

**Difficulties Experienced by Pre-service Teachers and
Lecturers in Engineering Graphics and Design Course
at a University in South Africa**Moses Makgato¹ and Samuel Khoza²

*¹Department of Technology and Vocational Educational, Faculty of Humanities, Tshwane
University of Technology, Private Bag X680, Pretoria, 0001, South Africa
Telephone: +27 833196 948, E-mail: makgatom@tut.ac.za*

*²Department of Technology, School of Education, University of Witwatersrand, Private Bag 3,
Johannesburg, 2050 South Africa
Telephone: +27 84 300 4543, E-mail: Samuel.khoza@wits.ac.za*

KEYWORDS Sectional Drawing, Spatial Skills, Technical Education, Rotation Views, Isometric Views, Teacher Education

ABSTRACT Engineering Graphics and Design is the medium of communication in technical field. EGD is one of the electives taken by students in their degree course in South African Universities. This paper investigated difficulties students and lecturers have in sectional drawing. Purposive sampling was used to select 40 female and male students in 2nd and 3rd year of varying ages. Data was collected through questionnaires, focus group interviews and classroom observations. Questionnaire data was analyzed statistically using figures and percentages whereas classroom observations were analyzed as a report on what was observed in class. Interviews were analyzed thematically. The results found that students have difficulties in understanding sectional drawing and have poor spatial skill. Lecturers lacked adequate pedagogic practices of sectional drawing. The paper recommends that students' spatial skills should be developed before the commencement of the academic year and sectional drawing resources be made available for effective teaching of EGD.