

# **Using a constructivist approach in teaching pre-service elementary teachers how to teach mathematics**

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## **Abstract:**

According to the Principles and Standards for School Mathematics, the need for mathematical knowledge and understanding is increasing. Students in all grades need to learn more mathematics and therefore require more effective teaching. The distinction between conceptual and procedural knowledge of mathematics has received a great deal of discussion and debate throughout the years. The purpose of this study is to examine whether students learn mathematics more successfully by instruction using a constructivist approach to gain conceptual knowledge about mathematics or by the more typical procedural approach. This study was conducted at a mid-sized accredited private university in southwest Ohio during the fall 2003 semester. The students were all pre-service elementary teachers enrolled in a mathematics education course. Overall the findings demonstrated a remarkable change in the methods used by the pre-service teachers. The results established that most of the teachers in the experimental group felt mathematics should be taught conceptually as opposed to procedurally after completing the mathematics education course.