

Training Adult Education Mathematics Lecturers: What Did They Think and Did They Learn?

Prof. Sonja van Putten, Prof. Willem Johannes Rauscher

University of Pretoria, South Africa

Abstract

In 2013, the Department of Higher Education and Training (DHET) in South Africa gazetted the establishment of community education and training colleges which would target post-school young people and adults with a view to raising their level of education and heightening their employability. The idea was that these students, who did not qualify for admission to Technical and Vocational Education and Training or to universities, would improve their skills so that such admissions became possible. Nine community colleges were established, involving over 3000 adult education and training centres, and lecturers were employed to teach such subjects as, amongst others, mathematics at Grade 12 level. However, it became clear that the lecturers were themselves in need of subject knowledge training to improve the performance of their students, the level of which was not acceptable. Subsequently, the Science, Mathematics and Technology Education department at the University of Pretoria developed and presented a one-week mathematics short learning programme to lecturers who were identified by the DHET. A baseline test was administered on the first day of the course. The test questions were mainly about deductions from graphs (parabolas and cubic graphs). A summative test, based on the content that was presented during the course, was administered on the last day of the course.

In this study, the first two levels of Kirkpatrick's Model were used to investigate how these lecturers experienced the training as well as whether they truly understood what they had been taught. The findings in this qualitative case study show that the participants were satisfied with the training, but the summative test results indicated that learning was not optimal and that conceptual understanding had not improved. The average for the baseline test was 55%, and the participants demonstrated no consistent understanding from one question to the next, despite the procedural nature of the questions. The post-test average was 40%, considerably lower than the baseline test: this was ascribed to the fact that 38% of the summative test consisted of problem questions which required the participants to think logically, and to demonstrate conceptual understanding. The participants were taken aback by the challenge to their thinking and were not able to develop logical mathematical thought as opposed to mechanical completion of rote learnt sums. It is recommended that multiple follow-up training sessions be implemented to scaffold and embed their knowledge and understanding of the relevant concepts.

Keywords: Adult learning, mathematics education, Kirkpatrick's Model, Short Learning Programme