

How Do Learners Conceptualize Plane Mirror Reflection? A Case Study of Grade 11 South African Learners

M. John, J.M. Molepo and M. Chirwa

Walter Sisulu University, Umtata, Eastern Cape Province, South Africa, 5117

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ABSTRACT The focus of this paper is to understand how Grade 11 learners conceptualize image formation in a plane mirror. The sample consisted of 70 learners, selected by using the convenient sampling technique, from a selected urban senior secondary school in the Province of the Eastern Cape in South Africa. The mixed-method nature of the research design was accompanied by the use of the 4-Tier Optics Diagnostic Instrument (4ODI), which enabled the collection of both quantitative and qualitative data simultaneously. The findings emerged from the analysis of seven relevant questions of the 4ODI, which indicated that the learners had held four types of conceptions, that is, scientifically-accepted strong conceptions, scientifically-accepted weak conceptions, alternative conceptions, and errors due to lack of knowledge. It also emerged from this study that not all the correct responses of the participants could be justified by scientifically acceptable arguments.