quarterly Report*. [Online]. Available [http:// www.statssa.gov.za/publications](http://www.statssa.gov.za/publications) (Accessed 5 February 2013).

It is evident from Table 2.1 that there are an estimated 33 million people aged between 15 and 65 in the country. The South African labour force between these limits increased year on year end in that quarter by a figure of 397 000. Employment also increased by 198 000. Approximately 14.7 million South Africans were economically in active, and a third of these people (4.667 million) were unemployed, according to the official definition of unemployment. Although there had been an increase in employment, unemployment had also increased by 197 000, which had brought the unemployment rate to its 2012 level at 25.5 per cent.

2.2.3 Challenges to economic growth

The goal of the South African government is to reduce unemployment by half by 2014, in order to realize a growth in GDP of six per cent (Development Indicator, 2010). Mohr and Fourie (2009) attribute the decline in economic growth to the increase in unemployment. Mukora (2008) argues that the short supply of qualified, competent and experienced artisans

will severely hamper South Africa's ability to deliver on an economic growth rate of six per cent per annum. According to Naicker (2007) the extension of the transitional artisan and technical skills development programme was identified as one of the five main areas for targeted intervention by the Joint Initiative on Priority Skills Acquisition (JIPSA) which was launched by the government in 2006, to grow the South African economy.

The JIPSA initiative realizes that the biggest obstacle for both public infrastructure and private investment programmes is the scarcity of technically skilled labour, at the intermediate level (Mummenthey, 2008). Naicker (2007) argues that the scarcity of skilled technical staff slows down economic growth. Mzaca (2001, as cited in Naicker 2007) also supports the notion that economic growth is strongly affected by the nature of the available human capital, with specific focus on the skills of the workforce. According to Akoorjee and McGrath (2008), the government approved the revised Human Resource Development Strategy for South Africa (HRD-SA) in 2007 so that the work initiated under the JIPSA would continue into the HRD-SA, with more strategic focus on sector skills development.

Skill shortages in the labour market and industry in South Africa were an important reason for the establishment of FET Colleges (Naicker, 2007). The JIPSA initiative had found that the lack of skills and basic knowledge creates higher rates of unemployment, and where employment was available; there was a lack of suitably qualified candidates. Subsequently, FET Colleges had been tasked by the government to meet the demands of the labour market and industry, by developing skilled graduates for the workplace (Akoorjee and McGrath, 2008).

2.3 Skills development

According to Akoorjee and McGrath (2008) a skilled workforce is essential for the growth of the South African economy. Robbins, Judge, Odendaal and Roodt (2009) state that South Africa's economy can grow only if its critical technical skills base can be adequately developed. It is from this perspective that the concept of skills development will be discussed.

2.3.1 Defining the Concepts

Robbins *et al* (2009) define a skill as the ability to apply something learnt after being trained

to do so. According to Akoorjee and McGrath (2008) a skill is viewed as a task or competency performed to a pre-determined standard. Robbins *et al* (2009) concur that competence is a task that is performed according to standards that need to be achieved when executing an activity. It is evident with reference to the above definitions that a skill is the competence or ability to perform a required task to a specific standard, once one has been trained to do so. Conversely, a skill shortage occurs due to the lack of a specific skill (Nel, Kirsten, Swanepoel, Erasmus and Poisat, 2009). Robbins, *et al* (2009) state that a skill shortage arises when the demand for a certain skill exceeds the supply. It is evident that skill shortages occur when there is a deficiency in the specific skills needed for the job.

According to Janse van Rensburg (2009) most organisations value artisan skills development as it increases productivity and, performance, and it provides financial benefits to the organisation. A skilled workforce also increases market-share opportunities, where there is an availability of a skilled pool of workers. According to Mukora (2008) in order to deal with the skill shortages in South Africa, the Department of Labour (DoL) and Sector Education and Training Authorities (SETAs) had to commit to critical skills development initiatives. Mukora (2008) further states that artisan skills development increases the opportunity for companies to strengthen their technical base, thereby increasing company their market-share opportunities. This contributes positively to the growth and development of South Africa as a whole.

According to Naicker (2007) the implementation of the Skills Development Act of 1998 had important implications for FET institutions. According to the Act, FET institutions must engage responsively in developing the skills capacity of the country by offering and managing learnerships through the SETA-'s, and by sustaining training programmes supported by the national skills fund, which is directed at creating skills and learning for employment. Gewer (2009) argues that FET colleges are not responsive to skills development, as their graduates are not adequately prepared for the job environment. Elliot (2006) states that FET colleges should contribute to the development of a better skilled workforce through gearing their technical and vocational training to better articulate with the skills requirements of industry. Wedekind (2008) also argues that FET colleges are not offering expanding access to the critical mass of learners who therefore have limited opportunity to develop their knowledge and skills, and are therefore not prepared for entry to the labor market.

2.3.2 Historical perspective

According to Akoorjee and McGrath (2008) the Reconstruction and Development Programme (RDP) identified human resource development as one of the five important programmes necessary to accelerate the execution of reconstruction and development in South Africa. The government's economic policies required that human resource development should take precedence in ensuring economic growth. Advanced training and education were regarded as the basis for skilled employment. Greater labour productivity would result from the development of proper attitudes towards work, with more focus on new skills development activities (Mukora, 2008).

According to Robbins *et al* (2009) South Africa developed one of the most inclusive skills development systems in the world. National mechanisms such as JIPSA and the National Skills Development Strategy (NSDS) were also used by the government in support of accelerated economic growth. Naicker (2007) explains that the NSDS comprised of three elementary levels, which included, policy making, the framework for skills development and the improvement of basic skills in the workplace. The National Skills Authority (NSA) which was formed in 1999 developed a new framework for education and training, by creating the South African Qualifications Authority (SAQA).

2.3.3 Legislative framework

According to Janse van Rensburg (2009) the government is aware of the national predicament regarding the shortage of technical skills. Governing structures were therefore developed and implemented to assist in this regard. Nel *et al* (2009) explain that the South African Qualifications Authority Act No.58 of 1995 was passed in order to improve skills training and development in South Africa. The Act allowed for the establishment of the National Qualifications Framework (NQF) and the South African Qualifications Authority (SAQA). The objectives of the NQF include the commencement of the integrated national framework for learning outcomes to enhance the quality of education, and promote the development of learners so that they may contribute positively to the economic growth of South Africa (Naicker, 2007).

According to Mummenthey (2008) the SAQA was the central body in assuring the high quality of education and training, by overseeing the successful development and implementation of the NQF. Since the SAQA is responsible for the quality assurance of education and training it is answerable to the DoL and the Department of Education (DoE). Janse van Rensburg (2009) states that the NQF categorized all education and training qualifications on a scale of eight levels, which scale was sub-divided into three bands, namely the General Education and Training (GET) band (NQF level 1), the Further Education and Training (FET) band (NQF Levels 2 to 4) and the Higher Education and Training (HET) band (NQF Levels 5 to 8). The eight-level NQF has been revised into a ten level framework. The ten levels of the NQF provide the scope for post-matric and pre-higher educational levels in which, intermediate skills development is situated (SAQA, NQF level descriptors, 2011).

2.3.3.1 The NQF's relationship to the world of work

Mummenthey (2008) argues that although the NQF endeavours to integrate education and training, it does not however address the linkage between education and training, in the context of the world of work. Vorwerk (2005) also argues that the NQF does not present a satisfactory systemic relationship between the world of work and learning. The practical execution was occupation unfriendly since it did not cater for the occupational qualifications required by industry (Vorwerk, 2005). According Badroodien (2003) the NQF model has no provisions for occupational qualifications, for example a baker or a butcher, but only for qualifications defined by the NQF in general terms, such as a certificate, diploma or degree. These qualifications do not include an occupational title as required by the labour market.

Furthermore, professional bodies and specialised sector experts are excluded from the Education and Training Quality Assurance (ETQA) bodies, a fact which leads to qualifications that do not adequately address the needs of industry (Vorwerk, 2005). Mukora (2008) states that the current skills shortage has been worsened by the fact that a large number of the learnerships that were embarked on are at the lower levels, NQF levels 1 and 2, rather than intermediary skills levels. This was partly as a result of the initiative by the government to meet specific targets to employ unemployed youths.

2.3.4 National mechanisms

According to Robbins *et al* (2009) the HRD Strategy, NSDS, the Accelerated and Shared Growth Initiative for South Africa (ASGISA) and the JIPSA were designed to promote the acceleration of skills development. These national mechanisms will be briefly described below, as they are interrelated in terms of the legislative framework for national strategies and initiatives to drive and promote the implementation of learnerships and workplace learning.

2.3.4.1 The human resource and national skills development strategy

Mummenthey (2008) explains that the Human Resource Development Strategy which was introduced in 2001 provides an all-encompassing framework for the government's approach towards skills development. The strategy is to create a better life for all South Africans by maximizing the potential of the people through the acquisition of knowledge and skills. Janse van Rensburg (2009) add that the HRD strategy consists of five founding objectives, namely improving the fundamentals for human development, improving the supply of scarce skills in response to economic needs, promoting employer participation in long-term learning, intensifying employment through establishing appropriate industrial policies, innovation, research and development, and ensuring that the four strategic objectives of the HRD strategy are linked. The supply of scarce skills and employer participation in long-term learning are predominantly connected to the learnership system, with the focus on scarce skills development, in close collaboration with the labour market (Mummenthey, 2008).

According to Naicker (2007) the main drive of the HRD strategy is to ensure that all governmental departments work together in order to realize the established objectives and the input made by the Department of Labour into skills development, as summarized in the first National Skills Development Strategy (NSDS). The NSDS was implemented in 2001 with the aim of providing South Africa with the skills that are essential for economic growth, social development and sustainable employment growth (Janse van Rensburg, 2009).

According to Mummenthy (2008) since the introduction of the HRD Strategy in 2001 a total of 280 000 learners have graduated in engineering studies, but only 34 per cent of these have found jobs in industry. This is because their FET courses are not aligned to industry

requirements.

Kraak (2008) further explains that over the period 1 April 2001 to 31 March 2005, which was the first phase of the implementation of the NSDS learnership intervention to develop scarce skills, a total of 134 223 learners enrolled for learnerships which were in non-technical fields, at a much lower skill level than artisanal work. As a result the learnership initiative set out in the NSDS has not resolved the shortage of technical skills at the intermediate level. Figure 2.1 illustrates the transition of legislation incorporating skills development.



Figure 2.1 The transition of legislation regarding skills development

Source: Adapted from Janse van Rensburg, C. 2009. *Organisational Perspectives of Learnerships within Manufacturing, Engineering and Related Services Organisations in the Sedibeng Municipal District Area*. Published dissertation. Vaal University of Technology. [Online]. Available [http:// www.vut.netd.ac.za](http://www.vut.netd.ac.za). (Accessed 1 September 2011).

It is evident from Figure 2.1 that the development of legislation pertaining to skills development began in 1995 with the SAQA Act. The Skills Development Levies Act in 1999

followed the introduction of the Skills Development Act of 1998, which led to the inception of the NSDS. The SETA system followed with the development of the sector skills plans using the NSDS as a support structure, such as learnerships. The amendment of the Skills Development Act of 1998 brought about the Skills Development Act of 2008. Section two of the Skills Development Act of 1998 was amended to provide four alternative paths to the trade test required to qualify as an artisan.

2.3.4.2 National Skills Development Strategy II

According to Janse van Rensburg (2009) the National Skills Development Strategy II (2005-2010) is the revision of the government's first five-year NSDS (2001-2005), which was established by the Department of Labour under the direction of the National Skills Authority (NSA). Mumenthey (2008) explains that one of the main purposes of the NSDS is to set out national skills priority areas for skills development through learnership programmes. The objectives include, encouraging and fast tracking quality training in the workplace and to support designated groups and new entrants to participate in recognized work by combining learning and work-based programmes to become more skilled. Janse van Rensburg (2009) states that the first NSDS focused mainly on quantity, while the revised NSDS prioritizes the quality and relevance of training, with more focus on important outcomes, such as job creation.

2.3.4.3 Accelerated Shared Growth Initiative of South Africa and Joint Initiative on Priority Skills Acquisition

According to Aloorjee and McGrath (2008) the Accelerated and Shared Growth Initiative for South Africa (ASGISA) was officially launched in 2006 to promote the governments mandate to halve unemployment and poverty from one-third to one-sixth by 2014. The mandate also included the acceleration of employment equity. Naicker (2007) adds that ASGISA identified constraints in the economy and possible interventions for attaining a sustainable annual GDP growth rate of six per cent in the long term. The most critical constraints identified as needing intervention were in the fields of education and skills development, specifically addressing critical skill shortages, which were impeding economic growth.

Naicker (2007) explains that the objectives and constraints identified by the ASGISA, created the Joint Initiative on Priority Skills Acquisition (JIPSA) task team in March 2006. Its key responsibility is to guide and support the implementation of ASGISA and its objectives through the grouping of education and training, with recognized skills in the short term. Naicker (2007) adds that ASGISA is also responsible for the human resource development strategies for the medium and long-term. For this reason, in 2006 JIPSA recognized five high-profile priority skills areas for immediate attention. The main objective was to broaden the training pipeline, retain people in skilled employment and train them more effectively to higher standards.

Five high-profile priority skills were:

- ✚ High-level, world-class engineering and planning skills for the “network industries” transport, communications, water, energy
- ✚ City, urban and regional planning and engineering skills
- ✚ Artisan and technical skills, with priority attention to infrastructure development, housing and energy, and other areas identified as being in strong demand in the labour market
- ✚ Management and planning skills in education and health
- ✚ Mathematics, science and language competence in public schooling.

It is evident that the area most relevant to the context of this study is the third skills field, which addresses artisanal and technical skills development, which is in great demand in the labour market.

According to Akoorjee and McGrath (2008) in 2008 JIPSA estimated that there was a shortage of 7500 artisans 7500 in the country as a whole. JIPSA therefore prioritized the alignment and direction of all training initiatives leading to artisan qualifications, with specific focus on the new vocational training system, which was also referred to as a system of learnerships. Employers were urged to encourage their employees to participate in the system by affording them time off for off-the-job training, providing development outside the direct work role, and making available personal tutoring and mentoring on the job. Employers were also to invest in well-established training programmes, with proper

structured off-the-job activity, provided by, external training centres (Impact Assessments of Learnerships and Apprenticeships, 2008).

A study carried out by Chandra, Moorthy, Rajaratnam and Schaefer (2000, as cited in Badroodien 2003) regarding the proportion of in-house training as opposed to external training provided in small, medium to large firms, established that in South Africa, there was a high preference for the in-house approach to training. The study found that 68% of the respondents indicated that their firms carried out in-house training compared to 32% who made provision for external training. Elliot (2006) states that industry was absorbing the cost for the extra training of FET graduates since the quality of FET-trained graduates did not conform to the requirements of the workplace environment. Wedekind (2008) argues that the FET curriculum is not aligned to industry's needs, and that as a result there is a misfit of graduates in the workplace.

2.3.4.4 National Skills Development Strategy III (2011)

According to Squire (2011) the vision of the NSDS III is to create practical institutional mechanisms for skills planning, focussing further on work-related programmes. The vision includes the development of FET colleges so that they will be more responsive to the needs of industry. Squire (2011) further states that the emphasis of the NSDS III is on institutional learning which is associated with job-related programmes. It prefers the development of FET Colleges in order to address national skills requirements and the improved utilisation of workplace skills training initiatives. SETA's are required to facilitate the delivery of sector-specific skills interventions and deal with employers' demands through service delivery (Janse van Rensburg, 2009).

According to Mumenthey (2008) the sector skills plans, developed by each SETA, outline the specific strengths and challenges of the sector related to employment and skills development. The plan includes an analysis of the current supply of education and training and of the factors influencing change in the sector, an assessment of future employment and skill needs, and a vision of how to meet the projected skills demand through FET. Squire (2011) explains that the role of FET Colleges is to expand post-school learning opportunities for young people by providing a mechanism for offsetting some of the shortcomings of the

current education system, and by providing an alternative learning pathway to increase the employability of youth in a challenging labour market. Wedekind (2008) states that FET Colleges have failed to prepare graduates for the labour market, thereby not addressing the intermediate skills objectives of NSDS III.

2.3.5 The Skills Development Act No. 97 of 1998

Nel *et al* (2009) state that the Skills Development Act No. 97 of 1998 was implemented on 1st of February 1999, and replaced the Manpower Training Act and the Guidance and Placement Act. The main purpose according to section two of the Skills Development Act No. 97 of 1998 was to:

- ✚ Develop workforce skills by increasing investment levels in education and training.
- ✚ Utilize the workplace for on-the-job learning and opportunities for skills acquisition.
- ✚ Guarantee a high quality of education and training for the work place.
- ✚ Assist with job placements for employees and employers.

Naicker (2007) adds that the implementation of skills development created learnerships job education and training programmes based on the conventional apprenticeship training system. The learnerships are slotted into the National Qualifications Framework (NQF) by the introduction of a qualification approved by the South African Qualifications Authority (SAQA). To drive the implementation of the skills development strategy, the Sector Education and Training Authority (SETA) system was developed (Nel *et al*, 2009). According to Naicker (2007) the SETAs' main objective is to develop and implement different sectorial skills plans through learnership programmes and to undertake quality assurance to ensure compliance. Mummmenthey (2008) adds that the SETAs are also responsible for paying out levies collected from employers from the different sectors.

2.3.6 Manufacturing, Engineering and Related Services Sector Education and Training Authority (MERSETA)

The MERSETA is the SETA for the manufacturing, engineering and related services sector. The primary function of the MERSETA is to encourage economic growth through employment and social development, by ensuring that inequalities in education, and training

are addressed (MERSETA Sector Skills Plan, 2011- 2016). According to Akoorjee and McGrath (2008) the MERSETA consists of five Chambers which include the metals, plastics, automotive, motor and new tyre sectors. The terms sector and industry can be used interchangeably in order to describe the major groups such as the metals sector, the automotive sector and the plastics manufacturing sector.

According to Naicker (2007) the MERSETA serves approximately 50 thousand companies nationally. The manufacturing sector provides employment for about 13.2 per cent of the total employed population. The sector also employs approximately 27.3 per cent unskilled workers, 21.9 per cent semiskilled workers (machine operators and drivers), 37.2% skilled workers (technicians and trades) and 17.2 per cent highly skilled workers (professionals and managers). According to Akoorjee and McGrath (2008) the MERSETA has four main geographic regions namely Gauteng, Cape Town, the Eastern Cape and Durban. For the purpose of this study the “manufacturing sector” will be restricted to the MERSETA firms in the Durban area.

Janse van Rensburg (2009) states that when the NSDS II was drafted, it was apparent that the Merseta needed to ensure the alignment of the scarce and critical skills, identified within their sector’s skills plan. Akoorjee and McGrath (2008) explain that the MERSETA’s skills development plan is widespread, consisting of a range of registered learnerships and apprenticeships. In 2010 and 2011 the MERSETA registered 6 370 learners on learnerships and apprenticeship programmes, but only 3 775 learners completed these qualifications. A study carried out by the Human Science Research Council (HSRC) in 2008 recommended that the MERSETA should play a more active position and developmental role in working with employers to ensure that learnerships and apprenticeship skills programmes were prioritised (Impact Assessments of Learnerships and Apprenticeships, 2008).

The impact study concluded that learnership and apprenticeship systems are ideal training systems for skills upliftment. The study further explained that the challenges faced in skills development have to do mainly with the MERSETA system which is not responsive to the prevention of system abuse and corruption. The ultimate challenge was to ensure the success of the learnership programmes. This would involve, for instance the improvement of the MERSETA’s administrative system, which was slow at processing work, addressing the inadequate training period, and correcting the was more theoretical orientation of the learning

programmes. The bulk of the respondents felt that the apprenticeship system was to be preferred to the learnership system, since a learner was employed over a longer training period had better job security, and would therefore be more inclined to excel on the training programme (Impact Assessments of Learnerships and Apprenticeships, 2008).

2.3.7 Learnerships

According to Nel *et al* (2009) the learnership programme implemented in South Africa was adapted from the United Kingdom. Janse van Rensburg (2009) describes learnerships as a new dimension in vocational education and training, since they combined theoretical and practical learning, which concluding with a registered NQF qualification. Babb and Meyer (2005) add that in South Africa learnerships are based on the apprenticeship model. The model is seen as a traditional technical training system, which includes aspects of practical training on-the-job and theoretical elements offered mostly in occupational trade-type professions.

In support of Janse van Rensburg (2009) Mummenthey (2008) states that learnership programmes merge learning at an institutional and work-based level and leads to a nationally acknowledged qualification that is endorsed by SAQA. Robbins *et al* (2009) describe learnerships and skills programmes as job-related programmes that integrate formal learning with on-the-job work to produce a real-life working relationship. It is evident from this definition that on-the-job training programmes integrate theoretical and practical skills development. The definition given by Robbins *et al* (2009) will be used in this study.

The Skills Development Act No. 97 of 1998 established the learnership model. The Act stated that learnerships would include the apprenticeship model, but it did not stipulate whether the phasing out of the apprenticeship model was required. This decision to retain apprenticeships was taken as a result of the shortage of intermediate vocational skills in the South African labour market, with the result that apprentices continued to be trained under the two routes of the Manpower Training Act of 1981: Section 13 and Section 28 (Mukora, 2008).

According to the MERSETA, there are five sectors that employ apprentice learners nationally, namely the metals, automotive, motor, new tyre and plastics sectors. The analysis

of employer data reflects that there is a proportional distribution of apprentice learners across the various sectors, with the highest proportion falling within the metals sector at 37%, followed by the motor sector at 29%, the automotive sector at 11%, the plastics sector at 6% and, the motor and new tyre at 1% (Impact Assessments of Learnerships and Apprenticeships, 2008).

Mukora (2008) states that learnerships provide opportunities for graduates to learn in the workplace, linking theory and practice in order to deepen the skills base of the South African economy. According to Mummmenthey (2008) learnerships provide pathways for unemployed youth to gain skills and work experience, thereby improving their employability. A study carried out by the HSRC in 2008 found that when compared to people involved in learnerships, almost all the apprentices who completed or terminated their studies reported positively about their apprenticeship experiences. The strongest impact was in the improvement of their technical skills, their career opportunities, and the enhancement of their self-confidence. The study also concluded that the apprentice route was preferred to learnerships by industry (Impact Assessments of Learnerships and Apprenticeships, 2008).

2.3.7.1 The learnership system: criticisms and challenges

According to the MERSETA, companies participate in learnership and apprenticeship systems because they recognise the importance of training for the future, and the possibility of receiving training rebates for skills empowerment initiatives (Impact Assessments of Learnerships and Apprenticeships, 2008). Davies and Farquharson (2004) state that the implementation of learnerships costs more than the grants given by the SETAs. According to McGrath and Paterson (2007) there is a general lack of knowledge about the learnership system and its procedures, especially about the registration requirements and the levy-grant procedures. In support of McGrath and Paterson (2007) Mummmenthey (2008) argues that the poor understanding of the new skills development policy is one of the major stumbling blocks in the way of the execution of learnerships.

According to Louw (2009), although the Department of Labour reported successful learnership enrolments it overlooked throughput rates, and success rates of learners in terms of the NSDS. Mummmenthey (2008) confirms that potential learners have poor literacy and numeracy skills, a fact which poses a challenge to skills development in South Africa. A key

challenge experienced in learnership implementation is in partnerships, a requirement of all its stakeholders. Lundall (2003, as cited in Louw 2009) believes that the learnership process is inefficient, and that it has still to prove itself in terms of learning excellence and quality assurance. According to Mumenthey (2008) companies fail to understand current practices with regard to education, training and assessments, including their roles and responsibilities when learnerships are hosted. It is evident that some organisations perceived learnerships as additional labour and others consider learnerships as a burden, and an inconvenience.

Louw (2009) is of the opinion that the greatest concern for sustaining learnerships is the long term consequence of the poor quality assessments of learner capabilities. Such practice would have a negative impact on the credibility of a learner's qualification in terms of skills development in the workplace. Davies and Farquharson (2004) state that one of the key processes for effective learnership implementation is the recruitment and selection process. Babb and Meyer (2005) confirm that the selection process of learners is crucial to the elements of an effective learnership system.

According to Louw (2009) the participation in a learnership programme is free of any charges, and also learners receive an allowance, referred to as a stipend, which is used to cover the learners travelling and lunch costs. Babb and Meyer (2005) believe that organisations benefit from apprenticeship and learnership programmes. The benefits include the facilitation of workforce skills development, the receipt of financial benefits in the form of skill incentives, the creation of employment opportunities for previously disadvantaged people and increased productivity and performance through the development of practical skills. There are no penalties in the learnership agreements for non-completion, which is why some learners leave programmes ahead of time.

Naicker (2007) argues that learnership drop-out occurred due to the selection of mismatched learners during the recruitment process. Babb and Meyer (2005) further state that the recruitment and availability of suitable technical learner candidates in various industries is a real challenge.

2.3.7.2 Learnerships and apprenticeships

The Oxford South African Concise Dictionary (2010) defines an apprentice as someone who is learning a trade or craft from an employer by means of a legal agreement. According to Mummmenthey (2008) the traditional apprenticeship system was South Africa's major pathway for the qualification of skilled White artisans for all major industry sectors. Apprentices were fully sponsored by an employer and the average training duration was 3 to 5 years. The apprentices also studied in part-time block-release arrangements at technical colleges and they were afforded on-the-job work practice under the direction of a senior artisan at the place of work. Mukora (2008) states that the apprenticeship model described here proved not to be a solution to the national problem of the shortage of skilled workers which was why the idea of learnerships was introduced. The learnership system was seen as being more flexible, and it also addressed the criticisms levelled at the traditional apprenticeship system.

Babb and Meyer (2005) explain that learnerships combine vocational education and training, and are structured learning and workplace experience programmes. The intention of such a programme is to qualify learners with a formal registered qualification endorsed by SAQA. A learnership programme has a minimum entry level of NQF level two, and a certificate is awarded upon completion, which represents the requirements of NQF level four. Mukora (2008) states that the learnership programme is primarily aimed at addressing skills development at NQF levels two to four. Table 2.2 illustrates the differences between learnerships and apprenticeships.

Table 2.2 Differences between learnerships and apprenticeships

Learnerships	Apprenticeships
Demand led	Supply side driven
Range of NQF occupations	Intermediate skills levels N1 to N4
Outcome based	Time-based
12 to 18 months duration	3 to 5 years duration
Assessments by accredited assessors	Final central trade test
Skills Development Act of 1998	Manpower Act of 1981

Source: Adapted from Erasmus, B.J., Loedolff, P.Z., Mda, T., and Nel, P.S. (2007). *Managing Training and Development in South Africa*. 4th edition. Cape Town, Oxford University Press Southern Africa.

It is evident from Table 2.2 that there are distinct differences between learnerships and apprenticeships. Learnerships are demand led in response to the economic needs of all sectors, while traditional apprenticeships are offered by independent providers, based on labour market demand, which is also limited to some industries. Trained qualifications for learnerships are based on work based training principles adopted by NQF ranges of occupations, while apprenticeships follow the intermediate skill levels of the National Trade Certificate framework. The ages of learners and the duration of the programmes differ considerably. The primary legislation for learnerships is the Skills Development Act No. 97 of 1998 and that for apprenticeships is the Manpower Act of 1981. The underlying training principle for learnerships is outcome based, where there is integration of theory and work-place practice, while apprenticeships are time based theoretical training combined with practical learning.

Impact studies carried out by the HSRC in 2008 indicated that most employers still prefer the apprenticeship system, as there is a common employer perception that more skilled artisans are produced through this system (Impact Assessments of Learnerships and Apprenticeships, 2008). The HSRC study believed that learnerships are more demand led, which results in their alignment with employers' exact skills requirements. Kraak (2008) argues that after a decade has passed since the implementation of learnerships, it is questionable whether it was demand led. The HSRC impact study on learnerships and apprenticeships found that one in

every two apprenticeship learners in South Africa completed their qualifications and one in every five terminated their studies. The province with the highest percentage (45%) of completed apprentices was the Eastern Cape, while the provinces with the highest percentage (29%) of terminations were the Free State and the Northern Cape. KwaZulu-Natal had a 16% termination rate. It is evident that there are salient differences between the learnerships and apprenticeships. For the purposes of this study, the apprenticeship route is preferred.

2.3.8 The nature of skills shortages

There is sufficient research and literature in support of South Africa's having a serious shortage of technical skills and knowledge (Robbins *et al*, 2009; Naicker, 2007; Nel *et al*, 2009; Akoorjee and McGrath, 2008). Robbins *et al* (2009) are of the opinion that the skills scarcity in South Africa is due to emigration and the excess of illiterate unskilled and semi-skilled labour. In support of Robbins *et al* (2009) Naicker (2007) adds that South Africa needs younger learners to enter industry as the country has lost its experience base through emigration and the failure to train. According to Naicker (2007) the MERSETA had identified fitters, turners, welders and boilermakers as artisans with serious skills in the metal industry who were in short supply.

According to Mukora (2008) the Department of Labour had also identified fitters, turners, welders and boilermakers as being scarce commodities. Mukora (2008) further states that there is a serious shortage of qualified and experienced artisans in the labour market, and supplies the following examples in support of his statement:

- ✚ The Steel and Engineering Industries Federation of South Africa (SEIFSA) accelerated their artisan training model by reducing the training programme to 80 weeks, in order to expand the artisan pool available in the steel and engineering industry.
- ✚ Bombela Concession Company recruited around 100 artisans from the Philippines, India and the Southern African Development Community during the Gautrain project.
- ✚ Sasol imported around 900 skilled artisans from Asia to undertake maintenance work in September 2006 during their annual shutdown period.

Patel (2007, as cited in Mukora 2008) states that the shortage of artisans is a global phenomenon because “young people are afraid to get their hands dirty”. There trend is for

young people to take up careers in computer related occupations rather than engineering and its associated professions. Robbins *et al* (2009) argues that the MERSETA should have been more proactive in ensuring that technical training and skills development programmes meet the objectives as set out by the NSDS. Mining giant Exxaro, for example, viewed the shortage of technical skills and expertise as the biggest stumbling block to its business growth, as it spent approximately 6% of its wage bill on artisan development programmes. The effectiveness of Further Education and Training (FET) in bridging this gap in technical skills in industry would determine whether or not solutions to the problem were found in the medium to long-term.

2.4 Further education and training (FET)

Further Education and Training (FET) is a term used to refer to all education and training equivalent to the last three years of secondary school. FET is situated at the junction between basic education, higher education and the world of work. FET is a crucial phase of learning as it provides the critical middle-level skills for entry into higher education or employment (The National Business Initiative Annual Report 1998 – 1999). According to Nyaba (2009) a successful FET programme provides the knowledge, skills, attitudes and values to ensure that learners are economically productive. The programme also needs to supply the skills and competencies necessary for South Africa to be competitive. Elliot (2006) states that the current learning outcomes of FET Colleges are not aligned to the needs of industry. The quality of FET graduates is not what is required in the workplace

According to Gamble (2003) training and workplace experience is essential for vocational preparation. FET college training assists learners in the transmission of the principles of trade and theory, while the workplace allows for the application of what has been taught to a situation specific competence. Nzimande (2009) argues that FET colleges are responsible for educating and training young people for entrance into the workplace, creating self-employment, and ensuring satisfactory levels of competency. Wedekind (2008) states that FET colleges are part of the overall system of technical and career education, in accordance with the human resource development plan, which is coupled to the economic policies of South Africa. Accordingly, there is a link between skills, shortages, development, SETAs, and unemployment, all of which are directly relevant to FET.

A study carried out by Young and Gamble (2006) found that although FET colleges were providing artisan type skills, employers reported a shortage of qualified artisans. Employers perceived the FET output as not having the type of skills that they required. The study concluded that many learners at FET colleges who undertake technical studies do so with insufficient workplace experience. The learners learn the theory for examination purposes only, and they do not know how to apply it to a work situation (Young and Gamble, 2006).

2.4.1 Legislative Framework

According to Mukora (2008) the formulation of the FET policy started in 1996 with the appointment of the National Committee on Further Education to investigate options for transforming the incoherent FET sector. The Green Paper on Further Education and Training was thereafter published in 1997 followed by the White Paper on Further Education and Training in 1998. The provision of skills development at both private and public colleges was regulated by the Further Education and Training Act of 1998.

According to Mummmenthey (2008) the crucial point in the change of the FET sector was the publication of the new institutional landscape for the public FET Colleges in August 2001. This established 50 new FET colleges which are based on a new quality-assurance structure which focuses on open and distance learning for students. The new FET colleges are designed to foster collaboration between the government and the private sector. It is evident that the intention of further education and training legislation is to transform the FET sector so that that it can be more responsive to the needs of the private sector and government's skills development strategy (Nyaba, 2009). Figure 2.2 illustrates the transition of the legislation incorporating FET.



Figure 2.2 The transition of legislation regarding skills FET

Source: Adapted from Mukora, J. 2008. Artisan Trade Scarce and Critical Skills. Published by the HSRC. [Online]. Available [http// www. hsrepress.ac.za](http://www.hsrepress.ac.za) (Accessed 23 August 2011).

It is evident from Figure 2.2 that the inception of the legislation pertaining to FET was in 1996 with the formation of the National Committee for Further Education and Training. Based on the report from the National Committee, the Green Paper on Further Education and Training was developed with the main aim of transforming the FET sector. The White Paper on Further Education and Training set up policy for funding skills development and transforming the FET sector. The Further Education and Training Act of 1998 followed with the provision of skills development and regulations governing both private and public FET colleges.

2.4.2 The role of the government

Mukora (2008) argues that the government has failed to ensure that FET meets the demands of industry. There was a disagreement between the DoL and DoE as far back as 1990. It was argued that an integrated department would better able to address the fragmented nature of the then governance of education and training. According to Wessels (2007) in support of Mukora (2008), FET colleges lack an understanding of the divide between theory and the practical world of work. This is evident in that FET colleges are managed by the DoE while the qualifications for which they train learners are set by the DoL. An example of this disconnect was when the DoE changed the curriculum of the FET colleges. As of January

2007 the National Technical Education (NATED) courses previously offered by FET colleges in three-month blocks were phased out and replaced with one-year National Vocational Certificate (NVC) courses offered at NQF levels 2, 3 and 4 over three years (Mukora, 2008). The NATED courses were the theoretical components for apprenticeship programmes that were provided for in the Manpower Training Act of 1981 and were effective in producing quality artisans (Mummenthey, 2008). A study carried out by the HSRC found that the phasing out of the NATED courses was a serious problem, as companies were still looking for NATED course graduates (Impact Assessments of Learnerships and Apprenticeships, 2008).

Mukora (2008) argues that although the DoE stated that it consulted industry on the change, this was not the case. At a time when the shortage of skilled artisans is effecting economic growth, it was inappropriate for the DoE to introduce a new one-year vocational programme at FET colleges without consulting industry (Wessels, 2007).

2.4.3 Critique of FET

Wedekind (2008) argues that divisions at both programme and organizational levels exist in FET colleges due to the smaller intakes of learners and the reduced national publicity and government attention. According to Akoorjee and McGrath (2008) FET in South Africa is a sector that needs to be more responsive to market requirements, and is requires a government-led vision. According to Mummenthey (2008) the FET sector is not responsive to the needs of the private sector as learners are receiving remedial training rather than training that will permit them to perform in the workplace.

Wedekind (2008) states that in response to the demography of the country colleges had left behind their roots in training White artisans, and so now have a problem with finding their new identity.. There is also a concern over how learners enter the further education and training system and why they select particular programmes. It is evident that further education and training learners are not guided in their choice of learning programmes. According to Stumpf, Papier, Needham and Nel (2009) FET college learning programmes are not flexible in preparing graduates for the work environment. The programmes create constraints for learners because of the lack of capacity of the academic staff and a deficiency in FET policies.

Wedekind (2008) argues that the shortage of skilled artisans may be attributed to the failed interventions of learnership training.

2.5 Job readiness – local and global perspectives

A work-readiness study carried out by Raftopoulos (2006) found that organisations in South Africa are intensifying recruitment activities in order to get the right graduate candidates to fill a job category. Due to the difficulty of sourcing the right technical proficiency, most companies are multiskilling existing staff and placing them in roles in which they have serious technical skills constraints. Raftopoulos (2006) further states that work- or job readiness, which is also referred to as graduate employability, has to do with the skills required to be placed in a job. The terms work- or job readiness and graduate employability are used interchangeably. Wagner (2006) defines job readiness as a set of skills and behaviours that are necessary for any job. Nabi (2003) states that work readiness has to do with the possession of the correct level of skills and attributes needed by students to be employable.

Raftopoulos (2006) argues that learners who have the necessary academic and technical skills could make a significant contribution to the workplace, since they are job ready. Robbins *et al* (2009) states that organisations are being proactive by providing additional technical training and skills development programmes to achieve the desired skills in the workplace. According to the Merseta, supportive employers are contributing to successful apprenticeship and learnership programmes by providing additional training outside the boundaries of the programme (Impact Assessments of Learnerships and Apprenticeships, 2008). According to Raftopoulos (2006) organisations are providing graduates with soft and technical skills training in order to get them job ready.

Butcher (2008) states that the tertiary level of education should have the scope to add a work-readiness component to it in order to ensure that graduates are equipped not only with technical skills but also with soft skills to enable them to integrate into a workplace environment. It is evident that the topic of job readiness has been extensively studied abroad, but that a limited amount of research on the topic has been performed in South Africa. Munby, Versnel, Hutchinson, Chin and Berg (2003) state that the United States of America (USA) and Australia have foregrounded the basic work-related skills and competencies required by people to be successful in the world of work. In 2007 the Australian Department

of Education, Science and Training (ADEST) researched and identified the personal traits required for today's employees, including the eight employability skills. The report described employability skills as the skills necessary to grow within the workplace by applying one's potential and ultimately contributing to the strategic goals of a company (Graduate Employability Skills Report, 2007). The eight employability skills detailed in the report were communication, teamwork, problem solving, self-management, planning and organizing, technical skills, long-term learning skills, and initiative. The report also included the employability skills framework, which described what employers from all sizes of organizations, industries and locations needed from graduates in the workplace (Graduate Employability Skills Report, 2007).

The Australian work-place policy was implemented in 2009 as a result of the ADEST study. The policy's main aim is to allow apprentices to get familiar with their chosen trade and to permit employers to measure the learners' work readiness, skill level and attitude towards work. This policy was established as a method of ensuring that the correct level of competence was acquired by learners during the tertiary college phase, prior to the offering of an apprenticeship position to a learner. Work experience is a compulsory component of the college program and is part of the learners' structured workplace programme. Work experience is an evaluation subject that all work-ready students undertake (Australian Apprentice Work Placement Policy, 2009).

In the USA the Work Readiness Credential was developed in 2005 as a guide to assist entry-level job seekers to expand their skills and knowledge in order to be able to meet the standard for work readiness. This standard is based on collective agreements across industry with regards to the knowledge, skills and talents that are important for successful performance in the workplace. The Credential was intended to deal with the constant skills gap of jobseekers identified by employers at the first step of the career ladder (Work Readiness Credential, 2005).

According to Butcher (2008) the tertiary level of education should have the scope to add a work-readiness component to it in order to ensure that graduates are not only equipped with technical skills but also with soft skills, to enable them to integrate into the workplace environment. Pandor (2008) argues that the division between academic and vocational training is different to what it was in the past. Accordingly, artisans and technicians not only

need basic physical skills but also need to be able to adjust to new job skills as products and production methods transform. A study carried out by Baatjes (2008) on the skills and knowledge requirements for a new workplace concludes that interpersonal skills, problem-solving skills, thinking skills, communication and mathematical skills, life skills such as the ability to work in a team, enthusiasm, and a particular attitude occupy an important role for both business and government in job-readiness skills initiatives.

Ngcuka (2006) states that skills form the foundation on which every successful economy is built. Economies such as Malaysia and Japan confirm that their economic recovery and turnaround was as a result of the proper execution of a workplace skills strategy. It is evident from the concept of job readiness that both government and industry have an important role to play so that proper skills leading to successful employment can be acquired by the learner. Skills development has become a significant component in South Africa, and the research carried out by Australia in 2007 and the USA in 2005 confirm that job readiness skills form the core component for integrating learners into the workplace.

Naicker (2007) concludes that there is definitely a shortage of all categories of artisans in the manufacturing industry in Durban, since the demand for artisans is on the increase. Devey, Valodia and Velia (2005) carried out a research study to determine the key constraints to growth and employment in Durban. Approximately 600 small, medium and large manufacturing companies from the greater Durban Metropolitan area were surveyed. The key finding in terms of constraints to their growth was the lack of availability of artisans with appropriate technical and vocational skills. The research findings concluded that there were artisan skills shortages throughout the different sizes of manufacturing companies in Durban, and that these shortages affected the companies' ability to expand. Devey, Valodia and Velia (2005) further concludes that the possession of FET vocational training with work experience is ranked low by the sector as a recommendation for recruitment, since there are concerns about the quality and characteristics of the vocational training provided by the FET system.

2.6 Summary

This chapter has provided a background to the implementation of skills development through FET and its impact on industry. This has been a broad overview with no reference to specific studies related to sector being studied, which substantiates the need for this study. The literature reviewed above addresses matters having to do with unemployment, skills development, FET, and job readiness. During the review it has become evident that FET has an influential role in preparing graduates for the world of work. Concerns have been raised over the development of artisan skills through FET, and their impact on industry. An in-depth analysis of these issues is required in order to determine possible solutions to the problems, with the aim of enhancing skills development and promoting economic growth. The next chapter will discuss the research methodology used in this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

According to O’Leary (2004), research methodology is a framework related to a set of definitive assumptions that is used to conduct research studies. Saunders, Lewis and Thornhill (2003) describe the stages in research as the formulation of the research topic, the reviewing of relevant literature, the choosing of an appropriate research strategy, the collecting of data, the analysis of data, and finally the reporting of the results. Based on the nature of the objectives of this research project a descriptive study was undertaken. It is evident that the goal of descriptive studies is to offer the researcher a description of the observable facts from an organisational and industry-orientated viewpoint. This chapter includes an account of the aim and objectives of the study, the research methodology and the design of the questionnaire. The purpose of the research project was to deal with the impressions of Durban metal and engineering organisations of the FET system, with particular reference to whether or not they think the system is adequately preparing learners for the work situation.

3.2 Aim of the study

The aim of the study was to establish the skills required for FET mechanical engineering graduates to perform their jobs effectively within industry.

3.3 Participation and location of the study

According to Sekaran and Bougie (2009), a target population is defined by its elements, geographic location and time. Brynard and Hanekom (2005) refer to a population as objects, questions, observable facts, situations, events specified for the intention of sampling. The target population for this research study consisted of 60 foremen who are involved in the training and development of FET graduates, from small, medium and large metals and engineering companies situated in Durban. Heery and Noon (2001) categorise the different sizes of companies as small, medium and large. Small companies have 1 to 99 employees,

medium companies have between 100 and 499 employees, and large companies have 500 or more employees. Permission was obtained from the KwaZulu-Natal Tooling Initiative (KZNTI) to conduct the study in Durban.

3.4 Research Approach

According to Coldwell and Herbst (2004) the purpose of research design is to gather research information. Erasmus, Loedolff, Mda and Nel (2007) state that applying an appropriate research method is essential for data collection. Sekaran and Bougie (2009) describe two approaches to data collection for research design, namely the qualitative and the quantitative approach. O’Leary (2004) argues that a research design is the plan for conducting studies, which includes the methodology and tools involved in quantitative or qualitative research. Qualitative and quantitative research methods are utilised to gather various different types of information in order to provide an enhanced understanding of the situation being researched.

Table 3.1 Differences between qualitative and quantitative research

Qualitative research	Quantitative research
Concerned with understanding	Focused on cause and effect relationships
Utilizes uncontrolled observations	Utilizes controlled measurements
Subjective	Objective
Inductive	Hypothetico-deductive
Process-oriented	Outcome-oriented
Ungeneralizable: single research studies	Generalizable: multiple research studies

Source: Adapted from Blaxter, L., Hughes, C. and Malcolm, T. (2001). *How to research*. 2nd edition. Buckingham, Great Britain: Open University Press

It is evident from Table 3.1 that there are distinct differences between qualitative and quantitative research methods. Qualitative research is un-generalizable since it comprises of an inductive process which is subjective. This method relies on uncontrolled observations during data collection activity. On the other hand, quantitative research is generalizable since it consists of a hypothetico-deductive process that is objective. This method utilizes controlled measurements for collecting research data. Yaing and Miller (2008) argue that the

quality of the research design will determine the quality of the data collected. After careful consideration, the decision was taken to use the deductive, quantitative method, utilising a questionnaire for data collection, due to the short duration of the study and the reliability of the data being collected. The qualitative method was not utilised for this study as the questionnaire sought to obtain accurate quantitative data in order to analyse the quantitatively the job readiness and the extent of the skills of FET graduates. A qualitative study would only add a dimension to this, in understanding graduate work skills, which was not the main focus of the study. This understanding could be achieved through an exhaustive literature review.

3.4.1 Quantitative research

According to O’Leary (2004) quantitative research generates quantitative information through numbers that can be processed into statistical models for interpretation. Anderson (2004) describes quantitative research as a method or experiment that utilizes surveys to illustrate and clarify observable facts. Brynard and Hanekom (2005) in support of Anderson (2004) explain that quantitative research methods are based on observations, quantitative analysis and questionnaires. Kumar (2005) argues that quantitative research generates a collection of facts which represent objective reality detached from the perceptions of individuals. Leedy and Ormrod (2005) state that quantitative researchers rely chiefly on deductive reasoning since they draw logical conclusions from hypothesized premises.

Kumar (2005) states that surveys have certain limitations which include low response rates. Anderson (2004) argues that although surveys have their limitations, they are most widely used by quantitative researchers because they are easy to administer and cost effective, and the chance of generating unreliable research data is minimized since survey questions are designed to obtain accurate responses. Leedy and Ormrod (2005) further state that the surveys used during quantitative research studies are descriptive in nature and involve collecting and analysing data by asking questions. Keller (2009) believes that the easiest way of collecting data is by direct observation, experiments and surveys. The general method of sourcing data is through the use of self-administered questionnaires.

The quantitative approach obtains data relatively efficiently in terms of researcher time, energy and cost. Questionnaires are administered to gather numerical data which is evaluated and processed into statistical models to explain the findings. A cross-sectional study was

utilized in this case, since the study had a limited time frame for data collection. Research data was collected at a single point in time over a four-week period.

3.5 Sampling

Sekaran and Bougie (2009) describe a sampling process as the selection for study of a representative part of a population to gain insight into the whole population. Sampling is used since it produces reliable results and is relatively practical in terms of time, cost and the expenditure of resources. According to Coldwell and Herbst (2004) sampling is used since it is relatively economical, accurate and precise. Kumar (2005) argues that sampling draws inferences about observable facts relating to an entire population. O’Leary (2004) defines sampling as a process that is strategic and sometimes involves the use of practical methods for gathering data that best represents the larger population. Brynard and Hanekom (2006) in support of O’Leary (2004) explain sampling as the method used to gather information about a small group in order to determine the characteristics of a large group. It is evident that if a sample is selected appropriately it will display the same characteristics as the larger population.

3.5.1 Sampling Design

There are two types of sampling designs namely probability and non-probability sampling. Probability sampling is based on the principle that every unit in the sampling frame has a chance of being selected, while non-probability samples are instances when the chances of selecting members from the population are unknown (Coldwell and Herbst, 2004). According to Yaing and Miller (2008) probability sampling includes random, systematic and stratified samples, while non-probability sampling includes quota, purposive, snowball and self-selection samples. Saunders, Lewis and Thornhill (2003) explain that probability sampling is associated with survey-based research with simple random sampling design to ensure that each element of the population has a known chance of selection, and non-probability sampling, in contrast, is arbitrary and subjective, since individual elements of the population do not have a reasonable chance of being included. Coldwell and Herbst (2004), in support of Saunders, Lewis and Thornhill (2003), state that non-probability sampling does not assess whether the sample is representative of the population or not.

Coldwell and Herbst (2004) further state that the advantage of probability sampling are that, given that the sampling frame is complete and the samples are adequate, it is unbiased and representative of the population. Probability sampling can be generalized to a population with some degree of confidence. This study uses a probability sampling design with stratified sampling method, since it has a low degree of bias and is most generalizable. According to Bryman and Bell (2007) stratified sampling method is probability sampling, which selects a sample from the sampling frame by chance so that it represents the population as a whole. Sekaran and Bougie (2009) explain that stratified sampling ensures that each element of the population has a known and equal chance of being selected.

For the purposes of this study, the research specifically focused on metals and engineering organisations situated in Durban. Stratified sampling was used to collect data for the study in order to ensure that these organisations had an equal probability of inclusion in the sample.

3.5.2 Sampling size

The sample size for this study was 52 foremen who were randomly selected from metals and engineering organizations in Durban out of a total population of 60. Foremen who trained and developed FET mechanical engineering graduates into qualified artisans were specifically targeted. The sample size was obtained from the generalized scientific guideline for sample size decisions developed by Krejcie and Morgan (1970, as cited in Sekaran and Bougie 2009). Stratified sampling would ensure that each foreman had an equal opportunity of being included. Anderson (2004) argues that there is not enough clarity about what the best sample size is for a given population. According to Keller (2009) sample sizes greater than 30 and smaller than 500 are suitable for the majority of research studies.

3.6 Data collection

Sekaran and Bougie (2009) describe various data collection methods, which include interviews that are carried out face-to-face, telephonically, or by personally administered questionnaires. Meyer, Mabaso, Lancaster and Nenungwi (2004) define a questionnaire as a structured list of questions used to test research objectives through the extraction of reliable responses from a sample. According to Saunders, Lewis and Thornhill (2003) questionnaires are an inexpensive means of mining data from respondents, and self-administered

questionnaires are the most popular type. A professional, clear, logical questionnaire would ensure high response rates, and valid and reliable research data. Sekaran and Bougie (2009) explain that data can be gathered in a narrative form through conducting interviews.

Leedy and Ormrod (2005) argue that interviews prevent the researcher from identifying cause-and-effect relationships, since the researcher carries out verbal data collection by putting general research questions to a small number of participants. Verbal descriptions are utilized to portray the situation being studied. This study did not utilize interviews since the perceptions of a small group of respondents would not provide a good foundation for understanding the situation being researched. A self-administered questionnaire was used for data collection, instead of interviews. The questionnaire would give rise to information on the sentiments of foremen who trained FET graduates. Prior to the researcher's preferring a questionnaire to interviews, the pros and cons using a questionnaire as the basis of the study were considered. Table 3.2 describes the pros and cons of using questionnaires.

Table 3.2 The Pros and cons of questionnaires

Pros	Cons
They are less expensive and save time	The distribution of questionnaires can be costly
A large number of respondents can be reached	Response rates can be low or incomplete.
The respondents have time to think about the answers to the questions	Responses to questions may be influenced by the respondent's ability to read all the questions
Greater anonymity	There is less opportunity to clarify issues if the questions are not understood
The data is pre-coded	The questions limit and shape the nature of the answers

Source: Adapted from Kumar, R. 2005. *Research methodology: a Step-by-Step Guide for Beginners*. 2nd edition. London: SAGE Publications.

Based on Table 3.2, the rationale for utilising a questionnaire can be indicated as:

-  It is less expensive
-  It is less time consuming

- ✚ Greater anonymity can be afforded to respondents
- ✚ Large numbers of respondents can be reached

3.6.1 The administration of the questionnaire

The questionnaire and the informed letter of consent (the cover letter) were created on QuestionPro, an online electronic research software tool, which was the source for gathering primary research data for the study. The questionnaire was e-mailed to respondents via an attached electronic survey link which gave access once selected. Informed consent was achieved through a check box on the electronic survey system and once the questionnaire was completed the research data was automatically recorded on QuestionPro. The research data collected via QuestionPro, was downloaded into an SPSS software package for analysis.

The details of each organization were obtained from Kwazulu-Natal Tooling Initiative (KZNTI) communication distribution lists. To ensure that the questionnaire reached the right respondents, organizations were contacted telephonically to clarify who were the foreman that were involved in the training and development of FET graduates. These foremen were then contacted telephonically, and they were informed briefly about the purpose of the survey. Participation in the research was also voluntary. This was the initial activity that ensured that an acceptable response rate would be achieved. Foremen that had internet access and indicated their willingness to be involved in the research study were e-mailed the QuestionPro link so that they could gain access to the questionnaire. Foremen who did not have online internet access to QuestionPro were emailed soft copies of the questionnaire and the letter of informed consent for completion. The completed questionnaires were collected and manually captured into QuestionPro.

To ensure good response rates, the purpose of the research study was explained in detail to all respondents. Anonymity was assured to all respondents. Follow-up activity was also carried out with various respondents requesting them to complete the questionnaire, so that high response rates were achieved. According to Saunders, Lewis and Thornhill (2003) the higher the response rate during data collection the more representative the sample is of the larger population. The population size was 60 foremen. The sample size was 52 foremen, and 49 responses were actually received. This amounts to a success rate of 94%. Respondents representing 6% of the sample either failed to complete the questionnaire or they showed no

interest in completing the survey. This could be attributed to the heavy workloads experienced by respondents, as it was the end of the financial year for some of the organisations.

3.7 The development of the Instrument

The purpose of the study was to ensure that the research objectives were met. The questionnaire (Appendix Three) was developed in order to address each research objective. The questionnaire was designed to include the following five sections:

-  Section A - Questions 1 and 2:
Demographic data, which covered the type of organization in relation to the industrial sector and its size.
-  Section B - Questions 3 to 7:
Perspectives regarding the employment and utilization of graduates.
-  Section C - Questions 8 to 12:
Perspectives regarding artisan skills development, FET graduates job skills, the impact on the organization and what is being done to get graduates job ready.
-  Section D - Questions 13 to 19:
The graduate skills required by the sector and the role industry can play to increase the skills of graduates.
-  Section E - Questions 20 and 21:
Perspectives regarding the artisan skills shortage and the activities required to rectify the shortage.

According to Hamlet (2005) the elements that make a questionnaire valid and reliable include the title, the covering letter, the instructions for completion, the factual data, the focal data, questions that describe the topic, and closing remarks such as a thank-you note. Welman and Kruger (2001) advise that the cover page of the questionnaire should have clear instructions so that respondents understand what is expected of them. The development of the questionnaire included a covering page that detailed the purpose of the study and a brief instruction on how to complete the questionnaire. An assurance of respondents' anonymity and confidentiality was also included on the cover page.

According to Kumar (2005) the layout of a questionnaire should be interactive, easily understood, easy on the eye and sequenced to be easily followed. Gillham (2000) argues that the questions contained in a questionnaire should be simple, to the point, and easily understood. The questionnaire for this study was constructed in such a way that it was easy to follow and simple to understand so that it could be used as a resource for mining primary research data. According to O’Leary (2004) open-ended questions require respondents to answer questions in their own words, expressing their opinions, while close-ended questions are chosen from a scale of programmed responses, which are statistically easier to analyse. The questionnaire comprised of 5 pages and 21 questions. The literature review and research questions were used as a basis upon which to construct the questionnaire.

According to O’Leary (2004), closed-ended questions required respondents to choose from a range of predetermined responses, which makes the data easy to code and to analyse statistically. Most of the questions asked in this study were closed-ended, respondents being required to choose among set answers. This technique was preferred in order to collect the most amounts of data while imposing least on the respondents’ time. Examples of four types of questions that were posed include the following:

- ✚ Multiple choice single-answer questions were used to obtain demographic data regarding an organization’s size, the industrial sector to which it belongs, and how it uses graduates.
- ✚ Dichotomous scale YES/NO type questions were used in the questionnaire to seek precise answers which were supported by follow-up questions for more detail.
- ✚ A four point Likert scale was also utilized, where respondents had to indicate satisfaction, relative neutrality or dissatisfaction with a statement.
- ✚ A rating-scale type question was used, where respondents were required to indicate the importance of workplace skills by rating them numerically from 1 to 5 in terms of importance.

According to O’Leary (2004) poorly worded, biased, leading or loaded and problematic questions for the respondents should be avoided in a questionnaire. Careful consideration was given to the design of the questions to avoid ambiguity, double-barrelled questions, and complex terms, easy to agree or disagree questions, offensive questions and questions that assumed special sorts of pre-existing knowledge.

3.8. Pretesting and validation

Kumar (2005) describes a pilot study as a small-scale test that is carried out in order to ensure that a research questionnaire is fully developed prior to proceeding with the full-scale research activity. According to Leedy and Ormrod (2005) the pilot testing of questionnaires is required to ensure that the responses likely to be received are of sufficient quality, so that when the actual respondents complete the questionnaire their answers will be appropriate. Welman, Kruger and Mitchell (2005) state that a pilot study effectively administers the questionnaire to a small number of subjects in order to identify errors in the measurement process and any unclear or ambiguous wording. Anderson (2004) argues that since researchers are heavily absorbed in a project they could miss a noticeable mistake. Pilot-testing therefore assists the researcher in ensuring that any mistakes are corrected before the questionnaires reach the respondents.

Leedy and Ormrod (2005) support the notion that a pilot test could be carried out by administering questionnaires to at least a dozen friends or colleagues in order to discover if they had any difficulty in understanding the questions. This approach was adopted by the researcher with the assistance of fifteen third-year MBA students and the researcher's supervisor. The results derived from the pilot study were as follows:

- ✚ The content of the questions was related to the research topic and the objectives, and would provide relevant research data. A suggestion was made to change the word 'tick' in the instructions to 'select', and the suggestion was accepted.
- ✚ The cover page was found to be relevant since the instructions were easily understandable and the correct contact details were supplied. The instructions at the end of the last paragraph were not entirely clear and therefore the necessary changes were made to the wording thereof.
- ✚ The duplication of question content was noted, and all duplication was deleted from the questionnaire. Double-barrelled questions were changed and separated.
- ✚ The overall layout of the questionnaire was thought to be appropriate.
- ✚ The estimated time taken to complete the questionnaire was between 10 and 15 minutes. The respondents considered the time given to complete the questionnaire to be acceptable.

3.8.1 The validity and reliability of the questionnaire

According to Sekaran and Bougie (2009) knowledge of the principles of measurement is important to ensure that the data collected during research activity is appropriate and addresses the objectives of the study. Tests of the reliability of the measuring instrument and the validity of its measure are required. Anderson (2004) argues that research data collected during the research process should be relevant and valuable, and that it is therefore important that the data collected is reliable and valid in order for the researcher to draw accurate conclusions. Reliability and validity are two important characteristics that should be considered when assessing a research instrument.

Leedy and Ormrod (2005) describe validity as the capability of an instrument to measure what it was designed to measure. According to Sekaran and Bougie (2009) the test for validity may be established through the questions' face qualities, the extent to which they are criterion related, and their construct validity.

Face validity refers to the logical link that the questions have with the objectives of the study (Kumar, 2005). Criterion-related validity is the prediction of the criterion on which the measure differed which was appropriate to the concept being measured (Sekaran and Bougie, 2009). Construct validity has to do with whether or not a scale correlates with the theorized scientific construct. It is evident that in order for a measuring instrument to do what it is supposed to do, there should be a logical link between the research questions and the objectives of the study. According to Sekaran and Bougie (2009) content validity is also an important test to assess if the concept is being adequately measured. Content validity is the extent to which the questionnaire measures what it claims to measure (Kumar, 2005).

It was important that the questions measured the issues foregrounded in the research study. Content validity assessed the questions of the measuring instrument. In this study both face and content validity were covered by ensuring that the research questions were linked to the objectives of the study. For content validity the questionnaire was verified by the researcher's supervisor and two colleagues. Face validity was achieved by circulating the questionnaire to fifteen pilot respondents. The recommendations from the pilot study regarding the logic, content and instructions were taken into consideration.

O'Leary (2004) describes reliability as the internal consistency of a measuring instrument. Sekaran and Bougie (2009), in support of O'Leary (2004), state that the reliability of a measuring instrument points towards the "stability" and "consistency" of the measured assertion. Kumar (2005) argues that the ability of an instrument to produce consistent measurements all the time is important. The more similar the result once the instrument is administered to a population, the greater is the reliability. A measuring instrument is reliable if it is stable over a period of time and the scores obtained are similar. Anderson (2004) states that it is not possible for any researcher to collect data that is one hundred per cent reliable and valid, but that it is necessary to ensure that reliability and validity tests minimize the limitations of a study so that the results are credible. The questionnaire was pilot tested to ensure that reliability and validity were maximized.

3.8.2 Ethical considerations

Ethical considerations and ethical behaviour are important issues in research activity (Welman, Kruger and Mitchell, 2005). Saunders, Lewis and Thornhill (2003) define ethics in research as the appropriateness of a researcher's behaviour in relation to the rights of the participants of the study. It would be unethical to collect research data without the participant's knowledge, willingness and consent. The ethical clearance for this study was obtained from the University of KwaZulu-Natal's (UKZN) research office. Anonymity was guaranteed to the foreman who agreed to participate in the study by completing the questionnaire. The respondents were given the necessary information about the purpose of the study in the covering letter, their participation was voluntary, and that were informed that they had the right to stop answering the questionnaire at any stage of the process. Informed consent was given after the respondents accepted that they had read and understood the details on the cover page.

3.9 Analysis of the data

Babbie (2009) states that the responses obtained from questionnaires should be analysed on a statistical basis to bring meaning to the research data. Sekaran and Bougie (2009) explain that the data obtained from questionnaires needs to be statistically coded in order to determine variation. According to Blumberg, Cooper and Schindler (2005) coding involves the assigning of numbers to responses so that the data can be grouped into categories.

QuestionPro automatically codes the responses, which can be read by Excel, SPSS and other packages.

3.10 Summary

Chapter Three introduced and discussed the research methodology and statistical techniques used in the study. The purpose of the research, the objectives, methods, population and sample size were also discussed. A self-administered questionnaire was used as the primary source of data collection. The analysis of the data obtained from the research instrument proved to be valid and reliable. As a result, useful information was obtained upon which valuable recommendations were prepared. The presentation and discussion of the research results follow in Chapter Four.

CHAPTER FOUR

Presentation and Discussion of the Results

4.1 Introduction

This chapter presents a summary of the empirical findings of the study established through the collection of primary data. The data obtained was statistically analysed using SPSS and is presented using graphs, tables and discussions. The results are presented in separate sections which address the objectives of the study. Descriptive statistics in the form of frequencies, percentages and cross tabulation tables are used to present the results that address the demographic variables. Inferential statistics are presented as correlations and Chi-square values.

4.2 Demographics

The demographic characteristics of the respondents who participated in the study are detailed in this section. Demographic information provides an in-depth understanding of the environment in which the research took place, as well as the common variables which will be compared with the key variables relating to the research questions. A total of 50 respondents' responded to the demographic questions.

4.2.1 The industrial sector

Table 4.1 reflects the sector in which the respondents operated.

Table 4.1 The industrial sector

Industrial Sector	No. of Respondents	Percentage
Metals	44	88%
Automotive	3	6%
Plastics	3	6%
Total	50	100%

It is evident from Table 4.1 that the metals sector represented the majority (88%) of the respondents while the automotive and plastics sector represented 6% each.

4.2.2 The size of the organisation

Table 4.2 illustrates the size of the organisation the respondents worked in.

Table 4.2 Company size

Size of Organisation	No. Of Respondents	Percentage
Micro - 1 to 9 employees	4	8%
Small - 10 to 99 employees	12	24%
Medium - 100 to 499	17	34%
Large - 500 or more employees	17	34%
Total	50	100%

It is evident from Table 4.2 that the largest number of respondents (34%) was employed in medium to large size companies. Respondents who worked for micro and small companies comprised 8% and 24% of the sample.

4.3 Objective one: to determine the reasons why the metals and engineering sector employs FET graduates

According to the MERSETA, the sectors that employ apprentice learners nationally include the metals, automotive and plastics sectors. The analysis of employer data reflects that there is a proportional distribution of apprentice learners across the various sectors with the highest

proportion falling within the metals sector at 37%, followed by the automotive sector at 11% and the plastics sector at 6% (Impact Assessments of Learnerships and Apprenticeships, 2008).

4.3.1 The employment of FET graduates

Respondents were asked to indicate how many FET graduates they employed in the different trades. Their responses are presented in Table 4.3. Table 4.3 reflects the percentage distribution of FET graduates employed as learner fitter and turners, welders, boilermakers and tool and die makers. A total of 50 respondents' responded to this question.

Table 4.3 FET graduates employed in different trades

Number of Staff	Fitter and Turners	Welders	Boilermakers	Tool and Die makers	Millwrights
1 to 5	44%	22%	22%	78%	60%
6 to 10	10%	34%	30%	14%	34%
11 to 20	28%	2%	4%	6%	6%
21 to 50	18%	20%	22%	2%	-
51 and over	-	22%	22%	-	-
Total	100%	100%	100%	100%	100%

It is evident from table 4.3 that 44 % of the respondents indicated that their organisations employed 1 to 5 fitter and turners, respondents representing 34% of the sample indicated that their organisations employed 6 to 10 welders, respondents representing 30% of the sample responded that their organisations employed 6 to 10 boilermakers, respondents representing 78% of the sample responded that their organisations employed 1 to 5 tool and die makers, and 60% of the respondents indicated that their organisations employed 1 to 5 millwrights. There is no other literature to support this finding. It is unique to the study and therefore adds to the body of knowledge in the field. It can also be inferred, based on the demographic profile of the study, that the size of each organisation determines the number of graduates employed in each organisation.

Cross tabulation tables are utilised to demonstrate the relationship between the size of the organisation and the graduates employed in the various occupational trades.

Table 4.4 illustrates the cross tabulation between organisation size and the number of FET graduates employed as fitter and turners.

Table 4.4 Cross tabulation between company size and the number of graduates employed as fitter and turners

Number of graduates employed as Fitter and Turners							
Number of staff employed		1 to 5	6 to 10	11 to 20	21 to 50	51 and over	Total
	1 to 9	8%	-	-	-	-	8%
	10 to 99	18%	6%	-	-	-	24%
	100 to 499	14%	-	2%	18%	-	34%
	500 or more	4%	4%	26%	-	-	34%
Total	44%	10%	28%	18%	-	100%	
n = 50			p = 0.00		$\chi^2 = 53.555$		

It is evident from Table 4.4 that a relationship ($p=0.00$) exists between the organisation's size and the number of FET graduates employed as fitter and turners. Respondents who worked for micro and small companies comprised 8% and 24% of the sample respectively, and indicated that their organisations employed 1 to 10 FET graduates as fitter and turners. Respondents representing 34% of the sample, who worked for medium sized organisations, indicated that they employed 1 to 50 graduates, and 34% of the respondents (those from large organisations) reflected that they employed 1 to 20 graduates as fitter and turners.

Table 4.5 reflects the cross tabulation between organisation size and the number of FET graduates employed as welders.

Table 4.5 Cross tabulation between company size and the number of graduates employed as welders

Number of graduates employed as Welders								
Number of staff employed		0	1 to 5	6 to 10	11 to 20	21 to 50	51 and over	Total
	0 to 9	8%	-	-	-	-	-	8%
	10 to 99	8%	16%	-	-	-	-	24%
	100 to 499	4%	12%	-	-	18%	-	34%
	500 or more	2%	6%	2%	-	2%	22%	34%
Total	22%	34%	2%	-	20%	22%	100%	
n = 50					p = 0.00		$\chi^2 = 58.463$	

It is evident from Table 4.5 that a relationship ($p=0.00$) exists between the organisation size and the number of FET graduates employed as welders. Respondents who worked for small companies comprised 16% of the sample and indicated that their organisations employed 1 to 5 FET graduates as welders. The 30% of the sample who worked for medium sized organisations responded that their companies employed 1 to 50 graduates. The respondents from large organisations (32% of the total) reflected that they employed 1 to over 51 graduates as welders, and 8% did not employ any welders.

Table 4.6 reflects the cross tabulation between organisation size and the number of FET graduates employed as boilermakers.

Table 4.6 Cross tabulation between company size and the number of graduates employed as boilermakers

Number of graduates employed as Boilermakers								
Number of staff employed		0	1 to 5	6 to 10	11 to 20	21 to 50	51 and over	Total
	0 to 9	8%	-	-	-	-	-	8%
	10 to 99	8%	14%	2%	-	-	-	24%
	100 to 499	4%	8%	2%	-	20%	-	34%
	500 or more	2%	8%	-	-	2%	22%	34%
Total	22%	30%	4%	-	22%	22%	100%	
n = 50					p = 0.00		$\chi^2 = 58.377$	

It is evident from Table 4.6 that a relationship ($p=0.00$) exists between the organisation's size and the number of FET graduates employed as boilermakers. Respondents (16%) from small companies indicated that their organisations employed 1 to 10 FET graduates as boilermakers. Respondents (30%) from medium sized organisations indicated that they employed 1 to 50 graduates, respondents (32%) from large organisations reflected that they employed 1 to over 51 graduates as boilermakers, and 8% did not employ any boilermakers.

Table 4.7 reflects the cross tabulation between the organisation's size and the number of FET graduates employed as tool and die makers.

Table 4.7 Cross tabulation between the company size and the number of graduates employed as tool and die makers

Number of graduates employed as Tool and Die makers								
Number of staff employed		0	1 to 5	6 to 10	11 to 20	21 to 50	51 and over	Total
	1 to 9	-	8%	-	-	-	-	8%
	10 to 99	18%	-	6%	-	-	-	24%
	100 to 499	34%	-	-	-	-	-	34%
	500 or more	26%	6%	-	2%	-	-	34%
Total	78%	14%	6%	2%	-	-	100%	
n = 50					p = 0.00		$\chi^2 = 40.988$	

It is evident from Table 4.7 that a relationship ($p=0.00$) exists between the organisation's size and the number of FET graduates employed as tool and die makers. Respondents (6%) from small companies indicated that their organisations employed 1 to 10 FET graduates as tool and die makers. Respondents (34%) from medium sized organisations indicated that they did not employ graduates as tool and die makers, and respondents (8%) from large organisations reflected that they employed 1 to 20 graduates as tool and die makers.

Table 4.8 reflects the cross tabulation between an organisation's size and the number of FET graduates employed as millwrights.

Table 4.8 Cross tabulation between a company's size and the number of graduates employed as millwrights

		Number of graduates employed as Millwrights						
Number of staff employed		0	1 to 5	6 to 10	11 to 20	21 to 50	51 and over	Total
	0 to 9	8%	-	-	-	-	-	8%
	10 to 99	16%	2%	6%	-	-	-	24%
	100 to 499	10%	24%	-	-	-	-	34%
	500 or more	26%	8%	-	-	-	-	34%
Total	60%	34%	6%	-	-	-	100%	
n = 50					p = 0.00		$\chi^2 = 25.002$	

It is evident from Table 4.8 that a relationship ($p=0.00$) exists between the organisation's size and the number of FET graduates employed as millwrights. Respondents (8%) from micro companies indicated that their organisations employed 1 to 10 FET graduates as millwrights. Respondents (24%) from medium sized organisations indicated that they employed 1 to 5 graduates as millwrights, respondents (8%) from large organisations reflected that they also employed 1 to 5 graduates as millwrights, and 8% did not employ any millwrights.

The findings of section 4.3.1 indicate that the metals and engineering sector in Durban employs FET graduates as fitter and turners, welders, boilermakers, tool and die makers and millwrights. It is also evident from the results of the cross tabulation between company size and the different occupational trade categories that both medium and large organisations in the metals and engineering sector tend to employ more graduates in the different occupations as detailed in Tables 4.4 to 4.8. Although the MERSETA has carried out similar studies nationally, as discussed in section 4.3, the occupational trade categories linked to organisational sizes had not been researched. There is no other literature to support this finding. It is unique to the study and therefore adds to the body of knowledge in the field.

4.3.2 The recruitment of FET Graduates

The respondents were asked to indicate their purpose in recruiting FET graduates. Their

responses are presented in Figure 4.1.

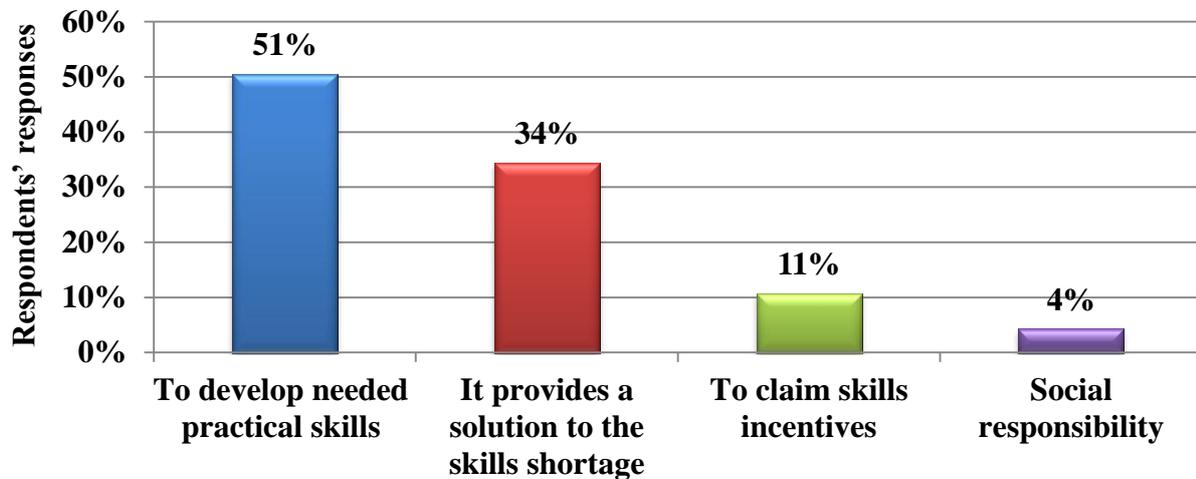


Figure 4.1 Reasons for recruiting FET graduates

51% of the respondents indicated that their purpose in employing FET graduates is to develop the practical skills needed in the company, 34% believed that it provides a solution to the skills shortage, 11% used it to claim skills incentives while 4% indicated that it is a socially responsible practice. A similar study carried out by the MERSETA found that companies participated in learnership and apprenticeship systems because they recognise the importance of training for the future and the possibility of receiving training rebates for skills empowerment initiatives (Impact Assessments of Learnerships and Apprenticeships, 2008). According to Babb and Meyer (2005) organisations benefit from apprenticeship and learnership programmes. The benefits include the facilitation of workforce skills development, receiving financial benefits in the form of skills incentives, creating employment opportunities for previously disadvantaged people, and increasing productivity and performance through the development of practical skills. The findings support the study carried out by Merseta and the statement of Babb and Meyer (2005).

4.3.4 Recruiting suitable graduates

Respondents were asked if it was difficult to recruit suitable FET graduates. Their responses are presented in Figure 4.2.

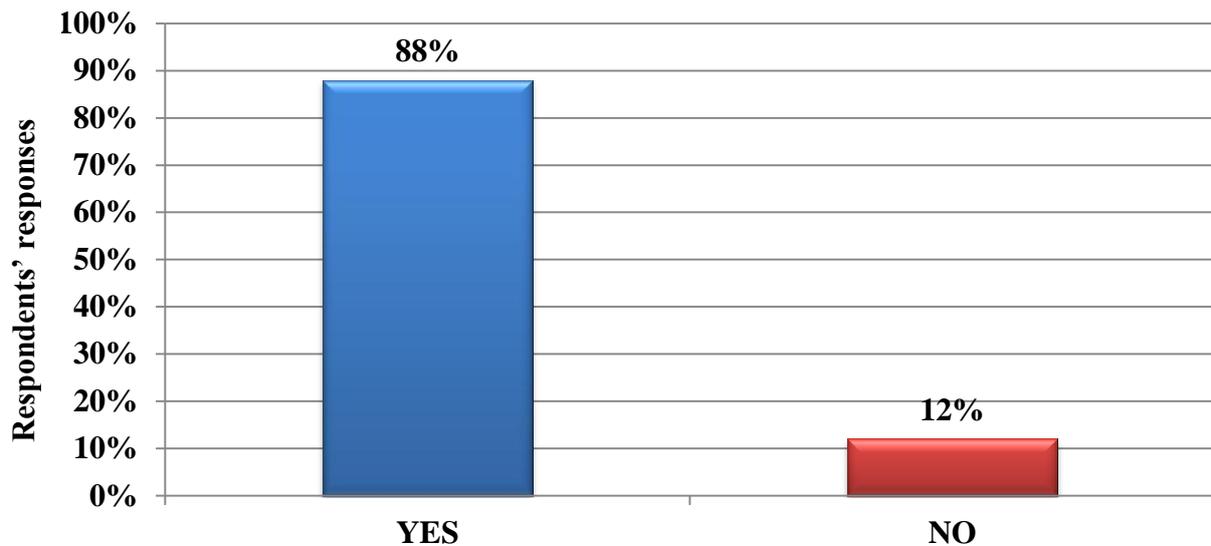


Figure 4.2 Difficulty in recruiting suitable FET graduates

It is evident from Figure 4.2 that 88% of the respondents agreed that it was difficult to recruit suitable FET graduates while 12% disagreed. According to Davies and Farquharson (2004) and Babb and Meyer (2005), one of the key processes for effective learnership implementation is the recruitment and selection process. Furthermore they stated that the recruitment and availability of suitable technical learner candidates in various industries is a challenge. The findings support the sentiments of Babb and Meyer (2005).

4.3.5 Difficulties in recruiting specific trades

Respondents were asked in which occupational trade categories they were experiencing difficulty in recruiting FET graduates. Their responses are presented in Figure 4.3

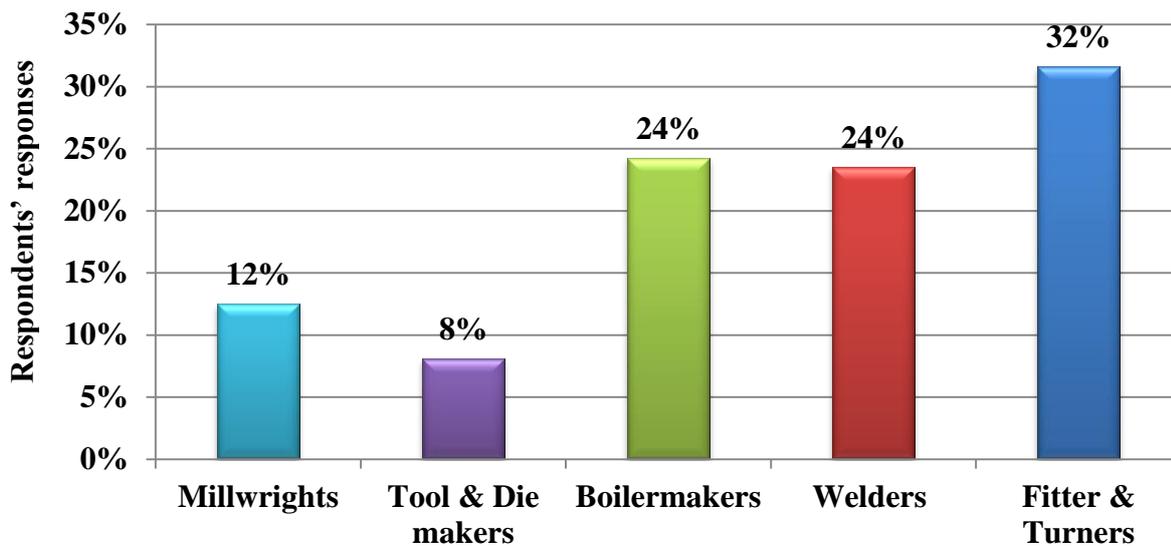


Figure 4.3 Occupational trade categories where recruiting difficulties were experienced

It is evident from Figure 4.3 that 32% of the respondents indicated that it is difficult to recruit fitters and turners, 24% identified boilermakers and welders, 13% indicated millwrights, and 8% believed that tool and die makers were difficult to recruit. According to Naicker (2007) the MERSETA identified fitters and turners, welders, boilermakers and millwrights as being in serious short supply in the metal industry. A similar study carried out by the Department of Labour further confirms that fitters and turners, welders, boilermakers and tool and die makers are scarce skills in the metal industry (Department of Labour Report on Artisan Trades, 2008).

Patel (2007 as cited by Mukora 2008) states that the shortage of artisans is a global phenomenon as the younger generation is afraid to get its ‘hands dirty’. There is a trend indicating that younger people are taking up careers in computer-related occupations rather than in engineering professions. Based on the studies carried out by MERSETA, the DOL and Patel (2007), it is evident that there is a scarcity of skills in the occupational trade categories indicated in Figure 4.3. Patel’s (2007) statement raises the concern that younger people are not interested in taking up careers as artisans. It can be inferred that the findings of this study support the studies by MERSETA and the DOL through the indication that it is difficult to recruit graduates in scarce skills categories. But a distinction needs to be made between the concepts of skills shortages and recruitment difficulties. Recruitment difficulties can occur

where a company finds it difficult to fill a vacancy because of an inadequate supply of occupational skills.

4.3.6 Rectifying the recruitment problem

Respondents were asked to indicate what activity is carried out by their organisations to rectify the recruitment problem. Their responses are presented in Figure 4.4.

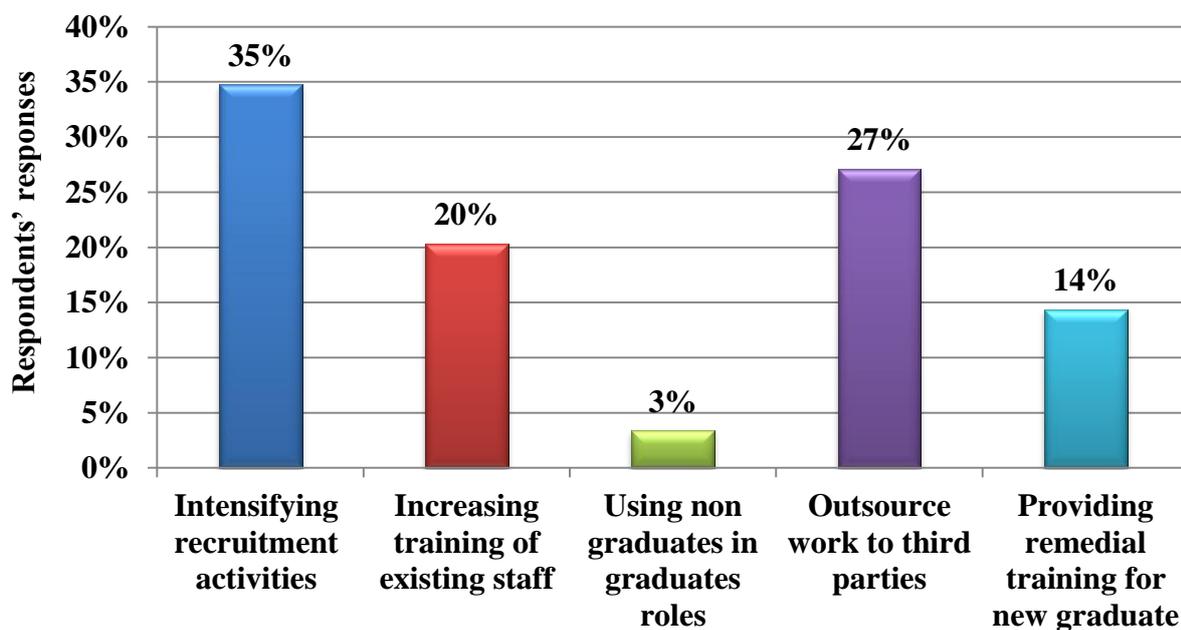


Figure 4.4 Action to rectify the recruiting problem

It is evident from Figure 4.4 that 35% of the respondents indicated that their organisations were intensifying recruitment activities, 27% indicated that work is outsourced to third parties, 20% indicated that that their organisations increased the training of existing staff, 14% responded that their organisations provided remedial training for new graduates, and 3% stated that their organisations utilised non-graduates in graduate roles. A similar work-readiness study carried out by Raftopoulos (2006) found that organisations are intensifying recruitment activities in order to get the right graduate candidates to fill a job category. Due to the lack of sourcing the correct technical skills, most companies were multi-skilling existing staff and placing them in roles where there was a serious technical skill constraint.

A similar study carried out by Mukora (2008) revealed that the mining and minerals sector, which was the main employer of apprentices, was outsourcing its engineering functions as an alternative to employing skills that are difficult to find. According to Mummenthey (2008) the FET sector is not responsive to the needs of the private sector and government's skills development strategy, as learners are receiving remedial training since they cannot perform in the workplace. There is no other literature to support the finding that non-graduates are used in graduate roles as described in Figure 4.4. This finding is therefore unique to the study and adds to the body of knowledge in the field. The finding supports those of the studies carried out by Mukora (2008), Raftopoulos (2006) and Mummenthey (2008).

4.4 Objective two: to determine the skills shortcomings of FET graduates

According to Nyaba (2009) a successful FET programme provides the knowledge, skills, attitudes and values to ensure that learners are economically productive. Nzimande (2009) stated that FET colleges are responsible for educating and training young people for entrance into the workplace and for ensuring skill competency levels. Accordingly, there is a link between skills shortages, development and deficiencies in the context of FET.

4.4.1 Artisan skills development

The respondents were asked to indicate the importance of artisan skills development to their organisations. Their responses are presented in Figure 4.5.

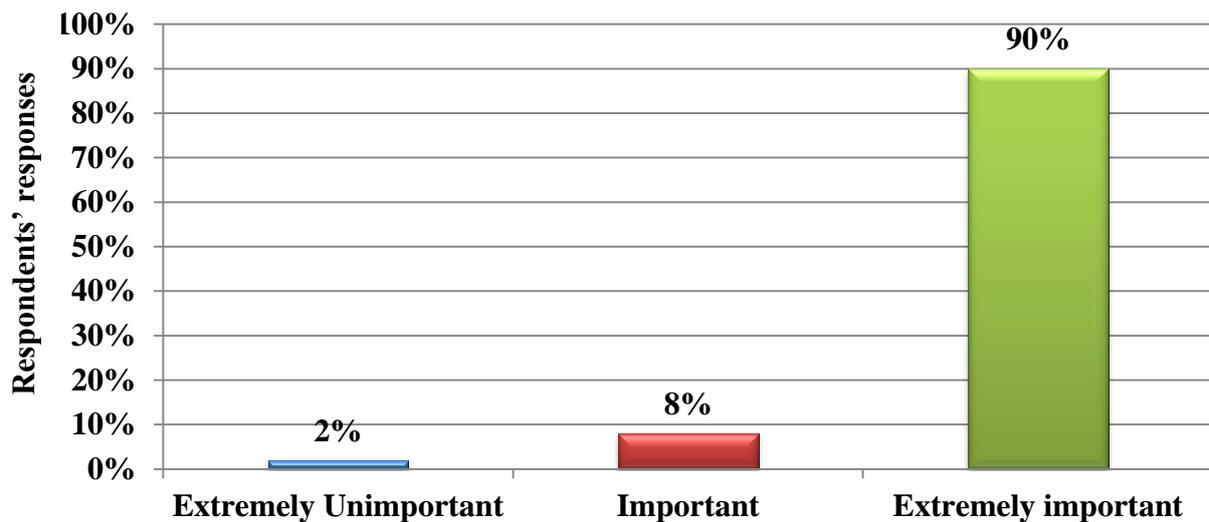


Figure 4.5 The importance of artisan skills development

It is evident from Figure 4.5 that 90% of respondents believe that artisan skills development is extremely important to their organisation, 8% responded that it is important and only 2% felt that artisan skills development is extremely unimportant. Naicker (2007) states that the Accelerated and Shared Growth Initiative for South Africa (ASGISA) formed the Human Resource Development strategy for the medium- and long-term outlook. Five high-profile priority skills areas for immediate attention were recognised. It is evident that the area that is relevant to the context of this study is the third skills field, which addresses artisanal and technical skills development, which was identified as being in high demand by the labour market. The findings support the statement of Naicker (2007).

4.4.2 The value of artisan skills development

Respondents were asked to indicate the value of artisan skills development to their organisations. Their responses are presented in Figure 4.6.

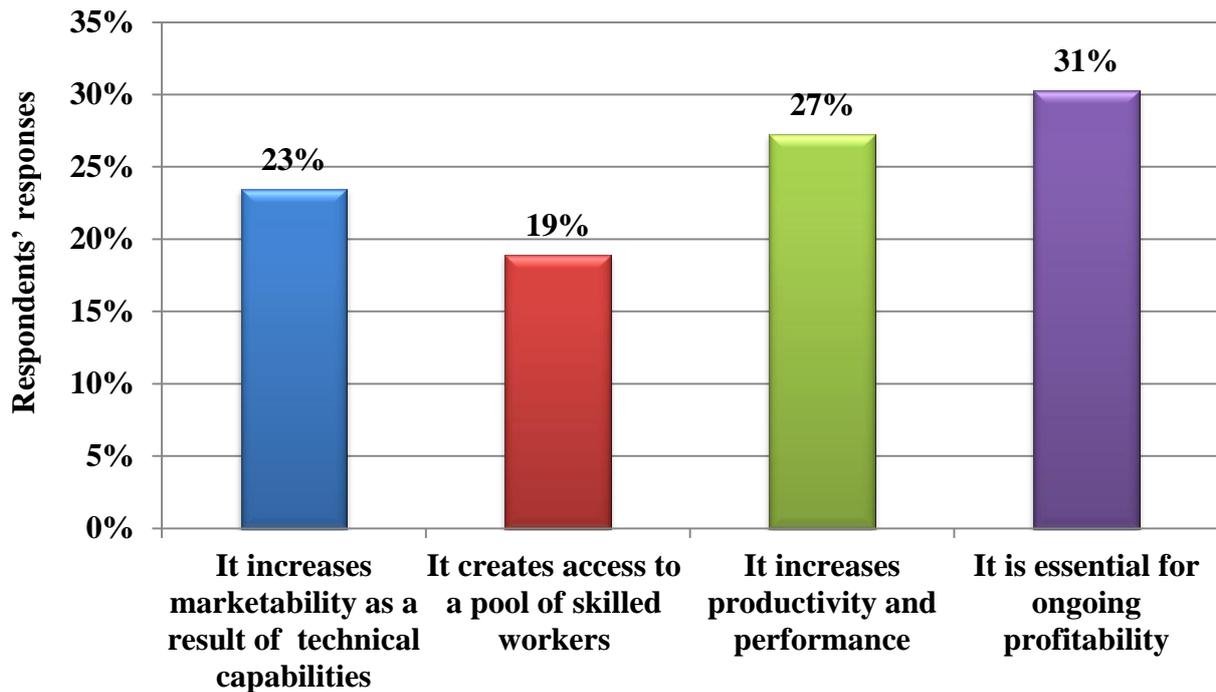


Figure 4.6 The significance of artisan skills development

It is evident from Figure 4.6 that 30% of the respondents indicated that artisan skills development was essential for on-going organisational profitability, 27% felt that it increases productivity and performance, 23% said that it increased marketability as a result of the improvement in the company's technical capabilities, while 19% indicated that it created access to a pool of skilled workers. A similar study carried out by Janse van Rensburg (2009) found that most organisations valued artisan skills development since it increased productivity and performance, provided financial benefits to the organisation, created a skilled workforce that was easily accessible, and increased market share opportunities due to having a skilled pool of workers. Mukora (2008) states that artisan skills development increases the opportunity for companies to strengthen their technical base, therefore increasing company market share opportunities. This contributes to the economic growth and development of South Africa. This finding supports the study of Janse van Rensburg (2009) and the statement by Mukora (2008) on artisan skills development.

4.4.3 FET graduate's job skills

Respondents were asked to describe graduate job skills relating to the different occupational trade categories. Their responses are presented in Table 4.9.

Table 4.9 reflects the percentage distribution of the levels of FET graduates' job skills as Fitters and Turners, Welders, Boilermakers, and Tool and Die makers. A total of 50 respondents' responded to this question.

Table 4.9 Description of graduates' job skills

		Fitters and Turners	Welders	Boilermakers	Tool and Die makers	Millwrights
Job Skills Level	Poorly Skilled	36%	32%	34%	6%	24%
	Under skilled	56%	38%	40%	22%	18%
	Skilled	8%	12%	4%	2%	8%
	Highly skilled	-	-	2%	-	-

It is evident from Table 4.9 that the majority of the respondents believed that the graduates are either under- or poorly skilled. Respondents representing 56% of the sample indicated that graduate fitters and turners were under-skilled, 38% said that graduate welders were under-skilled, 40% believed that graduate boilermakers were under-skilled, 22% indicated that graduate tool and die makers were under-skilled, and 24% stated that millwrights were poorly skilled.

Elliot (2006) states that FET Colleges' current learning outcomes are not aligned with the needs of industry. The quality of FET graduates is not what is required in the workplace. According to Gamble (2003) training and workplace experience is essential for vocational preparation. FET college training assists graduates in the transmission of the principles of trade and theory, while the workplace allows for the application of what has been taught to a situation-specific competence. The findings support the Elliot's statement in that the majority of the respondents indicated that graduates were either poorly or under skilled. It therefore can be inferred with reference to the statement of Gamble (2003) that FET colleges are not imparting quality job skills to graduates.

4.4.4 The impact of skills deficiencies

The respondents were asked to indicate the impact on their organisations of the skills deficiencies of the graduates. Their responses are presented in Figure 4.7.

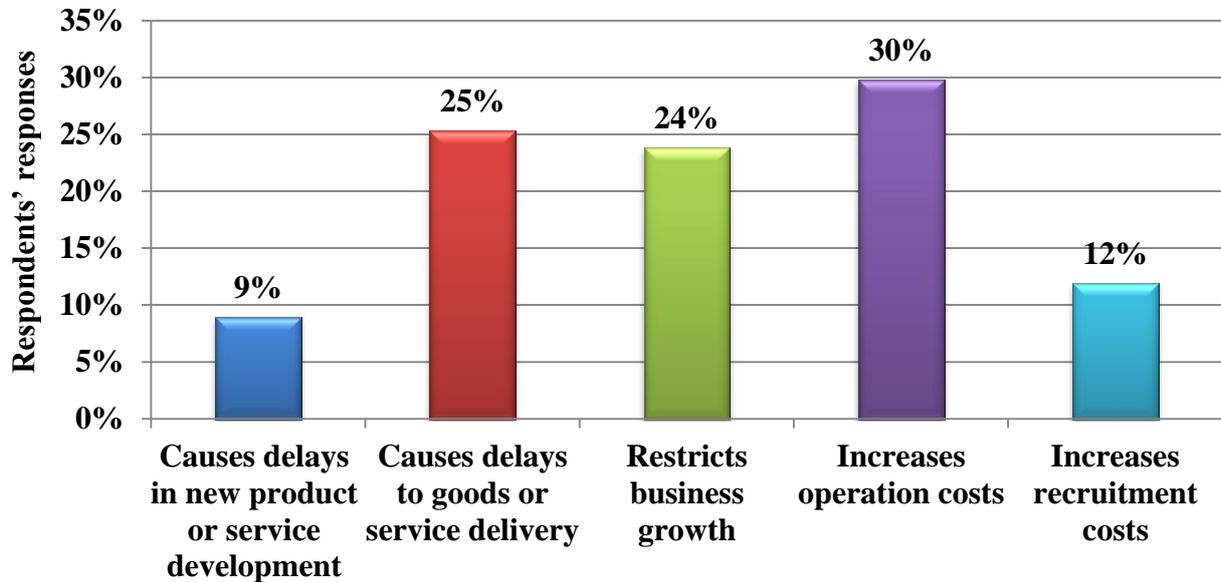


Figure 4.7 Impact of the skills deficiency

It is evident from Figure 4.7 that 30% of the respondents indicated that the impact of the skills deficiencies of the graduates increases their organisations' operational costs, 25% felt that the impact causes delays to goods or service delivery to their customers, 24% responded that the impact restricts business growth, 12% indicated that recruitment costs increased and 9% believed that the impact causes delays for new product or service development. There is no other literature to support these findings, which are unique to this study and therefore add to the body of knowledge.

4.4.5 FET graduate job performance

Respondents were asked to describe FET graduates' job performance. Their responses are presented in Table 4.10. A total of 49 respondents responded to this question.

Table 4.10 reflects the percentage distribution of the respondents' impression of FET graduates' job performance.

Table 4.10 Graduates' job performance

Job performance description	Percentage
They don't understand the theory and can't do the job	43%
They understand all the theory but can't apply it to the job	4%
They understand some of the theory but can't apply it to the job	45%
They understand some of the theory and can apply some of it to the job	8%
Total	100%

It is evident from table 4.10 that 45% of the respondents indicate that although FET graduates understand some theory, they cannot apply it to the actual job. A similar study carried out by Young and Gamble (2006) found that although FET colleges were providing artisan type skills, employers perceived FET output as not catering for the type of skills they require in industry. Learners at FET colleges learn the theory for examination purposes and therefore cannot apply what they have learnt to the job. The findings of this study support those of the study conducted by Young and Gamble (2006) in that the majority of the respondents indicate that the graduates understand some theory but cannot apply their knowledge to the job.

4.4.6 The skills and attributes of graduates

The respondents were asked to describe the skills and attributes of the FET graduates. Their responses are presented in table 4.11. A total of 49 respondents responded to this question.

Table 4.11 reflects the percentage distribution of the respondents' impressions of the FET graduates' skills and attributes.

Table 4.11 The skills and attributes of the graduates

		Extremely dissatisfied	Dissatisfied	Satisfied	Extremely satisfied
Skills and attributes	Technical expertise	51%	39%	8%	2%
	Communication skills	27%	45%	24%	4%
	Teamwork	27%	39%	33%	2%
	Ability to be creative	43%	51%	6%	-

It is evident from table 4.11 that the majority of the respondents indicated that they were either extremely dissatisfied or just ordinarily dissatisfied with the skills and attributes of the FET graduates. Respondents representing 51% of the sample were extremely dissatisfied with the technical expertise of graduates, 45% felt dissatisfied with the communication skills of graduates, 39% felt dissatisfied with the teamwork ability of graduates and 51% were dissatisfied with the graduates ability to be creative. There is no other literature to support this finding, which is unique to the study and therefore adds to the body of knowledge.

4.1 Objective three: to determine employers' actions to get the FET graduates job-ready

Raftopoulus (2006) describes job-readiness, which is also referred to as graduate employability, as having the skills required to be placed in a job. Wagner (2006) defines job readiness as the set of skills and behaviours that are necessary for any job. Nabi (2003) believes that work-readiness is the possession of the correct level of skills and attributes needed by students to be employable. It is evident that the concept of being job-ready plays an important role for organisations to ensure that a graduate's skills set fits into a particular job situation.

4.5.1 The provision of extra skills

The respondents were asked to indicate if their organisations provided graduates with extra skills training. Their responses are presented in Figure 4.8.

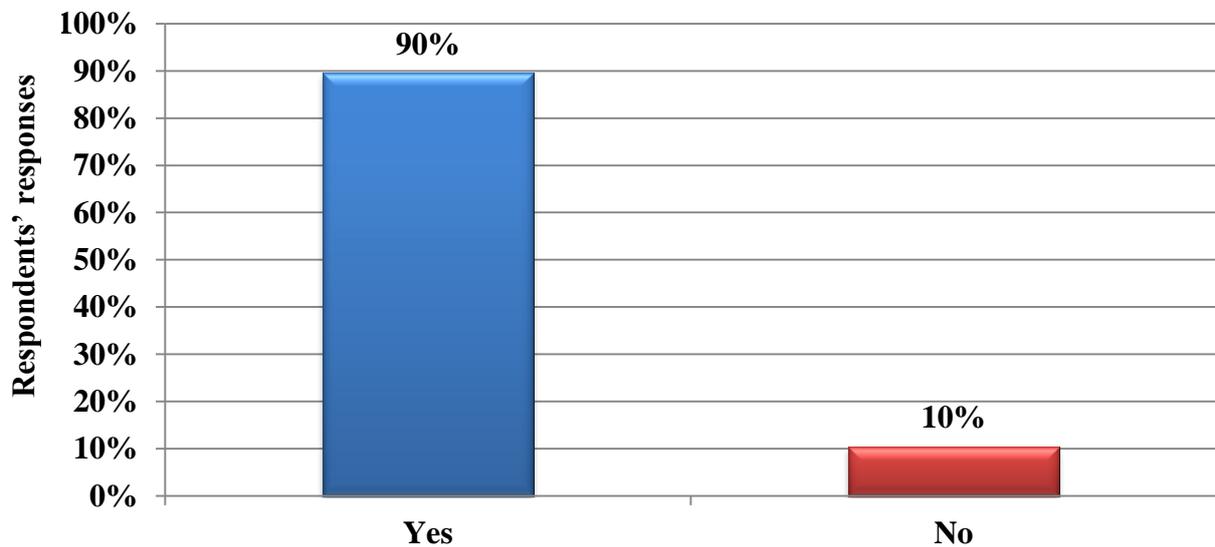


Figure 4.8 The provision of additional skills

It is evident from Figure 4.8 that 90% of the respondents indicated that their organisations provided additional skills training to the graduates while 10% of the respondents responded that their organisation did not. Robbins *et al* (2009) states that organisations are being proactive by providing additional technical training and skill development programmes to impart the desired skills to their FET graduates in the workplace. A similar study carried out by MERSETA; found that supportive employers are contributing to successful apprenticeship and learnership programmes by providing additional training that is outside the boundaries of the programme (Impact Assessments of Learnerships and Apprenticeships, 2008). The findings support the statement made by Robbins *et al* (2009) and the finding of the study carried out by MERSETA.

4.5.2 Skills development initiatives

The respondents were asked to indicate what type of training is provided to the graduates. Their responses are presented in Figure 4.9.

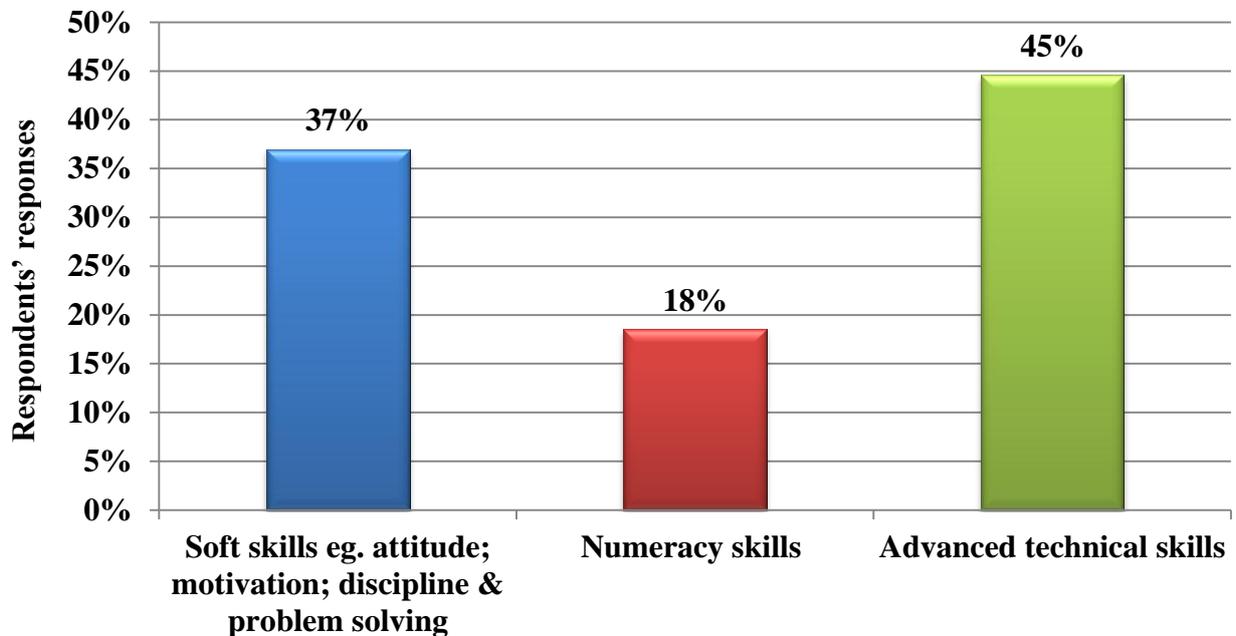


Figure 4.9 The provision of extra training

Just under half (45%) of the respondents indicated that their organisations are providing advanced technical skills to graduates, 37% indicated that soft skills training was provided, and 18% stated that their organisations provided numeracy skills training. A similar work-readiness study carried out by Raftopoulos (2006) found that organisations were providing the graduates with soft skills and technical skills training in order to get the graduates job-ready. According to Butcher (2008) post-school education should have the scope to add a work-readiness component to it in order to ensure that graduates are equipped not only with technical skills but also with soft skills to enable them to integrate into the workplace. Another similar study carried out by Mumenthey (2008) confirmed that potential learners had poor literacy and numeracy skills, which poses a challenge to skills development in South Africa. The findings of this study support those of similar studies by Mumenthey (2008), Raftopoulos (2006) and the statement of Butcher (2008).

4.5.3 Training providers

The respondents were asked to indicate who provided training for the graduates. Their responses are presented in Figure 4.10, which represents in percentages the proportion of in-house training provided by the companies as against external training.

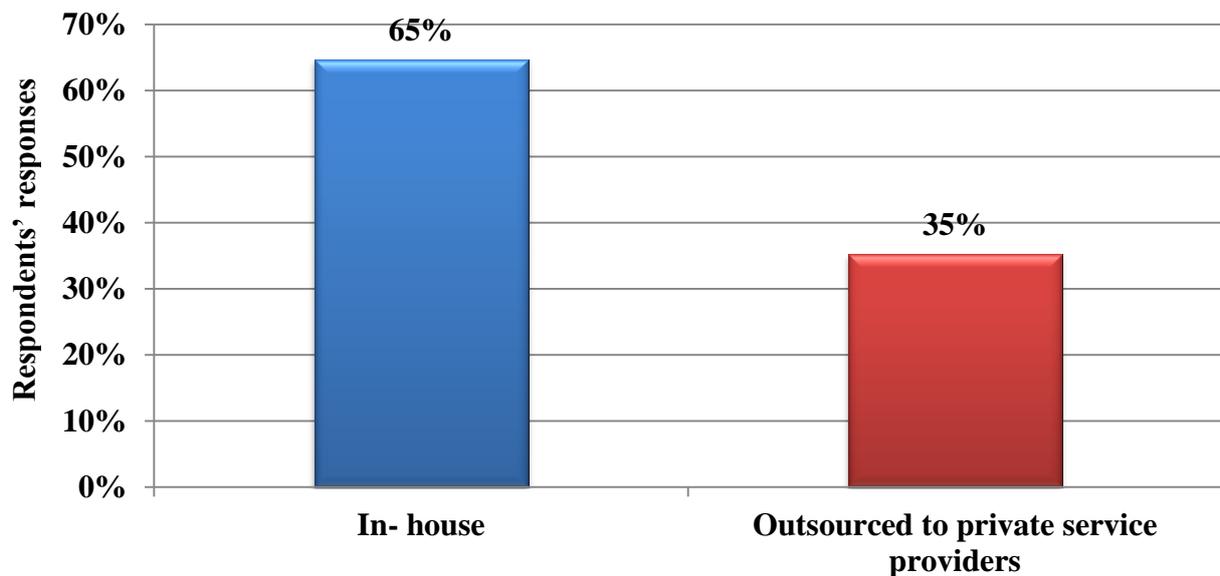


Figure 4.10 Proportion of in-house versus external training

It is evident from Figure 4.10 that over two-thirds (65%) of the respondents indicated that they provided in-house training for the graduates and 35% responded that the training was outsourced. According to a similar study carried out by Chandra, Moorthy, Rajaratnam and Schaefer (2000, as cited by Badroodien 2003), there was a strong preference for in-house training since 68% of the respondents indicated that their firms carried out in-house training, compared with 32% preferring external training. The research supports the study carried out by Chandra *et al* (2000) since the research findings are similar.

4.5.4 Training Costs

The respondents were asked to indicate how funds are obtained for the additional training of the graduates. Their responses are presented in Figure 4.11.

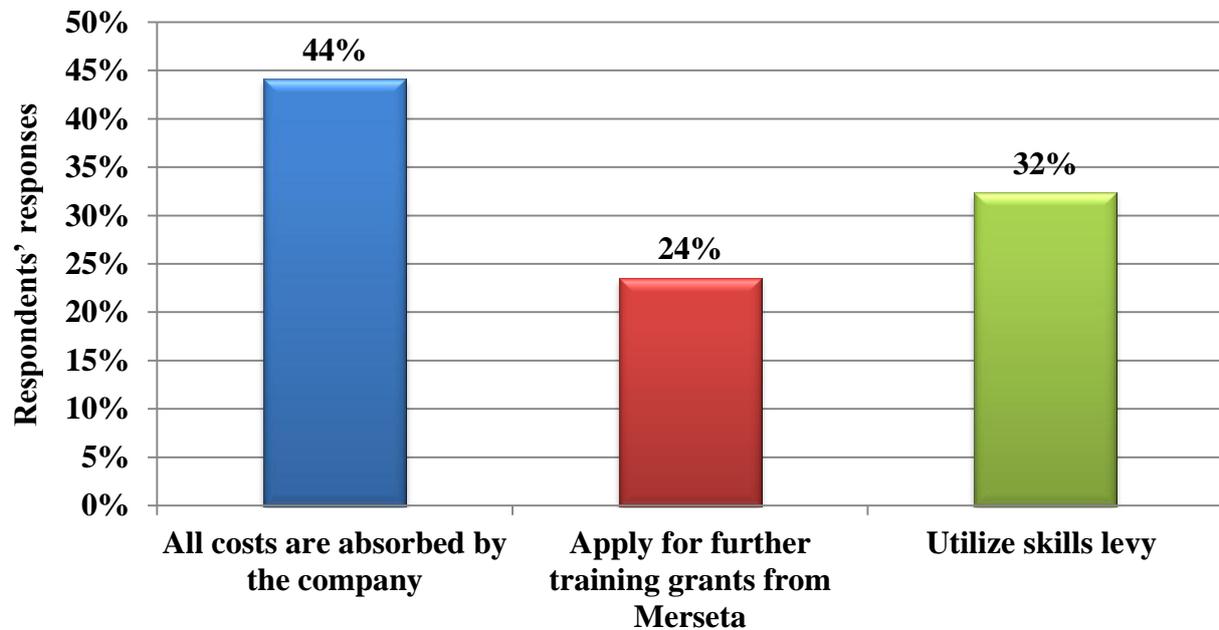


Figure 4.11 Funding of the training initiatives

It is evident from Figure 4.11 that 44% of the respondents indicated that all training costs are absorbed by their companies, 32% responded that their organisation utilized the skills levy, and 24% indicated that their organisations applied for further training grants from MERSETA. There is no other literature to support this finding, which is unique to the study and therefore adds to the body of knowledge in the field.

4.2 Objective four: To determine the skills required by the metals and engineering industry in Durban

Robbins *et al* (2009) describe a skill as the ability to apply something learnt after being trained to do so. Akoorjee and McGrath (2008) view a skill as a competency to perform a task to a pre-determined standard. It is evident that a skill is the competency or the ability to perform a required task once one has been trained to do so.

4.6.1 The ranking of workplace skills

The respondents were asked to rank the importance of various skills for the FET graduates from 1-5 in terms of importance (1 being the most important and 5 the least important). Their responses are presented in Figure 4.12 in mean values.

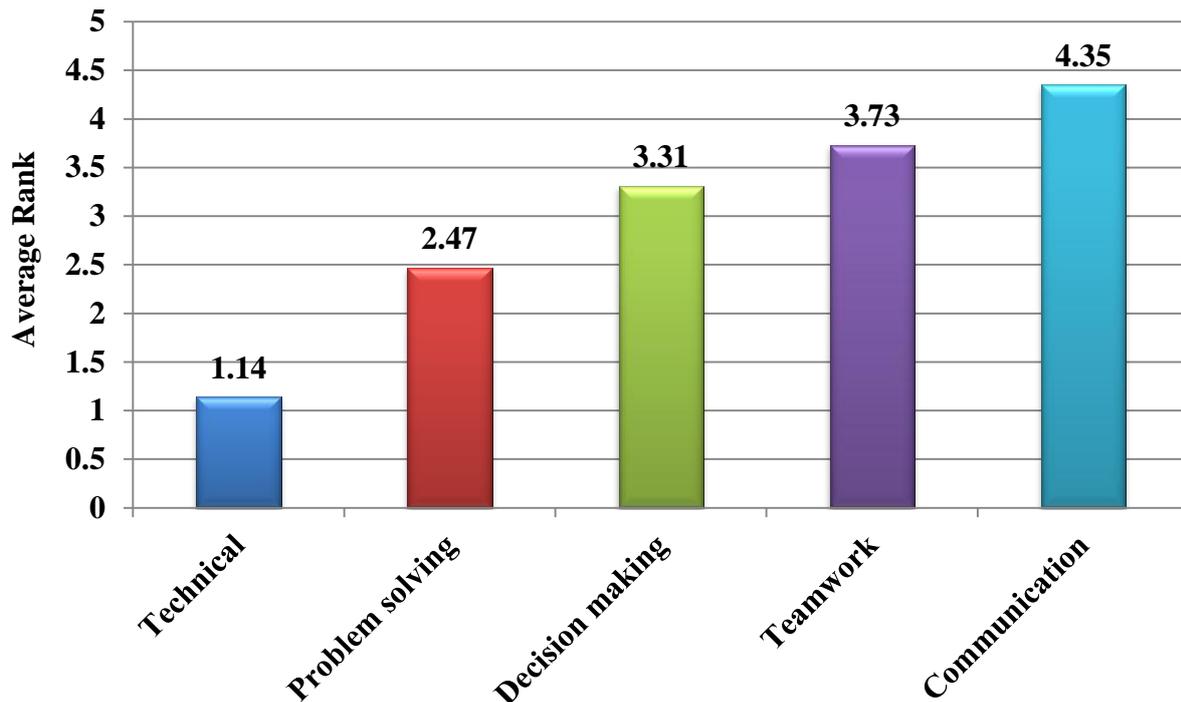


Figure 4.12 Workplace skills ranked from the most to the least important

It is evident from Figure 4.12, which is based on mean values, that the respondents indicated that the most important skills for graduates are technical, and these are followed by problem solving, decision making, teamwork and communication skills. A similar study carried out by Baatjes (2008) on the skills and knowledge requirements for a new workplace concluded that interpersonal skills, problem-solving skills, thinking skills, communication and mathematics skills, life skills such as the ability to work in a team, enthusiasm, and a particular attitude play an important role in both business and government's job-readiness skill initiatives. This study supports the statement of Baatjes (2008).

4.6.2 The role of industry in skills development

The respondents were asked to indicate what role industry can play in increasing the skills of FET graduates. Their responses are presented in Table 4.12 in percentages. A total of 172 responses were received for this question.

Table 4.12 Industry's role in skills development

Answer	Percentage
Get involved in the FET curriculum with more focus on the work-based element.	26%
Partner with MERSETA to make developing workforce skills a top priority.	24%
Provide more and better quality training.	20%
Provide extra training resources to support graduates.	13%
Ensure that the graduate has chosen the right trade.	9%
Develop accredited assessments for work-based learning with NQF credits.	8%
Total	100%

It is evident from Table 4.12 that 26% of the respondents indicated that industry should get involved in the FET curriculum with more focus on the work-based element. A similar study carried out in the USA found that the work-readiness component necessary to expand knowledge, skills, and talents that are important to successful performance in the workplace was based on industry's involvement (Work Readiness Credential, 2005, p.5). This finding supports the study carried out in the USA.

Respondents representing 24% of the sample said that industry must partner with MERSETA to make developing workforce skills a priority. A similar study carried out by the Human Science Research Council of South Africa (HSRC) found that the MERSETA was not playing an active role in working with employers to ensure that learnership and apprenticeship skills programmes take priority. It was recommended that the MERSETA work with industry and prioritise skills development activities (Impact Assessments of Learnerships and Apprenticeships, 2008). The findings of this study support those of the impact assessment study.

The respondents (20%) believed that industry should provide more and better quality training. A similar study carried out by the HSRC in 2008 found that the quality and structure of the training of apprentice learners was a big concern, and that employers should invest in training programmes that provided excellent training outcomes (Impact Assessments of Learnerships and Apprenticeships, 2008). The findings of this study support those of the impact assessment study.

Respondents representing 13% of the sample stated that industry should provide additional training resources to support graduates. A similar study carried out by the HSRC in 2008 found that employers should provide additional training resources for learners outside the normal work situation to fast-track skills development (Impact Assessments of Learnerships and Apprenticeships, 2008). The findings of this study support those of the impact assessment study.

Respondents representing 9% of the sample indicated that industry should ensure that graduates have chosen the correct trade and 8% of the respondents indicated that industry should develop accredited assessments for work-based learning with NQF credits. There is no other literature to support these findings, which are unique to the study and therefore add to the body of knowledge in the field.

4.6.3 Artisan skills shortage

Respondents were asked if they believed that there is an artisan skills shortage in the metals and engineering sector. Their responses are presented in Figure 4.13.

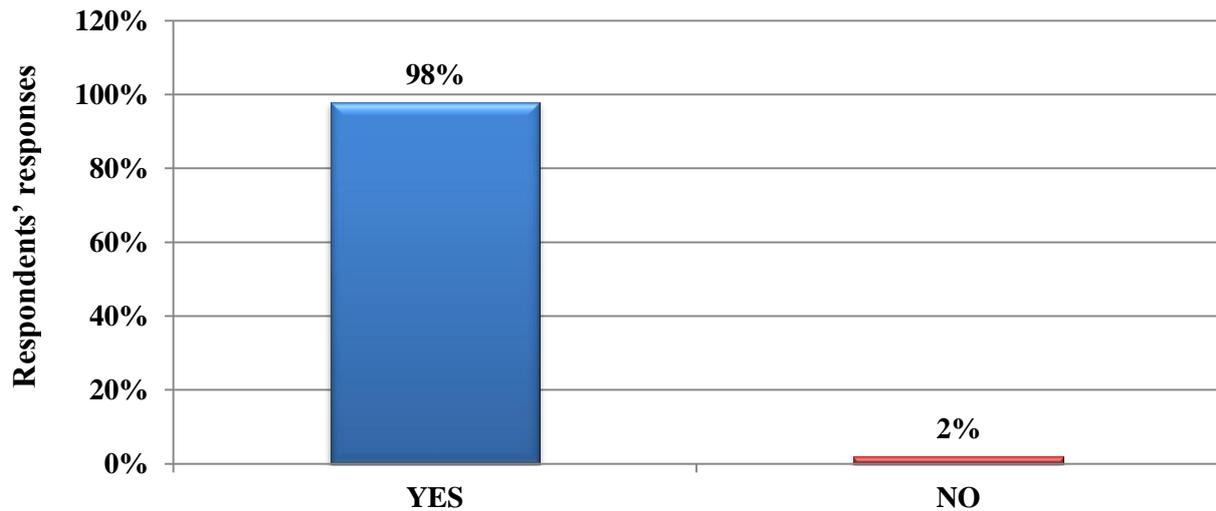


Figure 4.13 Artisan skills shortage

It is evident from figure 4.13 that 98% of the respondents indicated that there is an artisan skills shortage, while 2% responded that there is no shortage. A similar study carried out by Devey, Valodia and Velia (2005) found that there were artisan skills shortages in the manufacturing Sector in Durban, which affected companies' capability for business expansion. Mukora (2008) states that there is a serious shortage of qualified and experienced artisans in the South African labour market. The findings of this study support those of the study carried out by Devey, Valodia and Velia (2005) and the sentiment of Mukora (2008).

4.7 Objective five: To determine the activities required to rectify the skills scarcity

There is sufficient research and literature in support of South Africa's having a serious shortage of technical skills and knowledge (Robbins *et al*, 2009; Naicker, 2007; Nel *et al*, 2009; Aloorjee and McGrath, 2008). Aloorjee and McGrath (2008) believe that a skilled workforce is essential for the growth of the South African economy. Robbins, Judge, Odendaal and Roodt (2009) add that South Africa's economy can grow only if its critical technical skills base can be adequately developed.

4.7.1 Rectifying the skills scarcity of artisans

The respondents were asked to indicate what they think needs to be done to rectify the skills shortage. Their responses are presented in Table 4.13.

Table 4.13 Activities to rectify the skills shortage

Answer	Percentage
More collaboration between government, MERSETA, FET colleges and employers is required.	19%
Improve the quality and relevance of FET education.	19%
Phase out the LEARNERSHIP programme and adopt the old apprenticeship training system.	18%
Reinstate the National (N) Certificate programme.	18%
Skills incentives should be increased.	14%
Revise the current NQF level for FET so that qualifications are better recognized.	9%
Improve the current LEARNERSHIP programme.	3%
Total	100%

It is evident from table 4.13 that 19% of the respondents indicated that in order to rectify the skills shortage there should be more collaboration between government, MERSETA, FET colleges and employers. According to Naicker (2007) skills development initiatives can be successful only if there is more co-operation between the Department of Labour, MERSETA, FET colleges, the Department of Education and employers. The findings of this study support the statement by Naicker (2007)

19% of the respondents indicated that there needs to be an improvement in the quality and relevance of FET education. A similar study carried out by McGrath (2003) found that FET education was not responsive to industry's requirements and it was recommended that the FET curriculum be revised, incorporating improved quality assurance. The findings of this study support those of the study by McGrath (2003).

18% of the respondents stated that the current learnership programme should be phased out and the old apprenticeship system be reinstated. A similar study carried out by MERSETA found that most companies preferred the old apprentice system since quality artisans had been produced by that system (Impact Assessments of Learnerships and Apprenticeships, 2008). The findings of this study support those of the study by MERSETA.

18% of the respondents felt that the National Certificate programme should be reinstated. A similar study carried out by the HSRC found that the phasing out of National Certificate courses was a serious problem as companies are looking for National Certificate graduates (Impact Assessments of Learnerships and Apprenticeships, 2008). The findings of this study support those of the impact assessment study.

14% of the respondents believed that skill incentives should be to be increased. A similar study carried out Davies and Farquharson (2004) found that the levies given by the SETAs for the training of learners were not adequate as the costs of the training were much greater than the grants given. The findings of this study support the findings of Davies and Farquharson (2004).

9% of the respondents indicated that the current NQF level for FET qualifications should be better recognised and 3% indicated that the current learnership programme needs improvement. There is no other literature to support these findings, which are unique to the study and therefore add to the body of knowledge in the field.

4.8 Summary

The significant findings of this study are that the metals and engineering companies in Durban are in urgent need of artisanal capacity building. There is strong evidence that there is a shortage of qualified artisans in the sector and that the efforts made by FET colleges to develop technical skills for the workplace are ineffective. The findings have proved that FET mechanical engineering graduates do not possess the relevant skills required to work in the metals and engineering sector. The following chapter concludes this study by providing recommendations and comments on the study limitations.

CHAPTER FIVE

Conclusions and Recommendations

5.1 Introduction

Unemployment is one of the key factors that dilute economic growth prospects for South Africa. The South African Government, through various interventions has realized that the scarcity of technically skilled labour is hampering economic growth. The artisanal skills shortage in South Africa is no new phenomenon. The origins of South Africa's skills policy system are intricately linked to its past. The current predicament is such that the demand for technical skills exceeds supply. The literature has indicated that the technical skills scarcity is prevalent throughout the world. Developed countries such as Australia, USA and the UK have similar skills demand-and-supply problems but, unlike the situation in South Africa, the strategy applied by those countries has improved and stimulated skills development. The government's focus on further education and training to bridge the technical skills gap in the metals and engineering sector has been proved in this study to be ineffective

This chapter focuses on the findings of the research study, its limitations, recommendations arising from it, and a suggestion of future studies that could be undertaken in the same field.

5.2 Key findings and conclusions

The main aim of the study was to determine the skills required for FET mechanical engineering graduates to perform their jobs effectively within industry, the extent of the deficiencies in graduate skills, and the coping strategies of companies that employ such graduates. The study further explored whether or not there was an artisan skills shortage in the sector and the actions required to rectify the skills shortage. The review of the literature indicated concern over the implementation of skills development initiatives through FET and its impact on industry. The literature further revealed that the government and industry collaboration plays an important role in enhancing skills development and promoting economic growth. The exploration of FET mechanical engineering graduates' job skills revealed that there is a dire need to increase skills development activity to ensure the future

growth and sustainability of metals and engineering companies in Durban.

The main research question and sub research questions were crafted so that they were aligned with the objectives of this study. The results have shown that FET graduates lack job readiness skills and FET colleges are not providing learners with the skills that are necessary to the industry.

5.2.1 Objective one

The results for objective one indicate that metals and engineering companies employ FET graduates in the various occupational trades that are described as scarce skills by the DOL and MERSETA. The purpose of employing FET graduates is to develop relevant practical technical skills and also to provide a solution to the skills shortage over the short term. Additional findings identified that companies experienced difficulties in recruiting FET graduates as fitters and turners, boilermakers, welders, tool and die makers and millwrights. It is evident from the findings of this study that companies are intensifying their recruitment activities and also outsourcing work to third parties in order to rectify the recruitment situation.

5.2.2 Objective two

Based on the findings of objective two, it can be argued that the major challenge faced by the metals and engineering sector is the development of the required artisan skills in order to increase productivity and remain profitable. The sector has a high level of dependence on technical skills for product development and competitiveness. It is evident from this study that the skills and capabilities of FET graduates are poor and below industry's acceptable requirements. This situation has a negative impact on the organizations' operational requirements and operating costs, which eventually restricts business growth in the medium to long term. Additional findings indicate that the graduates lack the ability to apply the theory learnt to the job. The sector is also dissatisfied with the technical and communication skills of graduates.

5.2.3 Objective three

It is clear from the findings of objective three, that metal and engineering companies are providing additional skills training to FET graduates and all costs are absorbed by the companies themselves. Skills development initiatives are mostly carried out in-house and include the provision of soft skills and advanced technical skills.

5.2.4 Objective four

Given the findings presented under objective four, it is evident that the metals and engineering sector values technical, problem-solving and decision-making skills as important workplace skills for a graduate. The study has proven that there is a shortage of skilled artisans in the sector. It has been further highlighted that the role of industry in getting involved with the FET curriculum by focusing more on the work-based element can increase the skills of FET graduates.

5.2.5 Objective five

Based on the findings under objective five, it is evident that industry believes that there should be more collaboration between government, MERSETA, FET colleges and employers in order to address the skills shortage. The study has also proven that the relevance of FET education is thought to be inadequate and the issue of the quality of the skills of the graduates is a serious concern.

This summary of the results and findings of the study suggests that the objectives of the study have been achieved, and that the study should provide significant and valuable information to industry, FET colleges and the government. The results of this study could be employed to develop a strategy to address the current skills situation in the metals and engineering sector.

5.3 Recommendations to improve the current situation

The recommendations proposed are based on the findings of the study, the review of relevant literature, and discussions.

5.3.1 Training and development incentives

It is evident from the results of the study that the supply of artisans is thought to be inadequate. It is estimated by JIPSA that there is a yearly shortage of 7500 artisans. The government has therefore prioritized all training initiatives leading to artisan qualifications, placing a greater focus on the establishment of learnerships (Akoorjee and McGrath 2007). Industry should play a more supportive role in training artisans by affording learners development opportunities outside their direct work situations by making personal tutoring and mentoring available on the job (Impact Assessments of Learnerships and Apprenticeships, 2008). It is evident from the results of the study that the metals and engineering companies are providing additional training to graduates. However, these additional training costs are often absorbed by the companies. These training costs have created an additional financial burden on the companies as there is no mechanism to claim the full training costs incurred.

The full reimbursement for training based on a learner successfully achieving a craft would eventually increase the pool of skilled artisans in the sector. The Department of Labour in conjunction with the South African Revenue Services should make available a mechanism for organizations to be reimbursed in full for their training initiatives. The more companies that invest in training; the more likely it would be that they can claim for incentives which will enhance training and development activity.

5.3.2 The increased role of Industry

The scarcity of skills is a worldwide phenomenon. However, in the USA the work-readiness credential as a standard was developed to expand the learner skills and knowledge necessary for the workplace. The credential is intended to deal with the constant skills gaps identified by employers. The US government understood the important role industry can play in skills

development. As a result this standard was based on agreements across industry clusters regarding the knowledge, skills, and talents that are important to successfully perform in the workplace. (Work Readiness Credential, 2005). It is evident from the findings of this study that the metal and engineering companies can increase skills development if they participate more actively with the MERSETA to make workforce skills a top priority. Similarly, as in the USA, the DOL and DOE should involve industry in the development of the FET curriculum with a special focus on workplace skills for graduates.

5.3.2 The quality and relevance of FET education

It is evident from the findings of this study that the improvement of the quality and relevance of FET education is vital for rectifying the skills shortage. There is a link between skills shortages, development and deficiencies which is directed to the FET system. Nyaba (2009) states that successful FET programmes provide the knowledge, skills, attitudes and values to ensure that learners are economically productive. Nzimande (2009) further states that FET colleges are responsible for educating and training young people for entrance into the workplace by ensuring that skills competency levels are achieved. The DoE needs to partner with the DoL to ensure that skills development and FET take high priority for workplace skills development. The FET curriculum should be revised to include skills and attributes for graduates to integrate in the workplace. To ensure that colleges are delivering quality programmes, there should be more quality control standards in place to ensure strict adherence the curriculum.

5.3.3 Government's involvement in skills development

The main aim of the Skills Development Act of 1998 was to develop the required workforce skills by increasing investment levels in education and training. The government established the SETAs to ensure that the objectives of the Skills Development Act were achieved by implementing different sector skills plans through learnership programmes and by undertaking quality assurance practices to ensure compliance (Naicker 2007). Mummmenthey (2008) adds that the SETAs are also responsible for collecting levies from employers and paying out skill development grants for learnership programmes. It is evident from the study findings that the current learnership programmes are not effective in developing artisans, and industry prefers the old apprenticeship training system.

Government should consider the following:

- ✚ Increase skills grants so that companies can provide better quality training to graduates.
- ✚ Revise the current NQF level qualifications for FET in order that the qualifications attained by graduates are better recognised by industry and higher tertiary institutions.
- ✚ More collaboration is required between the DOL, MERSETA, FET colleges and industry to ensure that skills development programmes consider the work-based elements.
- ✚ The FET curriculum should be revised and benchmarked against best practices globally to ensure that learners are receiving the best quality technical training.
- ✚ The FET curriculum should also focus on soft skills such as communication, problem solving and decision making skills so that graduates integrate easier into the workplace.
- ✚ Re-instate the National Certificate programme.

5.4 The limitations of this study

Due to the composition of the industrial sector in Durban, the study's emphasis was on large, medium, small and micro metals, plastics and automotive organisations. These organisations have diverse structures and this study focussed on concerns about the level of the skills of FET mechanical engineering graduates in all of these organisations, regardless of their size.

The distribution list obtained from KZNTI represented all of the industrial sectors in KZN. E-mails were sent to all of the companies on the Durban distribution list to confirm whether they belonged to the metals and engineering sector. This resulted in delays, and after two weeks only ten companies had responded. Most of the companies were from the metals sector, followed by the automotive sector and the plastics sector. A company from the tyre sector dropped out of the study since it did not employ FET graduates. A total of nine companies supported the study. A further two-week delay was experienced as letters of consent had to be obtained from each organisation in order to carry out the study. During the first week of administering the questionnaire through QuestionPro there was a noticeable trend of incomplete and slow responses. As a result the researcher decided to personally visit respondents in the Durban area and encourage them to complete the survey.

It is evident that the topic of job readiness has been extensively studied abroad. There is limited research data on the topic in South Africa. The literature reviewed in this study is limited to that dealing with the metals and engineering sector in South Africa.

5.5 Recommendations for future studies

Due to the limited focus of this study some characteristics could have been missed. The following are possible studies that could be performed.

- ✚ As the research study was limited to the metal and engineering sector, the other sectors should be researched and their results compared to the findings of this study.
- ✚ Since the study focused on the metal and engineering sector in Durban, future research should also include a provincial evaluation of FET graduates job readiness skills.
- ✚ FET colleges should be studied to verify the alignment of the training they offer to the needs of industry.
- ✚ The impact of the phasing out of National Certificate courses should be studied.

5.6 Summary

The research achieved the objectives of this study and confirmed that FET graduates do not possess the required skills to perform their jobs effectively, and that industry is providing additional training to improve the skills of graduates. It has also been proven that the training costs incurred to provide such training are absorbed by industry. It has further been proven that there is a scarcity of skilled graduates in specific occupational trades as detailed in this study and that it is difficult for companies to recruit graduates in these trades. The metals and engineering sector value technical, problem solving and decision making skills as important workplace skills for graduates. The study has proven that there is a shortage of skilled artisans in the sector. It has been further highlighted that there should be more collaboration between industry and the government in getting the FET curriculum more focused on the work-based element, which would increase the relevance of the skills of the FET graduates.

REFERENCES

Akoorjee, S., and McGrath, S. 2008. *Education and Poverty Reduction Strategies*. Chapter 12. Published by HSRC. [Online]. Available <http://www.hsrcpress.ac.za>. (Accessed 23 August 2011).

Anderson, V. 2004. *Research Methods in Human Resource Management*. Wiltshire: The Cromwell Press.

Australian Apprentice Work Placement Policy, 2009. [Online]. Available <http://www.australianapprenticeships.gov.au>. (Accessed 1 September 2011).

Babb, S., and Meyer, T. 2005. *Perspectives in Learnerships*. South African Case Studies. Randburg: Knowledge Resources.

Babbie, E. 2009. *The Practice of Social Research*. 12th Edition. USA: Wadsworth.

Badroodien, A. 2003. *Technical College Responsiveness*: Chapter 5. Published by Human Science Research Council. [Online]. Available <http://www.hsrcpress.ac.za>. (Accessed 23 August 2011).

Baatjes, B. 2008. *An Investigation of Knowledge and Skill Requirements for Employment as a Machine Operator in the Textile Industry*. [Online]. Available <http://www.ukzn.ac.za>. (Accessed 1 September 2011).

Bhorat, H. 2007. *Employment and Unemployment in South Africa*. [Online]. Available <http://www.growthcomission.org>. (Accessed 1 September 2011).

Blaxter, L., Hughes, C. and Malcolm, T. 2001. *How to research*. 2nd edition. Buckingham, Great Britain: Open University Press

Blumberg, B., Cooper, D.R., and Schindler, P.S. 2005. *Business Research Methods*. McGraw Hill Companies: New York.

Bryman, A., and Bell, E. 2007. *Business Research Methods*. 2nd Edition. New York: Oxford University Press Inc.

Brynard, P.A., and Hanekom, S.X. 2005. *Introduction to research in Public Administration and related academic disciplines*. Pretoria: Van Schaik Publishers.

Butcher, C. 2008. *Global War for Talent*. Mail and Guardian. [Online]. Available <http://www.mg.co.za/article/2008-04-16-global-war-for-talent>. (Accessed 1 September 2011).

Coldwell, D. and Herbst, F. 2004. *Business Research*. South Africa: Juta and Co Ltd.

Davies, T.A., and Farquharson, F. 2004. The learnership model of workplace training and its effective management: lessons learnt from a South African Case Study. *Journal of Vocational Education and Training*, vol. 56, no.2, pp.181-203.

Devey, R. Valodia, I. and Velia, M. 2005. *Constraints to Growth and Employment: Evidence from the Greater Durban Metropolitan Area*. [Online]. Available <http://www.sds.ukzn.ac.za>. (Accessed 23 August 2011).

Elliot, G. 2006. *Scarce skills final report*. Published by Human Science Research Council. [Online]. Available <http://www.hsrcpress.ac.za>. (Accessed 23 August 2011).

Erasmus, B.J., Loedolff, P.Z., Mda, T., and Nel, P.S. 2007. *Managing Training and Development in South Africa*. 4th edition. Cape Town: Oxford University Press Southern Africa.

Gamble, J. 2003. *Curriculum responsiveness in FET colleges*. Capetown: HSRC Press.

Gewer, A. 2009. Features of social capital that enhance the employment outcomes of FET college learners. Published dissertation. [Online]. Available <http://www.wiredspace.wits.ac.za>. (Accessed 1 February 2013).

Gillham, B. 2000. *Developing a Questionnaire*. London: Continuum.

Graduate Employability Skills Report, 2007. [Online]. Available <http://www.aces.shu.ac.uk>. (Accessed 1 September 2011).

Hamlet, B. 2005. *Developing a Model for Establishing, Implementing and Maintaining Learnerships in South Africa*. Published dissertation. Port Elizabeth: Nelson Mandela Metropolitan University. [Online]. Available <http://www.nmmu.ac.za>. (Accessed on 2 September 2011).

Heery, E. and Noon, M. 2001. *A Dictionary of Human Resource Management*. New York: Oxford University Press.

Impact Assessments of Learnerships and Apprenticeships, 2008. Published by Human Science Research Council. [Online]. Available <http://www.hsrcpress.ac.za>. (Accessed 23 August 2011).

Janse van Rensburg, C. 2009. *Organisational Perspectives of Learnerships within Manufacturing, Engineering and Related Services Organisations in the Sedibeng Municipal District Area*. Published dissertation. Vaal University of Technology. [Online]. Available <http://www.vut.netd.ac.za>. (Accessed 1 September 2011).

Karlsson, J. and Berger, M. 2006. Well-grounded and prepared new teachers: Reflecting on the promise of learnerships. *Journal on the Perspectives in Education*. 24(1), pp. 53-61. [Online]. Available <http://www.sabinet.co.za>. (Accessed on 2 September 2011).

Keller, G. 2009. *Managerial Statistics*. 8th Edition. Nelson Education, Canada.

Kraak, A. 2008. Three pathways to intermediate skilling: *Education, Employment and skills in South Africa: Human Resources Development Review 2008*, pp. 677- 702. Cape Town: HSRC Press.

Kumar, R. 2005. *Research methodology: a Step-by-Step Guide for Beginners*. 2nd edition. London: SAGE Publications.

Leedy, P., Ormrod, J. 2005. *Practical Research: Planning and Design*. 8th edition. Pearson Education, New Jersey.

Louw, L.A. 2009. *Efficacy of learnership programmes: an exploratory investigation of learner perceptions in the Cape Peninsula*. Published dissertation. [Online] Available [http:// www.dk.cput.ac.za](http://www.dk.cput.ac.za). (Accessed on 2 September 2011).

McGrath, S., and Paterson, A. 2007. Enterprise Training- HRD Review 2007. *Education, Employment and Skills in South Africa*, pp. 300-321. Cape Town: HSRC Press.

Meyer, M., Mabaso, J., Lancaster, K. and Nenungwi, L. 2004. *ETD Practices in South Africa*. 2nd edition. Durban: LexisNexis Butterworths.

Merseta Sector Skills Plan, 2011-2016. Published by Merseta. [Online]. Available <http://www.wrseta.org.za/downloads>. (Accessed 23 August 2011).

Mohr, P. and Fourie, L. 2009. *Economics for South African Students*. 4th edition. Van Schaik Publications. South Africa.

Mukora, J. 2008. *Artisan Trade Scarce and Critical Skills*. Published by Human Science Research Council. [Online]. Available <http://www.hsrcpress.ac.za>. (Accessed 23 August 2011).

Mummenthey, C. (2008). *Implementing Efficient and Effective Learnerships in the Construction Industry*. Published dissertation. Stellenbosch University. [Online]. Available [http:// www.sajip.co.za](http://www.sajip.co.za). (Accessed 1 September 2011).

Munby,H., Versnel, J., Hutchinson, N.L., Chin, B. and Berg, D.H. 2003. Workplace learning and metacognitive functions of routines. *Journal of workplace learning*, Vol.15, No.2, pp. 94-104.

Naicker, L. 2007. *An Investigation into Artisan Skills Shortage*. Published dissertation. Graduate School of Business, UKZN.

Nabi, G.R. 2003. Graduate employment and under employment: opportunity for skill use and career experiences amongst recent business. *Education and training*, vol.45, no.7, pp. 371-382. [Online] Available [http:// www.emeraldinsight.com](http://www.emeraldinsight.com). (Accessed on 2 September 2011).

Nel, P.S., Kirsten, M., Swanepoel, B.J., Erasmus, B.J., and Poisat, P. 2009. *South African Employment Relations*. 6th Edition. Van Schaik Publications. South Africa.

Ngcuka, P. 2006. Speech at the launch of the Joint Initiative for Priority Skills Acquisition (JIPSA). [Online]. Available <http://www.info.gov.za/speeches>. (Accessed 1 September 2011).

Nyaba, M.K. 2009. *An Evaluation of the Engineering Studies Curriculum at Ikhala Public Further Education and Training College*. Published dissertation. [Online]. Available [http:// www.etd.uovs.ac.za](http://www.etd.uovs.ac.za). (Accessed on 2 September 2011).

Nzimande, B. 2009. *The draft national policy framework for lecturer qualifications and development in FET colleges in South Africa*. [Online]. Available [http:// www.info.gov.za/view/DownloadFileAction?id=106313](http://www.info.gov.za/view/DownloadFileAction?id=106313). (Accessed 1 September 2011).

O'Leary, Z. 2004. *The essential guide to doing research*. London: SAGE Publications.

Oxford South African Concise Dictionary 2010. 2nd edition. Oxford University Press Southern Africa.

Paterson, A., Visser, M., and Du Toit, J. 2008. South Africa: National Skills Survey 2007. Available <http://www.labour.gov.za>. (Accessed 1 September 2011).

Pandor, N. 2008. Address at Pan African Technical Vocational Education and Further Education and Training conference. [Online]. Available <http://www.iacsouthafrica.co.za/documents2008>. (Accessed 1 September 2011).

Raftopoulos, M. 2006. Work Readiness and Graduate Recruitment in the Fasset Sector. Published dissertation. [Online]. Available <http://www.ukzn.ac.za>. (Accessed 1 September 2011).

Robbins, S.P., Judge, T.A., Odendaal, A., and Roodt, G. 2009. *Organisational Behavior-Global and Southern African Perspectives*. 2nd edition. Pearson Education. South Africa.

South African Qualifications Authority, 2011. *National Qualifications Framework level descriptors*. Available [http:// www.saqqa.org.za](http://www.saqqa.org.za). (Accessed 1 September 2011).

Saunders, M., Lewis, P., and Thornhill, A. 2003. *Research Methods for Business Students*. 3rd edition. Harlow: Pearson Education Ltd.

Sekaran, U., and Bougie, R. 2009. *Research Methods for Business – A Skill Building Approach*. 5th Edition. John Wiley: United Kingdom.

South African Development Indicator. 2010. [Online]. Available [http:// www.thepresidency.gov.za](http://www.thepresidency.gov.za). (Accessed 2 September 2011).

Squire, D. 2011. *The National Skills Development Strategy*. [Online]. Available [http:// www.skillsportal.co.za](http://www.skillsportal.co.za). (Accessed 23 August 2011).

Statistics South Africa. 2012. *Labour force survey quarterly report* [Online]. Available [http:// www.statssa.gov.za/publications](http://www.statssa.gov.za/publications). (Accessed 5 February 2013).

Stumpf, R., Papier, J., Needham, S., and Nel, H. 2009. *Improving the Higher Education and Further Education and Training College Interface in South Africa*. [Online]. Available <http://www.chet.org.za>. (Accessed 2 September 2011).

The National Business Initiative Annual Report. 1998 – 1999. [Online]. Available <http://www.nbi.org.za>. (Accessed 1 September 2011).

Vorwerk, C. 2005. *Occupational Qualifications on the NQF: Proposals for an Occupational Learning System*. [Online]. Available <http://www.saqqa.org.za/docs/events>. (Accessed 1 September 2011).

Wagner, J.O. 2006. Work Readiness Skills. [Online].

Available <http://www.jfs.ohio.gov/infobrief20-WorkReadinessSkills.p>.

(Accessed 1 September 2011).

Wedekind, V. 2008. *Report on Further Education and Training (FET) Colleges in South Africa*. [Online]. Available <http://www.ukzn.ac.za>. (Accessed 1 September 2011).

Welman, C., Kruger, F., and Mitchell, B. 2005. *Research Methodology*. 3rd edition. Oxford: University Press.

Welman, J.C. and Kruger, S.J. 2001. *Research Methodology*. 2nd edition. Oxford: University Press.

Wessels, E. 2007. *A business perspective of the role of FET colleges in the economy*. [Online]. Available <http://www.docstoc>. (Accessed 1 September 2011).

Work Readiness Credential. 2005. [Online]. Available <http://www.eff.cls.utk.edu>. (Accessed 1 September 2011).

Yaing, K., and Miller, G.J. 2008. *Handbook of Research Methods in Public Administration*. New York: CRC Press.

APPENDIX 1

‘College of Law and Management Studies’ and ‘Graduate School of Business & Leadership’

Dear Respondent,

MBA Research Project

Researcher: Sandesh Singh (0739915072)

Supervisor: Prof A.M Singh 031-2607061

Research Office: Ms P Ximba 031-2603587

I, **Sandesh Singh** an MBA student, at the ‘College of Law and Management Studies’ and ‘Graduate School of Business & Leadership, of the University of KwaZulu-Natal. You are invited to participate in a research project entitled: “An investigation into Job Readiness of Further Education and Training (FET) Mechanical Engineering graduates”. The aim of the study is to establish the skills required for FET mechanical engineering graduates to perform their jobs effectively within industry, in Durban. The rationale of this study will contribute towards the improved quality of skills development. Through your participation, I hope to understand what the required job skills are for FET Mechanical Engineering Graduates and the skills they are lacking.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. There will be no monetary gain from participating in this survey. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business and Leadership, UKZN.

If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisor at the numbers listed above.

The questionnaire should take you about **10-15** minutes to complete. The questionnaire comprises of 5 pages with 21 questions. I hope you will take the time to complete this survey.

Sincerely

Investigator’s signature_____ Date_____

This page is to be retained by the Participant

APPENDIX 2

**College of Law and Management Studies' and
'Graduate School of Business & Leadership'**

MBA Research Project
Researcher: Sandesh Singh (0739915072)
Supervisor: Prof A.M Singh 031-2607061
Research Office: Ms P Ximba 031-2603587

CONSENT

I..... (Full names of participant)
hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT: _____ DATE: _____

.....

This page is to be retained by the Researcher

APPENDIX 3

‘College of Law and Management Studies’ and ‘Graduate School of Business & Leadership’

Questionnaire:

‘An investigation into the job readiness of FET Mechanical Engineering graduates’

(Please tick the relevant blocks for each of the questions / statements)

1. Which sector of industry does your organization belong to?

Metals	<input type="checkbox"/>	Plastics	<input type="checkbox"/>	Automotive	<input type="checkbox"/>	Motor retail and components	<input type="checkbox"/>	New Tyre	<input type="checkbox"/>
--------	--------------------------	----------	--------------------------	------------	--------------------------	-----------------------------	--------------------------	----------	--------------------------

2. How many staff is employed in your organization?

1 – 9	10 - 99	100 - 499	500 or more
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. How many FET graduates do you employ in each of the following trades?

	0	1-5	6-10	11-20	21-50	51 and over
Fitter & Turners	<input type="checkbox"/>					
Welders	<input type="checkbox"/>					
Boilermakers	<input type="checkbox"/>					
Tool & Die makers	<input type="checkbox"/>					
Millwrights	<input type="checkbox"/>					

4. What is the purpose for recruiting FET graduates?

(Please select all that apply)

To develop needed practical skills	<input type="checkbox"/>
It provides a solution to the skills shortage	<input type="checkbox"/>
To claim skills incentives	<input type="checkbox"/>
Social responsibility	<input type="checkbox"/>

5. Is it difficult to recruit suitable FET graduates?

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

If your answer to this question was NO, continue to question 8.

6. Since you answered YES to question 5, indicate below which trades you are experiencing difficulty in recruiting FET graduates? (Please choose the option applicable to your organization)

Fitter & Turners	<input type="checkbox"/>
Welders	<input type="checkbox"/>
Boilermakers	<input type="checkbox"/>
Tool & Die makers	<input type="checkbox"/>
Millwrights	<input type="checkbox"/>

7. What actions are being taken by your organization to rectify the recruitment problem?

(Please select all that apply)

Intensifying recruitment activities	<input type="checkbox"/>
Increasing training of existing staff	<input type="checkbox"/>
Using non graduates in graduates roles	<input type="checkbox"/>
Outsource work to third parties	<input type="checkbox"/>

8. How important are Artisan skills development to your organization?

Extremely Unimportant	Unimportant	Important	Extremely important
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If your answer to this question was extremely unimportant or unimportant, then continue to question 10.

9. Since you answered **important / extremely important** to Question 8, why do you think that artisan skills development is **important or extremely important** to your organization? (Please choose the option applicable to your organization)

<input type="checkbox"/>	It increases marketability as a result of technical capabilities
<input type="checkbox"/>	It creates access to a pool of skilled workers
<input type="checkbox"/>	It increases productivity and performance
<input type="checkbox"/>	It is essential for ongoing profitability

10. How would you describe the following FET graduates job skills? (Please choose the option applicable to your organization)

	Poorly skilled	Under skilled	Skilled	Highly skilled
Fitter & Turners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Welders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boilermakers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tool & Die makers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Millwrights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If your answer to this question was skilled or highly skilled then continue to question 12.

11. Since you answered **poorly skilled /under skilled**, what impact does this have on your organization? (Please choose the option relevant to your organization)

Causes delays in new product or service development	<input type="checkbox"/>
Causes delays to goods or service delivery	<input type="checkbox"/>
Restricts business growth	<input type="checkbox"/>
Increases operation costs	<input type="checkbox"/>
Increases recruitment costs	<input type="checkbox"/>

12. How would you describe an FET graduate's job performance?

<input type="checkbox"/>	They don't understand the theory and can't do the job
<input type="checkbox"/>	They understand all the theory but can't apply it to the job
<input type="checkbox"/>	They understand some of the theory but can't apply it to the job
<input type="checkbox"/>	They understand some of the theory and can apply some of it to the job
<input type="checkbox"/>	They understand all the theory and can apply it to the job

13. How satisfied are you with the following skills and attributes of FET graduates?

	Extremely dissatisfied	Dissatisfied	Satisfied	Extremely satisfied
Technical expertise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication Skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teamwork	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to be creative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If your answer to this question was satisfied or extremely satisfied then continue to question 18.

14. Since you answered extremely dissatisfied/dissatisfied, does your organization provide any additional skills training?

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
------------	--------------------------	-----------	--------------------------

If your answer to this question was NO, continue to question 18.

15. Since you answered YES to question 14, what additional training is provided?

(Please choose the option relevant to your organization)

<input type="checkbox"/>	Soft skills eg. attitude; motivation; discipline & problem solving
<input type="checkbox"/>	Numeracy skills
<input type="checkbox"/>	Advanced technical skills

16. How are the additional skills training provided?

(Please choose the option applicable to your organization)

<input type="checkbox"/>	In- house
<input type="checkbox"/>	Outsourced to private service providers

17. Who provides funds for the additional skills training?

<input type="checkbox"/>	All costs are absorbed by the company
<input type="checkbox"/>	Apply for further training grants from MerSeta
<input type="checkbox"/>	Utilize skills levy

18. The following workplace skills are important for FET graduates.

(Please rank from 1-5 in terms of importance. 1 being the most important & 5 the least important)

Technical skills – ability to do the job	
Teamwork –ability to work with others	
Problem solving skills	
Decision making skills	
Communication skills	

19. What role can Industry play in increasing the skills of FET graduates?

(Please select all that apply)

Partner with MerSeta to make developing workforce skills a top priority	<input type="checkbox"/>
Provide more and better quality training	<input type="checkbox"/>
Develop accredited assessments for work-based learning with NQF credits	<input type="checkbox"/>
Get involved in the FET curriculum with more focus on the work-based	<input type="checkbox"/>
Ensure that the graduate has chosen the right trade	<input type="checkbox"/>
Provide extra training resources to support graduates	<input type="checkbox"/>

20. Do you believe there is an artisan skills shortage in the Metals and Engineering Sector?

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
------------	--------------------------	-----------	--------------------------

If your answer to this question was NO, you have come to the end of the questionnaire.

21. Since you answered YES to Question 20, what do you think needs to be done to rectify the skills shortages? (please select all that apply)

<input type="checkbox"/>	Improve the quality and relevance of FET education.
<input type="checkbox"/>	More collaboration between government, MerSeta, FET colleges and employers are required.
<input type="checkbox"/>	Improve the current LEARNERSHIP program
<input type="checkbox"/>	Phase out the LEARNERSHIP program and adopt the old apprenticeship training system.
<input type="checkbox"/>	Reinstate the National (N) Certificate program.
<input type="checkbox"/>	Skills incentives should be increased.
<input type="checkbox"/>	Revise the current NQF level for FET so that qualifications are more recognized

End of the Questionnaire

THANK YOU, for taking the time to complete this questionnaire.

APPENDIX 4



Research Office, Govan Mbeki Centre
Westville Campus
Private Bag x54001
DURBAN, 4000
Tel No: +27 31 260 8350
Fax No: +27 31 260 4609
snymann@ukzn.ac.za

16 May 2012

Mr S Singh (210525251)
Graduate School of Business and Leadership

Dear Mr Singh

PROTOCOL REFERENCE NUMBER: HSS/0146/012M

PROJECT TITLE: Job Readiness of Further Education and Training (FET) Mechanical Engineering graduates

In response to your application dated 10 April 2012, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully



.....
Professor Steven Collings (Chair)
HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE

cc. Prof Anesh M Singh
cc. Wendy Clarke

 1910 - 2010 
100 YEARS OF ACADEMIC EXCELLENCE

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville