

the Naledi3d Factory

Virtual training for lathe and milling machine operators (2004)

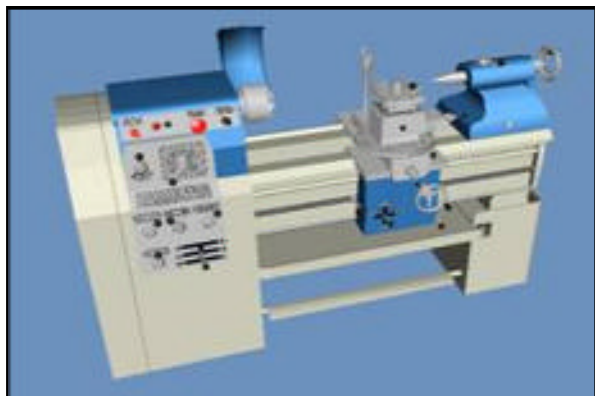
Purpose: SA is under-resourced in good tool-making skills and doesn't meet the needs of industry, especially with an expanding economy. New ways of training are required and the use of virtual reality in technical skills development offers tremendous potential in helping to address the urgent needs of the manufacturing sector. The Department of Labour, the Skills Development Fund, Tshwane South College for FET and the University of the Witwatersrand joined with us to develop a learning system for the operation and use of lathe and milling



In a Nutshell: VR simulations, blended with other multimedia provide a rich and rewarding learning experience, allowing the student to practice machining procedures and understand the main principles of milling and turning. The virtual machines are true to life and provide feedback when mistakes are made. A self-assessment section tests the learning gained, which include safety and trouble-shooting.

Moving around:

An Internet Explorer interface provides access to main sections on the milling machine and lathe. The user can fit a work-piece, take measurements and do basic machining. The ability to zoom in, rotate and walk around the machine makes this learning experience particularly engaging.



Some of the areas addressed:

SAQA Unit Standards were used as a basis for the virtual lathe and milling machine so as to conform to national standards. The learning covered includes: basic use of the machine; health and safety issues; tolerance and measurement; definitions and terminologies; tips and tricks; links to other resources. The learning content was structured to include: an introduction (aims and objectives, finding help, structure, navigation, etc); background; basics; operations; tasks; a self-assessment system and a reference section.

