

Grade 12 Learners' Alternative Conceptions about Rate of Chemical Reaction in Selected Schools in Lepelle Circuit, South Africa

Itumeleng Phage¹, Marome Matseba², Dr. Tsakani Ngobeni³

Central university of Technology, South Africa

Abstract

This study focuses on the misconceptions of grade 12 learners about the factors that affect the rate of reaction. Reaction rate is a fundamental chemistry part which forms a basis for comprehension of subsequent chemistry areas. A Reaction Rate Concept Test (RRCT) was developed in the form of questionnaire and administered to a group of Physical sciences learners, in South Africa, to collect data and statistically analysed. This study was based on Conceptual Change Approach as the strategy which will be used in the teaching and learning contexts to minimize or eliminate misconceptions held by most learners at high school level. The results showed that only few (about 34%) of the learners mastered certain concepts while the majority (about 66%) of the learners struggled to deal with the same concepts. This means that most learners do not understand the effect of factors affecting the reaction rate. There were serious misconceptions from the learners that have a significant impact on their academic performance. These misconceptions shown to have a high resistance to change, and the teachers should always guard against and be vigilant enough to deal with them as soon as they emerge.

Keywords: Reaction rate, concept test, conceptual change approach, teaching and learning, resistance, misconceptions.