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2022
https://hdl.handle.net/10539/33994

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A teacher's explorative investigation of using drawings to stimulate learner talk in the Grade 11 Life Sciences classrooms.



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Abstract

The tendency of employing written assessments to establish learning which is widespread in the majority of public schools in South Africa was criticized for disadvantaging some learners in multilingual circumstances (Dempster & Stears, 2013). Drawings, which offer visual representations (drawings), can be employed as successful tools that bridge the gap between learners' knowledge and the teacher's comprehension of the presented drawings, to facilitate better engagement through talk (Dempster & Stears, 2013; Pintó, Gutierrez & Ametller, 2005).

This research reports on a case study where knowledge was generated about the use of learners' drawings to stimulate talk from a scenario that involved the chewing of sandwich and drinking juice. The activity required the content on digestion and excretion which were topics that are covered at Grade 11 Life Sciences. The aim of the study was to explore how learners used talk, to articulate the accuracy and relevancy of their drawings to the given scenario. The visual representations (drawings) were employed as tools that bridged the gap between learners' knowledge and the teacher's comprehension of the presented drawings, to facilitate engagement. Additionally, the researcher also wanted to listen to the learners' experiences on using drawings for the purpose of professional development and improving the use of drawings as a science practice. The participants for the study were 58 Grade 11 Life Sciences learners, two critical friends and the teacher-researcher, who was the participant observer during the generation of data. The case study methodology was employed to generate and analyze the numerous data that

were produced through some drawing activities, classroom observations, written questionnaire responses and audio recordings from peer-discussions of the drawings and from focus-group interviews on the emergent issues. The audio recorded data were transcribed for analysis and the drawings were analyzed according to the seven-scoring scale adopted from Reiss and Tunnicliffe (2001) and then inductive-thematic approach was used to analyze the questionnaire responses. The learner talk forms were analyzed by matching them to the characteristics of the 3 types of social talk adopted from Wegerif and Mercer (1997). The findings revealed that 21% of the drawings represented the expected body systems and they were scored at level six and many other drawings represented 31% completed alimentary canals which were scored at level 5 then the rest of the drawings depicted uncompleted systems for the urinary and alimentary canal which were scored at lower levels. The participants acknowledged being familiar to making and using drawings in the subject and that they benefitted from the visual representations of the abstract concepts in spite of the difficulties they had with creating the drawings. The talk forms in peer groups were mainly cumulative with minimum references to the drawings and some relevant scientific terminologies were distortedly used. Contrastingly, the focus group interviewees consulted their drawings, distinctly, as they explored and disputed about their drawings and they also used scientific terms appropriately. Therefore, based on the focus group's use of the explorative and disputational talk forms, it was concluded that utilizing drawings and learner talk facilitated learners to reveal their understanding. However, one of the focus group male learners revealed how he could not display and talk about the reproductive organs to youngsters publicly because of his cultural factors and the view was supported by the other male learners. Therefore, based on the findings, further investigations were necessary to establish how drawings could stimulate talk without infringing on some learners' cultural factors.

KEY WORDS: drawings, stimulate talk, alimentary canal, learner talk, Grade 11 Life Sciences,