

# Artisans and technicians in South Africa: WHAT THE **FUTURE** HOLDS



Artisanal work is becoming more complex.  
Credit: Guy Stubbs

There are widespread claims of a shortage of artisans in South Africa. While there is general agreement that artisan development is crucial, there is little consensus about the scale and nature of the demand, or about the nature and quality of artisanal training and work preparation. *Angelique Wildschut and Gerard Ralphs* report.

A number of pressing questions emerge: What knowledge and skill does a 21st century artisan require? What would a ‘good artisan training system’ look like? What would artisanal work of the future look like?

To assist policy-makers in their attempts to plan for future skills, this study looks at work itself – investigating its organisation and the diagnostics and problem-solving skills required in the work of artisans and technicians. It is a demand-focused study that has the changing nature of work as its central theme and seeks to contribute to labour market intelligence by putting forward an evidence-based argument for how to prepare artisans and technicians to be work ready.

We studied the sites in which artisans and technicians work in four sectors of the economy – boat builder and repairer in the boat-building sector; mechatronics technician in the engineering sector; camera assistant in the film-production sector; and confectionery baker in the tourism and hospitality sector.

Research covered four key themes of interest: company futures, workplace culture futures, work futures and qualifications futures.

## Company futures

According to business leaders we interacted with, the state of the global economic climate, regional and local political stability, and market volatility were the three key drivers of change in their companies. These dynamic structural factors, all beyond the control of companies, were viewed as potentially having the highest impact on future growth.

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Business leaders were, however, positive about current growth and growth forecasts, linking these projections to business strategies such as local and international diversification of products in both niche and mass markets. For example, companies in the baking sector which were oriented towards mass markets based their positive predictions on the constant growth experienced to date, while those oriented more towards niche markets used the steadily growing demand for artisanal breads from a greater variety of outlets as the basis for their prediction.

In the domain of employment, business leaders were clear that practices such as subcontracting, outsourcing, decentralisation, casualisation of work, temporary contracts and seasonal work fluctuation will affect future employment flows and movements of staff. The anticipated impact of these factors differed by sector and size of the firm. Small sites displayed a tendency towards predicting seasonal work fluctuations and temporary contracts, and larger sites tended towards predicting outsourcing.

## Workplace culture futures

The complexity of work can be captured by two opposing concepts: certainty and risk (Figure 1). When the end result is continually at risk during the process of making, producing, or maintaining, we talk about work of risk. All workplaces try to reduce risk

A ‘low-risk’ workplace culture was predicted for artisans and technicians of the future... attributed to mechanisation, automation and digitalisation.

and aim for work certainty through strict adherence to standard operating procedures (SOPs), for example.

Across all the sectors studied a ‘low-risk’ workplace culture was predicted for artisans and technicians of the future. This prediction was attributed to the increasing routinisation and standardisation of work that is arising from mechanisation, automation and digitalisation.

In mechatronics, for example, it is essential that work is performed to standard at all times to meet quality assurance, avoid costly product recalls, or mitigate the risk of damage to equipment. The environments in which artisans and technicians operate must be fool proof.

## The future of work

A ‘low-risk’ workplace culture for artisans and technicians relates to the anticipated nature of their work in the

Table 1: Work as a continuum of ‘certainty’ and ‘risk’ (Pye, 1968)

Work of certainty	Work of risk
Routine work	Mostly novel or unique situations
Narrowly specified tasks	Experimentation
Predictable problem solving	Complex problem solving
Simple task subject matter	Complex task/subject matter
Technique-focused	Conceptually driven
Supervised work	Autonomous work
Rule-following	Independent judgement
Simple interpersonal relations/teams	Complex inter-personal relations/teams

Source: HSRC, 2016



future: the greater the need for certainty of end-result, the greater the emphasis on standardised work performance through common work procedures; the greater the emphasis on innovation and design, the greater the need to work out new connections between parts, not by trial and error but through principled reasoning. Here, risk is inevitable as the answers are not known beforehand.

The research found two opposing work change trends: a shift towards predictable and standardised work, as well as a shift towards unpredictable risk work. Sectors were found either to move in one direction only, or to display both trends simultaneously. For example, in boat-building, lower-risk work is predicted based on increasing standards and procedures, but higher-risk work is also foreseen as a result of remote design work, new work methods and less supervision in a small business.

It should be noted that a sound technical vocabulary to talk about work, and the capacity for ongoing self-education and training to remain up-to-date, will contribute significantly to what counts as future ‘technical competence’.

These trends hold implications for the future of training and development but current trends in the provision of qualifications for intermediate-level work should also be taken into account.

### The future of qualifications

There is a general perception that there is very little training available for artisans and that ‘down-skilling’ will be the future trend.

The research found that in some cases formal qualifications are, and will be, an entry requirement for work, while a strong in-house and/or on-job training culture persists. On-job training and

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informal learning remain the dominant modes of education and training, with supplier-provided training on specific equipment or technology identified as a growing practice.

Each sector has a range of formal qualifications registered on NQF Levels 2 to 6. But there is little systematic evidence of delivery and take-up of these courses by the artisans, technicians, and companies (Table 1).

Two reasons were offered: first, technical work performance has not been formalised or codified, with resultant lack of qualification development. Second, qualifications have been developed and registered on the NQF, but their impact on the development of artisans was perceived as negligible.

### Four key trends for skills planning

#### Sector and company futures

Business unease about the connection between the global economic climate, regional and local political stability, and market volatility, linked to employment trends that anticipate a reduction in permanent or core staff and a drive towards cost-savings through subcontracting, outsourcing and casualisation, do not paint an overly optimistic picture of sectoral intent to invest in training and development.



Table 1: Summary of artisanal education, training and development opportunities in four sectors

Sector	Trades	Entry qualification required	Relevant qualification(s) registered on NQF	On-the-job training	In-house courses	Short courses (external)	Supplier training
Hospitality	Baker		National Certificates (Various) NQF Levels 2 – 4	√		√	√
Boat-building	Boat builder		National Certificate NQF Levels 2 – 4	√	√		√
Film	Film maker		FET Certificate (NQF Level 4) National Certificate (NQF Level 5)	√		√	√
	Camera assistant		National Diploma (NQF Level 6)	√		√	√
Engineering	‘Automation-orientated’ artisan	√	FET Certificate (NCV Level 4)* merSETA Mechatronics Learnerships NQF Level 4 (Trade Worker) and NQF Level 5 (Technician)	√	√ (medium and large firms)		√
	Automation technician	√	National (Professional) Diploma (NQF Level 6)	√		√ (programming)	√

Source: HSRC, 2016

## Sound technical vocabulary to talk about work, and the capacity for ongoing self-education and training to remain up-to-date, will contribute significantly to what counts as future ‘technical competence’.

### Workplace culture futures

Shifts to a ‘low-risk’ workplace culture are predicted, and attributed to the increasing routinisation and standardisation of work arising from mechanisation, automation and digitalisation.

Sound technical vocabulary to talk about work, and the capacity for ongoing self-education and training to remain up-to-date, will contribute significantly to what counts as future ‘technical competence’.

### Work futures

Two opposing work change trends are found: a shift towards predictable standardised work and a shift towards predictable risk work. Because sectors and workplaces can only either move in one direction, or display both trends simultaneously, both up-skilling and down-skilling of the work of artisans and technicians can be found.

*The implications for training are that different levels and types of apprenticeships will be required to serve the simultaneous coexistence of ‘high-risk’ and ‘low-risk’ work.*

### Qualifications futures

On-the-job training and informal learning remain the dominant modes of education and training, with supplier-provided training on specific equipment or technology identified as a growing practice.

*Formally registered and recognised short courses will need a definite space and integrity of their own, and could provide the narrower skills base required in routinised and highly standardised work environments.*

The research shows how an understanding of labour process variations and their impact on the nature of intermediate-level work provides a solid basis for supply-side planning, which does not take an ‘imaginary curriculum’ as a starting point but refers to actual work processes and their differences in large and small enterprises.

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**The full report, Gamble, J, Work and Qualifications Futures for Artisans and Technicians is available on [www.lmip.org.za](http://www.lmip.org.za)**





Miners underground.  
Credit: Africa Media Online

The South African mining sector has traditionally been a labour-intensive sector. However, to keep abreast with global competition, there has been an increase in the shift towards mechanisation and automation – a shift that holds implications for the skill and competency requirements in this sector, write *Angelique Wildschut* and *Tamlynn Meyer*.

# STRUCTURAL INEQUALITY still characterise work in the mining sector

The shift towards mechanisation and automation in the mining sector is having an impact on the demand for different occupational groups. There are those who anticipate the increasing employment of high-skill workers, while some assert that intermediate-level skilled labour will be negatively affected by the introduction of technologies operated by semiskilled or unskilled workers (de-skilling).

The mining sector plays a significant role in the labour market, both in terms of employment and revenue generation, but it suffers from a history of inequality and instability that have a negative effect on investment and growth. This volatility was recently highlighted by strike action that not only spanned an extended period of time, but that was also violent in nature. In this regard it is clear that an important future research area will be to better understand the sociological drivers

**'The mining sector suffers from a history of inequality and instability'**



Office staff above ground – representing two occupational groups.

of labour market change, which is increasingly acknowledged as having critical implications for our country's economy.

Data from a recent study by Wildschut et al on artisanal occupational milieus and identities indicated there was a growing trend to employ higher

(professional) and lower-level (clerks and elementary) occupational categories. Table 1 shows that there was also an increase in intermediate-level occupations, but this growth was much slower in comparison. These trends would support both the high-skill and de-skilling hypotheses.