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SKILLS DEVELOPMENT

New apprenticeship curriculum planned forstruggling South African tooling industry

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By: Petronel Smit
21st May 2010

TEXT SIZE

Industry association the National Tooling Initiative (NTI) plans to implement a reorientation programme and an apprenticeship curriculum within the next four years in its aim to localise qualifications and standards in the struggling local tooling industry.

This follows on the Gauteng Tooling Initiative's pilot assessment and benchmarking programme, in conjunction with Aachen University, in Germany, the University of Stellenbosch and the National Tooling Initiative Programme (NTIP), to assess six Gauteng tool rooms from September 2009 to April 2010.

NTIP CEO **Dirk van Dyk** says that characteristics of a comprehensive tool shop include the standardisation of tools, lean production principles, short lead times and the ability to meet customer deadlines.

These characteristics are largely lacking in the local tooling industry. The study concluded that the turnover and profit in South African tool making companies are low and, although the technological basis to manufacture functional tools is available in South Africa, the equipment is not used efficiently and the use rates are half the European average.

Identified Shortcomings

Research team leader **Stefan Kozielski** says that employees in South African tool shops are not properly qualified, with companies particularly facing a lack of design, engineering and business abilities.

"A lack of design abilities and competences were identified in the local toolmaking industry, with the focus resting on manufacturing and assembly. This results in the low [standard] of tooling technologies and the production of simple tools," he notes.

The research team points out that there are no opportunities to enhance knowledge for unskilled or skilled toolmakers, and emphasises the need for qualification programmes and facilities.

"A systematic approach to toolmaking is nearly absent, leading to a small customer base to generate turnover. "Handcrafted toolmaking in South Africa is no longer adequate to maintain the manufacturing industry and industrialisation.

Limited use of computer-aided manufacturing was also identified in the local tooling industry. Further, it was found that machines only work properly under the supervision of an operator. "Machines in Europe run more than 50% longer than their South African counterparts," Kozielski asserts.

The local tooling industry is also less service orientated than the global tools market. Tool shops are mostly focused on the physical products, resulting in limited offered services and a small turnover. "The tool shops rather focus on reactive problem solving than on the design and manufacturing of new concepts and tools," he says.

Further, an inability to meet customer deadlines is evident in the local market and significant improvement in project management and planning is needed. While logistics play a minor role in a tool shop's daily business, there seems to be a high degree of delay in the average South African tool shop.

This results in low productivity. "Order values are low in comparison with the global average, delivery times are long and there is no feel of urgency in any of the tool shops we visited," Kozielski notes. He adds that the facilities in South Africa are not designed for productivity.

Required Interventions

Research team member **Benedikt Gellißen** says that education and qualification in toolmaking must be the first priority in the local toolmaking industry.

Further, a competency-based apprenticeship system must be introduced. "The training of tool shop owners and managers in business skills with change management assistance is important," he notes.

He adds that technology clusters should also be introduced to enable cooperation in supporting the manufacturing industry and to enable research and development activities and technology transfer.

Another requirement is increased investment in tool design capabilities and the setup of a database with certified tool shops and tool shop suppliers. The development of a tooling industry communication platform and publications will also be beneficial to the tooling industry.

The full implementation of the re-orientation programme started in May and is expected to be complete by 2014.

Edited by: Martin Zhuwakinyu

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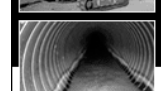
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