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DEVELOPING GRADE 12 LEARNERS CONCEPTUAL UNDERSTANDING OF CHEMICAL EQUILIBRIUM USING PROBLEM-BASED LEARNING

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This study aimed to develop learners' conceptual understanding of chemical equilibrium, using problem-based learning. The study used a qualitative research approach with ethnography as a design. Data was gathered from a rural school in Dimamo circuit of the Capricorn district in the Limpopo Province. The school had 24 learners in the grade 12 Physical Science classroom. Participatory observation, learner activities, and interviews were used in the initially in the study to identify learners' lack of skills and their learning difficulties. Problem-based learning was then applied continuously and repeatedly during the teaching and learning activities. It was shown that problem-based learning helped develop learners' conceptual understanding of chemical equilibrium. Thematic analysis was used to categorise and present data-related themes. Descriptive statistics was used to analyse the data generated during the intervention. The study discovered that learners lacked the mathematical computational skills and procedural fluency required for competence in this subject. Furthermore, the ability to apply Le Chatelier's principle to problems and identifying factors that affect kc and the equilibrium constant was also a hindrance to effective learning. The post-test revealed that learners' conceptual understanding improved following problem-based learning instruction. Moreover, the study also discovered that integrating new concepts with mathematical calculations, and theoretical justification can help learners improve their conceptual understanding. In conclusion, the concept requires the use of problem-based learning to further motivate learners and help them grasp the content and learn with understanding.

Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

Honours

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