PENERAPAN MODEL *BRAIN BASED LEARNING* UNTUK MENINGKATKAN KEMAMPUAN PEMAHAMAN KONSEP DAN BERPIKIR KRITIS MATEMATIS

(Studi Kuasi Eksperimen di Kelas V Sekolah Dasar Kabupaten Cirebon)

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ABSTRAK

Dalam pembelajaran matematika, siswa kurang memahami konsep matematika dengan benar dan kurang melibatkan proses berpikir kritis. Hal ini karena guru lebih memfokuskan pada kemampuan prosedural dan menganut paradigma *transfer of knowledge* serta siswa kurang memiliki prasyarat yang cukup terkait konsep matematika. Penelitian ini bertujuan untuk membandingkan kemampuan pemahaman konsep dan kemampuan berpikir kritis matematis antara siswa yang menggunakan model *Brain Based Learning* dengan pembelajaran langsung. Penelitian ini dilakukan karena belum pernah ada penelitian tentang penerapan model *Brain Based Learning* terhadap kemampuan pemahaman konsep dan berpikir kritis matematis. Metode penelitian yang digunakan merupakan studi kuasi eksperimen dengan desain penelitian berbentuk *Non Equivalen Group* dan menggunakan *teknik purposive sampling*. Temuan penelitian secara siginifikan menunjukkan bahwa: (1) pencapaian kemampuan pemahaman konsep matematis siswa yang memperoleh pembelajaran dengan model *Brain Based Learning* lebih tinggi daripada siswa yang memperoleh pembelajaran langsung; (2) pencapaian kemampuan berpikir kritis matematis siswa yang memperoleh pembelajaran menggunakan model *Brain Based Learning* lebih tinggi daripada siswa yang memperoleh pembelajaran langsung. (3) peningkatan kemampuan pemahaman konsep matematis siswa yang memperoleh pembelajaran dengan model *Brain Based Learning* lebih tinggi daripada siswa yang memperoleh pembelajaran langsung; dan (4) peningkatan kemampuan berpikir kritis matematis siswa yang memperoleh pembelajaran dengan model *Brain Based Learning* lebih tinggi daripada siswa yang memperoleh pembelajaran langsung.

Kata Kunci :   Model *Brain Based Learning*, Kemampuan Pemahaman Konsep Matematis, dan Kemampuan Berpikir Kritis Matematis.

THE IMPLEMENTATION OF BRAIN-BASED LEARNING MODEL TO IMPROVE MATHEMATICAL CONCEPTUAL UNDERSTANDING AND CRITICAL THINKING SKILLS

(A Quasi-Experimental Study to the Fifth Grade Students of Elementary School, Cirebon Regency)

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ABSTRACT

In mathematics teaching and learning, students lack good understanding of mathematical concepts and engagement with critical thinking process. These problems are caused by teachers focusing too much on the procedural skills and holding on to the paradigm of transfer of knowledge as well students' not fully meeting the requirements of mathematical concepts. The research aims to compare mathematical conceptual understanding and critical thinking skills of students using Brain-Based Learning model with those using direct instruction. It was conducted due to the non-existent research on mathematical conceptual understanding and critical thinking skills. The research adopted a quasi-experimental study with non-equivalent group design and purposive sampling technique. The findings show that: (1) The achievements of students using model Brain-Based Learning in mathematical conceptual understanding were greater than those using direct instruction; (2) The achievements of students using Brain-Based Learning model in mathematical critical thinking skills were greater than those with direct instruction; (3) The improvements of mathematical conceptual understanding skills of students treated with Brain-Based Learning model were greater than the improvements of students with direct instruction; and (4) The improvements of mathematical critical thinking skills of students taught with Brain Based-Learning model were greater than those of students with direct instruction.

Keywords: Brain Based Learning Model, Mathematical Conceptual Understanding Skills, Mathematical Critical Thinking Skills.