

Using a DVD to Illustrate Grade 12 Physical Sciences Experiments: A Teaching Aid to Support Learners

Thelma de Jager

Technical university of Technology, Pretoria, South Africa

Cell: +2784 745 9902, Telephone: +27 12 3829395, Fax: +27 12 3611165,

E-mail: DeJagerT@tut.ac.za

KEYWORDS Traditional Methods. Technology. Deep Learning. Training. Learning at Own Pace

ABSTRACT Grade 12 Physical Sciences teachers are not always adequately trained to use laboratory equipment to conduct experiments. To address this challenge, this study was based on a combination of traditional methods and technology (a DVD illustrating Physical Sciences experiments) to teach and learn four selected Grade 12 experiments. Student-teachers (n=18) were prepared and trained beforehand to execute the lessons during their practical teaching in selected rural schools, while the Physical Sciences teachers (n=18) observed. Before the student-teachers began the lessons, a pre-test was written by all Grade 12 learner participants (n=250) and the results recorded, but no feedback was given to the learners. After the lessons (taught over a period of four weeks) the same test was repeated, assessed and recorded. The results showed that 57% more learners had scored between 50% and 59% on the repeat test. Student-teachers and teachers then reflected (qualitative data) on the advantages and challenges of using a DVD teaching aid, revealing inter alia that learners could learn at their own pace; learners were more confident when interacting during discussions; unclear concepts were clarified; and lessons provided in-depth training and development not only for Physical Sciences student-teachers, but also for the teachers who had observed the lessons. This study recommends that visual illustrations of Grade 12 experiments be used in rural schools to support under-qualified Physical Sciences teachers until they are able to execute experiments on their own and with self-confidence.