

LMIP THEME 6: UNDERSTANDING CHANGING ARTISANAL OCCUPATIONAL MILIEUS AND IDENTITIES

WORK AND QUALIFICATIONS FUTURES FOR ARTISANS AND
TECHNICIANS: A RESEARCH GUIDE

LABOUR MARKET INTELLIGENCE PARTNERSHIP (LMIP)

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SECTION 1: INTRODUCTION

BACKGROUND: WHY THE NEED FOR A RESEARCH GUIDE?

The Human Resource Development Strategy of South Africa (HRDSA) and the erstwhile Joint Initiative on Priority Skills Acquisition (JIPSA) identified access to reliable information as an obstacle to the supply of relevant skills for growing the economy (DHET, 2010). In recognition of this gap a dedicated outcome and delivery agreement was set up towards the establishment of a credible institutional mechanism for skills planning in the country. In 2012, the Department of Higher Education and Training (DHET) commissioned the Human Sciences Research Council (HSRC) to lead a national research consortium, the Labour Market Intelligence Partnership (LMIP), to support it by conducting research that would form the evidence base towards reaching this outcome.

The programme of research spans a range of issues that aims, to better understand the labour market, the nature of skilling available, the relation between education and the labour market, as well as frameworks that could be employed to better understand these. The traditional structure of research consortium relationships would require conducting research to extend the knowledge base in skills and labour market planning. However, an equally important and particularly critical component of the LMIP was to capacitate a broader range of skills stakeholders to conduct analysis and interpret labour market information.

This research template is a first step towards this institutionalisation process, a product of the intense engagement and debate that formed a critical part of the structuring of the research process. The guide draws on the findings, methodology and design that underpinned an investigation into the knowledge and skills requirements of artisans and technicians in South Africa. The study focuses on work itself, to its organisation and to the diagnostics and problem solving found in the work of artisans and technicians, to make assessment of the kinds and combinations of knowledge that would be required by artisans and technicians in the future. It is a demand-focussed study which takes 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 artisans and technicians of the future should be prepared to be work-ready. The approach could be useful in its entirety or part of it could inform the practice of SETA/NAMB skills planning and strategy development, particularly with relation to ensure that appropriately skilled artisans and technicians will be available for the future workplace. This

guide is a condensed version of the research report. For a detailed discussion of the research and its findings, refer to Gamble (2016).

THE STUDY APPROACH

The relationship between education and training and work, or the economy, has long been a contested issue. Policy makers in most countries remain convinced of a positive link between investment in education and training and economic performance. Technical and vocational education (TVET) and, more recently, also general education, are viewed as primary determinants of economic success in a globally competitive world. A second causal link often assumed is that economic success is made possible by technology and technological advances and the more a sector and/or country invests in technology the more successful they will be in terms of economic performance. Counter positions argue that such causal chains are, in fact, the other way around: that it is the state of the economy that determines patterns of participation in education and training and the labour market; and, it is the way in which business is transacted in the short or longer term that makes technological development possible (Brown & Keep, 1999; Collins, 1992; Wolf, 2002). Whichever way round one chooses to view these relationships, it is clear that they are far more complex and nuanced than simple causality.

This study, seeks to understand how artisans and technicians of the future need to be prepared for the labour market, it makes no claims to direct causal relations with regards to either of the relationships described above. The design was informed more generally by a review of literature around future work and preparation for work (Gamble 2012) which yielded a set of general presuppositions, as below:

- Artisans and technicians of the future will work in both large-scale and small-scale firms of varying technological capacity.
- Innovation through technological invention, adaptation, improvement and on-job improvisation will be a key requirement of work of the future.
- (Re)production and maintenance of goods and services to internationally-accredited quality, safety and ecology standards will remain key components of work of the future.
- Entrepreneurial activity will be a strong component of all work, but especially when craft forms of design and production are combined with computerised technology.
- Different modes of 'risk' and 'certainty' will be found in future artisanal work, e.g. mechanised and proceduralised work practices that 'down-skill' the work of artisans and

technicians alongside practices that rely extensively on innovative and specialist diagnostics and fault-finding that 'up-skill' the work of artisans and technicians.

- The knowledge base of specialised work will consist of both situated and formal knowledge.
- Multi-skilling refers to a combination of social, discursive, technical and technological capacities.

In order to capture as many of the above issues as possible, the study was designed as a series of interlocking contexts focusing investigation and analysis into four dimensions:

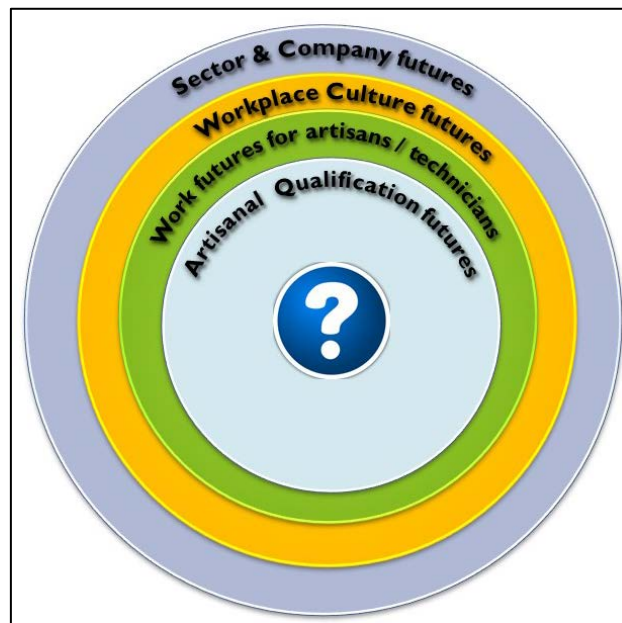


FIGURE 1: WORK AND QUALIFICATIONS FUTURES FOR ARTISANS AND TECHNICIANS

- **Company futures:** Here the key research question asked; *what changes are anticipated in companies or enterprises over the next two decades, which may impact on the role and functions of artisans and technicians?*
- **Workplace culture futures:** Here the investigation was primarily concerned with ascertaining *what levels of technical and communicative competence will be required by company employees in general and will there be training and development opportunities?*
- **Work futures:** This aspect of the investigation focused on understanding, *what kind of diagnostic and problem solving knowledge and skills will flexible work futures require from artisans and technicians?*
- **Qualification futures:** This aspect of investigation considered *how artisans and technicians will become work-ready?*

SECTION 2: RESEARCH VOCABULARY

The study drew from literature on the sociology of labour process and sociology of work, where the inter-relation between the activity of work, tool usage and material usage is considered definitive of the labour process (Braverman, 1974). For the study it was thus important to find ways of describing work that could be used across the different sectors. Two ways of describing work were adapted from the literature and are set out below.

WORK AS A CONTINUUM OF ‘CERTAINTY’ AND ‘RISK’

The complexity of work can be captured by two opposing concepts: *certainty* and *risk*. The difference lies in the degree of pre-determination of the end-result (Pye, 1968). When the end-result is continually at risk during the process of making or producing or maintaining, we would talk about *work of risk*. All workplaces try to reduce risk and aim for *work of certainty*, through the use of templates and jigs in handcraft, through automated work processes, or through strict adherence to Standard Operating Procedures (SOPs) and health and safety procedures. Rather than viewing work as fitting in under one or the other of the two oppositional poles, it is more useful to see the two poles as the far ends of a *continuum* (see Table 1).

TABLE 1: A DEPICTION OF WORK ALONG A CERTAINTY - RISK CONTINUUM

Work of Certainty.....Work of Risk
- routine work	- mostly novel or unique situations
- narrowly specified tasks	- experimentation
- predictable problem solving	- complex problem solving
- simple tasks/subject matter	- complex tasks/subject matter
- technique-focussed	- conceptually-driven
- supervised work	- autonomous work
- rule-following	- independent judgement
- simple inter-personal relations/teams	- complex inter-personal/teams

The ideal description of most types of technical and artisanal work would probably be at a mid-point between complete predictability and complete unpredictability of results. In reality though, it is likely that any one kind of work may tend to veer more to the one side or more to

the other. For certain components of work there may also be more certainty while for other components there may be a greater degree of risk.

WORK AS 'LABOUR PROCESS'

Work can also be described as a labour process that comes about through the relation between the division of labour (or the way work is organised), the tools or technology used and the materials used (see Figure 2).



FIGURE 2: WORK AS LABOUR PROCESS

This three-way relation was the traditional way of separating one trade from another. Even though advances in technology and materials have broken down many of the original trade demarcations, the value of understanding work in this manner remains undisputed. The three-way relationship is the same in all labour processes, but each site of work has a particular configuration of work organisation - materials - tools/technology that specialises the context and stipulates the work roles within that organisational context.

PROBLEM SOLVING AS THE CORE OF ARTISANAL WORK

These two ways of understanding work helped the researchers to understand each site as a specialised context in terms of labour process, with a focus on the kind of problem solving found in a particular labour process configuration: tending towards routine problems and predictable or standardised solutions; or, tending towards complex problems requiring new and innovative solutions.

Figure 3 shows how the two ways of describing work was combined to make an investigative lens for such a study. The next challenge was to find way of capturing the specialised nature of work contexts.

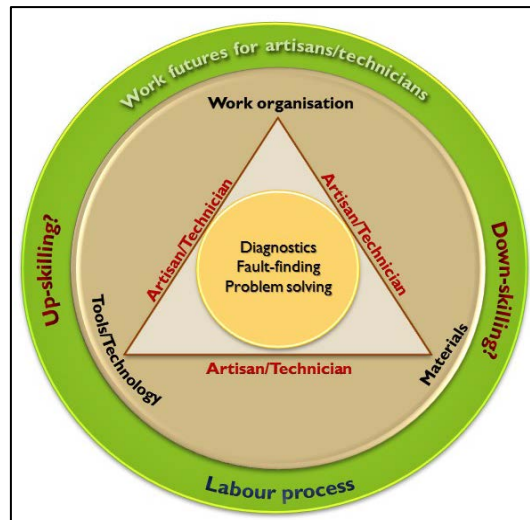


FIGURE 3: A PROBLEM SOLVING APPROACH TO WORK

Diagnostics, fault-finding and problem-solving are generally regarded as skills and, moreover, as *generic skills* which are applicable across jobs and occupations in an occupational group (DHET, 2013). As a general category ‘skill’ or even ‘critical problem solving skills’ was not going to be of great help. The study adopts a definition of skill proposed by the European Commission (as cited by Bohlinger, 2008: 99) which describes skills as the ‘*ability to apply knowledge and use know-how to complete tasks and solve problems*’. ‘Knowledge’ as used here is ‘*the body of facts, principles, theories and practices that is related to a field of study or work*.’

This definition is confirmed by numerous other descriptions that do not talk about skill without reference to the knowledge base on which skilled performance draws. In the British context, for instance, Fuller and Unwin refer to the link between ‘*a set of skills and related vocational knowledge that combine in the form of vocational practice to enable the individual to perform at a specific level in the workplace*’ (2011: 37). Putting forward the reverse side of the same coin from the Australian vocational education and training (VET) context, Wheelahan (2001) argues that ‘*competency-based vocational education and training qualifications in Australia deny students access to the theoretical knowledge that underpins vocational practice, and that this results in unitary and unproblematic conceptions of work*’.

In line with these literatures, this study takes up the issue of knowledge and how the knowledge bases required for problem solving in particular trades may change in the future. The study argues that this type of information will be crucial for decisions about what the 21st century artisan and technician need to know and do.

SECTION 3: RESEARCH FINDINGS

Overall research question: *What knowledge and skill does a 21st century artisan need?*

3.1 SECTOR AND COMPANY FUTURES

Sub-question 1: What are some of the changes anticipated in companies or enterprises over the next one to two decades, which may impact on the role and functions of artisans and technicians?

Finding 1: Business growth through diversified markets

With a few exceptions, the majority of sites, whether large or small, report positively on current and anticipated business growth. Growth is linked to a wide range of market strategies in terms of local and international market diversification across niche and mass markets.

While structural factors influence industrial and commercial production in different ways, three factors are viewed as having the highest potential positive or negative impact on future growth: (1) global economic climate (2) regional and local political stability and (3) market volatility.

Finding 2: Employment flows

All sectors anticipate that employment trends such as sub-contracting, outsourcing, decentralisation, casualisation of work, temporary contracts and seasonal work fluctuation will affect future employment flows and staff movements.

3.2 WORKPLACE CULTURE FUTURES

Sub-question 2: What levels of technical and communicative competence will be required by company employees in general and will there be training and development opportunities?

Finding 3: Shift to 'low risk' work culture with technical competence redefined

All sectors predict a 'low risk' work culture in the future, which they ascribe to increasing routinisation and standardisation of work through mechanisation, automation and digitalisation.

Although the technical complexity of work itself may or may not decrease, 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 a technical competence culture in the future.

Finding 4: An increased communication requirement

Medium to high levels of workplace literacies in terms of reading and writing in English, ICT expertise and technical and social communication are viewed as important components of workplace cultures futures across all four sectors, although not to the same degree.

The expectations of a younger generation of workers, easy access to print media, and more open and participative management communication cultures are viewed as key prospective drivers of change towards an increased communication requirement.

Finding 5: Training and development both a reality and an aspiration

Training and development cultures are reported as uneven.

High ratings refer to formal qualifications as an entry requirement for work, or indicate a strong in-house and/or on-job training culture. High ratings also express an identified need for ongoing training and development and a desire for more training opportunities.

Low current and future ratings reflect perceptions that very little training is available for artisans and that 'down-skilling' will be the future trend.

3.3 WORK FUTURES FOR ARTISANS AND TECHNICIANS

Sub-question 3: What kind of diagnostic and problem solving knowledge and skills will flexible work futures require of artisans and technicians?

Finding 6: Opposing but simultaneous work change trends

The study found evidence of two opposing work change trends: a shift towards predictable standardised work and a shift towards unpredictable risk work. Sectors either move in one direction only, or *they display both trends simultaneously*. The latter leads to a mix of up-skilling and down-skilling.

Finding 7: Occupational diversification

The effect of patterns of up-skilling and down-skilling is that no sector has only one version of the designated trade or specialist occupation studied. In each sector at least two or more variants and/or sub-variants co-exist.

Finding 8: Differentiated knowledge and skill within and between sectors

Artisans and technicians in all sectors diagnose and solve technical problems but there are marked differences in the knowledge on which they draw to do so: differences in type, depth and breadth of knowledge. This has a significant impact on training and development pathways.

Knowledge and skill bases of small and medium/large enterprises in the same sector also show degrees of difference.

3.4 QUALIFICATIONS FUTURES

Sub-question 4: How will artisans and technicians become work-ready?

Finding 9: A range of NQF-registered qualifications but limited delivery

Each sector has a range of formal qualifications registered on NQF levels 2 - 6 but there is little systematic evidence of delivery and take-up.

Finding 10: On-job training and supplier training the dominant modes of provision

In all four sectors on-job training and informal learning remain the dominant modes of education and training, with supplier-provided training on specific items of equipment or technology identified as a fast-growing trend.

SUMMARY OF RECOMMENDATIONS

- The intermediate labour market level needs a diversified training system with multiple entry and exit points.
- Evidence of a continued employer belief in the value of apprenticeship suggests that apprenticeship should be the main mode of delivery towards qualifications at intermediate labour market level.
- Single apprenticeships will not be sufficient. Different levels and types of apprenticeship will better serve the simultaneous co-existence of 'high-risk' and 'low risk' work in the same sector and sometimes in the same workplace.
- All sectors should introduce a foundational apprenticeship that signals a baseline of all-round expertise.
- A foundational apprenticeship could be followed by an intermediate and/or advanced apprenticeship to provide sectoral progression pathways and developmental opportunities for all workers.
- Where necessary, bridging programmes may need to be introduced act as a proxy for the continuity between school and TVET that is the marker of successful training systems at intermediate labour market levels in industrialised countries.
- In addition, formally registered short courses will need a definite space and integrity of their own, arranged into recognised part- or whole qualifications.

SECTION 4: HOW TO DESIGN THE STUDY

STEP 1: CASE SELECTION

The first step in conducting a similar study is to identify the cases. We consulted the Organising Framework of Occupations (OFO) for a list of artisanal trades and occupations. Four focus artisanal trades were identified and the relevant occupational codes were identified. Then to provide a further level of focus, a particular industry sector was selected to inform the empirical investigation into the particular trade:

- OFO code: 684907 Boat builder and repairer in the Boatbuilding sector
- OFO code: 681201 Confectionary baker in the Tourism and Hospitality sector
- OFO code: 671203 Mechatronics technician in the Engineering sector, and
- Camera assistant in the Film Production sector (this case did not have an OFO recognised trade in this regard, but was important as a contrast case)

The study made a distinction between small and medium-large sites. Sites were purposively selected according to the descriptive criteria in Figure 4. Each study focused on at least two small sites and two medium- large sites.

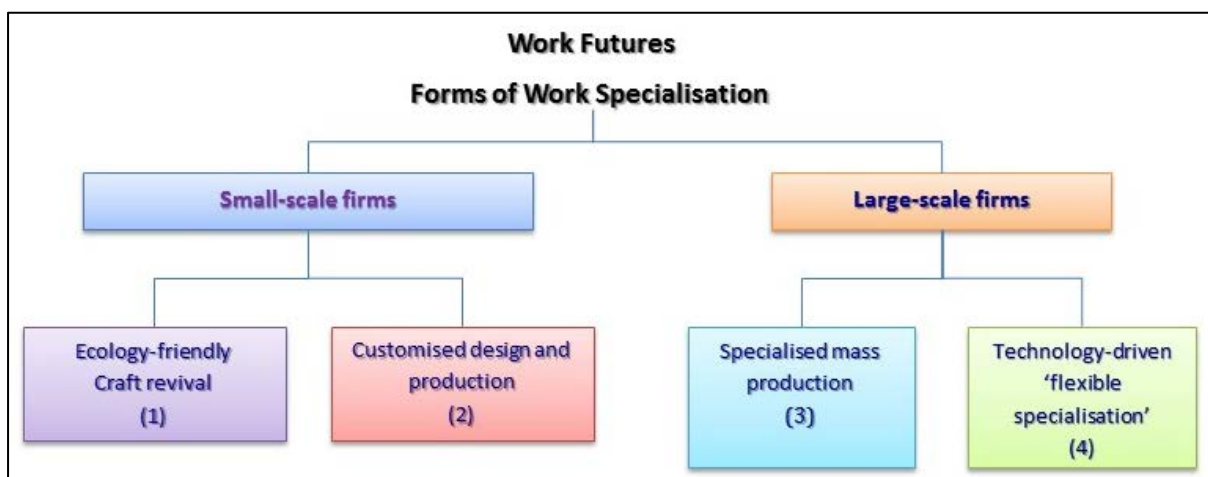


FIGURE 4: CRITERIA FOR SITE SELECTION

STEP 2: DATA COLLECTION

In each site we undertook the following activities:

- We interviewed the company owner, chief executive (CEO) or a nominee about *sector and site contexts and anticipated changes* (one interview per site).
- We interviewed (1) the CEO or owner (2) a supervisor or first line manager and (3) two artisans or technicians *about the work, training and development of artisans and technicians in that site, with a particular focus on diagnostics and problem solving* (four interviews per site). We conducted further individual interviews with all of the above people, as well as with an administrative staff member *about current workplace culture and anticipated changes* (5 interviews per site).
- We observed an artisan or technician at work for a full day or night shift.

STEP 3: DESKTOP RESEARCH

Desktop research was done to obtain information about the qualifications and training opportunities available for artisans and technicians in each sector. This enabled researchers to carry out a 'gap analysis' that shows the alignment or misalignment between what is required and what is available in each sector.

STEP 4: ANALYSIS

SPSS was used to code and capture information. Despite the small sample, this enabled systematic analysis and findings at both a site and sector level.

SECTION 5: RESEARCH INSTRUMENTS

The research instruments that supported the collection of data under each of the four dimensions of investigation are listed below:

To collect information about *company futures*, individual interviews were conducted using:

- Instrument 1: company futures: owner/CEO or nominee

To collect information about *workplace culture futures*, individual interviews and workplace observations took place using:

- Instrument 2: workplace culture futures: CEO/owner/nominee and supervisor and artisan/technician and senior administrative person, and
- Instrument 5: workplace observation instrument: the researcher aims to capture the rhythms and patterns of the artisan's/technician's work by observing and noting down his/her actions and interactions.

To collect information about *work futures*, individual interviews were conducted using:

- Instrument 3A: work futures: artisans and/or technicians CEO/ owner/nominee and supervisor
- Instrument 3B: work futures: artisans and/or technicians artisan or technician

To collect information about *qualification futures*, individual interviews were conducted using:

- Instrument 4A: qualifying artisans of the future: owner/CEO/nominee and supervisor
- Instrument 4B: qualifying artisans and technicians of the future: artisan or technician

REFERENCES

- Bohlinger, S. (2008). Competences as the core element of the European Qualifications Framework. *European Journal of Vocational Training*, 42(1), 96 - 112.
- Braverman, H. (1974). Labor and monopoly capital. New York: *Monthly Review*, 181-182.
- Brown, A. & Keep, E. (1999). *Review of vocational education and training research in the United Kingdom*. Brussels: European Commission.
- Collins, R. (1992). *Sociological insight: an introduction to non-obvious sociology. Second edition*. New York: Oxford University Press
- DHET (Department of higher Education & Training). (2013). Guidelines: Organising framework for occupations. Available at <http://www.dhet.gov.za/Publications/OFO%20Guideline%20-%202013.pdf>
- DHET (Department of higher Education & Training). (2010). Establishing a credible institutional mechanism for planning. Available at www.gov.za/sites/www.gov.za/files/DeliveryAgreement-Outcome5.pdf
- Fuller, A. & Unwin, L. (2011). The content of apprenticeships. In T. Dolphin & T. Lanning (Eds). *Rethinking Apprenticeships*. London: Institute for Public Policy Research. 29 - 39.
- Gamble, J. (2016). *Work and qualifications futures for artisans and technicians*. Synthesis report prepared for the DHET Labour Market Intelligence Partnership (LMIP). Pretoria: HSRC/LMIP.
- Gamble, J. (2012). *Models and pathways to institutionalise apprenticeships*. LMIP Working Paper 30. <http://www.lmip.org.za>.
- Pye, D. (1968). *The nature and art of workmanship*. Cambridge: Cambridge University Press.
- Wheelahan, L. (2008). Can learning outcomes be divorced from processes of learning? Or why training packages make very bad curriculum. Paper presented at the VET in Context: 11th Annual Australian Vocational Education and Training Research Association Conference. From [http://www.avetra.org.au/AVETRA WORK 11.04.08/CS1.1 - Leesa Wheelahan.pdf](http://www.avetra.org.au/AVETRA_WORK_11.04.08/CS1.1 - Leesa Wheelahan.pdf)
- Wolf, A. (2002). *Does education matter? Myths about education and economic growth*. London: Penguin Books.

APPENDICES

Instrument 1: company futures: owner/CEO or nominee

Instrument 2: workplace culture futures: CEO/owner/nominee and supervisor and artisan/technician and senior administrative person

Instrument 3A: work futures: artisans and/or technicians CEO/ owner/nominee and supervisor

Instrument 3B: work futures: artisans and/or technicians artisan or technician

Instrument 4A: qualifying artisans of the future: owner/CEO/nominee and supervisor

Instrument 4B: qualifying artisans and technicians of the future: artisan or technician

Instrument 5: workplace observation instrument

INSTRUMENT 1: COMPANY FUTURES: OWNER/CEO OR NOMINEE

LABOUR MARKET INTELLIGENCE PROJECT Theme 6, Project 3: Artisans of the future THEME 1: Company futures OWNER/CEO or NOMINEE			
Date of interview	Day	Month	Year
Interviewee code			
Job Title			
No of years at company			
Qualifications			

This questionnaire aims to capture a ‘futures’ dimension about **work** and therefore most questions will request you to think about current practices in your company, compare this to past practices and then extrapolate to future practices.

By their nature, ‘future’- orientated answers cannot be evidence-based but we ask that you rely on your understanding of your company and of the sector when you consider the future dimension of work.

After recording a brief company profile, Theme 1 asks you about past, present and future practices in terms of your company’s:

- Products or Services
- Markets or Clientele
- Tools, technology, machines and equipment
- Materials
- Work organisation and innovation
- Employment Flows

COMPANY PROFILE

1. How long has your business been in operation?

Less than a year		One to 5 years		Five to 10 years		More than 10 years	
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2. Is your business a:

Public listed company		Pty Limited company		Sole proprietorship	
Partnership		Close corporation		Other	

3. Please indicate the type of majority ownership to your business.

South African		Joint Venture with a foreign company		Foreign - owned	
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4. How many plants or branches are operated by the present business?

Number	
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5. How many people are currently employed by the business (including management)?

Permanent staff		Non- permanent staff		TOTAL	
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6. How would you rate your business in terms of size and shape?

Large		Medium		Small	
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7. Has the business grown in the last 10 years?

Yes, become bigger		No, become smaller		Stayed much the same	
Discuss:					

8. Do you anticipate the business growing significantly in the next 10 - 20 years?

Yes		No		Discuss:
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PRODUCTS OR SERVICES

9. What is your company's core business?

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10. Has this changed over the last 10 years? (perhaps through diversification, digitalisation etc.)

Yes		No		Discuss:
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11. Do you think your core business will change significantly in the next 10 - 20 years?

Yes		No		Discuss:
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12. Do you think this sector's core business will change significantly in the next 10 - 20 years?

Yes		No		Discuss:
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MARKETS OR CLIENTELE

13. To which markets are your products or services mainly directed?

Mass markets	Local or regional		International	
Specialised niche markets	Local or regional		International	
Discuss:				

14. Do you foresee significant market changes in the next 10 - 20 years and, if so, why?

Yes		No		
Mass markets	Local or regional		International	
Specialised niche markets	Local or regional		International	
Discuss:				

15. Has your business's market share changed over the last 10 years?

Yes		No		Discuss:
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16. Do you think your business's market share will change significantly in the next 10 - 20 years?

Yes		No		Discuss:
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TOOLS AND TECHNOLOGY

17. What are the main tools and/or technology used in your line of business?

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18. How would you describe the equipment currently in use?

Cutting-edge technology; very advanced	A mixture of old and new technology; we both maintain and replace as affordable	Still in good working order but no longer aligned with new technological advances	Out of date. Should have been replaced but very expensive	Other (Please describe)
Discuss:				

19. Have the tools, technology, machines or equipment used changed significantly over the last 10 years?

Yes		No		Discuss:
-----	--	----	--	----------

20. Do you think the technology used in this type of business will change significantly in the future?

Yes		No		Discuss:
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21. How do staff members learn to use new tools and equipment?

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MATERIALS

22. What are the main materials used in your line of business?

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23. Have the materials used changed significantly over the last 10 years?

Yes		No		Discuss:
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24. Do you think the materials used in this type of business will change significantly in the future?

Yes		No		Discuss:
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WORK ORGANISATION AND INNOVATION

25. How would you describe the way core production or service work is organised in your business?

Specialised and skilled workers perform one operation from start to completion	Multi-skilled production or service teams work together to perform an operation from start to completion	Work is driven by a production line and most jobs are semi-skilled. Each worker performs a single	Work is organised around fully automated or digitalised processes. Workers either highly
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		operation in the sequence	trained and specialised or they do menial work at semi-skilled or unskilled levels
Discuss:			
If none of the above, please describe:			

26. Has the way in which work is organised changed significantly over the last 10 years?

Yes		No		Discuss:
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27. Do you think the ways in which work is organised will change significantly in the next 10 – 20 years?

Yes		No		Discuss:
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28. How important are product and process innovations in your business?

It is the heart of the business. We are constantly innovating in terms of both product and process to give us an edge in the market	It is the heart of the business but we buy in design and bring in consultants. We are constantly innovating in terms of both product and process to give us an edge in the market	Our products have remained reasonably stable but we are constantly innovating in terms of finding ways to work 'smarter not harder'	Our business works best if both product and process are held stable, as this cuts down on expensive technology and training
Discuss:			
If none of the above, please describe how it is:			

29. Has design and innovation become more important in your business and/or in the sector over the last 10 years?

Yes		No		Discuss:
-----	--	----	--	----------

30. Do you think it will become more important in this type of business or sector in the future?

Yes		No		Discuss:
-----	--	----	--	----------

EMPLOYMENT FLOWS

31. Which of the following processes have had a significant impact on movement of staff in your business? (May be more than one)

Sub-	Franchising	Incorporation	Outsourcing	Centralisation	Decentralisation
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contracting					
Casualisation of work	Temporary contracts		Seasonal work fluctuations		
Please describe how these processes have affected employment flows:					

32. Which of these processes do you anticipate having a significant impact on employment flows in your business in the future (next 10 – 20 years)? (May be more than one)

Sub-contracting	Franchising	Incorporation	Outsourcing	Centralisation	Decentralisation
Casualisation of work		Temporary contracts		Seasonal work fluctuations	

33. When appointing staff what does your company do?

We promote from within?	Mostly, we recruit externally?	We use a combination?
Discuss:		

34. When appointing new technical staff, who would the company prefer?

People with specific work experience who can walk in and do the job with minimum induction and training?	People with good general work experience who will adapt quickly and build the required expertise on the job if necessary?	People with appropriate formal qualifications who may or may not have previous work experience?	A combination (please specify)
Discuss:			

35. Do you think your company's recruitment practices will change significantly in the next 10 – 20 years?

Yes	No	Discuss:
-----	----	----------

36. Does the company's staff profile reflect equity in terms of

Population group distribution?	Gender?	Disability?	Multilingualism?
Discuss:			

37. In which of these equity categories do you anticipate change in the future and why?

Population group distribution?	Gender?	Disability?	Multilingualism?
--------------------------------	---------	-------------	------------------

Discuss:

38. Does the company import labour from other countries?

Yes		No		If yes, from which countries and why?
-----	--	----	--	---------------------------------------

39. Do you anticipate that you may import labour from other countries in the future?

Yes		No		Discuss:
-----	--	----	--	----------

40. In which of the following categories have you lost a significant number of staff members in the last ten years and in which have you appointed a significant number of staff members? (You need only tick the relevant blocks)

Category	Lost through retirement, retrenchment, resignation		Appointed	
	Permanent	Non-permanent/Contract	Permanent	Non-permanent/Contract
Managers				
Professional staff				
Supervisors				
Artisan/technician				
Semi-skilled				
Unskilled				
Administrative				
Other				
Total				

41. Please insert actual numbers in blocks (A) and (B) below and then decide in which categories you would put the number of people in (B) if your company found itself in a growth situation in the next 10 to 20 years? (Insert actual numbers and not ticks. The total no. inserted should correspond to the figure in (B)).

Total no of staff (permanent + non-permanent)	(A)	
20 % of the total workforce (as above)	(B)	
Category	Permanent	Non-permanent/Contract
Operational Managers		
Professional staff, e.g. <i>project managers, project planners, quality control staff</i>		
Supervisors and inspectors		
Technicians		
Artisans		
Other skilled technical jobs		
Administrative staff		
Total		
Discuss the reasons for your choices:		

SUMMARY

42. In your view, which of the following will have the strongest impact on the future development of your type of business? (Consider each category and choose the 3 you consider to be most significant.)

Market volatility and shifts in competitors and pricing structures?	Technological advances that change the way work is organised	External conditions such as the general economic climate, stock market conditions and global financial flows
Local, regional and/or international political stability or instability	Availability of education and training opportunities for work force development?	E-commerce and opportunities afforded by information technology?
Attraction of foreign capital to the country through a ready supply of skilled labour?	Ecological and environmental footprints	Other (please specify)
Comment on your responses:		

43. Any other topic that you wish to discuss or comment that you wish to offer about company futures in your sector?

Thank you very much for your participation.

**INSTRUMENT 2: WORKPLACE CULTURE FUTURES:
CEO/OWNER/NOMINEE AND SUPERVISOR/TECHNICIAN AND SENIO
ADMINISTRATIVE PERSON**

LABOUR MARKET INTELLIGENCE PROJECT Theme 6, Project 3: Artisans of the future THEME 2: WORKPLACE CULTURE FUTURES CEO/OWNER/NOMINEE and SUPERVISOR and ARTISAN/TECHNICIAN and SENIOR ADMINISTRATIVE PERSON as respondents			
Date of interview	Day	Month	Year
Interviewee code			
Job Title			
No of years at company			
Qualifications			

This questionnaire aims to capture a ‘futures’ dimension about **workplace culture** and therefore most questions will request you to think about current practices in your company and then extrapolate to future practice.

‘Future’- orientated answers cannot be evidence-based so we ask that you rely on your understanding of your company and of the sector when you consider your workplace’s present and future cultures.

In this questionnaire we ask you to think about different dimensions of workplace culture:

- 2.1 Certainty-Risk
- 2.2 Social Relations
- 2.3 Information Communication Technology (ICT)
- 2.4 Literacy
- 2.5 Technical Competence
- 2.6 Training and Development
- 2.7 Management

The descriptive words listed under each dimension are examples which are intended to help you to think about aspects of your workplace culture:

- Consider the opposite ends of each dimension and give a rating on a scale from 1 – 10 that you think best describes your present workplace culture.
- Then give a second rating on the second scale to indicate whether you think the culture will stay the same or whether it will change to become more or less of what it is now.

- Explain your ratings by noting the descriptive terms that apply to your workplace. You may circle one or more of the descriptive words provided, or you may offer your own examples in the space provided.

1. CULTURE OF CERTAINTY - RISK

CERTAINTY ----- **RISK**

Routine work situations	Novel and challenging situations
Work mostly procedural	Complex problem solving
Work always supervised	Autonomous or self-directed work

At present

1	2	3	4	5	6	7	8	9	10
Comment:									

10 - 20 years into the future

1	2	3	4	5	6	7	8	9	10
Comment:									

2. SOCIAL CULTURE

LOW----- **HIGH**

Simple interpersonal environment	Complex interpersonal environment
Mostly individual work and problem solving	Mostly team work and joint problem solving
Specialist customer contact	All staff expected to interact with customers
Little joint planning and discussion	Frequent joint planning and discussion sessions
Staff relations limited to formal meetings	All staff members expected to attend internal and external functions and events regularly

At present

1	2	3	4	5	6	7	8	9	10
Comment:									

10 - 20 years into the future

1	2	3	4	5	6	7	8	9	10
Comment:									

3. CULTURE OF INFORMATION COMMUNICATION TECHNOLOGY (ICT)

LOW ----- **HIGH**

Only some staff (usually younger staff members) use the internet and Google to find information and problem-solve	All staff are expected to be ICT competent and to use the internet and Google to find information and problem-solve
Staff and management <i>seldom</i> correspond via email and/or other ICT avenues	Staff and management always correspond via email and/or other ICT avenues
Electronic diaries <i>seldom</i> used to synchronise meeting times and other events	Electronic diaries always used to synchronise meeting times and other events
Virtual storage platforms <i>not</i> really used	Virtual platforms a standard feature of information storage and retrieval
Cell phones and related technology <i>not</i> a standard feature of workplace communication	Cell phones and related technology a standard feature of workplace communication

At present

1	2	3	4	5	6	7	8	9	10
Comment:									

10 - 20 years into the future

1	2	3	4	5	6	7	8	9	10
Comment:									

4. CULTURE OF LITERACY

LOW ----- **HIGH**

No strong culture of reading and writing through memos, notices, minutes of meetings	Strong culture of reading and writing through, memos, notices, minutes of meetings
Multilingualism not the norm in - company communication and customer service	Multilingualism a standard feature of in - company communication and customer service

At present

1	2	3	4	5	6	7	8	9	10
Comment:									

10 - 20 years into the future

1	2	3	4	5	6	7	8	9	10
Comment:									

5. CULTURE OF TECHNICAL COMPETENCE

LOW-----HIGH

High technical competence not necessary	Technical competence highly valued and rewarded
Work mostly routinised and proceduralised to semi-skilled level	All staff expected to remain up to date in their areas of expertise through own research subscription to trade journals
Little common communication in technical language of workplace. Only used between staff with formal qualifications	Technical vocabularies related to business commonly and correctly used at all workplace levels

At present

1	2	3	4	5	6	7	8	9	10
Comment:									

10 - 20 years into the future

1	2	3	4	5	6	7	8	9	10
Comment:									

6. TRAINING AND DEVELOPMENT CULTURE

LOW-----HIGH

Low knowledge and skill standards the norm	Excellent knowledge and skills the norm
Little induction into new job practice	Formal induction into new job standard
Weak culture of in-house training	Strong culture of in-house training
Low staff expectation of up-skilling and re-training	Up-skilling and re-training standard practice at all levels

Staff seldom attend external training

Staff often attend external training

At present

1	2	3	4	5	6	7	8	9	10
Comment:									

10 - 20 years into the future

1	2	3	4	5	6	7	8	9	10
Comment:									

7. MANAGEMENT CULTURE

LOW-----**HIGH**

Direct supervision in regulated work environment

Leadership in open-ended environment

Staff seldom attend management information sessions

Staff regularly invited to attend management sessions

No notice boards, company newsletters

Company information publically displayed and freely available

Little or no regular performance appraisal and work discussion

Regular performance appraisals and work discussion are standard practice

At present

1	2	3	4	5	6	7	8	9	10
Comment:									

10 - 20 years into the future

1	2	3	4	5	6	7	8	9	10
Comment:									

SUMMARY

• In your view, which of the following attributes will be essential for staff to develop in future?

(Please consider each category and choose 3 in terms of significance)

Information and knowledge of the job	Computer literacy: the ability to use computers effectively	Literacy: the ability to read and write effectively
Multilingualism: the ability to communicate in more than one language	Competent interaction and communication with colleagues, management and customers	Ability to work with others as part of a team

Ability to manage own work and to think independently	Other (describe)	
Comment on your responses:		

- *Any other topic that you want to address or comment that you wish to offer?*

Thank you very much for your participation.

INSTRUMENT 3A: WORK FUTURES: ARTISANS AND/OR
TECHNICIANS/CEO/OWNER/NOMINEE AND SUPERVISOR

LABOUR MARKET INTELLIGENCE PROJECT Theme 6, Project 3: Artisans of the future THEME 3A: WORK FUTURES OF ARTISANS and/or TECHNICIANS CEO/ OWNER/NOMINEE and SUPERVISOR as individual respondents			
	Day	Month	Year
Date of interview			
Interviewee code			
Job Title			
No of years at company			
Qualifications			

This questionnaire aims to capture a ‘futures’ dimension about **the work of the artisan and/or technician of the future** and therefore most questions will ask you to think about current practices in your company, compare these to past practices and then extrapolate to future practices.

‘Future’- orientated answers cannot be evidence-based so we ask that you rely on your understanding of your company and of the sector when you consider the future dimensions of the work of the artisan.

PLEASE NOTE:

In this research project the work of an artisan or technician refers to **skilled work at the middle- or intermediate-level**

In this company we are studying the job of _____ *(please insert)*

We ask questions in two areas:

- Identifying skilled work in your company
- The future of skilled work in your company

IDENTIFYING SKILLED WORK IN YOUR COMPANY

1. Which jobs in this company could be described as skilled jobs at the middle- or intermediate level? (Name at least 3)

JOB TITLE	JOB GRADE

2. Name one technical job at a higher level of skill than the skilled jobs listed above.

JOB TITLE	JOB GRADE

3. Name one technical job at a lower level of skill than the skilled jobs listed above.

JOB TITLE	JOB GRADE

4. What are the most important criteria against which you measure the kind of skilled job we are studying in your company and why? (Please mention at least three measures)

This is very important in skilled work	Why?

5. What forms of knowledge are required in this job?

Please use the rating scale below to allocate a rating to each item.

Rating Scale: 5 = 'very often' | 4 = 'often' | 3 = 'fairly often' | 2 = 'not often' | 1 = 'not at all'

	Rating
--	---------------

Formal knowledge (scientific laws and principles gained through study)	
Situated or practical knowledge (gained through on-job experience)	
Knowledge of rules and procedures (as specified in company manuals)	
Other (specify)	
Discuss:	

6. What forms of skill are required in this job?

Please use the rating scale below to allocate a rating to each item.

Rating Scale: 5 = 'very often' | 4 = 'often' | 3 = 'fairly often' | 2 = 'not often' | 1 = 'not at all'

	Rating
Hand dexterity or manual skills	
Diagnostic and reasoning skills	
Planning, organising and time management skills	
Reading, writing and calculation skills	
Social and team work skills	
Other (specify)	
Discuss:	

7. Which of the following kinds of diagnostics and problem solving apply to the skilled job we are studying in your company?

Please use the rating scale below to allocate a rating to each item.

Rating Scale: 5 = 'very often' | 4 = 'often' | 3 = 'fairly often' | 2 = 'not often' | 1 = 'not at all'

(Tick as applicable)

Diagnostics and problem solving, as part of <u>routine work or maintenance</u>	
Standardised diagnostics and problem solving, as <u>specified in operations manuals</u> or through using diagnostic tools	
Working out solutions to unknown or novel problems <u>through practical experimentation</u> with actual tools and materials	
<u>Drawing on past experience</u> of similar or related problems and then making	

drawings or sketches before tackling the problems practically	
<u>Drawing on formal scientific principles/theories</u> to diagnose and solve problems in the mind or 'virtually' before proceeding with identified solutions	
<u>Using Google and the internet</u> to find solutions used by others experiencing the same kind of problem	
Bringing new problems to a <u>team meeting</u> for joint diagnostics and problem solving	
Other (describe)	

8. Has the way work is done in this job changed over the last ten years?

Yes, a lot	A few changes but fundamentally the same	Almost no change
If yes, how did skilled workers learn the new work methods?		
Discuss:		

9. Have the tools or technology used in this job changed over the last ten years?

Yes, a lot	Updated but not fundamentally changed	Almost no change
If yes, how did skilled workers learn how to use the new tools/technology?		
Discuss:		

10. Have the materials used in this job changed over the last ten years?

Yes, a lot, with re-training required	Somewhat but skilled workers could easily adapt	Almost no change
Discuss:		

11. What are the kinds of things that can go wrong in this job?

--

12. How is risk minimised?

--

THE FUTURE SKILLED WORK IN YOUR COMPANY

13. Do you think the middle-level skilled job which you have described above will still exist in your business in 10 – 20 years (Please give reasons for your answer)

1. Yes, definitely	2. Yes, but artisanal or middle-level skilled work of this kind will shift upwards to a higher level of knowledge and skill at technician level	3. Yes, but, artisanal or middle-level skilled work of this kind, will shift downwards to a lower level of semi-skilled work	4. This kind of work will simply disappear	5. Other (describe)
Discuss:				

14. If you selected 1, 2 or 3 above then please say what forms of knowledge will be required in this job in the next 10 - 20 years?

Please use the rating scale below to allocate a rating to each item.

Rating Scale: 5 = 'very often' | 4 = 'often' | 3 = 'fairly often' | 2 = 'not often' | 1 = 'not at all'

	Rating
Formal knowledge (scientific laws and principles gained through study)	
Situated or practical knowledge (gained through on-job experience)	
Knowledge of rules and procedures (as specified in company manuals)	
Other (specify)	
Discuss:	

15. What forms of skill will be required in this job in the next 10 – 20 years?

Please use the rating scale below to allocate a rating to each item.

Rating Scale: 5 = 'very often' | 4 = 'often' | 3 = 'fairly often' | 2 = 'not often' | 1 = 'not at all'

	Rating

Hand dexterity or manual skills	
Diagnostic and reasoning skills	
Planning, organising and time management skills	
Reading, writing and calculation skills	
Social and team work skills	
Other (specify)	
Discuss:	

16. Which of the following would best describe the kind of diagnostics and problem solving that will be required in this type of job in the next 10 - 20 years?

Please use the rating scale below to allocate a rating to each item, as applicable.

Rating Scale: 5 = 'very often' | 4 = 'often' | 3 = 'fairly often' | 2 = 'not often' | 1 = 'not at all'

Repetitive diagnostics and problem solving, as part of <u>routine work or maintenance</u>	
Standardised diagnostics and problem solving, <u>as specified in operations manuals</u> or through using diagnostic tools	
Working out solutions to unknown or novel problems <u>through practical experimentation</u> with actual tools and materials	
<u>Drawing on past experience</u> of similar or related problems and then making drawings or sketches before tackling the problems practically	
<u>Drawing on formal scientific principles/theories</u> to diagnose and solve problems in the mind or 'virtually' before doing so in practice	
<u>Using Google and the internet</u> to find solutions	
Bringing new problems to a <u>team meeting</u> for joint diagnostics and problem solving	
Other (describe)	

17. Will the way work is done in this job or his type of job change in the next 10 - 20 years?

Yes, a lot	Possibly a few changes but not much	Very little change
If yes, how will skilled workers learn the new work methods?		
Discuss:		

18. What tools or technology will be used in this job, or type of job, in the next 10 – 20 years?

19. How will staff learn to use the new tools and technology?

20. What materials will be used in this job or in this type of job in the next 10 – 20 years?

21. How will staff learn to work with the new materials?

22. Anything else you would like mention about the future of skilled work in your company?

Thank you for your participation.

INSTRUMENT 3B: WORK FUTURES: ARTISANS AND/OR TECHNICIANS

LABOUR MARKET INTELLIGENCE PROJECT Theme 6, Project 3: Artisans of the future THEME 3B: WORK FUTURES OF ARTISANS and/or TECHNICIANS ARTISAN or TECHNICIAN as individual respondents			
Date of interview	Day	Month	Year
Interviewee code			
Job Title			
No of years at company			
Qualifications			

This questionnaire aims to capture a ‘futures’ dimension about **the work of the artisan and/or technician of the future** and therefore most questions will request you to think about current practices in your company, compare these to past practices and then extrapolate to future practices.

‘Future’- orientated answers cannot be evidence-based so we ask that you rely on your understanding of your company and of the sector when you consider the future dimensions of the work of the artisan.

PLEASE NOTE:

In this research project the work of an artisan or technician refers to **skilled work at the middle- or intermediate-level.**

In this company we are studying the job of _____ *(please insert)*

We ask questions in two areas:

- Identifying skilled work in your company
- The future of skilled work in your company

IDENTIFYING SKILLED WORK IN YOUR COMPANY

23. Which jobs in the company are more or less at the same level as your job?
(Name at least 3)

JOB TITLE	JOB GRADE

24. Name one technical job at a higher level of skill than your job.

JOB TITLE	JOB GRADE

25. Name one technical job at a lower level of skill than your job.

JOB TITLE	JOB GRADE

26. Which of the following are important in your job and why?
(Please tick as applicable and discuss)

This is very important in my job			Why?
How accurate my work is	Yes	No	
How fast I work	Yes	No	
Whether I can decide what to do and do it on my own	Yes	No	

27. Describe a few more things which are important in your job (at least 3)

This is very important in my job	Why?

28. What kinds of knowledge do you need in your job?

Please use the rating scale below to allocate a rating to each item.

Rating Scale: 5 = 'very often' | 4 = 'often' | 3 = 'fairly often' | 2 = 'not often' | 1 = 'not at all'

	Rating
Formal knowledge (scientific laws and principles learned through study)	
Situated or practical knowledge (learned through on-job experience)	
Knowledge of rules and procedures (as written up in company manuals)	
Other (specify)	
Discussion:	

29. What kinds of skill do you need in your job?

Please use the rating scale below to allocate a rating to each item.

Rating Scale: 5 = 'very often' | 4 = 'often' | 3 = 'fairly often' | 2 = 'not often' | 1 = 'not at all'

	Rating
Hand dexterity or manual skills	
Diagnostic and reasoning skills	
Planning, organising and time management skills	
Reading, writing and calculation skills	
Social and team work skills	
Other (specify)	
Discussion:	

30. Which of the following kinds of diagnostics and problem solving do you do in your job?

Please use the rating scale below to allocate a rating to each item.

Rating Scale: 5 = 'very often' | 4 = 'often' | 3 = 'fairly often' | 2 = 'not often' | 1 = 'not at all'

(Tick as applicable)

I know most of the problems so I work step by step according to a set routine	
I use a manual or diagnostic tool and follow directions	

When it is a new problem I work things out as I go	
When it is a new problem I adapt ideas I saw somewhere else	
I make drawings or sketches before tackling new problems practically	
When tackling a new problem I work out the solution in my head before I start	
I use the knowledge I learned at school/college /university	
I research on the internet	
We solve problems as a team	
Other (describe)	

31. Has the way work is done in this job changed over the last ten years?

Yes, a lot	A few changes but not too much	Almost no change
If yes, how did you learn the new work methods?		
Discuss:		

32. Have the tools or technology you use in your job changed over the last ten years?

Yes, a lot	Updated but not really changed	Almost no change
If yes, how did you learn how to use the new tools/technology?		
Discuss:		

33. Have the materials you use in your job changed over the last ten years?

Yes, a lot. I had to retrain	Quite a bit but I picked it up easily	Almost no change
Discuss:		

34. What are the kinds of things that can go wrong in this job?

--

35. How is risk minimised?

--

THE FUTURE OF SKILLED WORK IN YOUR COMPANY

36. Do you think this kind of skilled job will still exist in this business in 10 - 20 years
(Please give reasons for your answer)

1. Yes, definitely	2. Yes, but skilled work of this kind will shift upwards to a higher level of knowledge and skill at technician level	3. Yes, but, skilled work of this kind, will shift downwards to a lower level of semi-skilled work	4. This kind of work will simply disappear	5. Other (describe)
Discuss:				

37. If you selected 1, 2 or 3 above then please say what forms of knowledge will be required in this job in the next 10 - 20 years?

Please use the rating scale below to allocate a rating to each item.

Rating Scale: 5 = 'very often' | 4 = 'often' | 3 = 'fairly often' | 2 = 'not often' | 1 = 'not at all'

	Rating
Formal knowledge (scientific laws and principles learned through study)	
Situated or practical knowledge (learned through on-job experience)	
Knowledge of rules and procedures (as written up in company manuals)	
Other (specify)	
Discuss:	

38. What forms of skill will be required in this job in the next 10 – 20 years?

Please use the rating scale below to allocate a rating to each item.

Rating Scale: 5 = 'very often' | 4 = 'often' | 3 = 'fairly often' | 2 = 'not often' | 1 = 'not at all'

	Rating
Hand dexterity or manual skills	
Diagnostic and reasoning skills	
Planning, organising and time management skills	
Reading, writing and calculation skills	
Social and team work skills	
Other (specify)	
Discussion:	

39. Which of the following kinds of diagnostics and problem solving do you do in your job?

Please use the rating scale below to allocate a rating to each item.

Rating Scale: 5 = 'very often' | 4 = 'often' | 3 = 'fairly often' | 2 = 'not often' | 1 = 'not at all'

(Tick as applicable)

I know most of the problems so I work step by step according to a set plan or routine	
I use a manual or diagnostic tool and follow directions	
When it is a new problem I work things out as I go	
When it is a new problem I adapt ideas I saw somewhere else	
I make drawings or sketches before tackling new problems practically	
When tackling a new problem I work out the solution in my head before I start	
I use the knowledge I learned at school/college /university	
I research on the internet	
We solve problems as a team	
Other (describe)	

40. Will the way work is done in this job or this type of job change in the next 10 – 20 years?

Yes, a lot	Possibly a few changes but not much	Very little change
------------	-------------------------------------	--------------------

If yes, how will staff learn the new work methods?		
Discuss:		

41. What tools or technology will be used in this job, or in this type of job, in the next 10 - 20 years?

--

42. How will staff learn to use the new tools and technology?

--

43. What materials will be used in this job or in this type of job in the next 10 - 20 years?

--

44. How will staff learn to work with the new materials?

--

45. Anything else you would like to mention about the future of skilled work at your company?

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Thank you for your participation.

INSTRUMENT 4A: QUALIFYING ARTISANS OF THE FUTURE:
OWNER/CEO/NOMINEE AND SUPERVISOR

LABOUR MARKET INTELLIGENCE PROJECT Theme 6, Project 3: Artisans of the future THEME 4A: QUALIFYING ARTISANS OF THE FUTURE OWNER/CEO/NOMINEE and SUPERVISOR as individual respondents			
	Day	Month	Year
Date of interview			
Interviewee code			
Job Title			
No of years at company			
Qualifications			

This questionnaire aims to capture a ‘futures’ dimension about **the work of the artisan and/or technician of the future** and therefore most questions will ask you to think about current practices in your company, compare these to past practices and then extrapolate to future practices.

‘Future’- orientated answers cannot be evidence-based so we ask that you rely on your understanding of your company and of the sector when you consider the future dimensions of the work of the artisan.

PLEASE NOTE:

In this research project the work of an artisan or technician refers to **skilled work at the middle- or intermediate-level.**

In this company we are studying the job of _____ *(please insert)*

We ask questions in four areas:

- Entering the trade
- Training and development
- Promotion within the company
- Trade test

ENTERING THE TRADE

1. When artisans or technicians enter trades or occupations in your business or sector, which of the following are required? (Tick as applicable.)

A formal school leaving certificate at Grade 9	
A school leaving certificate at Grade 9 level with pass marks in Mathematics and/or Science	
A formal school leaving certificate at Grade 12	
A school leaving certificate at Grade 12 level, or an NC(V) college qualification at NQF level 4, with pass marks in Mathematics and Science	
An N3 college qualification, with mathematics, science, technical drawing and trade theory, some practical experience and a trade test passed	
A specialist college or University of Technology qualification (certificate or diploma)	
A formal learnership, apprenticeship, traineeship or internship in the trade completed and a trade test or exit point assessment passed	
A satisfactory record of <i>general</i> work experience (12 months or more)	
A satisfactory record of <i>specific</i> occupational or trade experience (12 months or more)	
Other (please describe)	

2. Do you think trade entry requirements, as you have identified them in the above list, are:

Just right?	Focus too heavily on formal qualifications?	Focus too heavily on work experience?	Should be higher, in general?	Should be lower, in general

3. What changes would you recommend and why?

--

4. What are the main sources of apprenticeships or traineeships for artisans and/or technicians?

Company apprenticeships or traineeships	College- or university-based apprenticeships or traineeships	Apprenticeships or traineeships completed in other companies	Other (describe)

5. How do artisans and/or technicians hear about positions in your company?

'Word of mouth'	Advertisement in newspaper	Recruitment agencies	Other (describe)

6. Does the company's profile of apprentices, artisans and technicians reflect equity in terms of:

Population group distribution?	Gender?	Disability?	Multilingualism?
Discuss:			

7. In which of these equity categories do you anticipate change in the future?

Population group distribution?	Gender?	Disability?	Multilingualism?
Discuss:			

8. Does the company import artisans and/or technicians from other countries?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	If so, from which countries and why?
-----	--------------------------	----	--------------------------	--------------------------------------

9. Do you anticipate that the company may import artisans and technicians from other countries in the future?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Discuss:
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TRAINING AND DEVELOPMENT

10. Which of the following does your company currently offer and which do you think may be offered in the future? (Tick as applicable.)

	Now	Future
Formal learnerships for <i>employed staff</i> leading to a trade qualification		
Formal learnerships for <i>unemployed youth</i> , leading to a trade qualification		
Formal indentured apprenticeships which include a knowledge component, a practical component, a workplace component and a trade test		
Opportunities for further study at a college or University of Technology outside of an apprenticeship or learnership (with funding assistance)		
Internships/traineeships as opportunities for job rotation, to build all-round competence		

Short in-house courses on various topics (non-accredited)		
Informal mentoring		
Periods of job shadow to understand the work of others		
Regular performance appraisal and follow-up on improvement plans jointly developed with supervisor or manager		
Other (describe)		

11. What changes would you recommend and why?

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PROMOTION WITHIN THE COMPANY

12. Are artisans/technicians promoted to higher levels at this company?

Yes		No	
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13. If yes, please describe the basis on which promotions take place. If no, please give reasons why this does not happen.

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TRADE TEST

14. Do all the artisans/technicians in this company do a trade test?

Yes		No		Some		Discuss:
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15. If they do, where do they take their trade tests?

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16. What support does this company offer to artisans/technicians to meet trade test criteria?

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17. Indicate your satisfaction with the reliability of the trade test as a predictor of the expertise shown by artisans/technicians

1. Not satisfied at all	2. Slightly satisfied	3. Quite satisfied	4. Very satisfied
Discuss:			

18. Please give an estimate of what it costs this company to prepare an artisan/technician for a trade test, following an identified apprenticeship route (all expenses included)

Less than R10 000	R10 000 – R50 000	R50 000 – R100 000	More than R100 000
Discuss:			

19. Trade tests in the past were:

More expensive		Less expensive		Unsure	
Discuss:					

20. Any other comment about trade tests?

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SUMMARY

21. If you could change two things about the current apprenticeship and or traineeship systems what would they be?

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22. Do you think artisans and technicians have a place in work of the future?

Definitely		Yes, but mainly in proto-type and design		Unsure		No	
Discuss:							

Thank you for your participation.

INSTRUMENT 4B: QUALIFYING ARTISANS AND TECHNICIANS OF THE FUTURE: ARTISAN OR TECHNICIAN

LABOUR MARKET INTELLIGENCE PROJECT Theme 6, Project 3: Artisans of the future THEME 4B: QUALIFYING ARTISANS and TECHNICIANS OF THE FUTURE ARTISAN or TECHNICIAN AS INDIVIDUAL RESPONDENT			
Date of interview	Day	Month	Year
Interviewee code			
Job Title			
No of years at company			
Qualifications			

This questionnaire aims to capture a ‘futures’ dimension about **the work of the artisan and/or technician of the future** and therefore most questions will ask you to think about current practices in your company, compare these to past practices and then extrapolate to future practices.

‘Future’- orientated answers cannot be evidence-based so we ask that you rely on your understanding of your company and of the sector when you consider the future dimensions of the work of the artisan.

PLEASE NOTE:

In this research project the work of an artisan or technician refers to **skilled work at the middle- or intermediate-level.**

In this company we are studying the job of _____ *(please insert)*

We ask questions in four areas:

- Entering the trade/occupation
- Training and development

- Promotion within the company

ENTERING THE TRADE/OCCUPATION

1. How and why did you enter your trade?

Describe:

2. Did you do an apprenticeship/traineeship/internship with this company or in this sector?

Yes		No		Discuss:
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3. Please describe your work history before joining this company.

4. Which of the following is/are true about you? (tick as applicable)

I have had an interest in my trade/occupation since childhood	I have always tinkered around with stuff to do with my trade/occupation	I ended up in this trade/occupation by accident. I needed a job.	My trade/occupation is part of a family tradition
Discuss:			

5. How do artisans and/or technicians hear a position in this company?

'Word of mouth'	Advertisement in newspaper	Recruitment agency	Other (describe)

6. Which of the following was required when you got your job as an artisan or technician? (Tick as applicable.)

A formal school leaving certificate at Grade 9	
A school leaving certificate at Grade 9 level with pass marks in Mathematics and/or Science	
A formal school leaving certificate at Grade 12	
A school leaving certificate at Grade 12 level, or an NC(V) college qualification at NQF level 4, with pass marks in Mathematics and/or Science	
An N3 college qualification, with mathematics, science, technical drawing and trade theory, some practical experience and a trade test passed	
A specialist college or University of Technology qualification (certificate or	

diploma)	
A formal learnership or apprenticeship in the trade completed and a trade test or exit point assessment passed	
A satisfactory record of general work experience (12 months or more)	
A satisfactory record of specific work or job experience (12 months or more)	
Other (please describe)	

7. What do you enjoy most about your job?

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8. Where did you learn most about your trade or job?

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9. If you could change two things about your job what would they be?

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10. If you look back from where you are today and how you got here, would you:

Have made a different decision?	Yes	No	Unsure
Have wanted things to have happened differently?	Yes	No	Unsure
Discuss:			

TRAINING AND DEVELOPMENT

11. Have you had further training since joining this company?

Yes		No		Discuss:
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12. Have you experienced any of the following? (tick as applicable)

Job shadowing	Mentoring (formal or informal)	Formal performance appraisal
Comment:		

PROMOTION WITHIN THE COMPANY

13. Have you been promoted to a higher level since starting a job at this company?

Yes		No	
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**14. If yes, please describe your promotion and the reason you received it.
If no, why have you not received promotion at this company?**

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15. Is there another job or area of work in the company in which you would like to work?

Yes		Job title		No		Unsure	
Why would you like this job?							

16. Anything else about training and development that you want to talk about?

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Thank you very much for your participation.

INSTRUMENT 5: WORKPLACE OBSERVATION

LABOUR MARKET INTELLIGENCE PROJECT

Theme 6, Project 3: Artisans of the future

During one full artisanal work day the researcher must aim to capture the *rhythms and patterns of the artisan's/technician's work* by observing and noting down his/her actions and interactions.

PROGRAMME:

During the first visit to the company the researcher obtains a copy of the job description of the artisan/technician, if it is available.

On the day of observation the researcher spends the whole day with the artisan/technician, from the time of arrival at the workplace until the time that the day of work officially ends.

The researcher follows the artisan/technician, noting each action to be able to compile:

- A general plan of how a day of work evolves.
- A specific schedule of exact actions, the frequency of each action and whether others are involved. An example of such a schedule is:

Actions	Frequency (tick)	Involvement of others (tick and name)
1. Literacy: reading		
2. Literacy: writing		

- A record of diagnostic practices, fault finding and problem solving and whether they are in new or well-known, repeat situations

The researcher looks for evidence of workplace culture using the dimensions included in the *Workplace Cultures Futures Instrument* (7 of 10) e.g. the presence of certainty or risk during the work day; patterns of social interaction and communication; evidence of knowledge of the work to be done, literacy and technical competence and whether there is independence of thought and action.

TRIANGULATION: The researcher uses the evidence gained during the day of observation and completes a *Workplace Cultures Futures Instrument* (7 of 10). A member of management of the company will have completed this instrument during the initial visit to the company by the researcher and in this way the information obtained is triangulated specifically to the work of the artisan.