

Discovery-Based Approach of Mathematics Teachers and Academic Performance of Selected Intermediate Learners: Basis for an Intervention

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Abstract

In the locale of the study, which is Pulo ni Sara Elementary School, Cavite City, the intermediate mathematics teachers employ the mandated teaching strategies such as the 2C-2I and 1R which stand for Constructivist, Collaborative, Inquiry-based, Integrative, and Reflective. This study focused on the discovery-based approach which is a part of the Constructivist approach to teaching and is used to find out its effect on the performance of intermediate students. With the expected output of the study, which is an intervention program, this study will add to the literature about this approach in mathematics teaching. This study aimed to assess the effectiveness of the discovery-based approach in teaching mathematics to propose an intervention plan based on the findings. Specifically, it aims to determine the extent to which mathematics teachers perceive the effectiveness of the discovery-based approach in terms of experiencing, reviewing, concluding, and planning. To evaluate the academic performance of the pupils before and after giving tests following the implementation of a discovery-based approach by mathematics teachers as to pretest; and posttest To determine the significant relationship between the effectiveness of the discovery-based approach and the academic performance of the pupils in mathematics. To analyze the significant difference between the pretest and posttest following the implementation of a discovery-based approach by mathematics teachers. This study employed a descriptive quasi-experimental method with a questionnaire and pre-posttest as the main data gathering instrument. It is a type of research design that aims to obtain information to systematically describe a phenomenon, situation, or population. It helps answer the what, when, where, and how questions regarding the research problem rather than the why. Numeracy skills is one of the most important skills that pupils should learn and master as they form part of the pupils' foundation and development which can be utilized in solving more challenging problems or learning higher concepts in Mathematics. This must be emphasized by the teachers by providing assistance and extra activities to pupils to have more time to practice and master the lessons and concepts being presented to them, pupils. This means that the numeracy skills of pupils have a direct connection with their performance in mathematics. Most elementary mathematics classes continue to be dominated by teacher-led learning. Under such guidance, the teacher hardly ever has time to attend to every pupil. Many pupils may subsequently continue to perform below the expected level in mathematics, lose interest in the subject, and ultimately stop up trying to learn it. In actuality, pupils don't seem to be as interested in learning mathematics. So, one of the biggest issues is how to Increase pupils' interest in and aptitude for mathematics, especially for the underachievers. The findings of the present study were aligned with Yeh (2021) who recommended that teachers and parents work together to make sure that pupils have consistent follow-up on their lessons so that their interest in learning especially in Mathematics is maintained. Underperforming pupils need more attention and guidance therefore teachers and parents should be critical in dealing with them. Both parties must keep in mind that earlier development of the child is crucial to their future endeavors and success. Thus, challenges and weaknesses in the earlier stage should be addressed to have a better and solid learning foundation.

Keywords: Discovery-based learning in mathematics, academic performance, pretest, posttest, proposed intervention plan