

UTILISING TECHNOLOGY TO DEVELOP THINKING SKILLS IN AN  
INTRODUCTORY STATISTICS COURSE AT TERTIARY LEVEL

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South Africa has seen dramatic changes in the political area, and a complete overhaul of the education system is underway. The challenges of teaching statistics to post-secondary students, especially those studying in their second language and come from disadvantaged backgrounds, is huge.

New legislation prescribes that all courses offered in South Africa must be registered, described in detail and adhere to guidelines for critical outcomes. With the feeling that South Africa needs national standards for education and training, the concept of transparent national standards, (understood as specific descriptions of learning achievements) was established.

According to SAQA VOL. 1 NO 1, in the section Critical Cross-Field Education and Training Outcomes:

“At registration, proposers of qualifications must ensure that all Critical Outcomes have been addresses appropriately at the level concerned within the proposed qualification.... The following are Critical Outcomes that (should) successfully be embedded within unit standards:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.
- Work effectively with others as a member of a team, group, organisation, community.
- Organise and manage oneself and one’s activities responsibly and effectively.
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentations.
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.
- Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.” (P7)

As with all other courses, the registration of the course: Introductory Statistics, needs to be done. However the above need to be integrated in the proposal for registration of the course.

In the past, many critical (essential) outcomes were not achieved in education in South Africa. These outcomes need to be addressed in every course (unit standard).

The following specifically need to be addressed urgently in the development of a new statistics course:

- Make responsible decisions using critical and creative thinking
- Use technology effectively and critically
- Collect, analyse, organise and critically evaluate information.
- The aim of this study is to:
- To identify and adapt existing learning tasks and learning programs to reflect critical thinking skills.
- To utilise technology to develop critical, complex and creative thinking skills in an Introductory Statistics course at tertiary level.