

ABSTRACT

This dissertation is a report of a study that investigated the understanding of the meaning of non-technical words commonly used in the science classroom at an English medium university in South Africa. The study was performed on 184 pre-service science teachers, which included second year student participants registered for the Natural Science Methodology Course, as well as third and fourth year student participants enrolled on the respective levels of the Physical Science Methodology Courses. Data were collected using questionnaires and interviews. The collection of data therefore included participants answering multiple choice questionnaires and focus group interviews. The study used a Mixed Method (MM) research approach since this was seen as the most appropriate approach, because the analysis of the data required both numeric (quantitative) and narrative (qualitative) methods. Since MM research approach involves the combination of two methods, the weakness of one method can be improved by the strength of the other. As such, MM provides accurate and increased levels of confidence in research findings.

The findings of this study have revealed that pre-service science teachers had difficulties with non-technical words, when used in the science classroom context. The pre-service science teachers harboured alternative contextual meanings to the non-technical words, which consequently led to incorrect interpretations of the word items as it appeared in the questionnaire. Vygotsky (1978) argues for a tangled web that is woven between languages and thought, such that the concepts that teachers teach cannot be fully understood if they are not represented in words. As such, the conceptual framework that guided this study recognised words as a language and as knowledge (Postman & Weingartner, 1971). As transpired from this study, the lack of knowledge of the contextual meanings of non-technical words due to the lack of explanation during the classroom talk, has led to incorrect interpretations of these words. Apparently, the participants had been influenced by the word meaning from other contexts, when selecting response options that resulted in incorrect answers on the questionnaire, according to science classroom context.

These findings are regardless of their enrolment level and home languages. The message from this study is that lack of preparation; both at school and at tertiary levels in science language; are major contributing factors. Since there is no component in pre-service science teachers' training regarding the science language, research outcomes such as this, has

suggested a need to adjust the education curriculum of the science teachers accordingly. Hence, the findings from this present research study regarding science teacher preparation can be considered timely.

Key Words: Pre-service science teachers, Non-technical words, Contextual proficiency.