

MEDIATING BIODIVERSITY CONCEPTS WITH ENGLISH SECOND LANGUAGE LEARNERS

Zingisa Gqoloqa's research sought to understand how Grade 11 Life Sciences teachers mediate the construction of biodiversity concepts with English second language learners. The Examiners' Reports for Life Sciences from 2009 to 2012 triggered Zingisa's interest in the research. These reports consistently noted learner challenges in answering, interpreting and analysing questions during exams; and suggested that these challenges could be attributed to language issues experienced by English second language learners.

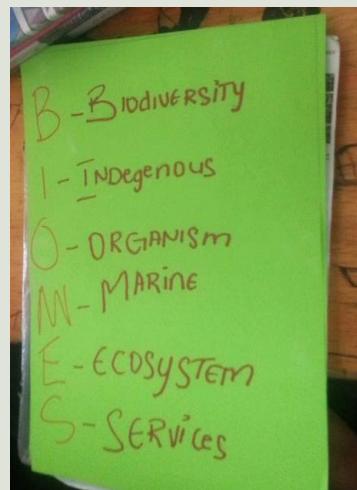
Two teachers in two Senior Secondary schools in East London, Eastern Cape participated in the study. Zingisa generated data through semi-structured interviews, followed by lesson observation and interviews stimulated by reflections on these observations with participating teachers.

Drawing on Vygotsky's (1978) social constructivism theory of learning, the study focused on mediation of learning and the construction of knowledge. According to Vygotsky, language is crucial in promoting interactions in a social set-up. To understand mediation, Vygotsky uses the term the ZPD as a metaphorical tool to explain the potential learning for students during problem solving activities with teachers or peers. It is in this space of the ZPD that this study focused.

The lessons observed focused on biodiversity and human impact on the environment. Teachers indicated classroom challenges as including: Learners struggling to interpret questions, spelling problems which alter meaning of concepts, and learners struggling to make distinctions among closely related concepts within the topic of Biodiversity.

During the course of the research, teachers demonstrated the use of a number of strategies to respond to these classroom challenges. Firstly, they used prior knowledge as a foundation to build upon new knowledge and elicit learner responses. Another strategy was to break down words. For example, when learners were unable to describe what a pesticide was the teacher reduced the word into parts - 'pest' (organism that harms your crops), and 'cide' (kill). Additionally, strips of papers with pre-defined terms were given to match a word with definition. Furthermore, reading information with pictures illustrating ecosystem services and how humans impact on these were supplied as case studies to contextualise information. Together with the learners, mind maps would be drawn on the chalk board illustrating human impact on the environment with a focus on cause and effects.

Observations of classroom activities, revealed that factors such as large class sizes, gaps in teachers' content knowledge, manifesting, for example in a lack of detail in chalkboard summaries had the potential to limit the effectiveness of the teaching strategies.



It appears the described language mediation activities challenged learners to brainstorm, think, write, spell, define and discuss vocabulary relating to the biodiversity. Additionally, code-switching encouraged learners to create a more relaxed mood for engagement.

Teachers chose pedagogic strategies according to their experiences as well as the classroom challenges they were encountering. Teachers' reflections on their practice provided opportunities for them to identify strengths and limitations of their choice of strategies and possibilities for improvement.



The study recommends that to strengthen mediation, teachers can explore and apply various strategies to make meaning of complex concepts. These can include deconstruction and reconstruction of words, matching words with definitions, use of diagrams and pictures as different representations of concepts, mind-maps, and case studies for relating abstract concepts to real-world contexts. In order to capacitate teachers and give them confidence to use these creative mediation strategies, teacher training should focus on developing teacher understanding of foundational knowledge in life sciences.

REFERENCES

Vygotsky, L.S. (1978). *Mind in society: the development of higher psychological process*. Cambridge, MA: Harvard University Press.

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