

“Planning for Artisanal Skills: What’s Missing?”



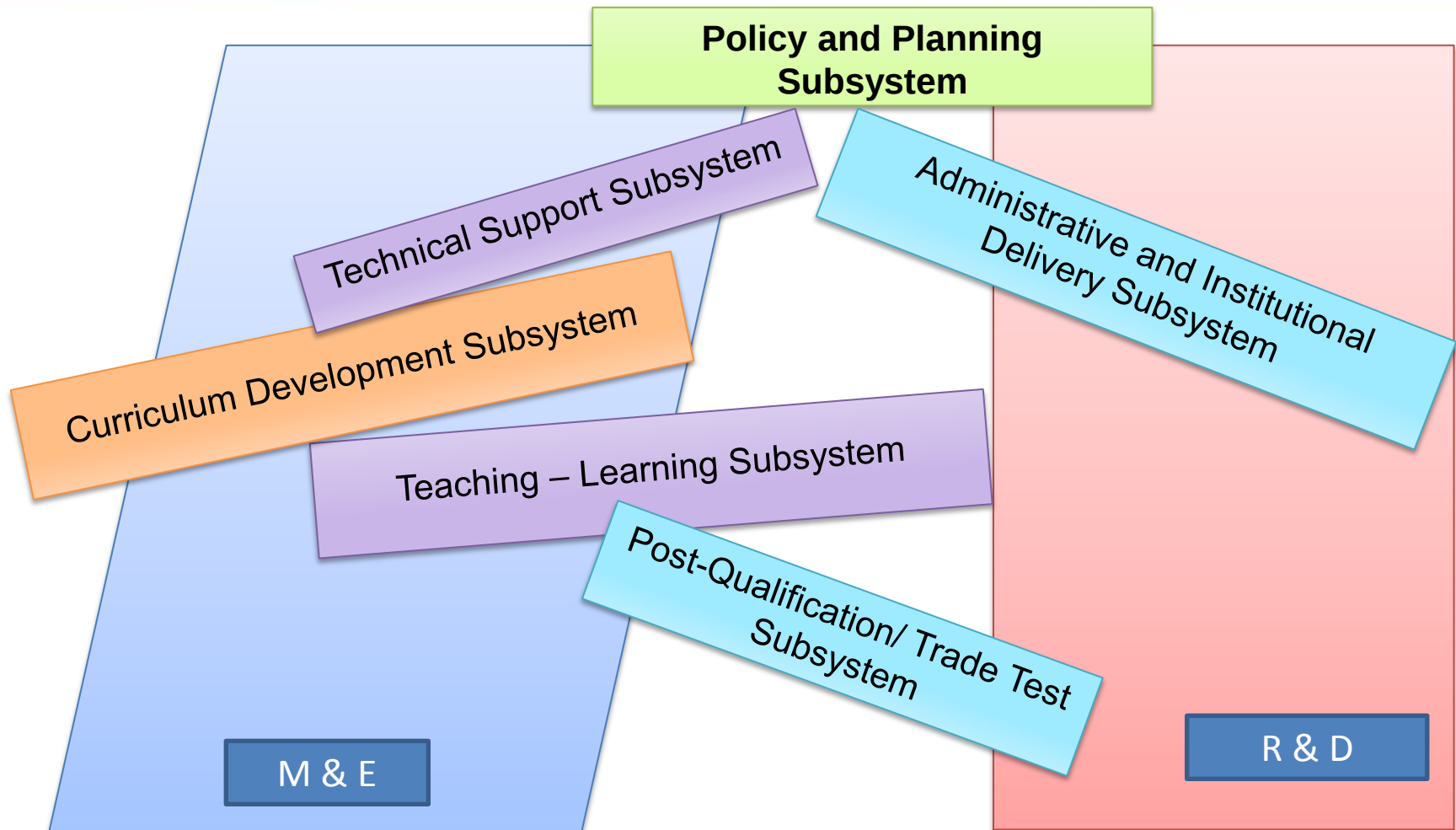
Towards better metrics of artisanal skills supply

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Metrics are needed for the various interdependent subsystems within an overall artisan development system



Policy and Planning Subsystem

- Governance and planning are profoundly interrelated;
- Metrics are needed for both governance and institutional arrangements, because the quality and throughput of vocational education strongly depends on a reliable framework for the cooperation of TVET Colleges, other training providers, and workplaces;
- The effectiveness of the roles and responsibilities of different actors (government departments, the organisations representing the business community as well as those representing the local vocational education and training institutions) in the system can be measured;
- How can these competencies be adequately `measured in a system of coordinated governance?

1) Planning needs to take into account... the current context and challenges in the Artisan Development System

How integrally is project and programme planning for the system as a whole and its component sub-systems, linked to Skills Planning?

- ✓ Learner / candidate pipeline blockages – numbers of learners exiting with different categories of entrance requirements.
- ✓ Numbers of learners entering and successfully completing the different trades, per different routes, modes of delivery, and per NQF qualification.
- ✓ TVET provider contributions, differentiated and per region and province.
- ✓ Numbers of grants linked to NQF and apprentice artisans per categories of priority skills.
- ✓ Typology of bridging programmes, and candidate numbers involved.
- ✓ Quantifiable impact of technological advancements on the labour market.
- ✓ Numbers of artisan aides per sector and sub-sector (at least 25% of people currently employed in artisanal occupations are not formally qualified or certified).

2) Planning needs to take into account... applied research

merSETA's research interventions have led to significant insights that shaping the way in which our skills development investment decisions are made, e.g.

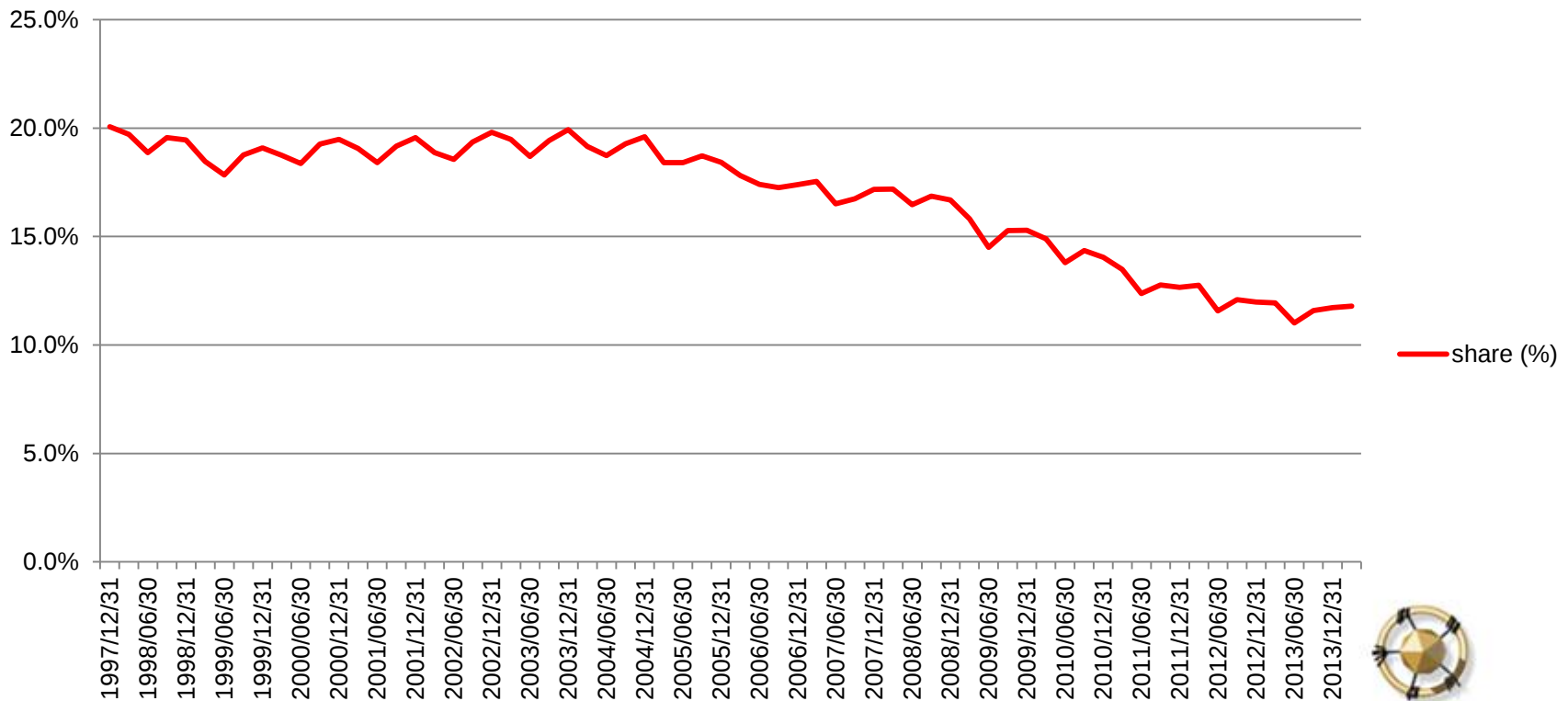
- The Post Trade Test Tracer Study revealed that the percentage strategic project apprentice candidates passing the trade test at the first sitting had increased from 66% to 78% over the past four years, with a notable observation that N3 qualifications achieve a significantly higher first time pass rate than the N2 counterpart – as much as 39% higher.
- The highest post trade test employment percentage was achieved through the competency-based, modular trades where formal level tests are completed after each of the four development phases of the apprenticeship.
- This study also found that 15.69% of the artisan respondents were unemployed with explanations ranging from occupation specific reasons (i.e., Welders, Electricians and Boilermakers seemed more vulnerable to unemployment), to number of attempts taken to pass the trade test (i.e., permanent employment negatively related to those who passed their trade test earlier), and geographic location (i.e., North-West, KwaZulu-Natal and Western Cape Provinces record higher proportions of artisans not working).
- The study also noted that artisans trained over and above the training needs of companies were more likely to be vulnerable to periods of unemployment, with lack of experience and fewer job opportunities being cited.
- Finally, our impact assessments have indicated a major opportunity to update curricula and learning content as key drivers of change.

...applied research (2)

- The merSETA's vocational competence research measured against a validated competence model designed for engineering vocations with the possibility of international comparability of results;
- We found that:
 - ✓ 59% of apprentices tested will not be able to achieve the required competence level of a skilled worker according to international industrial competitiveness standards;
 - ✓ the relatively low scores were not due to test motivation indicating unused potential;
 - ✓ reflexive work experience is one of the most powerful triggers for competence development evidenced by those apprentices registered to in-company training systems; and finally,
 - ✓ that there was a stagnation of competence development during the course of training underpinned by similar test scores for candidates in year one, two, three and four, with the root cause being cited as “modular/horizontal style” training packages that limit integrated work process learning.
- The significance of this is that the greater, and more holistic the artisanal competence...linked to the skills needs for advanced manufacturing...and sub-sector growth potential, the greater share of GDP, and sector growth.

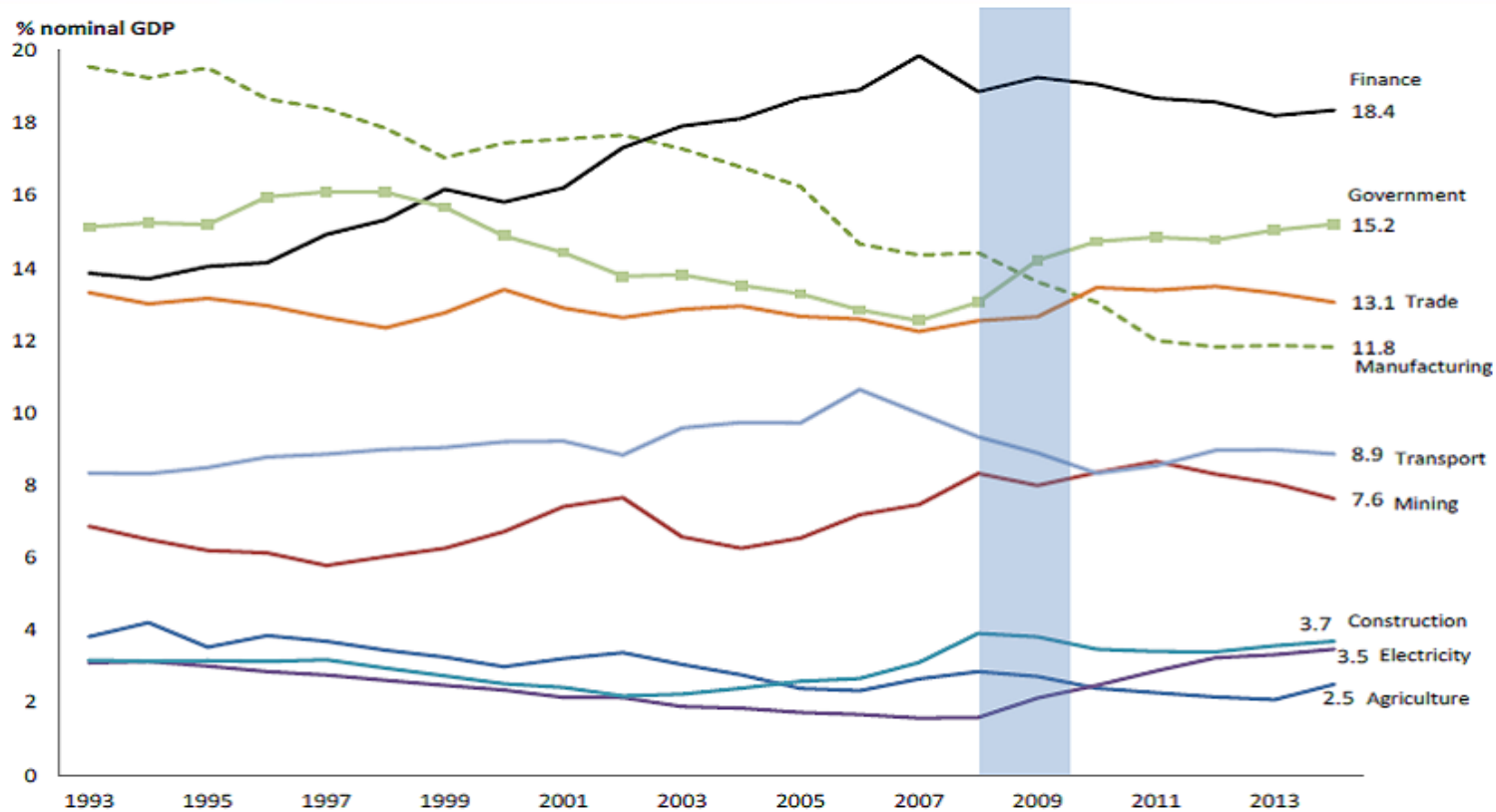
Manufacturing as a share of GDP has been declining by approximately 0.5 % per annum over the past 15 years...

Manufacturing Contribution to GDP

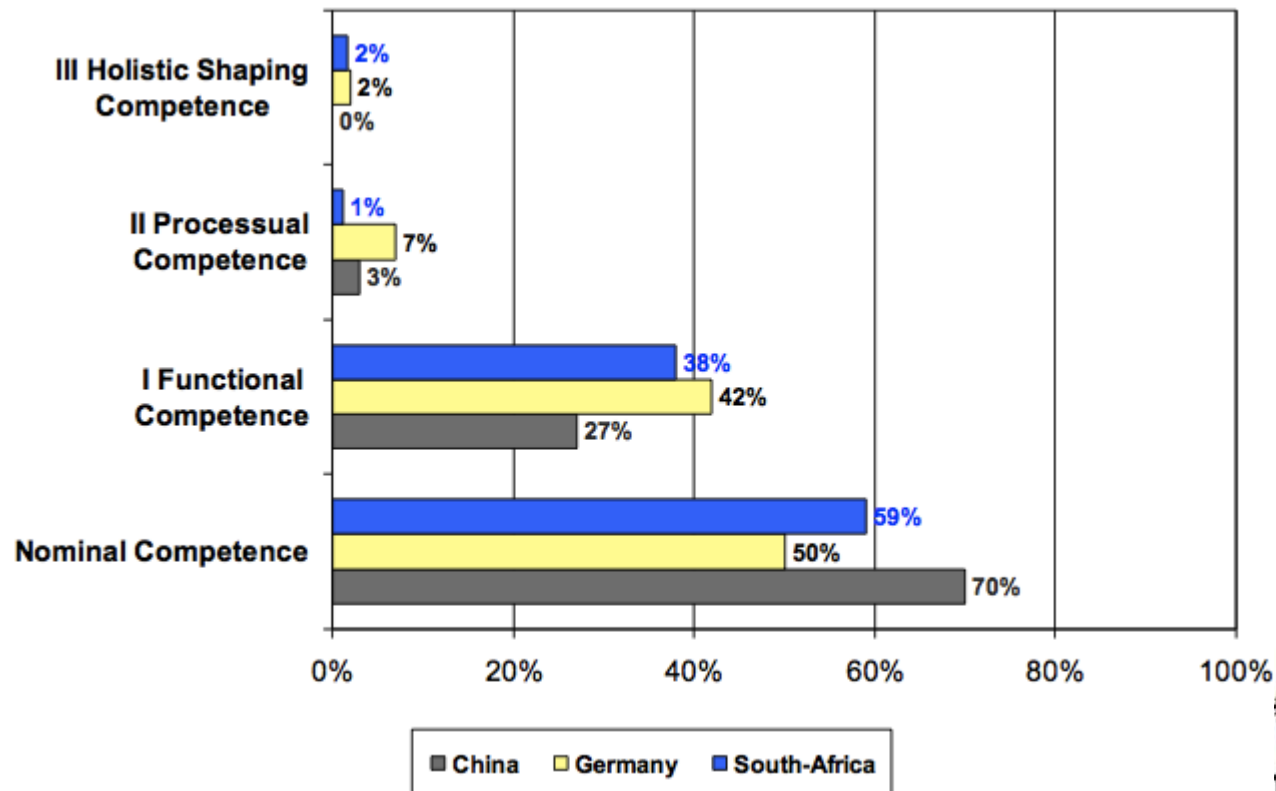


merSETA
MANUFACTURING, ENGINEERING
AND RELATED SERVICES SETA

Manufacturing decline relative to other economic sectors



Competence of apprentices in training can be used as a predictor for industrial competitiveness, particularly when benchmarked against other developing regions and fully industrialised economies



3) Planning needs to take into account...systematic approaches to increase workplace training capacity

- The merSETA is experiencing significant challenges in respect of workplace training and workplace experience capacity, and has to a large degree, reached the ceiling of what medium and large companies can provide.
- The INAP Memorandum, “An Architecture for Modern Apprenticeships - Standards for Structure, Organisation and Management” (2012) identifies the notion of training partnerships as a collective method for SMEs within supply chains and similar sectors operating in close proximity, whereby the management and administration of the training is handled externally and where some of the training can be handled by an external provider, based. This would allow for rotation of apprentices across sites, to address the problem of narrow production and curriculum content by being limited to one workplace.
- Forecasting is commonly applied at sector level. Yet parts of a sector may be growing while other parts are shrinking. Forecasts that are based only on general trends at sector level may therefore not accurately reflect the labour and skills needs of various parts of the sector.
- Industry and educational institutions tend to form one-on-one partnerships in an ad-hoc manner and with limited objectives, with a distinct lack of measurement criteria.

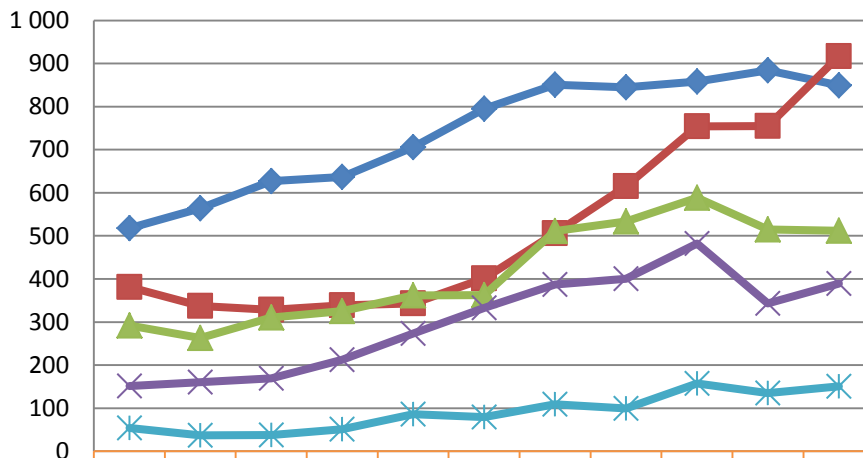
... And training provider capacity

- Qualifications and unit standards are driven by training providers instead of employers.
- There is need to quantify, measure and incentivise high level, specialised skills training to support cutting edge developments in a specific industry. which may not entail a full qualification on the NQF, e.g. World class manufacturing, technical and production training, innovation, machine manufacturer training.

Supply Side

- merSETA has a particular interest in electrical engineering, mechanical engineering, chemical engineering, industrial engineering, and metallurgical engineering skills which serve its sectors.

First degrees awarded in selected engineering fields: 1999-2011



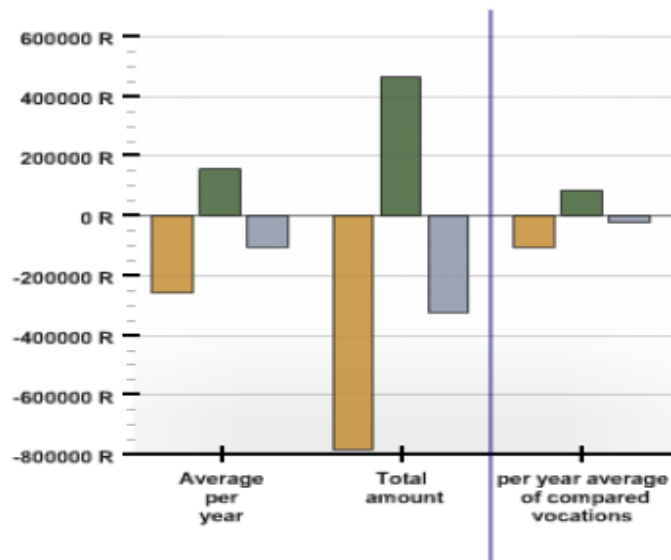
- Greatest percentage increase between 2010 and 2011 was in mechanical engineering followed by industrial and metallurgical engineering
- Graduates become available to the economy as engineers or engineering technologists and can, after a minimum of three years' work experience (during which certain criteria must be met), register as professional engineers or engineering technologists in their respective fields.



...apprentice training can be self financing

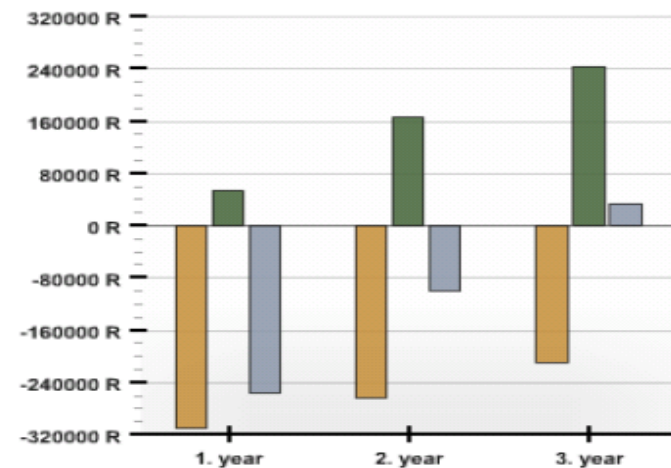
Costs and Returns

Costs and benefits



- Costs for one apprentice/trainee reduced by recieved subsidies
- Benefit from one apprentice/trainee
- Returns from one apprentice/trainee

Diversification over single years



4) Planning needs to take into account...the inherent – and necessary – twin aims of the pursuit of numbers and the pursuit of quality

- Empirical measurement methods are possible for both throughput and impact, for example, instruments to measure return on training investment i.t.o. Efficiency, Effectiveness, and Equity.
- There is a need to influence employers to reduce the uptake of apprentices in the trades which are currently experiencing high unemployment like welders, electricians and boilermakers. Trades with lower unemployment levels should be prioritised, such as rigger, fitter and millwright.
- Geo-spatial challenges and dynamics with regards to the supply of and demand for artisans in different trades. Our research indicates that a minority of artisans are employed in rural areas, and artisans are employed predominantly in urban formal areas (63.2%), this is even truer for merSETA industries (69.8%).

5) Planning needs to take into account...changing patterns of work organisation

- As we have seen from our sector research, the tension between the supply of skills and the demand for skills has been exacerbated by the rapid technological change that is sweeping through the workplace.
- New roles are proliferating, while traditional skills are falling out of fashion. The speed of change is unprecedented and the direction can be hard to predict – even tech futurists are hesitant to forecast more than a few months ahead.
- Empirical understanding of workplace practices in relation to the organisation of work and occupational categories is needed: there are different categories of artisans, based on particular skills set requirements, and programmes to address entry level as well as post qualification development, through to Master Artisan status need to be systematically explored, based on “coal-face” research on the ground (for example, coded welders are not necessarily fully qualified apprentices, the case of technologists in the tyre and plastics sectors).



6) Planning needs to take into account...a vision for the skills development system

A nuanced and consistent focus on understanding the capacity, constraints and potential of the vocational education and training system to deliver at the scale and quality that is needed, to support targeted economic growth potential, and reconcile the interests of stakeholders (industry) and shareholders (DHET and other government departments).

THANK YOU

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It's about caring for people
we render services to



WE BELONG:

It's about working together
as teams with fellow colleagues



WE SERVE:

It's about going beyond
the call of duty

