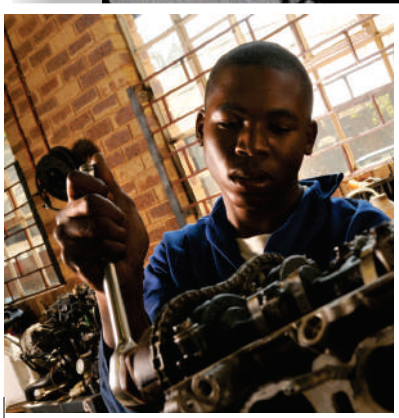
merSETA
MANUFACTURING, ENGINEERING AND RELATED SERVICES SETA

RESEARCH AS A CONDUIT

IN CLOSING THE SKILLS GAP 2016

AN overview of merSETA research in Action



LEADERS IN CLOSING THE SKILLS GAP

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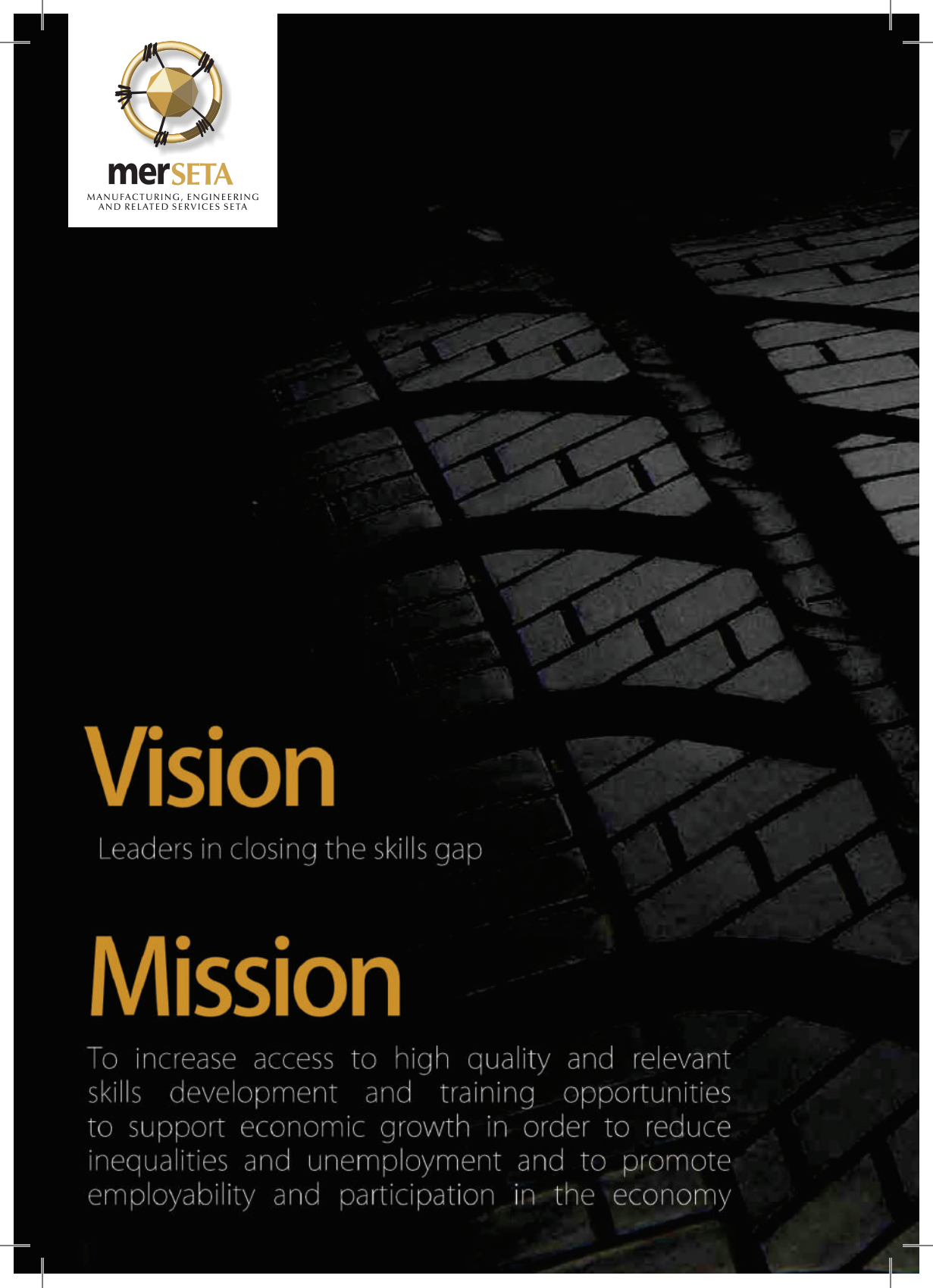

Vision

Leaders in closing the skills gap

Mission

To increase access to high quality and relevant skills development and training opportunities to support economic growth in order to reduce inequalities and unemployment and to promote employability and participation in the economy

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Foreword from the merSETA CEO

This research booklet comes out at an interesting time, a time when the Post School Education and Training space is undergoing significant changes that have seen an increase in emphasis on the importance of research for informed skills development in South Africa. Research at the merSETA has always played a critical role in guiding skills development interventions and policy direction and has also contributed in merSETA's recognition as one of the leading Sector Education and Training Authorities (SETA).

Research completed by the merSETA tends to cluster around the following thematic areas:

- Access and redress issues in skills development
- Artisan development
- Notions of employability
- Impact, quality and return on investment

Looking ahead,, merSETA will also focus on emerging themes deemed important for the sector such as "future skills demand" that have been necessitated by the growth of advanced manufacturing, innovation and technology in the manufacturing, engineering and related services. These rapid changes now demand a new set of skills for the modern workplace. Future skills demand research and planning for the provision of emerging and future skills is critical

Dr Raymond Patel

The merSETA CEO

in ensuring that the South African manufacturing, engineering and related services sector remains competitive and is not left behind or playing catch up to technology and innovation developments in leading manufacturing countries like Germany.

The merSETA through its experienced team of researchers and various partnerships with local and international Universities has generated significant knowledge in the skills development space. It is our sincere hope that our various stakeholders including policy makers, industry and academia will continue to tap into this rich pool of knowledge.

1. Introduction

Research has become an important feature within the merSETA. The role of research has cascaded into almost all units of operation within the organisation from a monitoring, impact assessment, partnership, strategic intent and indeed the skills planning perspective. It is evident that through the Strategy and Research Division the importance of informed decision making has taken on a stronger role in defining how we do what we do at the merSETA.

The strategic underpinning of the SETA is informed by credible information. This wealth of knowledge is garnered though projects' development, skills planning, monitoring, evaluation and partnerships – all informed by rigorous knowledge and quality management systems.

In the past, the merSETA have been quite vociferous in the academic space, and the very notion of research has become entrenched in the organisation. Over the years the projects and partnerships we have undertaken have informed the trajectory of the research, and in many cases has led to the implementation of projects and programmes within the skills development arena.

The first research booklet published by merSETA in 2013 demonstrated the need to highlight research undertakings which had relevance to the skills development eco-system, with a particular focus on the technical, vocational education, and training sector. The research concentrated on the role of FET Colleges (now called TVET colleges), examined the notions of employability, artisan identity, and issues of supply and demand. The research undertakings also started to engage in issues around impact, competence, and social determinants of labour supply, amidst others. The aim of the research booklet was to highlight particular areas of focus, as well as the research reports that were developed.

Since 2013, the merSETA has invested efforts in increasing its internal research capacity, strengthening partnerships, and putting more emphasis on impact, quality, competence assessment, monitoring, and tracking. The organisation has realised the importance of data and data management, as well as producing knowledge and harnessing skills to analyse and critique data and information.

The production of this current version of the research booklet has 3 main objectives: Firstly, it will highlight the research conducted since 2010 (the commencement of NSDS III), but also examine the role of research within the current skills development context. Secondly, this will give an indication of the anticipated role research will play in the new skills development landscape after the conclusion of NSDS III. Lastly, this will demonstrate overall, the merSETA's ever-enduring efforts to use research to close the skills gap.

2. Situation Analysis

At this point in 2015, the merSETA finds itself operating in both an exciting and tumultuous time. It is exciting on the one hand, in that the Post School Education and Training sector has started to work diligently to enhance the credibility of research and information. The sector is seeing real development in terms of implementation of the White Paper, as well as positive enhancements in our understanding of the needs of a dynamic labour market. On the other hand, the sector's current context in terms of the economic climate demonstrates the significant impact that global economic conditions and the domestic energy supply challenges have had on our sectors. The number of employees in the sector has decreased, vacancies in the sector have decreased, and our stakeholders have warned of further retrenchments and head-count freezes to be implemented in the next financial year. These trends do not bode well for our sector, and will further contribute to national levels of joblessness and economic uncertainty. This poses challenges for SETAs in terms of securing workplaces to meet their mandate under the current NSD Framework. This is compounded by the fact that our sector has seen a decline in traditional manufacturing production in favour of automation. These trends indicate that small and medium businesses, as well as informal sectors, will become a key component for employment opportunities – as well as skills development

opportunities – going forward.

Currently, the merSETA is mandated under the Skills Development Act no. 97 of 1998, to train and develop the current workforce, and to make provision for the training of new entrants into the workplace. The merSETA does this under the guidance of the National Skills Development Strategy (NSDS) III; which is informed and guided by other overarching government programmes that support the National Development Plan. These include the following:

- Human Resources Development Strategy for South Africa (HRDSA II);
- the National Development Plan;
- the New Growth Path;
- the Medium Term Strategic Framework (MTSF);
- the National Skills Accord;
- the Industrial Policy Action Plan (IPAP);
- the Department of Trade and Industry's Special Economic Zones (SEZ) policy.

Under the NSDS III, the merSETA operates as an intermediary between business, labour, the South African Government and Higher Education Institutions – as demonstrated in the figure below.

Figure 1: merSETA as an intermediary body

The White Paper on Post School Education and Training has also made prescriptions on the role of SETAs, and the role of research within SETAs, to support skills development. According to the White paper, SETAs form part of the post schooling system that supports the education and training process, along with other bodies such as the National Skills Fund (NSF), the South African Qualifications Authority (SAQA), Quality Councils, and the South African Institute for Vocational and Continuing Education and Training (SAIVCET).

According to the White Paper, the challenges facing the Post School Education and Training (PSET) system include the following:

- Mismatch between the supply and demand side;
- High rates of youth who are not in education, training or employment;
- Lack of diversity and transformation within the system with respect to demographics, curricula and culture;
- Challenges posed by social issues such as poverty, unemployment and inequality; and
- Weak data collection and analysis.

The aim of the PSET system is to create a single, coordinated education and training system that is highly articulated and mutually beneficial for its various components. It also aims to substantially increase headcount in terms of enrolments and graduations at education institutions, and to increase the quality of outputs.

Under the PSET system proposed by the White Paper, the SETAs have two main functions. The first is to focus on developing the skills of the employed population, and to develop a pipeline of skills into the workplace. Secondly, SETAs will need to focus on quantitative and qualitative data collection in accordance with the requirements of the proposed centralised skills planning unit within the DHET. Further to this, the SETAs will have to engage stakeholders to test emerging scenarios from within the central planning mechanism. SETA data would thus compliment national data systems such as Statistics South Africa (StatsSA), the Labour Market Intelligence Partnership (LMIP), and other government departments.

It is thus imperative that the merSETA aligns itself from the research perspective, to feed into the PSET system as proposed. In this light the research should focus on the following:

- Continuing and enhancing knowledge of the manufacturing, engineering, and related services sectors;
- Focusing efforts on the provision of accurate, representative data for the required sectors;
- Ensuring adequate research capacity or management of the research process;
- Brokering partnerships with key educational institutions and employers to facilitate training that is required by the sectors (currently and in the future);
- Advocating for workplace learning that is mutually beneficial to the learner and the employer; and
- Continued monitoring and understanding of the labour market, in terms of labour absorption, and opportunities for entrepreneurial efforts and training.

Overall, through the White Paper, the DHET and all PSET institutions need to work together, with the aim of transforming the post school system in line with the principles of social justice and equality. There is also an emphasis on providing quality training to produce quality labour market participants in areas that are needed by industry.

3. Research Agenda

A fundamental principle governing all research undertaken by the merSETA is that it should link to operational requirements, the broader skills development landscape, the Vocational Education and Training (VET) community, and feed into sector skills planning. The merSETA sectors and sub-sectors (classified collectively in the SETA as Chambers) have become a focus area for targeted research interventions considered by stakeholders to be particularly significant. Chamber level engagement with stakeholders is therefore central to the research strategy. In addition, engagement with regional stakeholders features as a significant part of the research strategy. Furthermore, there is an ever-increasing effort to incorporate the notion of impact as part of the overall approach, along with greater interrogation of available data and information.

Overall, the research strategy is executed through organisation-wide efforts; however the Strategy and Research Division within the merSETA is at the helm of research collaborations, partnerships and projects, as depicted in Figure 2 below. The team is comprised of multi-disciplinary competencies, and is organised into three inter-related functional units, which include: the Strategic Planning Unit, Sectors Skills Planning (SSP) Research and Chambers Unit, and the Projects Development Unit. Through these the merSETA has continued to participate and contribute to the overarching objective of establishing a "Credible Institutional Mechanism for Skills Planning", through informed decision-making, sound research methodologies, and reliable information and data.

In addition, the SETA participates in national initiatives such as the Post-School Education and Training Research Forum, planning for Strategic Integrated Projects (SIPS), and the Labour Market Intelligence Partnership's(LMIP) workshops and policy round-tables. The merSETA uses these platforms to engage on skills development issues at the policy-, strategic- and national level.

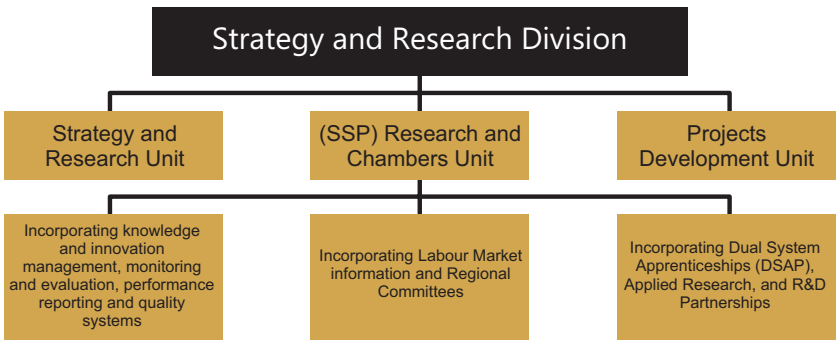

Figure 2: Strategy and Research Division

4. Overview of Research within the Strategy and Research Division of the merSETA

4.1 Sector Skills Planning

The overarching objective of the Sector Skills Plan Research and Chambers unit is to establish a Credible Institutional Mechanism for Skills Planning through informed decision-making, sound research methodologies, and reliable quantitative and qualitative data. In an attempt to gain credible data from industry, the merSETA annually avails funds to all Chambers in order to complete research they deem vital to their industry. These findings are then used to inform the merSETA's national Sectors Skills Plan. The Strategy and Research unit and Chambers unit work closely together on key outputs such as the National Sector Skills Plan and the Regional Sector Skills Plan. Therefore, these two units within the Strategy and Research Division should be considered inter-related.

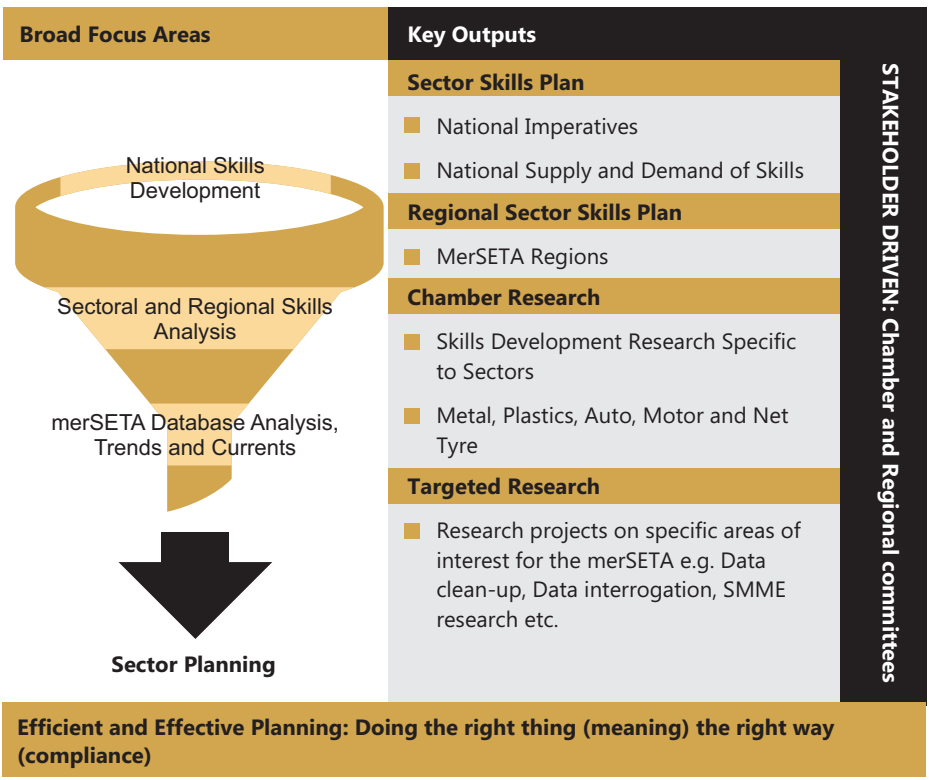

Figure 3: MerSETA SSP Research and Chamber Research focus areas and key outputs

4.2 Key Concepts

4.3 Projects Development Unit

The Projects Development Unit manages partnerships between merSETA and key organisations. Partnerships play a pivotal role in strengthening skills development interventions by creating and strengthening synergies among players in the skills development eco-system.
The merSETA has a range of partnership agreements with TVET colleges, local and international universities, and universities of technology, as well as national and provincial governments. A key objective is to support employability and contribute to the professional development of TVET educators.
Several of the partnership agreements also aim to strengthen the South African TVET College system through the introduction of teaching and learning methodologies to prepare the learners more effectively for the workplace. The Projects Development Unit facilitates this process, and monitors progress from start to end.
The merSETA has put in place various strategies aimed at supporting the establishment of new partnerships, as it is acutely aware of government's rural development agenda, development of special economic zones, ocean economy, and other national and sector priorities.

To date, the merSETA has entered into several partnership agreements which include:

- Thirteen (13) national and provincial government department partnership agreements;
- Public university and university of technology agreements;
- Two (2) international university partnership agreements; and
- Thirty nine (39) TVET College agreements.

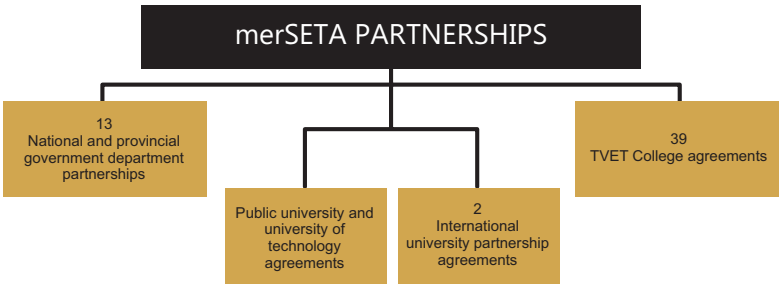

Figure 4: merSETA Partnerships

MerSETA has seen many successes as a result of partnerships that have yielded tangible returns in the skills development arena. These include efforts to support teaching and learning at TVET Colleges; brokering relationships between the education sector and the private sector; improving the quality of teaching and learning; and increasing learner success rates.

Partnerships are fraught with challenges. A major contributor to these is capacity limitations in managing, implementing, monitoring and evaluating key outputs and milestones. To this end, the merSETA has endeavoured to implement measures to ensure successful outcomes of partnerships, including the implementation of monitoring and evaluation; putting in place steering committees; ensuring effective contract management through clearly defined deliverables and roles (including financial management), and ensuring that all parties are on board and committed from the time of inception.

4.4 Principles guiding all merSETA research

A fundamental principle governing all research undertaken by the merSETA is that it should link to operational requirements, the broader skills development landscape, the Vocational Education and Training (VET) community, and feed into the Sector Skills Plan. The merSETA sectors and sub-sectors (classified collectively in the SETA as

Chambers) have become particularly significant as a focus area for targeted research interventions considered by stakeholders to be important. Chamber level engagement with stakeholders is therefore central to the research strategy. In addition, greater engagement with regional stakeholders will also feature as a significant part of the research strategy going forward. Furthermore, there will be increased efforts to incorporate the notion of impact as part of the overall approach, along with greater interrogation of available data and information.

4.5 Research Themes

The value proposition of research assignments is that they should strive to provide quality research outputs in support of merSETA Vision; aspiring to be "Leaders in closing the skills gap". The merSETA research themes are scoped for functionality and intrinsic value: functionality for a particular purpose within the merSETA mandate, and intrinsic value for relevance in terms of the national skills development imperatives. As merSETA has evolved it has become evident that in order to do justice to the Research and Development initiatives on sills development, a futuristic approach needs to be taken. Therefore, all upcoming research topics should be "future orientated" and address one or more of the following strategic challenges:

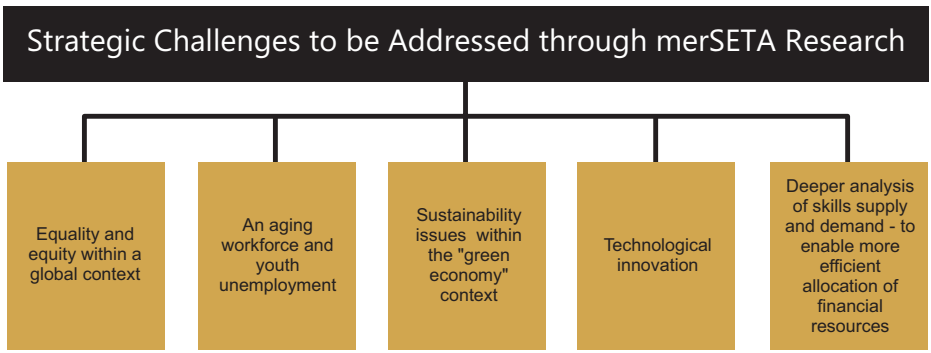

Figure 5: Strategic Challenges to be addressed through merSETA Research

5 Overview of merSETA Research

This section gives an overview of the merSETA research output and is divided into three sections (Sector Skills Planning, Artisan development research and Chamber led research).

5.1 Sector Skills Planning

5.1.1 Key Concepts

5.1.2 The merSETA Sector Skills Plan

The Manufacturing, Engineering and Related Services Sector Education Training Authority (merSETA) prepares annual updates of its Sector Skills Plan (SSP) in response to the requirements as set out by the Department of Higher Education and Training (DHET) in the National Skills Development Strategy III (NSDS III).

The analysis presented in this SSP draws on a range of information sources. These sources include merSETA's Work Place Skills Plans (WSPs); Statistics South Africa Quarterly Labour Force Surveys, data from Quantec that is based on the National Accounts; and other sources such as data sets and publications of Statistics South Africa (Stats SA), the Higher Education Management Information System (HEMIS) and industry associations including the National Association of Automobile Manufacturers of South Africa (NAAMSA). Additional and foundational data sources are merSETA's own commissioned research. Data from these sources are

augmented with research conducted by other national research institutions, industry publications and the media. A critical element of this SSP is the high level of input from a representative range of industry stakeholders.

Importantly, the development of an SSP must take into consideration a wide range of policy imperatives that seek to support inclusive sectoral growth and that advance both economic growth and the national social development and transformation agenda. These policies and strategies include those directly related to skills development: the Skills Development Act (2008), the NSDS III, and the second Human Resources Development Strategy for South Africa (HRDSA II). They also include strategies that focus more directly on economic growth and social development: government's Medium Term Strategic Framework (MTSF); the National Development Plan; the New Growth Plan; the National Skills Accord; the latest revision of the Industrial Policy Action Plan III (; the Department of Trade and Industry's (dti's) Special Economic Zones (SEZ) policy; the Department of Environmental Affairs' (DEA) "Integrating the Environmental Driver into Sector Skills Plans: An Enabling Document for all SETAs", and the Expanded Public Works Programme (EPWP), all of which directly or indirectly support the National Development Plan. Finally, monitoring and evaluation policies such as the Policy Framework for Government□Wide Monitoring and Evaluation (GWM&E) are also important. 2015 also saw the implementation of the new SSP framework which required SETAs to have a more focused approach in skills planning.

5.1.3 A Model for Sector Skills Planning (2009)

This project was initiated to investigate methods, processes and tools, both nationally and internationally, that can be used to identify skills needs to support industry-, provincial- and national strategies. The ultimate aim of the project was to develop a model for identifying, monitoring and reporting on the sector's skills needs, so as to inform planning and prioritisation of interventions and decisions regarding appropriate support and resources. The merSETA saw a need for this because of some weaknesses in current practice, which is reliant on: workplace skills plan and annual training report analysis; employer surveys; and consultations with stakeholders (mainly chamber members).

5.1.4 Analysis of workplace skills plans (WSP) and annual training reports (ATR) for merSETA member companies (2009)

The study objectives were to: conduct an analysis of WSPs and ATRs for the years 2005 to 2007; compare planned training to actual training; link implemented

training to identified sector scarce and critical skills; and determine training trends and future training needs.

Key findings

The study found that there had been a general decline in WSP submissions between 2005 and 2007, particularly in the Metal, Motor, and Plastics chambers. This decline can chiefly be attributed to the format changes of the WSP templates that are sent to companies as guidelines on the type of information required – and the failure of companies to understand the new formats.

A quick scan through the submitted WSPs and ATRs showed that a substantial amount of information was missing for the three years under review. It was observed that either companies were submitting incomplete information, or the capturing of information was inefficient. This phenomenon was clearly evident in the current analysis, where there were quite a number of "unknowns" in the data that was provided.

It was also noted that for various reasons, most companies were not completing the sections provided in the template consistently. For instance, a particular company would complete the "demographics" section of the WSP, but would not provide information on the education and skills priority section, or vice versa. Furthermore, most companies did not make submissions consistently in all the years under review.
During the process of analysing the data sets provided, it was noted that there is lack of clarity regarding the information requested in the grant application form. This therefore impacts on the quality and usability of the information collected.

It has been noted that there have been frequent and significant changes to the grant application forms. The changes could have been driven by a need to improve the data capturing tool. However, the changes have also caused

considerable frustration for companies when compiling the WSPs.

High level recommendations

After companies visited expressed various degrees of unhappiness with the Data Net system and the way that data must

be uploaded onto the system, it was recommended that merSETA explores ways in which data can be uploaded onto the system through spreadsheets, or CSV files, or similar.

Companies submitting WSPs were not completing every section of the WSP as required by the Grant Regulations of February 2007. It was recommended that merSETA starts insisting that companies complete every section of the WSP, or else they do not qualify for their grant payments until all the information asked for in the WSP has been provided. It should be explained to companies that this is not about the SETA flexing its muscles, but is about ensuring that comprehensive data on the sector is collected and analysed, so that future sector training strategies are built on more complete and real sector data.

5.1.5 The Regional Sector Skills Plans

Purpose

The Regional Sector Skills Plan (RSSP) was aimed at unpacking the regional specificity of the merSETA subsectors. The objective of this RSSP was to identify and map out key features, trends, forecasts and legislative initiatives regarding skills development, at the regional level. This synthesis report of the RSSP provides an overview of the key findings pertaining to regional and local developments in the merSETA sectors, and links to skills development planning.

Research Methodology

The research methodology used for this Regional Sector Skills Plan (RSSP) included both primary and secondary research, which involved both quantitative and qualitative research methods.

- Secondary (desktop) research was conducted on each region's economic, social and development status and strategies. The regional socio-economic analysis was made by doing a literature review of existing data and research papers. MerSETA has undertaken a wide range of research projects; these were reviewed and helped with improving understanding of the chambers that make up merSETA.

- Research conducted by government departments, national research institutions, industry publications, and the media, were used extensively in the report. Provincial governments publish annual reports such as the Provincial Economic Review and Outlook (PERO) and the Socio-Economic Review and Outlook (SERO), and these highlight the performance of the provincial economy and the social changes occurring in each province.

- The merSETA workplace skills plans (WSPs) were analysed to provide data on sector employment by chamber, demographic profile of employees and occupations by province. Although the database provided was only for 8% of the companies on merSETA's database,

it represents 35% of levy-paying companies. The WSPs represent the majority of the employees in the sector because there is a direct relationship between levies paid and employment. The data was assumed to be a representative sample of the merSETA sector, and was analysed as is.

- Regional and municipal economic data was obtained from Quantec, and this was used extensively in the report. National Accounts data is not captured according to three of the merSETA chambers; hence Quantec data that most closely resembled the merSETA chambers was used.

- National data sources include a range of statistical publications by Statistics South Africa (Stats SA), the DHET, the DoL, and data from industry associations.

- The demand projections in Chapter 4 were based on the merSETA Sector Skills Plan 2012/13 – 2017/2018 national projections. The demand projections are based on new demand resulting from economic growth and economic creation – as well as for replacement demand that will occur because of mortality, emigration, and the retirement of employees. The employment growth figures used in the model were derived from econometric modelling performed by Eco Quant. The econometric modelling was based on the sectoral demarcations found in the National Accounts data. Based on the distribution of manufacturing employment per province for Quarter 1 of 2013, the projections in the national SSP were proportioned to give a regional outlook. In essence, 35% of manufacturing employment was from Gauteng, and 35% of the projected demand was assigned to Gauteng. The customisation was limited as it assumed the distribution of manufacturing employment will remain the same in the foreseeable future. The research study was designed to be as interactive as possible with the merSETA.

- Regional Committees have representatives from all chambers: labour and employers. At the inception of the project the research team attended the Regional Committee meetings to introduce the project, initiate task teams, and outline the objectives. The primary research aspect of the study involved in-depth interviews with employer representatives, labour union representatives, FET colleges, and provincial government representatives. The majority of interviews were conducted face-to-face, but some were done telephonically. Information obtained from the primary research was used extensively to determine:

  - Factors affecting the skills development in the region,

  - Scarce and priority skills,

  - Implementation strategies and recommendations to address challenges faced.

A draft report was presented at the Regional Committee meeting and further discussions covered ways to refine the report and formulate region-specific strategies. The draft report was made available on the merSETA website for two weeks to invite stakeholders' comments and inputs.

Research Participants

In order to determine the nuances of each region as pertains to skills needs and skills development, the research team consulted with multiple stakeholders. Participants in the research included provincial government representatives, employers, shop stewards and other labour representatives, industry bodies/ association representatives, and merSETA regional managers. The stakeholder driven approach ensured the RSSP captured the specific relevant issues in each of the different regions. Strategic recommendations were mainly derived from the stakeholders to ensure easier facilitation when these recommendations are to be implemented. The number of participants in the RSSP process through interviews and task teams/focus groups, is shown in the table below:

Region	Stakeholder Consultations/No. of Participants
Limpopo & Mpumalanga	46
Western Cape	30
Gauteng & North West Province	24
Eastern Cape	14
KwaZulu Natal	12
Northern Cape & Free State Province	10

Table 1 Regional Stakeholder Consultations and Participants

5.1.5.1 Common themes from all regions

- Lack of adequate modern infrastructure in some training facilities highlighted as major cause of inadequately prepared learners.
- Pockets of excellence exist in the regions, i.e. there are some companies/training institutions with well-equipped and functioning training centres from which lessons can be drawn.
- Most stakeholders highlighted the problem posed by the lack of adequate literacy and numeracy skills of learners entering learnerships and artisan development programs.
- A common theme emerging from FET colleges was the need for employers to be more receptive to provide openings for learners to obtain work-based experience.

- Employer organisations outlined the need to simplify or minimise the paperwork and administrative load currently faced in training learners.
- Research participants pointed to a need for more consultative and collaborative approaches in the skills development environment, i.e. curriculum development should incorporate inputs from employers to ensure that the graduates produced are equipped with relevant training.
- Need for strengthening of existing technical high schools and establishment of linkages with higher education and training institutions, to ensure a consistent pipeline of high quality maths and science learners.
- Respondents across the country outlined that there is a lack of interest and awareness amongst young people for manufacturing related career paths.
- In all the provinces the majority of workers fall in the elementary occupations category.
- The majority of individuals in senior management and supervisory roles fall in the 45 years+ age category.

5.1.5.2 Unique issues from each province

The section below outlines some unique features from the nine provinces pertaining to economic activities, skills development, etc.

Gauteng – NorthWest region

- Gauteng is the largest contributor to the national GDP, constituting 34% of the country's output. The province is the main contributor to the manufacturing sector output.
- Gauteng has eight FET colleges and the North West province has three FET colleges. The majority (31%) of N1-N3 engineering students are in Gauteng FET colleges. Only 8% of the N1-N3 engineering students are in FET colleges in the North West.
- The North West province is mostly rural in nature and has an unemployment rate of 26.5%.
- Mining is the major economic activity; it provides jobs for 25% of the provincial workforce.
- The North West has no accredited Trade Test Centre and therefore apprentices are sent to Gauteng for testing.

Western Cape region

- Establishment of the first Special Economic Zone in Saldanha Bay (which will be mainly focused on the oil and gas industry) is expected to yield significant job creation and economic growth potential.
- The West Coast is expected to become a major oil and gas hub following the increased offshore oil and gas activities in nearby blocks.

- The Western Cape Tooling Initiative (WCTI) has a framework which can potentially be adopted for other merSETA chambers for the purpose of training and equipping artisans.

Eastern Cape region

- The motor, auto and new tyre chambers are the major activities in the province which fall under the ambit of merSETA.
- A greater share of the regional population is in the rural areas. However, most training and skills development institutions are located in urban centres.
- The shortage of skilled labour in the Eastern Cape has been seen as a challenge by many employers. Semi-skilled and unskilled labour is relatively easier to find. Attractiveness of the Eastern Cape Province as a place for skilled professionals is relatively lower compared to other manufacturing hubs such as Gauteng.
- Establishment of wind farms in the region is set to provide working models for other regions on how best to tackle the skills development needs of the renewable energy sector.
- Training institutions such as Port Elizabeth College have started gearing up in order to be ready to supply artisans equipped to function in the renewable energy sector. This has been aided by partnerships with international organisations such as the German Gesellschaft FÜR InternationanaleZusammenarbeit (GIZ).

Mpumalanga-Limpopo region

- Metal chamber companies based in the Nelspruit area send their apprentices to the Middleburg or Witbank area, as there are no reputable training providers in the Nelspruit area.
- The region's proximity to Gauteng has seen management positions being hard to fill sometimes, as there is an outflow of people from the region to Gauteng.
- The Limpopo provincial economy is small, resulting in there not being enough companies to absorb all the students coming from the FETs, which limits learners' workplace exposure.
- Limpopo has no accredited Trade Test Centres for the motor trades, and as such has to send apprentices to Gauteng.

KwaZulu-Natal (KZN) Region

- The regional economy is dominated by tertiary industries, which contributed 67% to its regional GDP. The secondary sector in KZN makes a larger (27%) contribution to the region's economy than in the nation as a whole (23%).

- KZN has recently undergone rapid industrialisation due to the abundant water supply and labour resources in the region.
- The province has the highest export propensity, as well as the highest level of industrialization in the country.
- The ports of Durban and Richards Bay together handle nearly 80% of South Africa's cargo tonnage.
- Richards Bay is the country's centre of aluminium industry operations, producing over 4% of the world's export of aluminium.

Northern Cape (NC) – FreeState (FS) region

- Mining is the dominant economic activity in Northern Cape, and agriculture is dominant in the Free State.
- Manufacturing in the region is dominated by the food and beverage industry in Upington, and by the food and beverage, clothing, textiles and metals industries in Kimberley.
- Manufacturing in NC and FS constitutes less than 5% of the national manufacturing output.
- The Chemicals industry is the largest manufacturing subsector in the Free State and accounts for 70% of the province's total manufacturing output.
- A university is to be built in the Northern Cape (Kimberly) and it is expected to develop at least two postgraduate centres of excellence in Physical Sciences (astronomy) and Applied Sciences (renewable energy, low carbon energy, hydrology, water resource management and climate variability).
- According to the 2012 merSETA database, 37.8% of employees in the Northern Cape were younger than 35 years, whilst 55.5% were between 35 and 49 years, and 6.7% between 49 and 64 years.

5.2 Artisan Development Research

5.2.1 Key Concepts

5.2.2 Impact of Adult Basic Education and training (ABET) within the merSETA (2008)

This research was undertaken in order to establish the current status and impact of Adult Basic Education and Training within the merSETA. The brief for this project required that the research provide reliable information on the current situation within the merSETA sectors pertaining to adult literacy, and numeracy training and outcomes. The findings of this study were intended to be used to support decision making and goal setting with regard to merSETA activities in the ABET area, and in particular to ensure merSETA ABET alignment with the National Skills Development Strategy (NSDS).

Key Findings

When asked to rate increases in productivity arising from ABET, over a third of company respondents indicated that ABET interventions had increased productivity. More importantly perhaps, nearly half of the respondents (44%) estimated that ABET training enabled the individuals to retain their positions in the company, and 48% claimed that ABET training allowed the learners an opportunity to place themselves in a position to apply for a new/better job.

However, at least 52% of respondents felt that there was little value derived from ABET training, as currently conceived,

from a business perspective. Some respondents indicated major support for the programme, but were critical of the SETA funding model, which they felt hindered the broader roll out of the programme.

High Level Recommendations

It was recommended that merSETA:

- Links ABET training to a simple productivity motivation to ensure that employers begin to link capacity building with issues core to their business.
- Ensures good monitoring and grading of service providers. There are a number of interventions that could be used to ensure that service providers deliver. These could include random client satisfaction surveys.
- Ensure that employers are given an opportunity to report directly to the merSETA regarding service provider performance (run an annual satisfaction survey).

- The merSETA should focus to some extent on the recognition of prior learning (RPL) for employees at lower levels, as they may not be literate in English or be numerate, but they can listen to instructions and follow instructions.

5.2.3 Impact assessment of learnerships and apprenticeships (2008)

In 2008, an Impact Assessment of Learnerships and Apprenticeships was commissioned to ascertain the efficiency and effectiveness of the learnership and apprenticeship systems, and to assess their impact on the demand for and supply of skills for the industry. This was motivated by the need to collect and analyse critical data regarding the development of a full understanding of the potential impact of learnerships and apprenticeships on the labour market. This included the scale, number and career progression of qualified apprentices and learners, as well as the employability of newly qualified learners exiting at different NQF levels, establishing what had motivated their choices and movements within the system, and the challenges they experienced throughout that period.

Undertaken by the HSRC, the focus of the study was on investigating ways to make learnership and apprenticeship programmes delivered by merSETA more efficient, i.e. the measurement of the internal workings, organisation, functionality and quality of learnerships and apprenticeships against legislated mechanisms and procedures; and an assessment of their effectiveness – namely the extent to which they equipped participants to enter or advance through the formal labour market.

Key Findings

The study concluded that learnerships provide important opportunities for participants to learn in the workplace, linking theory and practice and thus deepening the skills base of the South African economy. The study also cited that learnerships provide key opportunities for unemployed people to gain skills and work experience, and improve their employability. The study cited that the immediate concern is that a large number of the learnerships that are undertaken are at the lower NQF levels (mainly Levels 1 and 2) rather than at the intermediary skills level where the highest need lies.

High Level Recommendations

It was recommended that employers give their full support to the learnership and apprenticeship systems. Supportive employers make an enormous contribution to a successful learnership and apprenticeship system, whereas if employers are not supportive, it becomes very difficult for apprentices and learners to successfully complete their programmes.

Training providers must involve employers more fully in the programme. Measures must be taken to ensure that they understand the value of learnership and apprenticeship systems, that they meet their needs, and to help ensure that they have more effective training infrastructures in place.

5.2.4 Understanding disabilities and skills development within the merSETA (2010)

The goal of the project was to explore the attitudinal and physical barriers that existed so as to harness a successful learnership project that included people with a disability. These barriers have the potential to impede the process

of including people with a disability in many merSETA environments. Historically, people living with a disability have generally been excluded from the manufacturing, production and construction environments. However, if implemented using best practice, the inclusion of people living with a disability is both possible and sustainable. This report provides insight into how to make this possible.

Key Findings

The study came up with a matrix of the barriers that exist in the general management of learnerships for people with a disability. The matrix highlighted the barriers and provided insight into how to overcome these. Some of the barriers identified included:

1. Lack of adequate funding,
2. Inappropriate selection of learnership,
3. Lack of awareness and satisfaction with training from a physical and attitudinal perspective,
4. Lack of learner support on workplace sites and during the learnership training,
5. Poor basic education,
6. Lack of awareness and sensitisation training for the industry at large, training providers and employers,
7. Lack of access to training from a physical and attitudinal perspective.

High Level Recommendations

- Ensure funding is available for learners and training institutions. It is vital to understand that

sustainable inclusion of people with a disability into any workplace or training environment requires the implementation of a number of disability-specific interventions. This will incur additional costs and is a very important funding consideration.

- Trainers and training environments are often ill-equipped to successfully integrate people with a disability. Simple adjustments to training environments can immediately improve access. Analysis of environments is necessary when designing learnerships for people living with a disability.

- Learner support during the duration of the learnership is a key element for successful completion of training and workplace experience. It is important that sound mentorship and support strategies are incorporated into the model.

- It is apparent that people living with a disability have often been exposed to substandard learning environments, and this perpetuates limited access to advanced learning opportunities. Bridging programmes should be explored to remedy this inequality.

- Attitudinal barriers are often more difficult to alter than physical ones. Disability awareness and sensitisation training is important for the success of managing disability in the workplace in general, and it becomes imperative for environments that have traditionally excluded people with a disability.

5.2.5 Understanding the impact of HIV and AIDS in the sector on labour supply within the merSETA (2010)

The project formed a baseline research programme in understanding the impact of HIV and AIDS in the sector on labour supply. The purpose of this research project was to gain an in-depth understanding of the impact of HIV and AIDS in the manufacturing, engineering and related services sectors. This research was intended to inform and guide merSETA on a strategy for responding to the epidemic, and to support the sector in addressing it.

Key Findings

- 48.7% (19) of the participating employers indicated that they have a policy in place, but only 12.8% (5) have a strategic plan in place. Many of those with a policy in place indicated that it had not been updated over the past two years.

- 25.6% (10) of the participating employers indicated that they had assessed prevalence in their workforce. The prevalence estimates ranged from 3% to 15%, with an average of 10%.

- Approximately half the employers have some form of on-site care through a clinic service or nursing sister (visiting or permanent).This is a good starting point for implementing general and HIV-specific wellness interventions.

- Adult Basic Education and Training, Performance Management, Remuneration Review, and Succession Planning, are the least frequently offered programmes. Funeral and Life Insurance cover are the least frequently offered employee benefits.

- A scoring system was applied to the questions in the survey to facilitate the comparison of results. A score closer to 1.00 indicates higher overall knowledge, attitude and practice towards HIV/AIDS. The overall score for employees who completed the surveys was 0.65, with the highest rating for knowledge of HIV/AIDS, followed by awareness of risky behaviour, awareness in the workplace, attitude, and finally (Voluntary Counselling and Testing) VCT. This suggests that introducing VCT in these workplaces is an important next step.

- For the 2,994 employees of participating companies for whom data was provided, it is estimated that the HIV prevalence is 10.8 %. The additional cost associated with HIV for this group is R2,235 per employee per annum over the next five years. The intervention of providing anti-retroviral therapy to employees using a treatment protocol of CD4 at 350 has the highest programme costs, but also generates the highest level of savings as the wellness programme-only scenario. The net savings are expected to be in the order of 21.6% of the status quo cost. These savings are increased if some of the treatment costs are covered by the medical scheme, or through the government programme.

High Level Recommendations

The workplace practice survey indicated that 49% of the participating companies have an HIV/AIDS policy and 13% have a strategic plan in place.

- There is a need to establish a targeted HIV/AIDS workplace programme. This programme should target gaps identified in this assessment.

- Note that HIV/AIDS cover is part of the Prescribed Minimum Benefit for all medical schemes, and so covered employees will be able to access these benefits from their medical scheme. Organisations appear to have a range of workplace programmes available, but further development of an HIV/AIDS strategy and policy, and ensuring that employees know how to access

treatment, is recommended. Targeted awareness campaigns should take account of the age, gender, social and job-category structure of the workforce.

- Stakeholder involvement and participation should be increased to ensure successful implementation of the targeted HIV/AIDS workplace programme, and to further raise awareness of the impact and risk of HIV and AIDS on the business activities of the company.

5.2.6 Employability in the college sector: a comparative study of England and South Africa (2010)

The purpose of this study was to improve understanding of employability in a threefold manner: practically through the experiences and challenges of FET colleges; theoretically within the discipline of education; and comparatively by looking at contexts and experiences in England and South Africa.

Key Findings

Some of the conclusions of Phase 1 of the study were that there is a link between employability and quality, and that good teaching improves employability. Evidence from the study also suggested that students believed there are key sets of knowledge, skills and attitudes that promote individual employability, but they however appear to have little sense of the social capital dimension of their employability. In contrast, the study concluded that staff in FET colleges are far more conscious of the need to balance the human and social capital aspects of employability promotion.

5.2.7 Report on the merSETA research symposium on FET colleges, industry and employability (2010)

This report documents the proceedings of the merSETA Research Symposium on FET Colleges, Industry and Employability Education Partnerships for Africa Research Project Seminar, held at the Birchwood Conference Centre, Gauteng, South Africa, on 11 March 2010. The report builds on other research and impact studies, and reflects both new research results as well as the views of important individuals in the field. It aimed to help build a richer collective understanding of notions of employability, in the view of different stakeholders.

Key Findings

The research results suggested that employability, or lack thereof, should not be understood in terms of college practice alone. The results showed that:

- A number of demographic trends within the sector's practice that did not develop according to the vision for skills development.

- In the case of artisans, the principal skills required by most employers (76%) for recruitment were technical and practical skills; however 71% of employers also wanted artisans to have skills like problem solving, team work and communication skills. Over 60% required numeracy and literacy skills. Customer handling (44%), management skills (33%) and IT skills (26%) were required by few employers.

- In terms of recruitment source, the results showed a relatively low rate of staff were recruited from FET colleges. Instead, results come mainly (76%) from "other suitable staff" – staff not recruited from one of the listed educational institution types (i.e. potential poaching) – and 24% new recruits were from supply side/ education institutions, 54% were from universities, 16% from FET colleges and 22% from apprenticeships. However, it is worth noting that some chambers were more active in recruiting FET college graduates than others; notably plastics.

- In terms of these specific skills required, only 24% and 36% of employers reported that their artisans lacked the skills that they felt were important.

The results concluded that it appeared that that the nature of employability was dependent on employment practices, and the employment practices are dependent, at least in part ,on labour market dynamics.

5.2.8 Identifying the anticipated impact of the current economic crisis on skills development in merSETA companies (2010)

The objective of this project was to undertake research about the nature, form and context of the economic crisis and its anticipated impact on merSETA companies. This quantitative analysis of the anticipated impact on skills development brought on by the current global economic downturn examined possible strategies that could be put in place to identify merSETA company responses.

Key Findings

- The negative employment growth evident between 2005 and 2008 for five of the seven sectors that make up the merSETA sectors cluster, underscores the range of challenges faced by manufacturing firms, as well as the domestic motor vehicle sales subsector, in the years directly preceding the 2008/09 global and local economic recessions. Furthermore, the data supports industry's assertions that drives to improve efficiencies and reduce fixed costs, including wage bills, were already in place in many firms at the onset of the crisis.

- The forecast data suggested that while employment can be expected

to rise again into the future, growth will be slow and will lag considerably behind growth in gross value added for all three of the GDP growth scenarios analysed (1.4%, 2.9% and 3.9%). At the same time, the majority of the sectors in the merSETA cluster have been, and are set to continue, on a high-skills trajectory, with the proportion of skilled and highly skilled workers rising in relation to unskilled and semi-skilled workers.

- Rises in real labour remuneration are anticipated for the majority of merSETA's sectors. This is in relation to the overall sectoral wage bill, as well as in relation to remuneration per employee. The latter, which represents an increasing cost burden to firms, is likely to be related in part to the increasing proportion of skilled and highly skilled employees, and also in part to the premium salaries paid to these workers due to skills gaps and shortages.

- Overall, the econometric data analysed highlights the negative impact of the recent economic crisis on employment within the merSETA sectors cluster, and magnifies the cost burden that manufacturing will carry into the future, in relation to generally increasing demands for scarce-skilled and highly-skilled workers.

High Level Recommendations

The study uncovered examples of critical firm- and industry-level training that merSETA is not financially supporting due to issues related to local qualification registration. The merSETA needs to consider new and more flexible ways to provide financial support for training, so as to include such initiatives.

- The combination of high direct and indirect training costs, together with continued cash constraints, means that small- and even medium-sized companies are likely to have lower levels of training activities in the short-term future than in the pre-crisis past. The merSETA's training voucher scheme for small companies was applauded as a very positive development at industry level. The merSETA should consider increasing the size of companies qualifying for the training voucher scheme from 50 employees to 150 employees, to promote continued and increased training in the current economic environment.

- Cash-constrained firms will be even less inclined to train if they cannot be guaranteed timely merSETA payments for training milestones reached, and if the challenges related to learner registrations, and accessing theoretical training and assessments, are not addressed. It is critical that merSETA review and improve its internal administration systems in support of timely payments to firms, and more efficient learner registration and assessment.

- The shortage of artisans in merSETA sectors remains a major problem.

This is evident in firms' general commitment to continue artisan training, even during the economic crisis. In the same way, merSETA should continue with, and even increase, its focus on this critical area of skills shortages by considering new and innovative ways to provide appropriate training incentives to companies, across the board.

- It is understood at industry level that merSETA's mandates are laid out by the National Skills Development Strategy, which provides quantitative goals for learner registrations, and that achieving these goals has generally only been possible through a focus on developing lower-level-generic and sector-specific skills. Despite this, industry has continued on a high-skills growth path; one that demands quality in qualifications rather than just an increased quantity of these within the labour market.

  The merSETA needs to consider ways in which it can meet its mandate for quantity, but at the same time align its activities towards real sector needs. In particular, merSETA should consider increased and more flexible means to support high-level and even extremely firm-specific training.

- Large firms with dedicated training facilities and staff indicated that they often have spare training capacity. The merSETA should develop appropriate processes and incentives whereby sectors can cost effectively benefit from the full utilisation of all their training capacity.

5.2.9 Competence measurement in education and training (COMET) (2012)

The merSETA embarked on a large scale, multi-year competence diagnostics project (COMET) in partnership with the University of Bremen in Germany. The aim of the project was to adjust the architecture of apprenticeships in favour of achieving higher levels of holistic shaping competence.

Key Findings

- South African apprentices can well achieve competence levels explicitly higher than in the COMET pilot test carried out in October 2011, if dual vocational education and training is organised and modernised in

accordance with international standards. The South African TVET system has the relevant potential resources.

- A well-structured TVET system where curricula are based on learning areas is a precondition for building a workforce with ability to engage in holistic problem solving. An appropriate approach is the COMET competence model, with its central idea of vocational education and training: Empowering apprentices in a manner to actively participate in, and further to shape the world of work with socio- economic and ecologic responsibility.

- The weakness of the established VET structure is due to the fact that the core element of TVET, which is reflected work experience, is not bailed out as much as it needs. Therefore, it is suggested that the modular training concept in training workshops be replaced with the concept of learning in qualifying work processes.

- A dual organisation of vocational education is seen as a prerequisite for VET quality, and thus for the achievement of higher competence levels.

- Teachers and trainers (internal training officers) who took part in the South African COMET project 2011 have shown an enormous interest and commitment regarding both the implementation of modern VET research tools, and a modernisation of vocational education and training.

High level recommendations

Short term reform projects

A. COMET Project

Performance of a longitudinal examination (large scale competence diagnostics) with two test dates, in the vocations:

- electronic technician
- industrial mechanic
- car mechatronic

The pilot COMET project in 2011/12 revealed that vocational competence,

and vocational and occupational commitment of apprentices and students, can be measured very precisely – and test instruments have proved valid. The test results show, with a high degree of exactness, the strength and the weaknesses of the South African TVET

praxis. From these results it can be learned how the quality of apprentice teaching and training can be raised. Quality assurance in technical and vocational education and training needs an examination method according to international standards, which also allows for international comparisons.

The preparation phase was to include:

- Selection of test groups of around 300 – 600 apprentices/students per test group
- Implementation of the learning from "learning tasks" according to international COMET standards
- Introduction of the COMET Assessment System

B. Introduction of project oriented learning forms

Based on the COMET competence model, project oriented learning was to be introduced in the following vocations:

- electronic technician
- industrial mechanic
- car mechatronic

In this particular project stream, the effectiveness of project oriented learning was to be examined. In an agreement with other COMET projects, it was to be assured and guaranteed that works of those "learning tasks projects" which have already been successfully implemented can be used and shared by other partners of the international COMET network. This especially relates to the development of tests and learning tasks in the relevant vocations.

C. Project oriented assessments in the vocations:

- electronic technician
- industrial mechanic
- car mechatronic

The COMET rating and assessment scheme was to be tested using the COMET rating and measurement model as a basis. Assessment procedures play a major role in TVET quality. One can consider assessment practice as the "secret" or "hidden" curriculum. This is the reason why it is necessary to examine competence development of apprentices as well, by using test tasks according to the COMET competence model, and according to the current project findings.

5.2.10 AATP post trade test tracer study 2012

Purpose

The purpose of this study was to provide as much information as possible regarding the activities of apprentices after passing their trade test, including

the employment status and expectations of apprentices who have qualified on the AATP management platform. Tracer studies are designed to determine whether or not a programme is achieving its mission, and help demonstrate its impact. This is best seen by the achievements of the qualified apprentices (herein referred to as artisans). This assignment commenced in July 2012 and was concluded in September of the same year.

Methodology

The study employed both quantitative and qualitative research methods. A survey of merSETA artisans was conducted between July and August, 2012. The total study population was the AATP artisans who entered merSETA's AATP programme between the years 2007 and 2010, and the control group which consisted of the merSETA Non-AATP artisans. A stratified random sampling method was used to sample the 400 AATP (project) and 100 Non-AATP (control group) qualified artisans from a population of 2,337 and 8,879 respectively. The artisans' contact details were retrieved from the merSETA database.

Three questionnaires were developed – one for each stakeholder group: (i) project artisans and control-group artisans, (ii) employers, and (iii) training providers. Artisans were the main study group, while employers and training providers were informants. Each questionnaire consisted of both structured and unstructured questions. Questionnaires were administered to the respondents either through face to face or telephonic interviews.

Key Findings

Passing the Trade Test

- The study interrogated the trade test pass rates of the project artisans and revealed that the proportion of apprentices passing within the required programme time frame was increasing. 58% of Phase 1 (2007/8 intake) passed with the programme time schedule, and the pass rate increased to 68% for Phase 2 (2008/9),79% for Phase 3(2009/10),with the current rate for Phase 4(2010/11) standing at 78%. This shows an improvement in the overall management of the AATP programme.

- The study further analysed the number of times the project artisans had taken the final trade test by Phase. The proportion of the project artisans who passed their trade test on their first attempt increased from 66% for Phase 1, to 78% for Phase 4. The proportion of project artisans passing their trade test on their second or third attempt has been decreasing over time.

- An analysis of the project artisan pass rate by type shows that the CMBT artisans had a higher proportion (88%) of apprentices passing their trade test in their first sitting, than the Time-Based artisans with 69%.

The survey results suggest that the CBMT's, or 'the regulated phased approach', to apprenticeship training increases the pass rate on the first attempt.

- A comparative analysis of those passing at first sitting between project and control group artisans revealed that a higher percentage (71%) of project artisans passed their trade test at first sitting compared to the control group (66%). This suggests that a more structured artisan development system increases the pass rate at first sitting.

- The study conducted a cross tabulation of the number of times project artisans had taken the final trade test by the highest qualification prior to apprenticeship entrance. The results revealed that;

    - There is no significant difference between the percentages passing the trade test at first sitting.

    - The percentage of N2 graduates who passed their trade test at first sitting was very low; 40% for project artisans and 33% for control group artisans. This suggests that N2 graduates struggles to pass an artisan apprenticeship programme.

    - The percentage of N4 graduates who pass at first sitting was lower than average for both the project and control groups.

    - The majority of artisans who did not pass the test on the first sitting (36%) cited 'not being adequately prepared' as the main reason.

Artisan Employment

The Employed

- Out of the total sample size of 510 artisans, 406 (80%) indicated that they were employed.

- More than half (53%) of the qualified artisans were permanently employed, 44% were on contract, while 3% were working on a part-time basis.

- More CBMT were employed compared to Time-Based artisans; 85% and 79% respectively.

- There was no significant employment difference between project and control group artisans. 81% of control group artisans were employed, as compared to 79% of their project artisan counterparts.

- The study also found that permanent employment was negatively related to AATP programme phases– those who passed their trade test earlier are more likely to be permanently employed, and vice versa.

- More CBMT artisans were permanently employed than Time-Based artisans; 96% to 44% respectively.
- A higher percentage of control group artisans (70%) were permanently employed compared to project artisans (48%).
- Limpopo, EC and Mpumalanga provinces were the highest absorbers of project artisans.
- Riggers, Fitters, Millwrighters, Mechanics and Fitter &Turners are more likely to be employed, as employment rates among these trades were high (85% and above).

Artisan Retention and Mobility

- Of the total employed artisans, 59% indicated that they are working at the same company where they completed their apprenticeship. Thus 41% of employed artisans interviewed had left their original training company.
- CBMT artisans had the highest retention rate (79%) compared to Time-Based artisans (56%).
- The retention rate of control group artisans was higher, with 65% of the respondents still working at the same company, whilst for project artisans, 58% of the respondents were working at the same company where they completed their apprenticeship.
- 76% of the respondents who were still working at the company where they completed their apprenticeship indicated that the main reason they chose to stay was because they were 'offered the job'.
- Of the artisans who had left their original training company, 73% stated that the main reason for this was because 'the company could not take them on as employees'.

Artisan Migration Patterns

- A further review of the post trade test labour migration patterns of apprentices revealed that Mpumalanga artisan respondents recorded the highest mobility rates, with 42% having moved to Limpopo. The least mobility occurred in Western Cape, with 91% of respondents remaining in the province. This shows that it is not very important where training take place; artisans are prepared to move to provinces with employment opportunities.
- Limpopo Province had the highest project artisan retention rate; with 97% of the artisans interviewed still working at the company where they did their apprenticeship. KZN had the lowest, with only 30% still working at the company where they completed their apprenticeship.
- Gauteng, KZN and Mpumalanga qualified artisans were the most likely to have changed employers.
- The most popular destination was Limpopo Province.

The Unemployed

- Out of the total sample size of 510 apprentices, 104 (20%) indicated that they were 'not working' at the time of the interview, 0.78% were 'not actively looking for work', and 3.92% have 'not worked in less than 3 months'. Thus 15.69% of the total artisan respondents could be classified as 'unemployed'.

- Of the 20% of artisans who indicated that they were 'not working';

  - 83% were from the project artisan group, and 17% were from the control group.

  - 83% of the project artisans had been looking for a job for more than 3 months, compared to 59% of the control group.

- 33% of female artisans were 'currently not working', compared to 18% of their male counterparts.

- 99% of the unemployed artisans were still interested in pursuing careers as artisans.

- 73% of the unemployed project artisans cited that the main reason for not having found employment yet was because 'more experienced people were getting the jobs'.

- Of the total unemployed 58% had worked for a while after completing their apprenticeships, with 65% of project artisans stating that the reason for no longer being employed was because 'their contract had expired'.

- The most popular ways of looking for a job for those 'not working' included advertisement, internet, word of mouth, etc.

- According to artisans, the main cause of unemployment was lack of experience. A higher proportion of project artisans mention lack of experience.

5.2.11 merSETA employability in engineering survey 2013 research

Purpose

The study was undertaken to evaluate employability in the engineering industry through the eyes of recently graduated students, heads of FET colleges, and employers from various companies operating in merSETA sectors and sub-

sectors. Each of these groups took part in a unique measurement that was custom designed to investigate their views of employability in the engineering industry

Methodology

All three investigations were mostly qualitative in nature and had only a few quantitative questions. This qualitative approach helped us to better understand various aspects pertaining to the research objective. The Heads of Colleges and Employers were consulted through the use of face-to-face structured interviews, whilst the Students group completed telephonic surveys.

Each respondent group had the following sample target:

- Employer – 60 (Achieved all 60)
- Heads of College – 30 (Achieved 26)
- Students – 60 (Achieved all 60)

The Employer sample was proportionally split between five identified areas (Gauteng, Cape Town, Durban, Port Elizabeth and Bloemfontein). Due to a limited number of names, we decided that any Head of College could be interviewed on a specific list. These Heads of Colleges are situated in Gauteng, KwaZulu-Natal, Eastern Cape, Western Cape and Free State. Finally, graduates from seven FET Colleges across South Africa were interviewed, and formed part of the Students sample. Graduates came from three colleges in Gauteng, two in KwaZulu-Natal, one in the Eastern Cape and one in the Western Cape.

Students' Snapshot

Students in general have struggled to get jobs upon graduation. A lot of students weren't very positive about their future in the industry, but despite this, they were still inclined to recommend FET College to their friends, family and colleagues. Students were thankful for the skills they were taught and believed that these skills were valuable going forward. They were especially thankful for the practical skills and experience they obtained whilst studying at a FET College. They also acknowledged the role played by lecturers (capabilities), as well as the theory component of the work. There were some students that felt that there was a lack of practical experience and that too much emphasis was being placed on the theoretical component of the work.

Their main recommendations to FET Colleges would be to further assist them in getting jobs, as well as to expose them to even more practical experience. The most important focus point for FET Colleges should therefore be to provide assistance to studentsseeking jobs after they have graduated. This can be done through improved links between FET Colleges and the applicable surrounding work environment. From a student's perspective there are still a lot of positive aspects to attending a FET College. As mentioned, students spoke positively about the practical skills transfer, as well as the role played by lecturers (capabilities). In terms of continuing student satisfaction, this can be seen

as being very important; FET Colleges around South Africa should therefore be encouraged to investigate the existence of this within their own specific college. The capabilities of the lecturer and the alignment of their approach are especially important.

Employers' Snapshot

There were a significant number of employers who indicated that they didn't have any kind of relationship with FET Colleges. Those who did have a relationship had one due to their own employees studying there, their recruitment of FET graduates, or FET students gaining practical experience at their companies. On average, companies employed 15 employees in the last year. But of those 15, only one on average came from a FET College. The most important criteria employers looked for in employees were skills, attitude, experience, knowledge and some personality attributes. They desired graduates that had relevant skills and had the right aptitude for the job. According to the majority of employers, the most positive aspects of FET graduates were their knowledge, willingness to learn, and their enthusiasm, whilst the most negative aspect was a lack of practical experience. Employers thought higher of university graduates and felt that their degrees were of a higher standard. Respondents were divided on apprenticeships and learnerships and believed that both of these had positive and negative qualities. They felt that FET Colleges should provide more practical exposure to their students, provide them with more practical skills, and improve their facilities. There were also a couple of respondents that questioned the quality of the lecturers and suggested that this be improved. Companies felt that they should provide more training and do more to develop a link between themselves and FET Colleges.

Finally, they felt that the government should provide more funding to FET Colleges and do more to improve the overall quality of FET Colleges. They also felt that FET Colleges should better understand the needs of the industry and do more themselves to improve their overall quality. The most important aspect that needs attention is the potential disconnect between the skills of FET College graduates that enter the market, and the skills desired by companies in the relevant industries. It is imperative that the current skills transfer is aligned with the desired skills transfer. This will be made possible through discussions between companies and the relevant role players that decide the course content at FET Colleges. Content revision then needs to take place so that this can be aligned with the desired skills, and therefore enhance the job prospects of FET College graduates.

Heads of College Snapshot

In general, Heads of Colleges were a lot more positive about FET Colleges. They felt that the relationship between

themselves and companies was the key to graduates getting job placements. In most cases, they felt equipped to train students for the job market. The reasons they felt equipped were the quality of programmes, the lecturers, and the facilities. There were some respondents that felt that lecturers still lacked some quality and that this needed to be addressed. They felt that FET Colleges should focus on the quality of training, as well as the type of students they take in, to improve the quality of graduates. They also felt they needed to better understand the needs of the industry and provide more practical experience to their learners. They felt that companies weren't as receptive to FET graduates, and that this was due to a misconception of the NCV programme and the influence of the media. They felt that there were both positive and negative aspects when it came to the college and the students, but still felt that other tertiary graduates didn't have any advantages over FET graduates.

According to the Heads, government could do more by bringing all higher education institutes closer, and by providing more funding and bursaries. They also felt that FET Colleges could improve the quality of their training and better understand the industry's needs. The concept of quality is something that was mentioned on numerous occasions by Heads of Colleges. The most regularly mentioned aspect was the quality of training. Further discussions should be held with key role players to identify what the needs are, and whether the solutions to these needs can be implemented. Mentions were made of the lecturers as well as the facilities, and could be potential areas of investigation. There is also an acknowledgement by Heads of Colleges of the disconnect between the current skills offered by FET Colleges and those desired by the relevant industries. This aspect was mentioned across two different groups (Heads of Colleges and Employers) and can therefore be seen as important enough to warrant investigation and implementation.

5.2.12 merSETA artisan identity research 2013

Purpose

The purpose of this study was to examine notions of artisans as they undertake their training and work, in order to reflect on what these notions might imply for the future of artisanal skills development in South Africa; but particularly as is played out in the merSETA sector.

The following six questions shaped the research study:

1. What has happened to the notion of being an artisan over time, and what are the contributory factors to the changes?

2. How is identity and status determined?

3. How has training of artisans changed over time, i.e. apprenticeship to learnership?

4. How have changes in the labour market impacted on artisan-status in differing contexts?

5. Are there differences in which older and younger (white and black) artisans perceive their identity and status, given differing historical background, training and contexts?

6. How have FET Colleges impacted on the notion of being an artisan, and the production of artisans?

Methodology

The case study involved a review of the literature and statistics on artisans in the selected trades and nationally in the public domain, as well as individual interviews with apprentices, artisans, employers and training providers. Instruments were designed and adapted from interview schedules used for the professions' studies on nursing and medicine. The interview schedules were all open-ended to allow for the respondent's own understanding and perspectives to be brought to the fore, but key questions are listed. The case study participants included apprentices, qualified artisans, training providers and employers falling within the merSETA sector.

Key Findings

Artisan identity is determined strongly by race, gender and age, while status appears more closely linked to labour market demand.

The first key finding relates to the intersection of race and gender, with generational differences in the way in which artisanal identity is constructed. Thus, changes in the profile of those increasingly accessing the labour market have not yet had a significant impact on traditional notions of artisans. In comparison to race, gender appears to more strongly construct artisanal identity. Based on the interview data, age is considered an important factor, but impacts more on a perceived difference in identity, rather than an actual difference in approach to work.

Artisan status on the other hand, appears to be less dependent on the profiles of those involved in artisanal training and employment, but is strongly constructed by the perceived demand in the labour market. Because of this factor, we argue that artisanal status is characterised as being more volatile in comparison to identity, which appears to be more resistant to change.

Changes to artisanal training viewed as attempts at a quick fix solution to a very deep problem.

The second key finding relates to the overall perceived negative impact of the changes to the training of artisans (in terms of the routes and institutional arrangements), to the development

of a more positive artisanal identity and status. The findings under this theme strongly support assertions that incremental changes are needed instead of big institutional change, which has characterised the South African artisanal landscape over the last 20 years. During this period, the learnership system was adopted, without clear indications of how it would relate to apprenticeships, and then without giving the system enough time to adjust to the change – reintroducing apprenticeships and programmes such as the AATP. It is evident from the narratives of the respondents that many are not even clear on what kind of route the apprentices under their supervision are taking, many confusing AATPs with learnerships and vice-versa. Structuring FET Colleges at the centre of artisanal training provision has also not contributed to constructing a positive notion of artisans. In short, the data cautions against big structural adjustments to the system without giving sufficient time for systems to mature and produce quality results. This is important not only for garnering support for artisanal skills development, but also to inculcate stronger positive artisanal identities and associated status.

Changes to the notion of artisan: grease monkeys to skilled analysts.

The last finding emerged as the strongest theme in the review of the narratives of this sample of respondents. The changes to the nature of work and its organisation is pervasive in that it holds implications not only for the type of artisanal skills we will require in the future, how and where those skills will be developed, but also whether the traditional notion of an artisan will still be relevant in the future organisation of work. The strength of this theme is evident in the fact that it impacted on each area of interest/theme of investigation. But also in its own right, this suggests that probably the most far-reaching consequence for artisans is that it requires a re-evaluation of the relevance of the traditional system of training; not only because of the difficulties noted in the system, but also because of the realities of the current nature of work. By extension, what would also be required is a reconceptualization of what the notion of artisan means and how this relates to identity and status. No longer can we be comfortable with the notion of a 'grease monkey'. We have to move to conveying an image of artisans as 'skilled analytics'. This will be critical to ensure that the artisan remains an integral part of the nature of production in an increasingly technologically driven world of work.

5.2.13 Internship baseline study 2013

Purpose

This study, conducted by the South African Graduates Development Association (SAGDA), sought to review current strategies utilised by tertiary institutions to prepare graduates for work; to conduct a baseline study

of how internship programmes are currently implemented among employing organisations partnering with the ETDP SETA, the merSETA, and the NYDA; and to contribute towards standardization of best practices to influence internship policy in South Africa.

Methodology

A literature review of international and local publications on internships was conducted. Government Policy documents, the SAGDA Strategy Document, and the Sector Skills Plans were also consulted. Twelve qualitative focus group interviews were conducted with 76 current and past interns in four provinces. In-depth interviews were also conducted with 22 interns. Another set of in depth, one-on-one interviews was conducted with Career Guidance managers in seven HEIs, and with seven internship managers, in three provinces. A quantitative electronic survey was administered to 434 interns via email; after it was first piloted with 29 merSETA interns and feedback provided in a group meeting with 12 of them. The total response rate was 55.5 % (241 interns). The quantitative statistics in this report thus refer to the responses of the 241 interns in the final sample. Of these 64% (147 interns) were funded by the ETDP SETA, 19% (44 interns) were funded by merSETA-registered companies, and 16% (36 interns) were placed by the NYDA.

Research Objectives

Objective 1: To review current strategies utilised by tertiary institutions to prepare graduates for work:

Most institutions have a job readiness programme, which they monitor and evaluate. However, participation is not compulsory. As a result, only 52.2% (127 interns) had participated in any job readiness programme while still at the tertiary institution. In the qualitative interviews, the Career Guidance Officers reported that only about 25 to 33% of students use their services.

Secondly, institutions partner successfully with employing organisations to inform students about internship and work opportunities using different mediums, such as Career Days, campus notice boards, and the intranet.

In the third place, while CV writing, interview readiness, etc. are offered as part of the course curriculum or by the Career Centre, students are often taught

the proper writing technique and do not necessarily send out their CVs to try and get work experience while still studying.

Finally, they are not taught networking skills, which are essential to securing a job, both during the economic recession and in a generally highly competitive market. As a result, many still graduate with absolutely no work experience, which increases their chances of ending up unemployed.

For those who participate in the job readiness programmes, many found them to be useful in preparing them for the interview process, i.e. getting into the internship, which is a useful intervention considering that 70.5% (169 interns) were interviewed for their internships. However, there was no direct correlation between the job readiness curriculum and the value of the internship experience itself. This shows that the real value of the work experience and occupational specialization occur when interns are actually in the employer organisation.

The biggest challenge facing the Career Centres is insufficient human and financial resources to increase the effectiveness of their offerings.

Recommendations

It was recommended that job readiness skills must be applied and not merely theoretical. Students must be encouraged to send out their CVs from their first year, so they can get real interview opportunities and gain work experience before they graduate. This will help increase their opportunities for employment once they've graduated.

Secondly, in addition to CV writing and interview readiness skills, students should be taught job searching and networking skills, as relying solely on the traditional method of posting one's CV on the internet no longer suffices.

Thirdly, it was strongly recommended that more human and financial resources be provided to tertiary institutions to help them provide a wider range of services with more effectiveness for their graduates. This can be achieved with the assistance of SETAs, and with increased corporate sponsorship or investment into such interventions, which help reduce unemployment.

Objective 2: To conduct a baseline study of how internship programmes are currently implemented among employing organisations partnering with the ETDP SETA, the merSETA, and the NYDA:

H. Advertising and Recruitment

Internship programmes are well advertised across the country, as information is often available through word-of-mouth, campus advertising, and on the internet. The increased penetration of electronic media has provided access to information even for rural students.

Standard recruitment and selection practices are generally used as fair and

transparent mechanisms for screening candidates. Consequently, interns from different regions, genders, and disciplines are able to participate. Most probably due to the technical nature and related safety requirements of their work, merSETA interns are the highest interviewed (95% versus the NYDA's 75% and the ETDP SETA's 62%), in order to better align the candidate's skill-set to the requirements of the particular engineering and manufacturing organisation.

Recommendations

It was recommended that SETAs and organisations identify more internship, employment, and entrepreneurship opportunities for graduates in small towns and rural areas. It was further recommended that efforts to recruit graduates with disabilities be increased, as only 5% (12 interns) reported any form of disability in this sample of 241.

I. Alignment with Career Goals and Organisational Objectives

Most interns take internships to obtain workplace skills and professionalism (business etiquette) and to put into practice the theory they have been taught. The majority of interns are placed in the department that correlates with their qualification. However, because they are in entry-level positions, many end up doing more general office administration activities instead of meaningful work. Because of the high number of unemployed graduates, organisations can hire a graduate to merely get an extra set of hands to increase productivity, even if that work could have been done by someone who has no tertiary qualification.

In areas where there is a need for expert technical skills, i.e. finance, engineering, health, logistics, and supply chain management, there is better alignment between the interns' qualifications and their work activities. Consequently, 69.5% (167 interns) felt that more than 50% of their work activities were aligned with their qualifications. In the humanities and related fields there was less direct alignment between work activities and qualifications, e.g. a graduate who has studied Criminology and Political Science processing bursary applications for educators.

Finally, there were many who were doing work that utilised only a small portion of their full qualification, e.g. a Public Relations graduate working as a Personal Assistant. Others feel they are doing the odd job here and there but have no full responsibility, which makes them feel that their work is not really important.

Nevertheless, even in those instances where there was little or no alignment between the qualifications and work conducted, the internship experience helped the participants to learn professionalism and to clarify what work they want to do (or not) in future. It also helped them understand themselves better, or encouraged them to consider pursue further studies.

Recommendations

Employing organisations must have a clearly identified need for an internship programme. This need must be linked to the requirements of the industrial sector, their Human Resources Development Strategy, their Organizational Growth Strategy, and their Transformation Strategy, for example: Enterprise Development.

Secondly, organisations must have rigorous strategies and policies regarding the selection of interns and mentors, the allocation of work activities, their monitoring and evaluation mechanisms, and their absorption plans.

J. Internship Interventions

Whereas HEIs conduct Job Readiness programmes to prepare interns for the workplace, employing organisations welcome them by having basic on-boarding interventions, e.g. job descriptions (64%; 154 interns:), induction (80%; 193 interns), and mentoring programmes (76%; 183 interns). However, the job descriptions are not always implemented as envisaged, and the induction programmes are not standardized.

Skills development and training is offered mostly on the job (in more than 80% of instances) instead of in formal, structured workshops (less than 30% of instances). This is because interns are seen as transient, and organisations prefer to up-skill permanent employees. Moreover, organisations tend to avoid the hassles associated with administering skills training programmes and the related accreditation processes. Nevertheless, an overwhelming majority of interns felt that their "soft" or generic work attractions skills had improved greatly in the course of the internship (e.g. time management, interpersonal skills, problem solving, etc.). HIV/AIDS Awareness seems to have been more available than the other courses. This is probably because, due to the current epidemic in the country, many organisations have Health and Wellness Days.

Recommendations

It was recommended that appropriate mentors be selected and trained so they can guide, support, and advise graduates, as they navigate their way in the work place, thus enhancing the value of the internship. Mentoring should be much more than signing attendance registers. The practice should contribute effectively to performance development and to enhancing absorption rates. Structured mentoring must be budgeted for, and the time demands it makes on employees must be taken into account.

Skills development is an important component of bridging the gap between the tertiary institution and the work place. More structured, organisation-specific soft skills training must be provided to help graduates adjust from student life to the business world. Graduates with positive attitudes and better work attraction skills have a higher chance of

employability, compared to technical ability alone.

There was a strong recommendation that entrepreneurial skills training be a compulsory offering in all internship programmes. Where interns show real interest in pursuing this route, their acumen and potential must be assessed, and they must be placed in appropriate incubating entrepreneurship programmes.

Further recommendations were for more individualized and relevant technical skills training to be provided to broaden the internship experience, rather than merely reinforcing old skills. Job-specific technical skills training increases productivity by enhancing the interns' contribution, the effectiveness of the practical training, and job satisfaction.

K. Support for Career Path

The majority of interns felt that they had received support for their career path by being exposed to both internal (63%; 152 interns) and external (63%; 152 interns) work opportunities. Very little was done during the internship to expose them to entrepreneurial opportunities (31%; 74 interns). This reflects the traditional underestimation of entrepreneurship as a career development and employment generating instrument.

While most co-workers were very supportive, helping interns learn how to use new systems and programmes, there were also instances where co-workers were hostile, as they felt threatened by graduate interns who have higher qualifications than they do. This was sometimes a reflection that the co-workers were not involved in the identification of experiential training opportunities for interns. At times it reflected the tensions caused by the instability of the workplace due to the recession.

Recommendations

It was recommended that to increase the effectiveness of the internship and the pride of interns, more efforts need to be made to expose interns to senior management and talent managers by showcasing their work.

It was also strongly recommended that workers be involved in the identification of experiential training opportunities for interns, in line with the organisation's Human Resources Strategy and intern employment policy. Adequate support from co-workers and the genuine interest of mentors enhance the receptiveness of the organizational climate.

Absorption Rates

Of the 44% (106 interns) who had already completed their internships, 42% (45 interns) are still unemployed. Among those who were absorbed into permanent jobs, the biggest cohort is from the NYDA. It would appear that those companies that partner with the NYDA have a strong intention to absorb the interns when they first take them. In instances where the

internship is 12 months or less, interns complain about the short duration, citing that they often have to take a second internship to get a total of at least two years' work experience, as is required by the market place.

The low absorption rates reflect that many organisations take interns without the long-term goal of employing them. The low rates also reflect the continuing mismatch between the supply from tertiary institutions (especially HBIs) and the skills demands of the workplace in the current economy: graduates with technical, science and engineering qualifications are in higher demand than those in the Humanities. However, matriculants often lack the requisite Maths and Science skills for pursing these careers.

Of the 11% (27 interns) who had resigned from previous internships, the majority were placed by the NYDA (25% vs. the merSETA's 9% and the ETDP SETA's 7%). However, 43% of the interns placed by the NYDA had received permanent employment opportunities, as opposed to 33% for the merSETA and 29% for the ETDP SETA.

Recommendations

It was recommended that fair and transparent criteria be set for intern absorption/employment. Interns should be informed of these quite early on. This will help them work harder towards meeting organizational goals, and to raise alarms where progress is impeded. They will expect more of their mentors, and more rigour in the implementation of monitoring, evaluation and selection mechanisms. Some interns in Limpopo and Gauteng, for instance, were very disappointed that full employment was offered based on political affiliation instead of qualification and skill.

Secondly, mentors must be more effective in their role of assisting interns meet their career goals, by actively exposing them to as many employment opportunities as possible.

L. Funding

The fact that some interns are paid directly by the SETA while others are not results in the lack of standardization of stipends. The merSETA interns (Manufacturing and Engineering) tend to earn higher stipends than ETDP SETA interns (Humanities and Social Sciences) do. What was disheartening was that there were interns earning R1 041 per month, which was far below the minimum subsistence level of R1 500. It was not surprising therefore that 45% of interns stay at home with their parents. However, how one feels about the amount of the stipend is relative according to one's age, qualification, geographic location, or career goals. There were instances where earning a high stipend was less important than getting relevant practical work experience, especially in the manufacturing and engineering sector

Recommendations

Considering that 34.4% (83 interns) of interns have children, spend large sums on food and transport, and help support other family members, there is a need to calculate and standardize fair and realistic stipend amounts. Because of their socio-economic background, some interns are forced to be breadwinners. Therefore, it is recommended that standardized stipend amounts be set according to qualifications, geographic location, and industry norms, to ensure fairness and minimize the economic exploitation of interns.

M. Monitoring and Evaluation

HEIs review their performance in aligning their Job Readiness programmes with the requirements of the job market. They undergo peer review exercises and others conduct research to understand the growing demand for technology in the market place. Others are asking the SETAs to help them assess the demands of the market place. Some FETs are monitored by the government, the company-based recruitment agencies, and the students themselves.

In the workplace most organisations provide mentors to monitor and evaluate the interns' work performance, progress and acquisition of relevant skills. However, while the majority of interns feel they have opportunities to ask questions, and receive and give feedback, the delivery of the monitoring is inconsistent. The ETDP SETA interns reported that they got the most mentoring (81%; 119 of 147 interns) compared to the merSETA's 63% (28 of 44 interns) and the NYDA's 71% (26 of 36 interns). Nevertheless, the ETDP SETA interns also reported the least overall 'Enjoyment of the Internship' (72%), compared to 76% for the merSETA and 78% for the NYDA. The ETDP SETA interns also reported the lowest average 'Internship Value' score (69%), compared to 72% for the merSETA and 76% for the NYDA. This is because most of the mentoring activities involved the administrative signing of the monthly attendance registers and the quarterly reports, instead of the mentor ensuring a focused work scope to enable the acquisition of relevant knowledge and the development of a career path.

In evaluating their own experiences, the majority of interns in this study reported that the internship had helped them realize that they are competent and employable. They also felt that they were getting practical experience, even though it might not have been very relevant. Given the high rate of unemployment, the perceived 'Value of the Internship' is quite high at an average of 72.3% average for the total sample. It is a fact that getting paid while looking for job opportunities is better than staying at home. Most disliked was the amount of the stipend, which slightly more than half the total (51.5%; 124 interns) felt was too low.

Recommendation

It is recommended that the SETAs be more involved in the monitoring and

evaluation of the internships. This emphasizes the need for the SETAs to go beyond focusing on numerical targets, towards gathering more qualitative data from site visits.

Objective 3: To contribute towards standardization of best practices to influence policy.

Despite the serious challenges organisations experience in their efforts to absorb interns in the current recessionary climate, from this study we can suggest the following model of best practices for organisations to implement successful internship programmes:

1. Identify your organisational objectives for the internship programme, and get buy-in from the senior managers and co-workers.

2. Develop a robust internship strategy and policies in line with the organisational goals.

3. Have a designated intern manager who liaises with SAGDA to procure unemployed graduates, and with the SETA directly to ensure alignment with the SETA or industry's skills development strategy. Having a designated manager will also help interns know the person to go to when necessary.

4. Identify housing and relocation needs, and assist where necessary.

5. Assign and train mentors who are motivated to help the interns in their career development, i.e. ensure mentors do more than sign attendance registers. They must offer career guidance, and provide challenging work assignments and constructive feedback to improve the confidence of their mentees.

6. Hold orientation sessions for all involved (interns and mentors), in order to clarify roles and responsibilities.

7. Provide interns with real work assignments that are related to their studies and career goals, not just doing administration and filing. Ensure there is variety of work activities and enough work for the interns. Rotate them so they enhance their skills and experience by being exposed to different management styles and work activities. The importance of this cannot be overemphasised.

8. Provide interns with a job description and make sure that it is properly adhered to. This helps ensure that relevant work is assigned, improves the mentoring process, and enhances performance monitoring in line with set organisational goals.

9. Offer stipends that are fair and realistic, considering that due to the high inflation and the ever rising cost of food and fuel, interns must earn enough to provide for themselves and their dependents.

10. Encourage team involvement to improve social and networking skills.

11. Hold information sharing forums

where new interns can learn from ex-interns who have been recently hired as permanent employees in the company in the past three years.

12. Bring in speakers from your company's executive ranks for interns to learn more about the company and make career decisions, as they are able to access their role models. Such interaction also ensures buy-in from senior management, thus aligning the internship's contributions to the company's goals.

13. Offer training both in work-related (for example, computer language) and in general skills areas (for example, time management). Both are necessary for interns to derive optimum value out of the internship and to improve their employability.

14. Showcase intern work through presentations or exhibitions, so potential departments can employ talented interns.

15. Provide opportunities to teach and develop entrepreneurial skills. Expose graduates with high potential in this regard to opportunities for incubation, or assist them through the organisation's enterprise development strategy.

16. Conduct focus groups/surveys to get feedback from the interns and mentors, so as to improve satisfaction and get information about what the competition is doing.

17. Conduct exit interviews to gather feedback on the interns' experience and assess their interest in being hired by the host company full time.

18. Invite SAGDA and SETA officials to visit interns on site for monitoring and evaluation purposes.

5.2.14 External evaluation of the merSETA NGO support programme for the period 2009 to 2013, inclusive of recommendations for future programmes.

Purpose

The purpose of this research was to do an external evaluation of the work of the NGOs and the development of a related "repositioning" paper based on the evaluation findings, current research and inputs of organised labour.

Research Methodology

A combination of deskwork and interviews with NGOs was used for data collection. This allowed a synthesis of findings to a pattern of conclusions and corresponding recommendations. In that regard, a staged approach was employed, where an initial document analysis provided the first dataset on the projects, and that data was used to inform the interview aspect of the study. The approach took the form of five interlocking stages:

- A review of programme documents, files, and administrative data;

- The development of a research approach and methodology for the study;
- Based on the initial information base, the design of a questionnaire and interview schedule of managers and staff involved in the implementation of the projects;
- An interpretation of the findings and discourse analysis; and
- A set of recommendations.

Key Findings

The overall conclusion, though, must be that funding through NGOs is both programmatically impractical and financially unsustainable.

(II) Capacity

In terms of organisational and technical capacity, it was found that NGOs were not geared for the specificity of skills interventions in the manufacturing, engineering and related services sector. Training was subcontracted to third parties, with attendant problems of accountability. Although the size of the problem has yet to be quantified, it did imply a weakening of potential of civil society to meet NSDS goals. We believe this also to be of fundamental strategic importance. Skills development is much more than simply the provision of a service; it has a functionality which is particularly important in a sector such as manufacturing and engineering with high levels of demand for technical and managerial skills.

(III) Implementation

In all cases, the implementation of projects was in accordance with NGO-specific plans. However, none of the participants could claim to have gone beyond entry-level training. Equally, none could claim tangible contributions to the employability, or functionality, of learners in an active labour market.

(IV) Lack of vertical coherence

Even though the NGOs worked with very different types of partner organisations, and even supported a wide variety of different projects, there was considerable incoherence in terms of basic orientation, target groups, and types of outcomes. Of the six organisations, four reported poor lines of communication with merSETA. All displayed sub-optimal comprehensions of the merSETA skills context and degrees of mission drift. This inconsistency in terms of approach, target groups and outcomes was ironically in line with the national skills strategy – as expressed in the guidelines for civil society support, the guidelines for development cooperation with civil society, and the strategy for development cooperation with NGOs – suggesting the problem was partly the disproportionate emphasis of policy itself on issues of transformation and poverty alleviation over more fundamental industry concerns.

(V) Identitarian interests

Group identities appeared to be implicit in the general posture and orientation of NGOs to learners. Perhaps most clearly, this was found in anecdotal evidence of narrow foci on race and religion as organising principles of programme enrolments within specific social contexts. The net effect was a distorted principal-agent relationship, where NGOs tended to put their own private interests (and those of their social constituencies) ahead of those of stakeholders in the MER sector.

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(VI) Other findings

There were no indications that the outcomes in terms of increased skills had succeeded in influencing the distribution of opportunities. Effects in terms of ensuring the implementation of the merSETA programme objectives were also limited. In terms of developing appropriate pedagogical methodologies and matching work seekers with employment in the MER sector, there were fairly limited outcomes in the SMME and cooperative sector.

In summary, the funding of NGOs contributed to negative tendencies, such as fragmentation; competition for funds; mission drift; and the creation of a new wave of 'opportunity NGOs' de-linked from the MER skills context. This evaluation confirms a tendency towards reinforcing identity politics, institutional fragmentation, and opportunism.

Recommendations

The evaluation arrived at the following key recommendations and staged approach to their implementation.

STAGE 1: Discontinue NGO support, but maintain overall programmatic focus

(I) Discontinue merSETA NGO support

What is clear from the support programme experience is that NGO survival increasingly depends on their capacity to define and pursue new roles in the skills development arena. Yet few NGOs possess the skills and experience required to explore options for improving both financial sustainability and tangible interventions in a systematic manner. Given the wide berth of problems associated with the support programme, we recommend the immediate discontinuation of financial support to NGOs and NPOs.

(II) Maintain strategic focus of support programme

We recommend retention of the support programme approach, provided it is grounded in a shared vision/goal for programme partners. The problem, we contend, is not primarily the idea of interventions but a challenge of identity among providers and beneficiaries of services. Supporting processes and actors that can contribute to more focussed and

deliberate outputs in the long run is a sensible strategy in the context.

(III) Delineate growth-enhancing interventions from poverty eradication

The goals of supporting skills interventions are still valid, but such deep structural changes cannot be expected in the short term. The link between an emergency response and long-term sustainable development should be clearly delineated. Short-term interventions ought to be complimented by long-term recovery programmes to rebuild livelihoods, but this should not obscure the difference between purposive sector-based skills programmes and sustainable livelihoods.

(IV) Increase attention to capacity

As the major aim is to strengthen organisations, core funding might be used more systematically when all funds are earmarked for specific capacity-building project activities. The net effect, however, may actually be the draining of organisational resources and diversion of attention from the main task of skills development.

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(V) Consider more systematic monitoring of activities

Monitoring of the process and results is important for systematic learning and improvement of project activities. There is considerable room for improvements in this respect in the majority of cases studied. This responsibility rests with merSETA to designate and release staff for proper project supervision and monitoring.

(VI) Consider structured integration of components for development

As argued above, the focus on promoting participation does not respond in the long term to urgent concerns of most poor people. An exclusive focus on short term interventions may serve to increase the grassroots perception that what the organisations are doing is relevant for their situation. Thus, where it is possible to include programme components that respond to the needs of constituencies in the MER sector, without compromising the overall developmental orientation of the work, such efforts should be encouraged and supported.

STAGE 2: Towards a repositioning of the support programme

(VII) The NSDS III – A strategic perspective

As a macro planning tool, there is now common acceptance in government that the NSDS III is a timely and relevant strategic innovation towards the establishment and deployment of the state's administrative apparatus towards the effective provision of skills. However, the NSDS III appears to be hobbled by a

muddled interpretation of programmatic interventions, 'encouraging' support for NGOs and cooperatives as a strategic imperative towards poverty alleviation. The unfortunate by-product of this is an entrenchment of economic dualism – between the first and second economies – through binary interventions that do more to deflect attention from growth-enhancing – and therefore poverty reducing – measures. What is recommended is a strategic overhaul of the merSETA support programme and the institutionalisation of more strategic partnerships within the MER sector.

(VIII) Recast the support programme in the MER skills context

Thus, if there is a single lesson to be learned from the support programme experience, it is that industrial transformation and skills development in South Africa should be left in the hands of sector stakeholders who are clear about their objectives and have the technical expertise and strategic coordinating capacity to deliver.

(VIIII) Recast the principal-agent relationship

Institutions in successfully developmental states such as Japan mandated with the responsibility to deliver services or guide the state towards strategic priority outputs are established as a planning agency, which in South Africa's manufacturing and engineering context is merSETA. Yet how merSETA deploys its architecture across different tiers and spheres of industry and society is a complex matter which depends on additional reforms. Based on some of the lessons of East Asian development states, Japan in particular, and the analysis of the National Development Plan document, we will next set out some recommendations in the final strand of this study towards enhancing the strategic coordinating capacity and institutional efficacy of the South African merSETA.

(X) Build strategic sector-based partnerships

In so far as the NSDS III advocates partnerships between all role-players and stakeholders towards building self-reliance and a greater field of opportunities for individuals and thus economic growth with social equity. It is therefore recommended that merSETA, in partnership with organised labour and industry, has the responsibility to build people's capacities by promoting high economic growth and higher investment and employment, raising the standard of education, and introducing effective career path interventions. Programme interventions in the economy would here be aligned to social and economic strategies for the redistribution of opportunities, not funds. In short, the recommended approach is conceived as the construction of a strategic partnership in the MER sector.

(XI) Build Ideational capacity

Ideational capacity is the embeddedness of interests in social contexts. In order to

make real the aspiration embodied in the recommended compact with organised labour and industry means demonstrating that the outcomes are mutually beneficial. Certainly, the many successful societies that eradicated poverty in a short space of time used a social compact of some sort at different levels through which those at the bottom end of the income pyramid together with all others have enjoyed a steady rise in living standards.
The question, then, is what strategic options are ranged before merSETA?

(XII) Principal-agent challenges

It is recommended that a new principal-agent nexus is configured, where industry is de facto the principal, merSETA the administrative and regulatory agent, organised labour the principal agent, and its members the beneficiaries.
The introduction of industry clusters (engineering, manufacturing etc.), in an effort to ensure coordinated and focussed development, is a sure way to align funds, programme designs and inputs and outputs. In this way, targets would be set by unions and industry, with merSETA administrating the process. These targets would not be artificial. They would arise from a process of consensus and measurable deliverables.

(XIII) Technical support

To the extent that the recommendations in this report are rooted in a continuous process, the institutional architecture ought to be adapted and reconstituted as an essential planning and implementation agency (like an industry version of the NPC) incubated in merSETA as the administrative arm. Where necessary, secondments across the parties should be about enhancing the technical and organisational capacities. The important point to note is that the commitment by South African political leaders to build a developmental state before strengthening coordinating capacity of institutions such as the merSETA raises serious problems with regard to the effectiveness of skills development interventions.
Thus the strategic coordinating and implementation capacity would in this model be founded upon a set of institutional arrangements which simultaneously insulate the bureaucracy from special interests and establishes cooperative links between bureaucrats, organised business and organised labour.

(XIIII) Institutional coherence

Part of the challenge of strategic coordination is institutional coherence. In this regard, the bigger hindrances are fragmented and incoherent authority structures, the nebulous positioning of authority and fuzzy accountability. Attempts to impose a remote but overweening authority from merSETA head office level does not help matters. The result is managerial inefficiency and bureaucratic inertia. These problems emanate from a lack of or non-existence of proper structures. To deal with the problem, and in the absence of a normative and institutional base for

strengthening capabilities, means coming to terms with the limits and potential of the relative autonomy and authority of merSETA as the overriding architecture and institutional design that could lend greater coherence to different tiers of skills intervention. Devolve authority to regional and sectoral structures.

Institutional capacity

Finally, one can add a second priority intervention of technical capacity to provide complex services. Part of the success of the Japanese developmental state lies in the fact that its skills development system is of a high standard. The Japanese system focuses on building comprehensive knowledge. Knowledge production in South Africa is not evenly distributed and does not square with innovation. The knock-on effect is a lack of critical skills such as specialist technical skills. In order to address this challenge, the focus needs to be on building the expertise of service providers at all levels in partnership with higher education institutions.

5.2.15 Baseline survey of sustainable green-related activities, trends and innovations in the merSETA levy-paying companies 2013

Purpose

The purpose of the project was to deliver a baseline survey of the merSETA levy-paying companies in order to gain a better understanding of their green activities. This would inform and determine the sustainable green activity-related status, trends and innovations in the various sub-sectors.

Methodology

In selecting the appropriate data collection methodology, a number of factors were taken into account, including but not limited to the ease of reaching a wide range of respondents, participation rates, budget and timing constraints. Based on these considerations it was decided that the most appropriate data collection methodology would be that of an online survey. By making use of the online methodology, costs would be contained, while at the same time, all levy-paying businesses registered with the merSETA would be given a chance to participate in the study. In addition, online interviews are generally used when the target population is difficult to reach or has limited time available. Coverage was extended nationally to all levy-paying organisations on the merSETA database.

Key findings

The findings of the research reveal both expected and unexpected approaches and attitudes towards sustainability. As expected:

- The large, often international, companies have a higher level of activities that supports sustainability through best practice processes which are embedded in their operations. Key amongst these is the International Standards Organisation (ISO) and South African National

Standards certification. It should also be noted that improved sustainability practices are often an indirect consequence of such certification and not the primary objective of the management decision to adopt them. For many companies, certification is often a requirement to participate in the supply chain of an Original Equipment Manufacturer in the auto manufacturing industry;

- Companies which have adopted sustainability and / or environmental performance as a core value are easily identified as the theme is engrained at all levels of the organization and procedures are designed to implement, enforce and measure compliance thereof;

- The notion and concept of sustainability and environmental performance means different things to different people and 'do good' activities are often misinformed, resulting in little, or in extreme cases even negative impact, while the company believes it is on the right track and taking 'real' action; and

Smaller companies under current economic conditions are in a 'survival' mode with little time or budget to address non-mandatory policy objectives, such as environmental performance.

Findings which were not expected to come through as vocally as they did were:

- A strong call for Government to incorporate awareness programmes in the school curriculum as school leavers joining the work force tend to have little understanding of environmental awareness. Further, if behaviour is to change, beliefs and attitudes around protecting the environment must first be instilled. Instilling this with children is believed the most effective approach; and

- A real willingness of small and medium sized companies to implement ISO and National Standards, with an inability to do so due to the high upfront and on-going costs. Almost all companies shared the view that these certification programmes would make their operations more sustainable and competitive and would also 'up-skill' their workers. This suggests that if Government were to find a way to make certification accessible to small and medium sized companies it would have a significant impact on sustainability practices of small companies.

In conclusion, the research found that few companies have a holistic understanding and approach towards sustainability and environmental management. The companies which do have this understanding tend to be large companies, which are often foreign based, and have implemented programmes to either comply with best practise or have adopted sustainability as a core value. Small and medium sized companies tend only to comply with legal requirements or implement stand-alone projects which in many instances have little environmental value. This is possibly due to a

combination of factors, one being the way in which Government is implementing its policies which may not always be clear or effective - especially when it comes to voluntary measures. This is demonstrated by a higher awareness, compliance and budget allocations respondents have towards waste management, which is highly regulated, compared to water and energy efficiency, for example, which are not.

There is a clear disconnect between the understanding that the majority of the companies who participated in the survey have of sustainable development and what Government policies and strategies are trying to achieve. A key starting point would therefore be to implement a programme which aims to close this gap. Especially in light of 83% of companies who participated in the survey believe that 'the pressure for change (green related activities covered in the survey) will increase in the next three years'.

The findings show that the 'high' group of companies which employ best practice 'green' initiatives tend to be the multi-national, larger companies, while most others (the 75% in the 'low' category) are focusing on compliance and not introducing any 'green' initiatives beyond that. Smaller companies are constrained by limited resources, including human resources with specific environment skills or knowledge.

As identified in the research, the priority areas for most of the merSETA companies in the sample have been related to waste, water and energy – the latter possibly offer more accessible cost saving benefits whereas waste is possibly more highly regulated. These therefore suggest an appropriate starting (but not end) point for skills development within merSETA companies.

In order to support the intentions of most of the companies to increase their environment sustainability actions in the future, skills development could include a range of activities. Possibly, using a tiered framework, from basic advocacy, general awareness and knowledge of each of the input and output resource areas, through to a specialised qualification, that integrates the complexity of cross-resource management.

Recommendations

At the most basic level, an understanding of broad 'green' issues and of the need for sustainable environment approaches should be introduced for the many artisanal, technical and general worker levels. The outcome of this basic level is aligned to the needs of Level One of the proposed Environmental Maturity Matrix; to bring appropriate environmental considerations into the merSETA sub-chambers. This will enable these levels of workers to understand the 'what' environmental management is about and why it is important.

Further to the immediate scope of the merSETA membership, the membership see significant value in merSETA also

reaching out and offering general environmental management education to schools, public offices, municipalities, etc. However, it is acknowledged that this need of the membership may be better met through other government education departments or offices.

The next level, focused specifically on the industry workplace, looks at emphasising sustainable environmental management practices in basic training (induction and ongoing) such as management of hazardous waste such as oil, paint, chemicals, etc.). This could start driving awareness towards Level 2 of the matrix; building understanding of what activities must be undertaken in the areas of inputs and outputs to comply with all regulations and by-laws. Compliance therefore starts to grow roots into building an environmental value system. This can be done in the same way as health and safety issues are emphasised and supported by ongoing training, environmentally responsible procedures, and monitoring.

More in-depth training for environmental 'champions' could be provided at a next level, to increase the depth of understanding within the sector and to prepare them to play specific environment management roles in the future. This is like a bridging level from compliance to more formal structures and targeted at all levels of the organisation – from technical workers to supervisors to managers.

Learnerships and scholarships for technicians, engineers and scientists in the broad range of environment sciences will be needed to plug the skills shortage and to contribute to the development of local research, development and innovation and to enable firms to introduce best practices in their operations. With growing awareness and a developing environmental infrastructure, companies can start formalising policies; identify the environmental competency and skills sets needed; promote communication and build an environmental value proposition.

Further, merSETA may consider promoting environmental sustainability within the sector, within an overall framework of sustainable business management which mirrors its current thought leadership towards forging sustainable relationships between Planet, People and Profit, i.e. driving the Triple Bottom Line principle. This aligns with the survey results which identify a trend amongst Multi-national leaders in the metal and engineering and Auto Manufacturing sector that consider environmental sustainability as just one pillar of overall sustainability. At this level of development, companies would be maturing into Level 4 and Level 5 of the proposed Environmental Matrix.

In order to ensure that there are skilled people available to take on the environmental management positions that can drive best practice, which we believe will be the norm in the future, the merSETA is recommended to develop an environmental management qualification, which integrates an understanding of environmental sustainability within the

framework of business management - so that such managers are able to understand and build a business case for environment sustainability.

As the strategy of the proposed Matrix suggests, merSETA is required to develop skills that can build the industry's environmental journey. One that is starting from a position dominated by companies doing very little; towards a destination where more, rather than less companies can sustain environmental practices aligned with best practice.

5.2.16 Mapping post-school-school education and job opportunities in Gauteng 2013

Purpose

There is little research that tackles issues around spatial inequalities in South Africa, and it was hoped that this paper would add to the literature. The purpose of the research was to determine which people residing in Gauteng had access to education, training, and employment opportunities.

Objectives

Objective 1:
To address the nature of spatial inequalities in South Africa, and in particular, identify those who were able to leave poorer areas.

Objective 2:
To provide evidence that unequal societies tend to have concentrations of low skilled, unemployed and less educated citizens in certain areas such as townships. While the initial conditions created by the laws of the apartheid system meant that only poor people lived in township areas, informal settlements and rural areas, this does not necessarily hold true currently.

Methodology

The study was undertaken between October 2011 and April 2012. Different job adverts from various platforms were used to gather information on the jobs advertised in the period October-December 2012. A total of 250 job advertisement samples were examined, with a special focus on the sectors which offered more job opportunities, the type of qualifications and experience needed for the jobs, and which locations had more job opportunities. National accounts data from Statistics South Africa was also used as a main secondary source of data.

Data capturing process took place between the 12th and 30thMarch 2012. The data collected was in the form of Global Positioning System (GPS) results from Arc Map. The mapped information was obtained through physical mapping using the GPS. The physical locations that were mapped were the Public FET Colleges, Public Adult learning Centres, and the Employment Services in Gauteng.

Key Findings

There are a number of reasons why individuals remain unemployed for long

periods of time, and therefore cannot sustain their lives and those of their families. These reasons include lack of job opportunities, lack of education and skills for jobs available, and a mismatch between the type of skills required for jobs and jobs in the area in which they live. The geography of Gauteng's Local Municipalities, educational, skills and employment scenarios, and other factors affecting the inability of individuals in terms of education and training in Gauteng, are outlined below.

Gauteng Municipalities

Gauteng province has 10 local municipalities: Mogale; Randfontein; Westonaria; Merafong; Emfuleni; City of Tshwane; City of Johannesburg; Ekurhuleni; Lesedi; and Midvaal. There are 2.6 million people residing in the City of Johannesburg, who are between the ages of 18 and 65 years. African people account for the bulk of the population.

Education and Training in Gauteng

School education in Gauteng is large compared to the other provinces, and has been growing over the last decade. There were 1905 schools in 2000, and increased to 2040 in 2011. In 2012 there were 1045 no-fee schools with 855,889 pupils. With regards to the NSC Pass in 2011 in the Gauteng province, the percentage was 81.1%. Africans had 76.6%; Coloureds 82.7%; Indians 94.4%; and Whites 98.5%. This shows that the province provides for a large group of pupils in its school education system because the economic profile is better compared to the other provinces.

The Gauteng Public Adult Learning Centres (PALCS) provide training and education for adults in the Gauteng province. In Johannesburg Metro there are 16 PALCS; with 11in Tshwane Metro; and Ekurhuleni Metro respectively; three PALCS in West Rand District Municipality and one PALCS in the Sedibeng District Municipality . However, this information was sourced from the Department of Higher Education and Training website and it is possible that is not a full and comprehensive list of all the PALCS in Gauteng.

The Gauteng province has eight Further Education and Training Colleges (FETs):Central Johannesburg, Ekurhuleni East, Ekurhuleni West, Sedibeng, South West Gauteng, Tshwane North, Tshwane South and Western, across 32 campuses. FETs have always had a connection with the apprenticeship system. Black colleges could not have access to formal apprenticeships. The number of those who get an apprenticeship is still negligible compared to the need both from employers and individuals who require training. In addition, the throughputs are low. And there seldom seem to be any improvements in the candidates who qualify as artisans. Apprentice programmes are supposed to give the country skills in critical and scarce areas, and support reindustrialisation.

With regards to post school education and training provision, the Gauteng province has five universities.

In 2010 these universities had substantial numbers of students:

- University of Johannesburg -48,315
- University of Pretoria-57,114
- Tshwane University of Technology-51,785
- Vaal University of Technology -21,416
- University of Witwatersrand -29,498
- The total number was 208,128 -34.7% of the national total.

With that being said, only 25,647 students enrolled at FETs. This is a small number compared to the number of students enrolled in other types of institution. Post school public provision is offered in different institutions, which are the responsibility of the government but not necessarily that of the Education departments. This will include colleges like police, nursing, defence force and agriculture. However the information on enrolments at these colleges is not easy to get hold of.

Work and Employment

Migrant workers seem to be to the Gauteng province from rural areas, and other towns and cities around the country. A reason is that Gauteng has always been known as the City of Gold: so people came to Gauteng to look for jobs. The discovery of gold resulted in mining, which accounts for85% of the primary sector. Agriculture accounts for only 15%. As much as the economy of Gauteng was built on mining, it has grown in varying directions. The OECD shows that there have been shifts over time from mining to manufacturing, and now to financial services.

Unemployment

Unemployment has been an issue in the whole country for a long time. According to OECD, 30% of the jobs in the country are in Johannesburg, however the province still suffers from high unemployment. In 2011, 51% of Gauteng residents were employed, 18% were unemployed, 3% were discouraged work seekers and 28% of the population were not economically active.

Job placements vary in terms of requirements: some employers require experience, education, others are in different locations, or are located in private / public sector. Placements are advertised in print media and via online platforms. The research shows that there are more job opportunities in Johannesburg compared to other cities/ provinces in the country. There area high number of job opportunities offered by the community, and personal services. Required job experience is usually 3-5 years, and candidates must at least have a National Diploma/ Bachelors Degree as a qualification.

Employment Services

The Department of Labour is supportive of the unemployed and work seeking individuals having better chances of getting jobs and developing skills in the

labour market. The programme covers the Registrations Services, Career Guidance Services, Recruitment and Selection Services, Skills Development Service, Information Services, and Special Services. However, these employment services are spatially spread, making it difficult for other people (especially in the rural areas) to know anything about them, or use them. They end up being underutilised because they the appropriate participants don't know about them.

Spatial Distribution of PALCs, FETs and Employment Services Centres in Gauteng

In the Gauteng Province the economy and work opportunities are spread out more equally. The metro municipalities (City of Johannesburg, City of Tshwane and Ekurhuleni Metropolitan Municipality) offer more diversified economies.

The shifts in the country's economy require that individuals have more than a basic school education: their post school education is also crucial, because a variety of job advertisements require National Diploma / Bachelor's Degree qualifications. Yet many people from unprivileged backgrounds do not possess these qualifications. So the issue of qualifications (and lack thereof) is also emphasized in this paper.

The study revealed that the largest category in education in all municipalities is made up of those with incomplete secondary education. Lack of work experience is a problem for these new entrants into the labour market. This is usually the case in the societies where employment networks are inflexible.

Recommendations

- The only way to end poverty and inequality in South Africa is to create more jobs - and they need to be sustainable jobs.
- South Africa needs to create industries and businesses in the "missing middle": between low productivity informal sector enterprises and high productivity firms in the formal sector. This will allow the unskilled to find job opportunities and decrease the unemployment rate in South Africa.
- It is important for government to understand the history of the country and the spatial differentiation that has occurred, so that they can develop complementary policies that address issues of redistributive justice, intervening in the lives of the affected individuals in South Africa. These policies must address the issues of poverty at the local level. In education for example, policies should stress the importance of children from poor households completing senior secondary education, because it is very rare in South Africa for children to finish senior secondary education; which is crucial for those intending to continue their studies at higher education institutions.

- The employment services programmes need not be spatially spread to ensure that the unemployed and work-seeking individuals can utilise them to get jobs and develop their skills. This programme will hopefully decrease the unemployment rate and give people the skills that needed for the jobs that are available.

- There is a need to open up access to education; and higher education specifically. This is to ensure that individuals are equipped with the necessary skills for the available jobs, in order to enter different industries. Priority given to higher education needs to be stressed in South Africa.

- In Brazil, there is considerable evidence from household surveys that education expenditures and conditional cash transfer programmes have reduced inequality and poverty. Programmes providing cash to unprivileged families have enabled their children to attend school and go to health clinics. Most of the young people in Brazil are educated. Perhaps this is a strategy South Africa should consider adopting?

- South Africa needs to focus on up-skilling individuals to support their efforts to gain meaningful employment.

- Children from poor families must be identified - so that more support can be given to them, so that they can successfully complete their school education.

- Ensuring that there is equal access for all individuals: gain a post-school qualification should not only be a luxury for those who can afford it..

- The country's social grants need to be tied to certain conditions, such that children go to school, and should only be targeted at the poor.

- Creating new enterprises, which are localised, will alleviate the lack of work experience young people struggle with. Work experience is a key requirement to gain employment nowadays.

- Local government should be lively, and get involved when industries such as mining are shutting down or down-sizing, to ensure that the needs of the residents are addressed with regards to re-skilling and support for new ventures.

5.2.17 Investigating work and learning for employability 2015

Introduction

Youth unemployment is a global problem. In South Africa, currently,3.2 million of the 10.4 million youth aged between 15-24 years are not in employment, education or training (NEET). In other words, 31.4% of the country's youth are NEET (Statistics South Africa, 2014).

The two controllable factors prominently linked to sustained unemployment are

education and work experience. This paper is a synopsis of a study conducted during a Learnership implementation project within the automotive industry, and investigates the role of the workplace during this mode of work integrated learning.

The Problem

Youth make up a significant portion of the world's unemployed: 42.3% (ILO 2013, p. 3), with a global 13% youth unemployment rate consistently rising at about 0.2% every two years (Kapsos, 2014, p. 12). This continued expansion of youth unemployment is an important global issue to address.

In South Africa the youth make up 71% of the unemployed population. Of the 10.4 million youth aged between 15-24 years,3.2 million or 31.4% are not in employment, education or training (NEET) (Statistics South Africa, 2014). In addition, the National Planning Committee (NPC) claims that 65% of college students in South Africa are unable to find the work experience necessary to complete their training, and this does not even include finding jobs.

Holding a tertiary qualification will improve your odds of being employed by 1.7 times over obtaining a Matric, and 2.1-2.7 times if you had not completed school (Statistics South Africa, 2014, p. vii). Whereas having work experience means it is 2.7 times more likely for you to get a job.

Many countries and professionals see work integrated learning (WIL) as a solution to graduate unemployment. Even in South Africa there is growing political support for the idea, to the extent that the Minister of Higher Education and Training, Dr B. Nzimande, has used the phrase "every workplace a learning space" as an objective for the National Skills Accord.

Purpose

The purpose of this study is to understand, against the backdrop of massive youth unemployment, the interplay between work and learning.

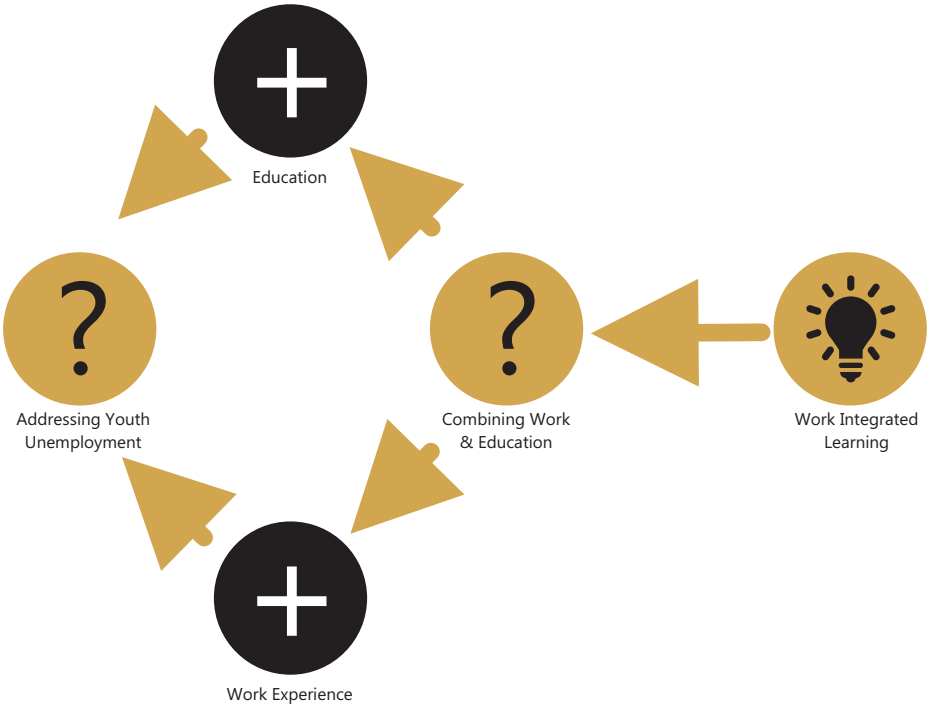


Figure 6: How is work and learning a solution to youth unemployment?

Firstly, to examine the workplace as a learning environment which supports the development of skills and attributes that will enhance the employability of young new entrants to the workplace; and, secondly, to investigate the readiness of the workplace to implement work integrated learning programmes. We do not fully understand the potential of workplace-based learning as a vehicle for learning and building employability skills, and this study sets out to investigate the contribution that workplaces make to the employability of young unemployed graduates.

Objectives

The key objectives of the study were to investigate:

- What the expectations of the workplace are during work integrated learning;

- How these expectations are affected by the dynamic work environment;
- How the workplace assists in making unemployed graduates more employable and what processes are followed; and finally
- How the workplace assists and supports learners to learn while being hosted at a worksite.

Reflecting on the essence of the study it became clear that the employer's role in a WIL project remained a "black-box" against the backdrop of high youth unemployment as presented in Figure 7.

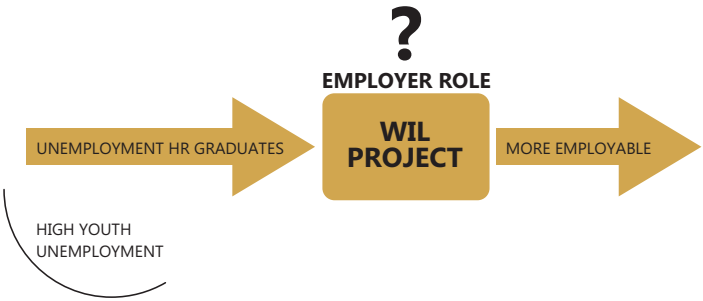


Figure 7: Investigating the role of the employer

A qualitative exploratory research study, in which the case study methodology is adopted, proved to be the most suitable. Data from a variety of sources such as interviews, questionnaires, company profile of the companies, and visual representations, was collected and encoded. Data was analysed to identify themes in line with the main research questions of the study in order to illuminate the case.

Key Findings

Firstly, the analysis of the learner backgrounds showed that the learner's employability and success in the workplace is less dependent on their home environment, parents' histories and the learner's existing qualifications, and more dependent on what the learners gain from the WIL programme itself. Where background did have an impact was in the support required for the project including transport and guidance counselling.

The study indicated that managers seemed to adopt one of three approaches to learners that were hosted in the workplace:

1. A structured approach – in which managers evaluated their worksites and the requirements of the programme to assess what experiences they could afford the learners, and what support they could

provide. This resulted in learners responding well to the programme, building their confidence and self -esteem.

2. An unstructured but managed approach, termed "going with the flow" in this study – where the primary objective seems to be to integrate the learner into the workplace, and less emphasis is placed on the programme was evident. The unstructured but managed approach seemed to fit the workplace best, in that they were able to develop the learner into precisely the team member that the organisation needed. This approach did however leave the manager and learner in continual doubt as to whether they are meeting the programme requirements.

3. Leaving it to the Learner – this is an unstructured and unmanaged approach with all activities being driven by the learner taking initiative and building their own networks, where learners systematically work their way into being a trusted member of the team. This approach required a self-driven and flexible learner, who was prepared to continually adjust to the workplace and seek out additional work and contacts. This was difficult to do as often learners in a WIL programme are afforded little or no status in an organisation. Thus learners face the continual risk of being excluded from the workplace and work teams.

It was confirmed that a structured approach enabled managers to take a more proactive stance with respect to the WIL programme and allowed them to shape, monitor and assess the learners' expectations, progress, and personal development. However, experienced managers found that supporting WIL projects was time consuming, and they wanted something that mirrored their work practices more closely to minimise the overheads involved.

The study also identified six primary inhibiting factors that slowed learning in the workplace, and in some cases brought it to a complete standstill:

1. Differing expectations – t linked either to expectations of specific outcomes from the programme, the processes through which the learners should be supported, or even how a workplace functions (or should ideally function). The level to which managers and learners could not find mutual understanding in this regard impacted their level of engagement or support for the programme. In some cases the inertia of not having their expectations met caused the learners to withdraw, doing only what is absolutely required by the programme or the workplace.

2. Lack of communication – it was surprising to see to what extent both learners and managers would assume that they did not need to share information with the other party. Whether it was learners assuming that managers already knew what

their programme deliverables were, or managers who conducted detailed planning but never shared their plans, expectations and goals with the learners, there was a consistent lack of communication.

3. Isolation – it was possible for workplaces to systematically isolate the learners from the work practices, by limiting their access to infrastructure and information. However, learners found their skills called into question, their activity limited to repetitive tasks, and they were never introduced to other members of staff. This impacted the way the learners valued their own skills and made them withdraw from work activity even further.

4. Punitive management –managers who, for whatever reason, emphasised performance over learning created a climate in which learners started talking less risk, and felt that the standards to be maintained were impossible; and this eventually affected their performance. This was exacerbated by the manager holding learners in limited esteem, due to the temporary nature of their association with the company. Also, in the absence of key strategic positioning of the project and the active promotion of the project by the project champion, there was little to increase the perception of the value of the learners on the project.

5. Conflict and exclusion – learners who perpetually raised issues with the managers and found that events made them feel excluded were eventually excluded by the workplace practice because they created the impression that they were difficult to manage or would not fit in.

6. Pregnancy – although not necessarily an issue from a learning perspective, the fact that four learners fell pregnant after enrolling on the project had serious management implications. However, it impacted the learners' employability since they were not able to gain as much work experience as their colleagues. This is evident when a Manager's assessment of the learner indicated that she was not work-ready and required further development.

In addition, the study highlights that managers are capable of supporting learning and providing additional training where required. However, for many managers, learning had not yet permeated their conversations, and they needed to pay special attention to the learning requirements of the project in order to develop a culture of learning, as these processes and practices are not yet part of the norm.

Key Findings

In conclusion, almost all learners felt that the programme enhanced their employability. Managers also felt that the skills and ability for learners to contribute productively in a workplace had improved, and as such, it is possible to say that the WIL programme did enhance the learners' employability. The

study however also highlighted that the learner's individual agency (as determined by their personality, motivation and attitude) was important in determining their employability.

The pivotal insights which emerged from this study can be summarised as the SCRIPT for work integrated learning described below:

- The work experience and subsequent learning can be shaped by creating an environment that is supportive of learning;
- The work experience becomes meaningful if it connects the learners to the workplace by providing the support required to enable them to participate fully in workplace processes and practices;
- Relationships are important and encourage the necessary support, in that learning in the workplace is mediated by people;
- Work integrated learning is an adaptive process between the stakeholders making information and feedback important for developing the learner's specialisation;
- Participants need to be empowered, and workplaces need to be ready and have the capacity in order for both learners and employees to become engaged in the process and maximise the benefit they receive; and
- Extending trust to the learners serves as the stimulus for their transformation, in that it communicates a perceived confidence in their abilities.

Recommendations

The assumption made at the beginning of this research study, that workplace experience will enhance employability, has proven to be correct. However, the application of WIL is complex and has many workplace challenges. There is a need for a balance between meeting the demands of the workplace and meeting the learning objectives of a specific programme offered by education, training, and development institutions.

It has become evident in this study that workplaces are not ready to receive learners; employers do not think to integrate the learners into the organisation and guide and support them through their learning processes. It requires specific capacity building and resources within the organisation to embark and continue on a well negotiated WIL agreement at various levels within the organisation. However, the study has also confirmed that workplaces do have the potential to enhance employability through a very deliberate and guided approach.

Learners' employability increased if they were able to connect to the work team and manager. In the study it became apparent that as managers and the learners developed a stronger relationship, managers became more invested in the employability and the employment of the learner. Adaptation

to the work environment, and making a contribution to the work team, became more important than the particular technical competency. Again, this comes from knowing the context of the organisation, how teams work, and better preparation of learners through this process.

It also became clear from the study that in South Africa, vocational and academic boundaries remain strong and the synergies required between institutions and workplaces to create what this study highlights as the "DNA of WIL", requires more than just a policy thrust. Despite having qualifications, or being registered on the National Qualifications Framework, which incorporate both the academic and the workplace component, the study has shown that academia and work continue to operate in parallel worlds.

Far more advocacy and capacity building of employers is required for policy – such as those proposed in the White paper for this to become a reality. This means that careful consideration must be given to the curriculum, which must include how learning in the workplace will be supported and managed, and by whom, as proposed by; making this a policy issue.

It is further recommended that due consideration must be given to include the possibility of allowing general knowledge application as part of the curriculum to be implemented in the workplace without being too prescriptive on the outcomes of the qualification, allowing the much desired need for a balance between work (as required by managers in the workplace) and learning (as required by the ETD institution).

5.2.18 merSETA tracer study 2015

The merSETA, in response to the NSDS III, have implemented various workplace learning programs to assist learners and graduates with the much needed work experience. These include apprenticeships, graduate internships, and learnerships. It was in this light that the merSETA identified a need to conduct a tracer study to take stock of the employment status of graduates, determine learner post learning program activities, establish expectations of learners who have successfully completed their learning programme, and to develop a deeper analysis of enablers, benefits of and obstacles to employment opportunities after the learner's final trade test. The study was conducted between 22nd January 2015 and 23rd March 2015.

A multi-pronged methodology was used to gather data. This included quantitative and qualitative methods, augmented by detailed desk research. The study consisted of three samples: learners, host employers and the training provider. The participants were sampled out of a merSETA database of learners, employers and training providers. The study was conducted nationally to ensure geographic representation of

race, gender, training provider, chamber and employment status. A total of 1030 learners who completed their learnerships or apprenticeships between 2012 and 2013, 20 employers, and 8 training providers, were interviewed.

From the learners' sample, the following was established:

- Their employment status;
- Reasons for learners to stay with the original training companies;
- Reasons to find employment outside the original training companies;
- From learners employed outside the original training company: how the employment was secured;
- Post qualification training courses attended.

From the original training companies and training providers, the following was established:

- Reasons for retaining and releasing learners.

From the primary and secondary data (literature review) collected, the following was established:

- The methodologies utilised by different organizations to conduct tracer studies;
- The employment rates of their graduates.
- It is envisaged that the study outputs will be used to, amongst other things:build baseline data of post qualification trends across the manufacturing and engineering sector; establish whether the workplace learning initiatives were successful and effective towards skilling and increasing learners employability; identify areas of strength and weaknesses and make potential improvements on the programs.

Profile of Learners:

- The results indicate that 72% of the learners interviewed were African, followed by 18% White learners, 6% Coloured, and 4% Indian. The gender split was 89% male and 11% female. Further analysis indicated that the majority of the learner graduates were African males (62%), followed by 17% White males, 11% African females, 6% Coloured males, and 4% Indian males. Very few White, Coloured and Indian females participated in the study. The analysis therefore contains little reference to these three categories unless in cases where they were adequately represented.
- The majority of those interviewed lived predominantly in Gauteng (40%), followed by Kwa-Zulu Natal (18%) and Limpopo. The least represented provinces were the Free State, North West and Northern Cape.
- The majority of the sample was young, with 74% of the learners being between 25-34 years, followed by 18-24 year olds at 12%. It was

interesting to find 45-54 year old learners (1%) in the sample, mostly referred by companies so as to obtain a qualification.

- Most learners (45%) were recruited straight from matric, whilst 39% already had undergraduate degrees or diplomas. There is a small number of learners (5%) and (4%) who had already completed another apprenticeship or learnership, respectively.

- Learners who participated were trained in various trades, however most were trained as mechanics (24%), electricians (17%), welders (7%), fitters (19%) and millwrights.

- Most learners (63%) were trained in the metal chamber, followed by 29% in the motor chamber. Only 2% each were from the Auto and Plastic chambers.

- The study included learners who completed a learnership or an apprenticeship. Eighty four (85%) of the total learners (875) interviewed had completed an apprenticeship, while 16% (155) would have completed a learnership.

- 83% of African males trained towards section 13, while 17% trained towards section 28. For White males, who had the largest percentage representation for section 13 (88%), with 12 % for section 28. Coloured males had 74% studying towards section 13, while 26% were studying towards section 28. Lastly, 79% of Indian males are training towards section 13, and 21% were studying towards section 28.

- On average, the graduates took 36 months to complete their learning programs and passed the final trade test at first attempt. Indian males took the longest to complete the programs (37 to 48 months), while White males tended to complete them faster; within 12 months. Most motor mechanics took longer to complete their programs, with welding being their quicker trade to complete. In terms of the 875 apprenticeships' learners, it was mainly African females who completed their learning within 13-24 months. Interestingly, Indian and White male learners were the majority at 43% and 34% respectively, in completing the programs within 37-48 months. The results indicate that most learners (85 out of 145) who did their learnerships, completed their studies either within 12 months (30%) or within 37-48 months. African females (45%) tended to complete their learnerships within 12 months, whilst White males were more likely (at 43%) to take longer (that is within 48 months) to complete their learnerships. These results further indicate that White females were not represented in the learnership sample.

- Most learners (76%) passed their trade test on the first attempt, with very few (3%) passing after three attempts. Coloured males (83%) tended to pass the final test on first attempt, while 73% of African males and African females passed, followed by Indian males at 74%.

Key Findings

Retention of learners

- Of the 1 030 learners interviewed, 83% mentioned that they were employed, whilst 17% were unemployed. This is an improvement from the 2012 tracer study results, which indicated an 80% employment rate from a sample of 510 learners.

- Of those employed, 49% were retained by the original training company on a full-time basis, and 25% were retained by the original training company on a part-time basis.

- Of the 1030 learners interviewed,80% found employment within a year after completing their learning programs, with only a few (8%) taking at least until two years to find employment. Only 8% found employment elsewhere, 4% were employed fulltime by a different company, whilst another 4% were employed part-time. There were 2% of learners who reported that they were self-employed.

- A further analysis of the data indicates that participants are more likely to be employed after completing their trade test, especially White male learners, and that they were least likely to be employed if they were an Africanfemale learner. As indicated, most White males were retained by the original employer. The least employed group was African females, with 64% employment and 36% unemployment. This is interesting as African females accounted for only 17 % of the learners, yet they are the majority unemployed.

- The majority of the learners were employed by large organisations that employ 150 or more employees. Eighty (80%) African females were employed by these organisation, while 19% were employed by medium organisations. Looking at African males, it was observed that 75% were employed by large companies, while 11% of the African males are employed by medium companies. The least employed group by large organisations, are White males. Only 47% were employed by a large organisation, 24% by medium organisations, and 14% by small or micro organisations.

- Most employers mentioned that they retained learners mainly because they had vacancies to absorbed, and they perceived that highly skilled learners and with the requisite experience "have the skills-set that we require''.

- Learners'main reasons for staying with their original employer were for the "further training and development opportunities"

provided. The other important reason mentioned was job satisfaction. It seems that higher wages was the least motivating factor.

- The results indicate that learners were mostly not employed because of lack of vacancies. Although the verbatim responses captured was that they were 'dismissed', further clarification with the learners indicates that some were released due to disciplinary issues, whilst some were released because there were no vacancies.

- These learners' main source of finding employment was through word of mouth (26%) and print media (26%), with recruitment agencies utilised the least at only 8%. A closer look at the results indicate that White male learners depended on referrals (48%), whilst African female learners (27%) used on-line job searches. Most Coloured male learners (55%) depended on word of mouth, and African male learners (36%) used print media.

Migration Patterns

- The migration patterns of learners ndicate that Gauteng and KZN had the highest mobility rates in this study. 11% and 10% of the learners left these provinces respectively, to work somewhere else.

- The post trade migration patterns indicate that most of the 11% and 10% of learners who trained in Gauteng and KZN respectively, left to work in other provinces. Further analysis indicates that of the 52 learners who migrated from Gauteng,24 (46%) went to work in Mpumalanga, and 11 (21%) are employed in Limpopo. The other 17 learners were fairly spread across the other provinces.

- Of the 22 learners (10%) who migrated from KZN, 10(45%) left to work in Mpumalanga, followed by 8 (36%) in Gauteng, two in Limpopo, and another two in the Western Cape.

- The Western Cape and North West were able to retain most of their learners.

- The migration patterns of learners who undertook apprenticeships and learnerships mimics the overall migration patterns; with Gauteng and KZN losing learners to other provinces – mainly Mpumalanga and Limpopo.

Learner Unemployment

- Out of a sample of 1030 learners, 177 (17%) indicated that they were unemployed. As already indicated, African learners, especially black females (36%), were the most likely to be unemployed. This was the trend in the 2012 tracer study, with an overall female artisan unemployment rate of 33%.

- The results indicate that the Western Cape had the least unemployment (it is important to note that the WC had only a 2% representation in the sample) with Free State, KZNand Limpopo having the highest unemployment at 21%, 21% and 19% respectively.

- Fitters, motor mechanics and riggers found 100% employment. On the other hand, none of the learners who trained as diesel mechanics, pipe fitters, earth moving mechanics, auto electricians, steel erectors, automotive sales and support services, auto repair and maintenance, mechatronics as well as mechanical engineers, found employment in their trained trades.

- Of the 177unemployed learners, 133 (75%) did an apprenticeship, and 44 (25%)a learnership.

- The majority (95%) were still looking a job. Most have been looking for more than three months, whilst 23% have been looking for approximately two years.

- Most of the learners (45%) mentioned that they were not working mainly because they did not have 'the experience required', whilst 36% mentioned that their job applications were 'turned down'. Only 11% mentioned that 'there were too few jobs available'.

- Employers on the hand, mentioned that the main reason for releasing learners was because there were no vacancies.

Training attended after completing trade tests

- For learners who were employed by a different employer, 68% mentioned that they attended further training after completing their trade test. The training was mainly in the form of short courses (53%), certificate courses (23%), and skilled programs (7%). Interestingly, there were a few learners who went to register for apprenticeships (6%) and learnerships (3%) – especially African males.

- Most unemployed learners (77%) did not attend any training courses after completing their trade tests.

Suggestions for Improved Effectiveness of Project Implementation

Overall, 56% of learners indicated that 'everything is ok' and nothing is needed to be done to improve the program. In order to improve on the learning programs going forward, the remaining learners recommended:

- That the material and course content be updated in order to accommodate the trends and advancement in the industry;

- That the administration, with regards to the management and communication of trade test dates and delivery of certificates, be streamlined;

- That there be visible monitoring of training providers and employers to ensure that 'people do what they are supposed to do'.

Employers and training providers on the other hand, mentioned that there is a need to:

- Update material, course content, and technology.

- Improve the quality assurance of material and trade centers.

- Enhance trainer competence.
- Improve the administration. Booking of trade tests and trade test dates were cited as major challenges.
- Ensure that the merSETA invest in better screening and selection of learners that partake in the program.
- Include more trades, as dictated by the industry needs.

Recommendations

The employment of the merSETA graduates is steadily increasing over the years, from 80% in the last 2012 tracer study to 83% currently. A closer look at the analysis indicates that the following can be done to improve learners' employability and the learning programs:

Table 1: Recommendations

Issue	Recommendation
Increase learner employment	• To further improve employment, the merSETA should consider prioritizing trade tests with demand that will include rigging and fitting. By creating awareness amongst of these trades through career and recruitment drives, learners can be attracted to consider career types that will increase their employability. • Review of trades – further investigation is required to understand the nature of the reasons why some trades have mass migration of learners once they have completed the training. We believe the reasons could be saturation of the job market, the intake is too large to absorb them all, or there are not enough companies to absorb the learners. • Developing re-skilling programs that will assist unemployed learners to access trades with higher employability chances. • Developing Female Acceleration Programs to attract and retain female talent into the industry. • Entrepreneurship Programs – there was a portion (2.5%) of learners who went on to open their own businesses. This provides the merSETA with the opportunity to develop targeted entrepreneurship training programs with specific focus on industry specific needs. This will provide unemployed learners with alternative opportunities; especially those who have undertaken saturated trades. • Most unemployed learners cited 'lack of requisite skills' as the main reason for not finding jobs. The merSETA needs to consider developing Post-trade Vocational Training Programs for unemployed learners, to augment the training they received. • 'Appropriate work experience for the learners. It is difficult for learners to get enough work experience in all the areas. The company does rotate learners and we train them in different learning areas'. • Soft Skills Training Programs, including management skills.
Improve efficiency of program delivery	**Administration:** • Invest in systems to streamline trade test administration and issuing of certificates. • Improve learner data management – to assist with registration of trade tests. **Learning material:** There is a need to update the training material and customize programs to meet business needs. Thus, establish a committee including industry and training providers/FETs to regularly review the trends and needs of the industry; and to review and update current training material, assist with alignment and curriculum development, as well as teacher training. **Increase trades:** Introduce more trades that are required by industry. **Monitoring and Quality Assurance:** There is a need to improve on monitoring and quality assurance systems and implementation for training materials and trade test centres. 'There needs to be a systematic approach and a more active role to make sure that the trade test centres across the country are up to the expected standards.' **Investing in Teacher/Lecturer Capacity Building Programs:** Increase the competence and knowledge of lecturers. 'Getting proper calibre of staff conducting the training. We need properly qualified trainers. Sometimes we get lecturers that are still students themselves.' **Communication:** Invest in call centre systems that allow for streamlined communication basics, in terms of acknowledging receipt of messages, returning emails, and completing enquiries.
Systematic Tracing Study plan	It is important to compare apples with apples. Thus it is important to set up longitudinal studies for 'flagship programs' to measure proper progress over time. This needs the setting of tracer study models for each program, and implementing them based on the duration of the learning programs. This will provide the merSETA with credible data to track progress and highlight challenges.

5.3 Chamber led research projects

Background

The purpose of this project was to assist chambers in identifying and exploring skills development issues in line with the broad direction of the industry. The research undertaken was critical in informing Sector Skills Planning and incorporated some of the following:

A. Scarce and critical skills identification;

B. Impact of the recession and skills development implications;

C. Impact of global context on the sector;

D. Supply and demand analysis.

Two phases of the chamber-led research projects have been completed since the inception of this project in 2012.

5.3.1 Key Concepts

5.3.2 PHASE I: PLASTICS CHAMBER RESEARCH PROJECT

Purpose

The purpose of the project was to develop an understanding of the size and shape of the plastics industry in South Africa; the factors impacting on its future; and the key drivers for change; with particular reference to skills priorities and possible growth scenarios.

Key Findings

The following were identified as challenges experienced by the plastics industry:

1. "Skills drain" including emigration: The industry is experiencing a loss of skills and years of experience through emigration, particularly to New Zealand and Australia. There is a resulting "knock on" effect in that there is no transfer of skills or knowledge from these experts to the new generation.

2. Poor basic education has an impact on workplace performance: Basic literacy is also lacking. Industry felt they are expected to do the work of the Department of Basic Education.

3. Failure to attract and retain skilled personnel: Industry was finding it difficult to attract and retain staff. Today's school leavers and graduates have little loyalty and do not remain with the company for any substantial period of time; they "chase the money". Moreover there is a general lack of succession planning and multi-skilling.

4. Input costs: high cost of resources, especially costs of materials, electricity and costs of raw products and input costs, especially raw materials.

5. There is a lack of a culture of sharing and collaboration in order to improve the industry & create new markets. This was attributed to negative work culture (management and workers); top-down management style; lack of engagement, lack of commitment; lack of loyalty to the company; lack of willingness to change; and lack of cleanliness and housekeeping in individual work areas and generally.

High Level Recommendations

In arriving at these high-level recommendations, it was suggested that the Plastics Chamber and merSETA as a whole need to look at the workplace as a site of learning and then assist industry to build in that capability. This is not just for the new entrants to the industry, but also for those who are currently employed – both the educated and the under-educated.

This recommendation is a guarded one – it is not one that can be implemented in an unstructured, formalistic way, using a "shot-gun" approach. It needs to be carefully planned, implemented and evaluated. By considering the industry

stratification that has been put forward for discussion, the Plastics Chamber can:

- Investigate more carefully the factors that underpinned the success stories;
- Use selected innovative companies to test, support and incentivise the 70:20:10 learning model;
- Establish and publicise best practices;
- Incentivise the next level of learning, improvement and innovation;
- Set up social interaction platforms with moderators to assist and encourage companies to share non-competitive information, e.g. based on LinkedIn.

The study also pointed out that the Plastics Chamber, however, is not well placed to implement and manage such complex and innovative projects. It would have to consider forging partnerships with other merSETA divisions, with industry bodies, government departments, and training providers, and also with businesses that are dedicated to developing new practices in organisations.

It was also recommended that the Plastics Chamber should actively partner with the merSETA Innovation, Research and Development division to plan, implement, manage and evaluate complex and innovative projects of this nature. The outcomes would be highly relevant to other companies in the plastics and rubber industries, as well as for the manufacturing, engineering and related services sector as a whole.

5.3.3 PHASE II: PLASTICS CHAMBER RESEARCH PROJECT

Purpose and High Level Outcomes for Phase II

The overall purpose and high level outcomes are summarised in the Table below.

Purpose	High level outcomes
To explore and provide research-based recommendations on how the plastics and related industries can best attract, develop and retain technical talent in order to ensure that the industry continues to "survive and thrive" in an increasingly competitive and changeable marketplace.	• Validation and expansion of the qualitative information collected in Phases I and II about trends influencing skills in the plastics industry. • Further development of detailed skills profiles in a specific plastics industry value chain. • Provision of some parameters for influencing skills development-led change processes in the industry. • Identification of recommendations on how the industry might best attract, develop and retain technical talent. • Collection of job-related information to support the development of a career guide for the Plastics Industry.

Methodology for Phase II

Selecting an appropriate research design

Given the nature of the research problem, a qualitative research design was selected:

- The research design included participative methods in order to "continue the conversation" with industry.
- It was also developmental, in the sense that the findings from previous phases were shared with participants in the focus groups, and were deliberately used as "building blocks" or "conversation starters". This approach helped to ensure continuity and to leverage existing knowledge and intellectual capital, rather than "reinventing the wheel".
- The design allowed for a final round of verification and refinement of the key findings from Phases I and II, to further strengthen the overall robustness and reliability of the research.

Conclusions and Recommendations

Towards an Industry Strategy

Based on the findings from Phases I to III and combining these with the lessons from the literature review, it was recommended that an industry strategy be developed. The strategy can be divided into two levels, namely a macro-strategy for the industry and a micro-strategy for individual enterprises.

Macro-strategy – Developing a Community of Practice (CoP)

The purpose of the macro strategy is to bring together people who are interested and committed to change, and use them to form a "coalition of the willing".

Micro-strategy at enterprise level – Developing a culture of change and innovation

The purpose of the micro strategy is to change management styles, develop skills, make people comfortable with change, increase employee engagement, and thereby improve retention and knowledge transfer.

Critical success factors for developing the plastics industry strategy

The following were identified as the critical success factors for the development of the industry strategy.

•Addressing the leadership issue:
Based on the participation from industry in Phases I, II and III, there appeared to be a lack of interest in the process from top managers. The study found that the solution to creating change in the industry should not depend entirely on top managers, but lies in harnessing the energy of individuals in industry who are already committed to changing things.

- Certified Plastics Practitioner (CPP) - Making the invisible cadre visible.

- There was a proposal to adopt a programme similar to the Canadian Plastic Practitioner Programme. The proposed programme will help establish a cohort of individuals who would contribute to the collecting, sharing and implementation of new ideas, discoveries and ways of doing things. Certified Plastics Practitioners (CPPs) would be ideally positioned to operationalise and develop a knowledge repository, as well as establishing and driving collaboration platforms for the industry. A CPP strategy would also help the industry to attract, develop and retain technical, innovative and entrepreneurial talent.

- Reframing skills development as skills management

- It was proposed that the plastics industry reframes the concept of skills development as skills management. A Canadian report used as a benchmark study, found few examples where skills development was consciously used as a strategy for retaining people. However, they cited numerous studies which confirmed that a good part of the satisfaction or dissatisfaction of workers is associated with issues related to their professional development. It was recommended that mechanisms for professional development include the following:

    - Focussing on the soft skills required to drive change at project level (including preparing managers to be trainers)

    - Using social media to foster engagement, share ideas and motivate individuals

    - Embedding training practices/ techniques within a philosophical framework.

Knowledge repository/ knowledge transfer/ knowledge management

An important role of the proposed Certified Plastics Practitioner will be to document improvement processes. This information can be collected and housed in a knowledge repository. There is therefore a need for designing and implementing a "Knowledge Repository" for the industry to collect experiences, lessons and successes, and disseminate useful and relevant models and ideas.

5.3.4 PHASE I: MOTOR CHAMBER RESEARCH

Project Title: Employment, educational and skills audit of the merSETA Motor chamber

Purpose

The aim of the research was to understand the educational and skills levels, as well the scarce and critical skills availability, in the context of the motor sector. This initial project explored inter alia issues related to:

1. An overview of the nature of the educational levels, formal or informal, in the merSETA Motor Chamber.

2. An overview of the employment profile of the merSETA Motor sector.

3. A skills profile of the sector in terms of demographics: race, gender, disability, geographical spread (urban/rural), occupational and employment level.

4. An overview of skills needs with a focus on scarce and critical skills identified in the sector over the past 3-5 years.

Key Findings

Key findings were summarized as follows from the overall research project:

- Qualitative research identified specific future skills needs beyond 2016 that need to be addressed as soon as possible.

- The acute shortage of artisans had the most significant impact on the motor industry, and imaginative solutions are required.

- The future of the motor sector will change considerably. There is a need for new sets of skills to be successful in the anticipated and forecasted environment, with regards to the following:

  - International & Globalization of supply & demand (Eastern impact amongst others)

  - Technology

  - Alternative fuel sources

  - Recycling & re-use

  - Ownership, etc

This may confirm the need for CPTD (Continuous Professional Technical Development) for technicians to remain relevant and up-to-date.

- New skills are required in at least the following areas:

  - The green agenda

  - Social media

  - Technological innovation

  - The ageing population and the growing middle class

  - Entrepreneurship

- Globalization
- Specialized areas such as:
  - Welding
  - New fuel sources
  - Supply chain and logistics
  - Customer relationship management & retention

- Existing curricula do not include learning material on the above areas. Existing curricula and learning content is therefore totally inadequate to direct skills development for the longer term and 2020 requirements.

- The industry needs more knowledge on especially the green agenda and entrepreneurship development. It is therefore essential that this research programme be backed up by providing more knowledge on the future environmental landscape.

- Insufficient learning interventions exist to offset a career in the Motor industry. It was found that there is a substantial gap between NQF 3 and 7 that needs to be addressed. The gap is founded in the following:
  - That qualifications are level and unit standard driven.
  - That there is a lack of natural connect and progression between the NQF levels.
  - A real split exists between levels 1-3 and 4-7 with regards to preventing well-needed career continuity over the long term in the enterprise.

- Specialization and complexity of the industry were not found to be adequately reflected in existing learning material. Uncertainty pertaining to the implementation of QCTO does furthermore complicate the afore-mentioned.

- Industry and career opportunities are not communicated and marketed well to prospective industry entrants.

- New entrants to the industry do not possess the minimum skills requirements the industry expects. Lecturers at learning institutions have limited knowledge of, and exposure to, the motor industry.

- The merSETA is ideally positioned to facilitate and guide a process that will result in sufficient skills delivery over the longer term.

High Level Recommendations

1. Current SSP

It was recommended that there have been some factors identified in the SSP that might justify further research/ investigation. Below are some of the gaps/concerns/noteworthy areas:

- There appears to be little mention of the informal education/training section in the SSP. If important after regional consultation, informal interventions need to be updated.

- A reasonable drop in employment in a 10 year period has been recorded. More strategies to redress the situation should be considered.
- It appears as if 13 085 companies in the motor sub-sector – almost 189 900 staff and the informal sector are not represented – further study could be considered.
- The international market largely owns tyre production. Strategies to exploit opportunities for South Africa could add further value.
- Competitiveness improvement does not speak about specific global trends, especially social media, specific technological changes, and Eastern market growth. Findings of this report should be included in the updated SSP.
- Electric cars (not only manufacturing, but motor chamber specific), have no specific skills sets/occupations identified. Findings of this report should be included in the SSP.
- With a high employment rate but low training rate, further empowerment initiatives could be considered.
- In the industry there is no sufficient progression through NQF Levels that may require further interventions. Writing curricula that enhance upward mobility could be considered.
- Single apprenticeship focus is reported– level progression could add further value.
- The motor sector does not lay sufficient focus on strategic drivers (i.e. waste, greening, renewable energy, advanced technologies, etc.).The solution is addressed in this well-timed research report.
- A task team should be appointed to assess the impact of the QCTO on skills development interventions in the Motor sector, and to facilitate the process to implement the new concept.

Using the points mentioned above as a basis, it was recommended that some areas within the SSP need to be further developed, especially focusing on future developments. It was noted that this study will add considerable value to the SSP update for 2013/4.

2. Updating Curricula

The impact assessment done so far indicated a major opportunity to update curricula and learning content in terms of the 2020 drivers of change.

Qualifications

While researching the qualifications, no sign was found of the significant 2020 drivers of change being mentioned in the unit standards. If qualifications need to be focused on current and future scarce skills, then these issues need to be addressed. The drivers of change linked to qualifications are as follows:

- Social media/Facebook/Twitter/ LinkedIn, etc.

- Green agenda/carbon credits/ environmental protection/waste act
- Middle class growth and buying power
- Innovation and technological changes
- Convergence of markets and industries
- The period after 2012 and adaptation
- Mobile telephone/technology
- Eastern countries (i.e. China/India/ Korea) and their influences
- Future customer – younger, smarter and more technologically orientated
- E-learning – growth paths being developed through e-learning
- Rural development and the informal training environment therein
- Global thinking with globalisation of industries and interdependency of markets in mind

It was recommended that new curricula be developed for all scarce skills positions. This is a major project that could take considerable time, effort and funding. However, it is essential that the entire set of functions of key positions be reconsidered, based on changing future demands.

1. Further stakeholder consultation

Based on the research done, it was recommended that the following questions be utilised for setting the agenda to be used as the basis for further generation of information during all future stakeholder focus groups that may follow after the closure of this research project:

- Does your organisation have any contributions to the 2020 landscape?
- What impact will the 2020 assumptions have on skills requirements?
- What impact will the QCTO have on skills supply to the motor industry?
- What changes will occur pertaining to existing and future skills within occupations?
- Please indicate any changes to existing and future skills requirements of occupations in terms of scarce and critical skills.
- Please list the most important critical skills.
- What are you opinions about skills outputs from institutions?
- Can you think of any other skills demand from the sector from a future perspective?
- Are there any other existing and future skills shortages?
- Develop scenarios and suggest solutions to deal with skills demand for the next 5 years.

- Please submit views and solutions to assist merSETA in fulfilling the objectives of the Skills Accord and New Growth Path.
- What needs do you have to complete WSPs?
- Please list your requirements and contributions in terms of Green economy skills for the Motor Chamber.
- Please list your requirements and contributions in terms of the National Infrastructure Plan.
- Please list your requirements and contributions in terms of provincial skills development strategies.

It was recommended as essential that stakeholder consultation become an ongoing process, because of the value they add in our understanding of future skills requirements.

2. The following recommendations were also submitted based on the inputs made at the research meeting held on 24 January 2013:

- FET colleges delivering skills to the Motor Sector should be empowered to support the needs of the industry, and solutions must be created as collaborative effort. It is essential that this process be followed to improve the quality of skills that the industry requires.
- Those existing skills pipelines should be improved where possible.
- Regional/satellite offices should be established in the rural areas to strengthen the skills development clusters.
- Industry skills required, should be marketed at schools and other skills providers.
- Additional initiatives should be designed to improve the strategic development of all areas served by merSETA.
- The findings of this research report should be incorporated in regional sector Skills Plans to enhance implementation in the various regions. Cross referencing will add value.

5.3.5 PHASE II: MOTOR CHAMBER RESEARCH PROJECT

Project Title: Follow-up future skills development research project for the motor chamber

Purpose

The purpose of the study was to determine actual skills requirements in relation to the identified change drivers within the various geographical and market sectors, to determine what type of Motor sector skills are required in those areas.

Methodology

The study used a mixed-methods

approach using a combination of document analysis, literature review and focus group discussions. Comprehensive desktop research was conducted on international literature focusing on:

- International Motor sector trends (which is mainly an update of the results of the previous research project).
- SA policy update with focus on IPAP and other policy issues affecting the Motor sector.
- International Centre of Work Integrated Learning (CWIL) benchmarks and best practices.
- Local CWIL benchmarks and best practices.
- Skills delivery mechanisms of the CWIL model.
- Successes of other CWIL's with specific reference to the Imperial applications.

A qualitative report was also developed, and it included:

- Skills development strategy proposals based on PESTEL and SWOT analysis.
- Scarce and Critical Skills identification, through desktop research and focus groups.
- Consultation with 'municipal economists'.
- Consultation with 15 practitioners in selected rural and informal areas.
- Stakeholder consultation through focus groups and questionnaires (if required) to obtain their requirements and inputs in respect of the CWIL skills delivery system.
- Development of drivers of change towards 2020 with specific reference to the green agenda and social media.

Key Findings

- It is a requirement that the industry changes due to technological changes.
- The concept of gradual change is required. Change will have an impact on equality in terms of poverty, joblessness, etc.
- Community Colleges need to play a bigger role.
- Aspects such as the growing middle class and the ageing population have been incorporated in the drivers of change.
- The automotive industry is a "Light House" as a massive employer and potential future employer / job creator in the Eastern Cape.
- The South African model of job creation is moving in an opposite direction to the international trend. We need a "what is best for South Africa?" solution.

- It was noted that "Blow Machine" is no longer required and that "stamping" – "bend" – "pipe" all came about through technological innovation.
- The following 2020 impact assumptions on skills requirements were noted:
  - Cars are evolving in terms of electronic innovations, more than mechanical innovations.
  - There is a shortage of skilled people to meet future requirements.
  - There is a growing need for Diagnostics Technicians.
  - Skills are needed with regards to the effect of innovations in paint – and the ability to mix paints. This has become an extremely technically demanding area.
  - Workers need upskilling to be able to contribute in different parts of the manufacturing and after-market processes.
  - Developments in technology are having an impact in areas such as dent removal.
  - Cognisance needs to be taken of the cross application of technologies.

The following issues pertaining to skills output by institutions were noted:

- Insufficient industry knowledge.
- Lecturers not competent in what the industry wants.
- Lack of practical exposure.
- Basic life skills lacking.
- 2020 requirements not part of curricula.
- Material not available in critical areas.
- The Centre of Work Integrated Learning (CWIL) was proposed. Its purpose is to address future (and existing skills needs) and address shortcomings in the current skills supply system.

The table below summarises priorities for the motor chamber identified in the study, as part of their implementation plan:

Priorities	Alignment with Linkages
Priority 1: To accelerate e-learning	E-learning is a key enabler of all actions required to develop the requirements of the 2020 skills landscape.
Priority 2: To accelerate SMME development	Development of the SMME toolkit will ensure accelerated SMME, women, youth, and rural development. The linkages between these areas are very clear.
Priority 3: To align learning content with the 2020 landscape / and drivers of change	It is clear that the drivers of change revealed the urgent need for updated learning material.
Priority 4: To strengthen the resource base through further research projects	Research in the following areas have been reconfirmed and are fully aligned with study objectives and recommendations: • Rural, youth and women development. • Continuous reassessment of drivers of change. • The green agenda. • Technological innovation.
Priority 5: To develop the after-market	The after-market emerged as a key focus area following the first consultation with industry experts during the 2012/3 skills research. The CWIL solution also requires a strong after-market component.
Priority 6: To focus on rural area needs	The best solution is to position the after-market as a rural focus, and to extend the CWIL solution to one rural area.
Priority 7: To expedite the delivery of artisans required by the motor industry	Incorporate in the CWIL solution, including focus on the levels higher than artisan. It was also found that artisans required over the longer term will need skills sets that differ substantially from now, which require a CWIL skills solution.
Priority 8: To facilitate the establishment of centres of excellence to improve skills delivery and partnering with education & talent pipeline providers, bringing about the meeting of industry entrance requirements	This follow-up research project identified the CWIL solution as the most ideal solution to develop skills required over the long term. The CWIL solution can therefore be viewed as the linkage between all study objectives.
Priority 9: To market the industry among potential entrants	This priority also fully supports all research objectives since entrants are required that show an interest in the Motor Sector.
Priority 10: To address skills accelerations and overcome career path restrictions	CWIL will also significantly contribute towards streamlining career paths.
Priority 11: To introduce at least one CWIL project	Implement a pilot project.

5.3.6 PHASE I: NEW TYRE RESEARCH PROJECT

Project Title: An analysis of the South African Tyre Manufacturing Industry's skills demand profile: 2009 – 2020

Purpose

The purpose of the research was to develop a diagnostic model and tool to assist with the accurate forecasting of scarce, critical, and emerging skills, in the New Tyre value chain by establishing:

1. Baseline skills requirements
2. Accurate skill forecasts
3. Training requirements
4. Required job competence

Key Findings and Conclusions

- The tyre industry is important to the SA economy and has shown a positive output and employment trend since 2009, despite significant competitiveness challenges. In addition, significant challenges confront the industry with regards to employment demand and supply.
- Half of the more skilled employment categories (executives/senior management, professionals, associate professionals and artisans/craft) have either a Grade 12 or lower as their highest level of education. This was alarming. High average employee ages revealed deep tacit knowledge/ experience, but industry cannot rely on this to meet future demands. A far greater focus on formal qualifications is critical to the industry.
- Many employees currently have non-industry specific qualifications. Future demand will require more technical qualifications.
- There are significant supply side challenges when recruiting individuals with technical and tyre-specific qualifications, especially in the artisan/craft and associate professional categories. This is substantiated both by quantitative research (long recruitment lead times) and qualitative information gained in interviews (lack of tertiary institutions offering necessary qualifications). Industry is attempting overcome this challenge through learnerships, but high employee turnover is mitigating the success of these programs.
- Industry needs to proactively support the supply of technical qualifications. Qualifications such as BSc, BTech, N4-6 and National Diplomas focusing on electrical, chemical and mechanical engineering should be supported (stronger partnerships with strategically located tertiary institutions).
- Projected demand for commerce-related qualifications at the executive/senior management and professional level should not pose as significant a supply-side challenge.

- Ability of firms to find and train employees to meet their skills requirements on time was of concern. Projected skills demands to 2020 may be completely wrong, precisely because skills supply constraints grow to the point where firms no longer grow their business, nor effectively compete with international competitors. If this occurs, employee demand will drop sharply as firms stabilize (or even contract) their output levels; and skills supply will no longer be an issue – except to replace staff. Giving urgent attention to emerging skills demand and supply issues is necessary if this situation is to be avoided, hence the central importance of the findings generated– and the associated development of a software tool that accurately identifies skills demands requirements within the industry on an ongoing basis (improve HR's ability to accurately plan for future demands).

5.3.7 PHASE II: NEW TYRE RESEARCH PROJECT

Project Title: Skills demand foresight analysis research study

Purpose

The purpose of this research was to unpack incipient and future trends in the global tyre industry, so as to understand how these trends will affect the future skills requirements of the five tyre manufacturers located in South Africa (and hence change the linear projections incorporated into the **Skills Demand Profiler**– that was designed in the earlier New Tyre research project – through to 2020). The key aspects included:

- Changes in respect of the materials being used to manufacture tyres;
- Changes to product design and associated engineering innovations;
- Changes to the tyre manufacturing process (most notably shifting levels of capital intensity); as well as
- Changes to the manner of work organisation at leading global manufacturers.

Research Methodology

A foresight analysis approach was used for interrogating emerging global trends and exploring their potential impact on skills demand. To complete the foresight analysis research, a high-level secondary desktop review was completed, identifying a collection of prominent emerging local, regional and global trends in the tyre manufacturing industry. This review drew from a number of publicly available industry research sources. A mix of secondary (desktop) and primary (interviews) research (analysis, interpretation and prospection) was also conducted to gain more insight into the problem being investigated.

Key Findings

The research completed as part of this foresight analysis produced some important findings that suggest that

the South African tyre manufacturing industry's future skills demands are likely to be shaped by emerging global industry trends, only in certain instances. For example, future developments in **synthetic rubbers** used to enhance tyre performance will continue to be a significant trend in the tyre industry moving forward. However, the resultant implications on future skills demand for South African manufacturers is limited given that: the role of South African firms in the value chain is limited to the manufacturing process; and the production recipes for new tyres manufactured locally are received from company headquarters. While chemical engineering and polymer science skills will continue to be important given the need for local manufacturers to understand new recipe mixes as they emerge, there is unlikely to be any change to the current skills demand profile.

The trajectory of chemical engineering and polymer science skills identified in Phase 1 of the research consequently remains unchanged.

The **end-of life tyre (ELT)** trend is also unlikely to have any significant implications on future skills demand requirements. High level chemical engineering skills required to further improve opportunities to reuse tyre crumbs for manufacturing new tyres will continue to be needed in traditional R&D centres of excellence, with limited impact on local operations.

While local manufacturers will continue adhering to the new **Integrated Industry Waste Tyre Management Plan**, this is also unlikely to have significant implications for skills development. The activities required to adhere to the process are purely administrative, and the research indicated no intent on the part of local tyre manufacturers to become involved in any new downstream recycling activities.

Unlike the first two major trends outlined above, the **upgrading of capital equipment** is recognised as an important trend for local manufacturers that will have major implications on future skills requirements. The increased use of mechatronics in likely capital upgrades will place an enhanced emphasis on mechanical, electronic and/or mechatronic engineering skills. Specifically, this trend will have implications for the associate professional, artisan and production worker employment categories – with mechanical, electronic and mechatronic engineering skills being prioritised.

Finally, the importance of successfully implementing Lean Manufacturing processes in local tyre manufacturing operations is also likely to shape the skills requirements of the industry.

However, this trend does not necessarily have implications for specific skills or qualifications. The implications appear to be more generalised, impacting on all levels of the tyre manufacturers'

organisational hierarchy. On the shop floor, multi-skilling, problem solving and strong numeracy skills will become more important, and will also need to be combined with an understanding of the core principles of Lean Manufacturing. At senior organisational levels,executives/ senior management, professionals and associate professionals will also need to actively drive the change in company culture to ensure that Lean Manufacturing is implemented effectively at the factory level. This requires a strong understanding of both the theoretical and practical dimensions of Lean Manufacturing within a tyre manufacturing environment.

Recommendations

The table below provides a **summary** overview of the recommendations for each of the **four trends identified**. Based on the findings, there was a general argument by the researchers, that neither the **synthetic rubber trend**, nor the **end-of-life tyre (ELT) trend**, will have a material impact on the present profile of domestic tyre manufacturer skills demands. On the other hand, the capital **equipment upgrading trend** is likely to have an impact on future skills demand in the professional, associate professional and artisan employment groups, where qualifications specialising in mechanical, electronic and mechatronic engineering have been identified as becoming more important in future. Finally, the researchers concluded that future **productivity gains** associated with successful Lean Manufacturing in the industry will have a moderating effect on employment demand. However, this trend does not prioritise or deprioritise any specific qualifications, and its implications will therefore be felt across all employment categories.

Summary of Key Research findings and Recommendations for the Skills Demand Profiler Trend	Effect on Future Skills Demand	Employment Categories Impacted	Qualifications impacted
Synthetic rubbers	**None**	-	-
ELTs	**None**	-	-
Upgrading Capital Equipment	**Yes:** Certain qualifications to be prioritised. Overall decrease in employment (labour displacing) – change to the elasticity of employment	• Professionals • Associate professional • Artisans	• Mechanical Engineering • Electronic Engineering • Engineering (Mechatronics)
Lean Manufacturing	**Yes:** The employment elasticity of manufacturing value add is likely to be affected based on the productivity gains through Lean Manufacturing	• Executives/Senior Management Professionals • Associate professionals • Artisans/craft • Production workers	No specific qualification group identified.

5.3.8 PHASE II: AUTO CHAMBER RESEARCH

Title: The capacities of technical schools and TVET colleges to meet the training needs of the automotive industry

Purpose

The goal of this study was to assess the capability of Technical Schools and Technical Vocational Education and Training (TVET) Colleges, and their ability to meet skills requirements of the OEMs.

Research Methodology

The research process comprised two main elements:

1. A literature review to highlight findings that have been made in respect of the relationship of vocational education and training to automotive industry/employment.

2. Qualitative research in a sample of technical high schools and TVET colleges, in provinces with an automotive industry presence. Focus groups were conducted with homogenous (rather than mixed) groups from the identified three sectors: technical high schools, public TVET colleges, and OEM companies. A multi-stage approach was undertaken in this study. In the first stage a reference group was convened consisting of representatives from Ford Motor Company, VW, Mercedes, and Further Education and Training Institute (FETI), in order to discuss and sharpen the research questionnaire. The research was piloted in the Eastern Cape and then rolled out to Gauteng and KZN.

Key Findings

Teaching capability

Public Technical High Schools, and TVET Colleges generally, are confronted by the challenge of an aging cohort of lecturers with insufficient qualifications and recent work experience to teach students for effective employment in the automotive industry.

Learning capability

Both TVET Colleges and Technical High Schools reported that students were struggling with fundamental subjects of Mathematics and English resulting in low throughput rates, whereas competence in these fundamental subjects is a prerequisite for employability within the automotive sector.

Moreover, the tight scheduling of curriculum at these institutions does not provide sufficient time within the academic year for exposure to workplace learning. It was however noted that colleges and technical high schools do have approximately three months of the year where teaching does not take place, which could be used for workplace exposure.

Infrastructure capability

TVET Colleges and Technical High Schools lack sufficient training infrastructure and equipment to adapt to the needs of an automotive industry that requires continuous changes in technology. Private technical high schools, particularly in KwaZulu Natal, appear to have sufficient infrastructure and equipment for the needs of the automotive industry, but the mode of training is primarily focused on the delivery of NATED theoretical training. Of concern is the fact that industry reported on donations of equipment to public TVET colleges and Technical High Schools that have been stolen or not properly maintained. This has led to a breakdown in trust, which may negatively impact on the willingness of automotive companies to provide equipment donations in future.

Decision making capability

The capability of Technical High Schools and TVET Colleges to organise their own resources to maximise teaching requires a broader understanding of the context within which Technical High Schools and public TVET colleges operate. Both operate within a strict regulatory environment that does not allow much leeway for autonomous decision-making by these institutions. Curricula is prescribed by the Department of Basic Education (DBE) and Department of Higher Education and Training (DHET), as well as by numbers of enrolments with prescribed entrance requirements. Private technical high schools are not as strictly regulated and therefore are able to be more responsive to industry needs.

Leadership capability

The recent recapitalisation of public TVET colleges has been primarily aimed at infrastructure rather than human resources. Within this context, management and leadership are required to maximise their resources. A key problem identified was the changing of leadership and management at public institutions, as agreements made between institutions and automotive manufacturing companies appeared to depend on management at the time. Changes in management and leadership appear to have affected college/school and industry partnerships. Whereas the DHET and DBE have set performance management targets for their respective public institutions, partnerships with industry for student workplace experience and lecturer exposure to industry do not form part of these agreements.

Resource capability

Well-resourced colleges and technical high schools appear to have much stronger linkages with the automotive manufacturing industry than historically disadvantaged institutions. While a need for bridging programmes and additional foundational learning has been identified by public technical high school and TVET Colleges, these institutions do not receive systemic funding for these activities and are therefore unable to respond adequately to these needs.

Partnerships

Engagement with the community and broader stakeholders appears to be adhoc and dependent on leadership of the institutions. In some cases, industry worked directly with lecturers to identify potential students, whereas at the upper end of the scale, successful collaboration with the automotive industry requires full commitment from both leadership and management – as in the case of the North West College partnership with an automotive manufacturing company.

Communication capability

The alignment of Technical High Schools and TVET Colleges to industry expectations appears to be characterised by a lack of communication between public institutions and industry. This can be seen through technical high schools' and TVET Colleges' requests for assistance from industry in the form of equipment and exposure to the workplace, whereas industry has indicated that its own attempts to work with public institutions have not been generally successful. Private technical high schools have more frequent engagement with industry. In KwaZulu Natal and the Eastern Cape, industry engagement with public technical high schools and TVET Colleges appears to have been compromised by previous engagements that have not resulted in lasting partnerships, with industry reluctant to re-engage with institutions that have not met their expectations. Industry has raised serious concerns around the quality of learners emanating from these institutions, but there is little evidence of close working relationships between industry and public institutions on issues such as curricula and workplace exposure to improve gaps in teaching.

Policy Implications

The DBE and DHET have both raised the need for closer collaboration between technical high schools and TVET Colleges in areas of curriculum and shared resources, but to date there appears to be minimal evidence of any engagement. There are currently three curriculum interventions for the successful training of automotive manufacturing artisans, namely: Technical High Schools offering CAPS 2 education with low levels of practical and workplace training; TVET Colleges offering NATED and NCV curricula that do not easily address automotive manufacturing company needs; and in-house company training of apprentices to become artisans. Private technical high schools generally NATED theoretical programmes. In all of these curricula interventions, there are key gaps and a need for closer communication to address issues affecting graduate employment within the automotive industry. Differentiation of technical high schools and TVET Colleges has been raised within policy, but there has been little movement on differentiation of public institutions to address training needs of particular industries, such as the automotive manufacturing industry.

Recommendations

The following were the recommendations made to the merSETA Auto Chamber, industry stakeholders, and education and training providers, to identify potential solutions that better align education and training provision to the needs of the OEM industry:

- The establishment of a stakeholder forum including representatives from the DBE and DHET, may provide an opportunity to identify new forms of collaboration that better align education and training provision to the automotive manufacturing industry's training needs. It is recommended that the merSETA Auto Chamber could perhaps approach both the Department of Basic Education and the Department of Higher Education and Training to discuss the possibility of a pilot process to better align education and training provision between Technical High Schools and TVET Colleges. This may be more feasible when the NATED review process being conducted by the Quality Council for Trades & Occupations (QCTO) is finalized.

- The possibility of establishing a pilot for the differentiation of Technical High Schools and TVET Colleges should be explored, whereby industry selected public institutions are identified and resourced to develop a strong focus on education and training for the automotive manufacturing industry. As this industry features strongly within South Africa HRD strategy and National Development Plan, motivation for a possible differentiated model of provision may be possible.

- Existing best practice identified in this research from both public and private education and training providers needs to be circulated to training providers as a means of improving education and training delivery.

5.3.9 PHASE I METAL CHAMBER RESEARCH REPORT

Project Title: Skills demand in the metal sector

Purpose

The purpose of this study was to develop an understanding of the skills needs in the Metal and Engineering sector, the factors impacting on future training needs, and key drivers of changes with reference to growth in the sector and national priorities (i.e. strategic integrated projects and other relevant large scale development projects which would reinvigorate the metal and manufacturing sector).

Methodology

A combination of a review of literature, an online survey and workshops were used as the primary methods of collecting data in this study. A literature review was conducted so as to collect available data on the metal and engineering industry in South Africa, and international

developments in the industry. Regional workshops allowed for the collection of rich, qualitative data directly from participants in a face-to-face setting.

Key Findings

The study found that a myriad of skills development initiatives supply business, potential learners and school leavers with opportunities to enter and become a part of productive and capable, skilled workforce. Government and national policy to date, continuously emphasise that a focus on skill development is needed – especially on scarce skills (that directly impact the economy due to their unavailability, and the fact that they are needed in our industry). Given the upcoming Strategic Integrated Projects (SIPS) and IPAP, a pool of skilled and competent workforces (labour market) will be needed to ensure sustainability and an ongoing globally competitive economy for South Africa. The decision to enter Further Education and Training (FET) or Higher Education and Training (HET) is a multi-stage process involving a series of successive decisions, finally resulting in enrolment in either an FET or HET programme. Clear career and vocational guidance is needed, starting in primary schools, in order to prepare adequately for the career or vocation that is in demand within the labour market. In the South African context, the student choice behaviour study and the Grade 12 learner pathway study combine a focus on individual student trajectories (particularly useful in understanding the factors that influence students in their decision-making), with a system-level understanding of the flow of students from one year to the next. It appears that career and vocational guidance are not purported or reinforced to enable learners to make informed decisions, and this is a critical aspect – especially if the extent to which declared intention to enter further or higher education is translated into student enrolment, and ultimately into student graduation and uptake in the South African labour market.

The primary purpose of Further Education and Training (FET) colleges in South Africa is to provide post-school vocational and occupational training; including artisanal training. FET colleges are expected to make an important contribution to meeting the demand for intermediate skills and widening post-school participation, particularly for young people who do not proceed to higher education and the NEETs (Not in Employment, Education or Training). There are currently 4.3 million NEETs, some of whom have degrees or vocational training, but their skills are not needed in the workforce. Perhaps emphasis should be directed to supplying entrepreneurial skills to young people, and to the funding mechanism for creating sustainable small and micro enterprises which will become the conglomerates of tomorrow.

Findings strongly indicated that FET colleges are accordingly seen as a vital component of the Technical-Vocational Education and Training (TVET) sector. The

Medium Term Budget Policy Statement (2009) made expansion of FET colleges a priority and set a NC(V) enrolment target of 20% of youth aged 18-24 who are not attending other educational institutions. But the fact is that the Department of Higher Education supplied the fifty public FET colleges with funding of R40 billion from the National Skills Fund (NSF) in 2012 for the resourcing and up-skilling capacity and infrastructure –yet this has not yielded a decrease in NEETs, or shortened the skills gap with regards to skills still needed. Prior to the creation of a single Ministry of Higher Education and Training in 2010, the location of colleges in the Education Department and skills development and artisan training in the Department of Labour (DoL) resulted in separate pathways for artisan training –in particular with inadequate interfacing of these systems. Public FET colleges have not, and are still not, seen by business or labour as serving the needs of industry, and industry has not been responsive to the needs of colleges. Quality challenges in basic education must continuously be addressed in order to supply the high demand for NQF level 4 programmes, as these are a response to weaknesses and give way to the need to emphasise a post-school occupational training system or pathway that provides business with the skills it needs.

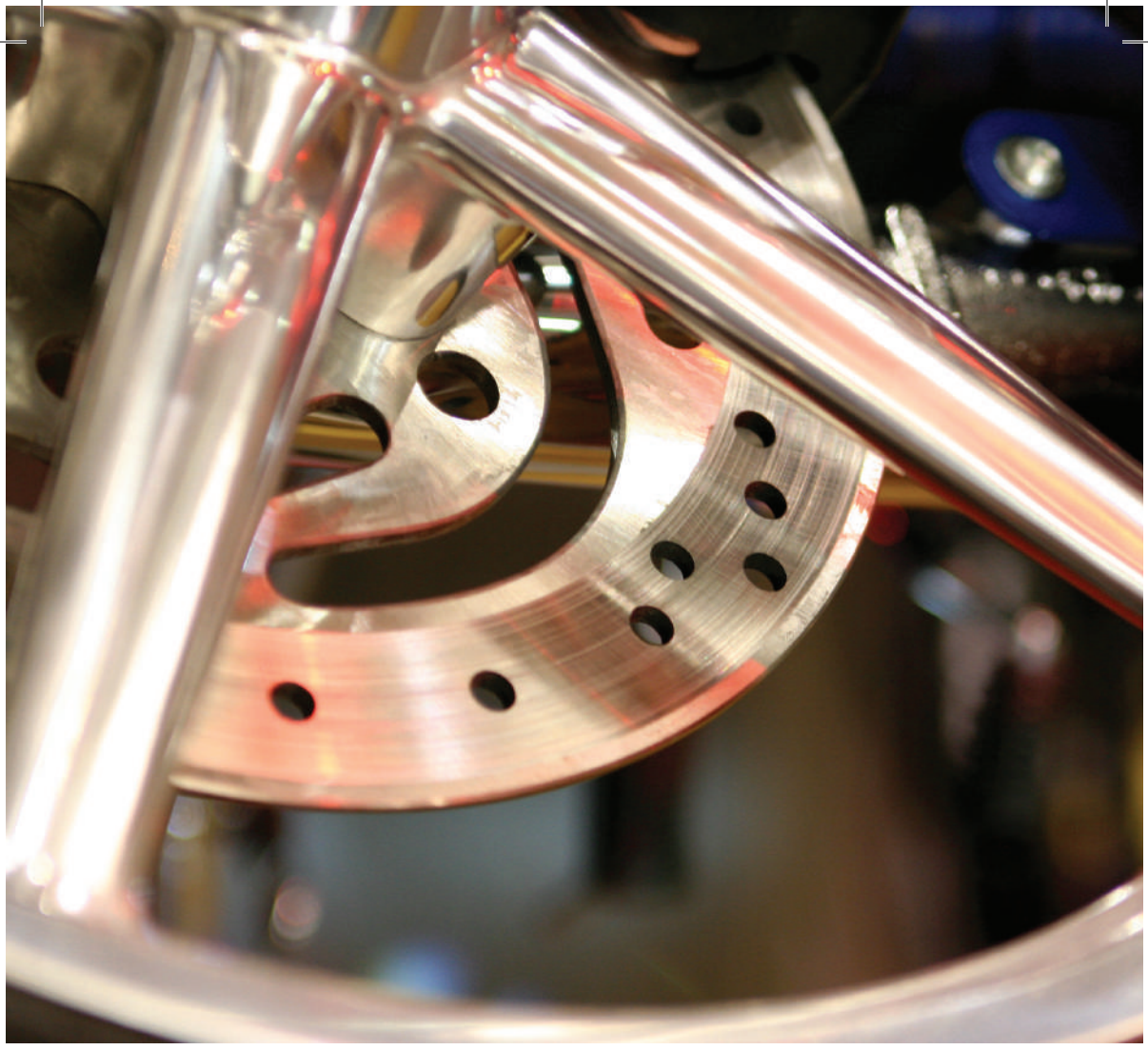
The findings from the research clearly show over and over, that artisan training has emerged as a critical concern, not just for industry – but that of government too. Minister Blade Nzimande has taken a special interest over the last couple of years in drivingartisan development, and it is clearly evident in the mantra: Make every workplace a training space/place.

It should be noted that intensive initiatives have started in order to strengthen artisan training, and increase the numbers, as well as the much needed quality, of skilled artisans, particularly in priority/scarce listed trades, through a synergy of strengthening FET colleges, SETAs and business initiatives.

High Level Recommendations

It was recommended that the Metal Chamber and MerSETA as a whole, need to look at the workplace as the site of learning, and then assist industry to build in that capability. This is not just for the new entrants to the industry, but also for those who are currently employed – both the educated and the under-educated. It was noted that the Metal Chamber however, was not well placed to implement and manage such complex and innovative projects. It would have to consider forming partnerships with other merSETA divisions, with industry bodies, government departments and training providers, and also with businesses that are dedicated to developing new practices in organisations.

The current state of the metal and engineering sector is also a significant factor that must be noted in terms of expansion of training and development.



As a key sector which has experienced a significant downturn on the back of the global economic crisis, companies were forced into survival mode, or face closure. As a result, training was impacted on, and as companies slowly emerge from the declines of recent years (based on the PMI for August 2013), it is evident that skills development and training will regain key positions in terms of strategy development and scenario planning. The focus by government on large-scale infrastructure development projects, such as the Strategic Integrated Projects (SIPs), also offers an opportunity for the rebirth of the manufacturing sector. This will be aided, in particular, by a focus on local skills development and local procurement, which will ensure that the downstream and upstream value chains within the manufacturing and engineering sector are able to respond to the needs of all 18 SIPs.

5.3.10PHASE II: MERSETA METAL CHAMBER RESEARCH REPORT

Title: Occupational skills demand dynamics in the Metal Industry

Purpose

The main aim of the research study was to identify and estimate occupational skills demand in the metal industry.

The objectives of the research study were to:

- Identify and estimate the extent of occupational skills demand in the Metal Industry.
- Identify supply-side weaknesses and current bottlenecks in the provision of education and training for occupations.
- Make recommendations for addressing occupational skills demand and improving the technical skills base in the Metal Industry.

Research Methodology

The study used more than one research method through triangulation in order to enhance confidence in the ensuing findings, and therefore used a combination of literature review, interviews, workshops and a survey.

Key Findings

- **Occupations in high demand:** the table below lists the occupations that were found to be **absolutely** hard to fill:

Professionals	Technicians and associate professionals	Craft and related trade workers
Electrical Engineer Project Manager	Mechanical Engineering Technologist	Millwright
Mechanical Engineer	Metallurgical Engineering Technologist	Fitter and Turner
Construction Project Manager	Pattern-makers	Toolmaker
Chemical Engineer	Metallurgical Engineering Technologist	Air-conditioning Mechanic
Metallurgist	Rope designers	
Production / Operations Manager		

- **Skills gaps:** The following ancillary "soft skills"were found to be the major skills gaps in the metals sector:

1. Leadership skills
2. Management skills
3. Production skills
4. Basic numeracy and literacy
5. Technical engineering skills
6. Supervisory skills
7. Customer service skills
8. Communication/interpersonal skills
9. IT skills
10. Marketing and sales skills

- The impact of skills shortages was found to have the following impacts:

1. Higher production costs
2. Some employees working longer hours
3. Declining productivity
4. Loss of business opportunities
5. Delivering late on our products
6. Loss of skilled employees
7. Loss of market share or profitability
8. Error rates are increasing
9. Lose business to competitors
10. Inability to upgrade to new technology

Other Key Findings

- Technical education at most post-school education and training institutions is not always as relevant or up to date as it should be. Technical education often takes place in a classroom environment. Instructors are often teaching material (or utilising equipment) that is outdated or irrelevant. Technical education often misses the most important aspect of modern technical work, which requires excellent critical thinking and problem-solving skills in a pressure- packed environment on the factory floor.

- Industry and educational institutions tend to form one-to-one partnerships in an ad hoc manner with limited objectives.

- Qualifications and unit standards are being driven by training providers instead of employers.

- There is a lack of emphasis on high level, specialised skills training (which may not entail a full qualification). Such training includes world class manufacturing, technical and production training, innovation, machine manufacturers' training and cutting edge developments in a specific industry.

- New jobs and new skill requirements are continually emerging. As they do, the skills needs of employers change

to suit changing business processes, technological developments, customer demand, legislative requirements and a host of other factors. New technologies mean that initially few are familiar with these applications.

- There is a concern among some industry representatives that the merSETA grants policy is not geared to meeting the training priorities of these industries.

Recommendations

- To prepare workers for the technology-infused, high productivity workplaces of advanced manufacturing, Science, Technology, Engineering and Math (STEM) skills must be a key focus of our nation's educational system.

- Employers must invest in job-specific, sustainable training programmes to ensure workers can continue to advance with the evolution of new business processes. The investment of skills levies in workforce development through the Skills Development Act and other programmes, such as SIPs, must be focused on training to the demand needs of the metals, engineering, and related industries.

- Broader and more sustainable links must be forged between educational institutions and businesses to ensure the alignment between a wide variety of sources of learning, including TVET colleges, universities, and industry-sponsored continuing education programmes. Industry and educators need more formal and frequent communications to refine curricula to meet current and emerging needs. It must be emphasised that current technology must be taught. We need to continue to provide strong underpinning engineering principles while also providing students with the opportunity to connect with the physical workplace and current technology. (This is why many universities are strengthening their high-value-add 'design-build' activities in the design spines of the engineering curriculum.)

- Addressing non-traditional and under-represented labour pools is a key national priority. Women and historically disadvantaged workers are two significant talent pools that are not yet fully leveraged by these industries. Further, there are skills and experience in other sectors which could be effectively leveraged into metals and engineering organisations. With policies and practices catered to address the needs and requirements of these specific groups, organisations must make an active effort to increase the available talent pool, particularly at management and professional levels.

- To develop faculty that can deliver an excellent manufacturing education, educators and industry should:

    - Keep up to date on using new technologies;

- Work with industry to understand current technical needs and update their curricula;
- Collaborate with industry, professional organisations and government on projects.

- Share best teaching practices – especially when it comes to alternative teaching methods – through appropriate continuing education programmes for instructors at all levels.

- The demand for some basic skills is extensive in these industries, such as basic reading skills (defined as the ability to read basic manuals), basic writing skills, and basic maths skills (the ability to add, subtract, multiply, divide, and handle fractions).

6. Conferences

Over the past years merSETA staff have presented in some of the leading local and international conferences such as the University of Kwazulu Natal teaching and learning conference and the Innovation Apprenticeship Conference. Some of the papers are highlighted below:

UKZN teaching and learning conference 2013

1. Akoojee, S. (2013). Selective Memory in Action: South African Further and Higher Skills in Transition. University of KwaZulu-Natal's 7th Annual Teaching & Learning Higher Education Conference 2013.

2. Crosby, L & Akoojee, S. (2013). SETAs and Sector Skills Planning: Understanding the Context in Revisioning Further and Higher Education. University of KwaZulu-Natal's 7th Annual Teaching & Learning Higher Education Conference 2013.

3. Dlamini, T. The Impact of Social Perceptions on Learner Enrolments at Institutions of Further Education and Training (FET Colleges). University of KwaZulu-Natal's 7th Annual Teaching & Learning Higher Education Conference 2013.

4. Manda, M. (2013). Bridging the Gap between the Skills Demand and Supply Side through Effective Knowledge Management in Higher Education: Re-Asserting the Role of Sector Education and Training Authorities (SETAs) in Facilitating Skills Development. University of KwaZulu-Natal's 7th Annual Teaching & Learning Higher Education Conference 2013.

International Network on Innovative Apprenticeship (INAP) 2013

1. 1.Brown, H, Zungu, Z & Hauschildt, U. (2013). Competence Measurement and Development in TVET: Results of the first COMET test in South Africa. INAP 2013.

2. 2.Akoojee, S. (2013). Apprenticeship in a Globalised World: Premises, Promise and Pitfalls. INAP 2013.

International Network on Innovative Apprenticeship (INAP) 2013

1. 1.Brown, H. (2015) Competence measurement in South Africa: Teachers reactions to feedback on COMET results. INAP 2015.

2. 2.Patel, R. (2015). Developing T-Shaped People: Transforming Skills into Skilfulness to Meet the Demands of the 21st Century Workplace. INAP 2015.

3. 3.Liebenberg, A. (2015). A Quest for social Justice: Exploring the Possibility of Expanding the South African Apprenticeship System to Provide Access to Informal Apprentices. INAP 2015.

7. Looking Ahead

The White Paper on Post-school Education and Training is set to become a policy guide for Post-School education and Training post NSDSIII has seen a renewed emphasis on the role played by SETAs merSETA has committed itself to fully supporting the DHET and the QCTO in the implementation of a more coherent post-school education and training system that is focused on employability and is informed by citizenship and lifelong learning.
Specifically, the merSETA recognizes the overarching theme of "social justice" as being important for how it does things including influencing the research agenda going forward:

- Future skills required in the manufacturing, engineering and related services sector
- Social innovation and access to technology.
- Partnerships with Higher Education Institutes and avoiding the duplication of resources is critical.
- "People – Planet – Profit" considerations.
- At a socio-economic level (including our levy-paying companies and learning institutions, as well as the workplace as a learning space) dealing with diversity is a crucial factor, in terms of access, redress and quality - towards an integrated E&T system.
- Formulaic approaches to projects and grants policies require revisiting and very specific monitoring and evaluation to determine quality and impact.
- Importance of "the community" in skills development planning, implementation and project management. Building capacity in community structures to liaise adequately with SETAs.
- Recognition of Prior Learning (RPL) and Credit Accumulation and Transfer (CAT) are significant for inter-institutional arrangements, social justice, and access, and require exploration and contextualisation in day-to-day operations, contracts and projects.
- Research contributing to the "Rural development" agenda

The White Paper stresses the need to improve the efficiency and effectiveness of the SETAs to ensure that training provision is directed towards identified sector, cross-sector and occupational needs. Their role in skills planning and research must be expanded to focus more on labour market analysis in order to improve the match between the supply of education and training and labour market needs. The SETAs have to play a stronger role in improving the articulation between educational institutions and the labour market.

Notes

Notes

WE CARE:
It's about caring for people we render services to

WE BELONG:
It's about working together with colleagues

WE SERVE:
It's about going beyond the call of duty

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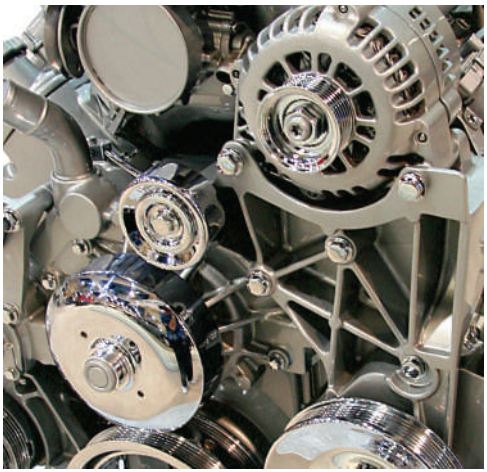
LEADERS IN CLOSING THE SKILLS GAP



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