

Teaching Management for Developing Students' Representation and Connection in Mathematical Concepts

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Abstract

This study aimed to adopt effective teaching and learning activities based on inductive approach to develop students' meaningful conceptualizing that leads to their better understanding of mathematical concepts. In order to enhance students' representation and connection in mathematics, the use of problem-based scenarios was used to help students develop their critical thinking process. The selected lesson was multinomial distribution in the pattern of $(a + b + c)^n$ when $n =$ positive integers. In addition, teaching materials and activities requiring class discussion between students and teacher were used to motivate more active classroom learning environment. While teacher was acting as facilitator, students were encouraged to construct new knowledge or concepts by themselves. This would allow teachers to recheck students' understanding reflected by a form of representation. The results showed that after implementing inductive model in teaching, student became more active to participate in activities and able to draw conclusion from given questions that improved their representation of mathematical concepts to apply in other deeper questions. In conclusion, the implications of inductive approach were that the approach was able to help teacher recheck students' current understanding immediately so that teacher could apply a variety of sets of questions and activities, resulting in students' greater reasoning skills and ability to apply mathematical knowledge in other areas.

Keywords: *Inductive approach, learning activity, mathematics, multinomial distribution*