PLAGIAT MERUPAKAN TINDAKAN TIDAK TERPUJI

# ABSTRAK

**Alin Christylinda Labi, 2024. Efektivitas Penerapan Model Pembelajaran Matematika Realistik dengan Pendekatan Neurosains Terhadap Kemampuan Representasi Bahasa Matematis Siswa di Salah Satu SMP. Tesis. Program Studi Magister Pendidikan Matematika, Jurusan Pendidikan Matematika dan Ilmu Pengetahuan Alam, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Sanata Dharma, Yogyakarta.**

Penelitian ini bertujuan untuk (1) Mendeskripsikan rencana dan implementasi Pembelajaran Matematika Realistik dengan Pendekatan Neurosains untuk membelajarkan materi relasi dan fungsi bagi siswa kelas. (2) Mengetahui kemampuan representasi bahasa matematis siswa kelas VIII pada materi relasi dan fungsi setelah mengalami pembelajaran dengan menggunakan Pembelajaran Matematika Realistik dengan Pendekatan Neurosains. (3) Mengetahui persepsi siswa terhadap penerapan Model Pembelajaran Matematika Realistik dengan Pendekatan Neurosains. Jenis penelitian yang digunakan dalam penelitian ini adalah penelitian desain dan kualitatif deskriptif. Subjek penelitian adalah siswa kelas VIIIb SMP Tunas Bangsa Horimoi Mawea. Tahun ajaran 2023/2024. Metode pengumpulan data yang digunakan adalah observasi langsung, tes tertulis, wawancara, dan Penerapan *Hypothetical Learning Trajectory (HLT)*. Teknik analisis yang digunakan adalah teknik analisis data kualitatif.

Penelitian ini menghasilkan suatu rancangan lintasan belajar untuk materi relasi dan fungsi menggunakan Metode Pembelajaran Pendidikan Matematika Realistik (PMR) dengan Pendekatan Neurosains. Berdasarkan hasil tes tertulis yang dilakukan setelah mengalami PMR dengan Pendekatan Neurosains, diperoleh bahwa (1) 16 siswa atau 73% memenuhi indikator representasi bahasa matematis visual. (2) 16 siswa atau 73% memenuhi indikator representasi bahasa matematis simbolis. (3) 15 siswa atau 68% memenuhi indikator representasi bahasa matematis verbal, sehingga berdasarkan hasil tersebut disimpulkan bahwa Pembelajaran Matematika Realistik yang diintegrasikan Pendekatan Neurosains khususnya pada materi relasi dan fungsi efektif untuk meningkatkan kemampuan representasi matematis siswa untuk jenis representasi visual, simbolis, dan verbal. Berdasarkan hasil wawancara pada seluruh siswa disimpulkan persepsi siswa terkait metode PMR dengan Pendekatan Neurosains memiliki respon yang positif, yaitu sebanyak 20 siswa (95%).

**Kata Kunci** : kemampuan representasi matematis, pendekatan neurosains dalam pembelajaran, PMR, penelitian desain, relasi dan fungsi.

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# *ABSTRACT*

***Alin Christylinda Labi, 2024. Effectiveness of Realistic Mathematics Learning Model with Neuroscience Approach on Students' Mathematical Language Representation Ability in One Junior High School. Thesis. Master of Mathematics Education Study Program, Department of Mathematics and Natural Sciences Education, Faculty of Teacher Training and Education, Sanata Dharma University, Yogyakarta.***

*This study aims to (1) Describe the plan and implementation of Realistic Mathematics Learning with Neuroscience Approach to teach relation and function material for class students. (2) Knowing the ability of mathematical language representation of VIII grade students on the material of relaition and function after experiencing learning by using Realistic Mathematics Learning with Neuroscience Approach. (3) To know the students' perception towards the application of Realistic Mathematics Learning Model with Neuroscience Approach. The type of research used in this study is descriptive design and qualitative research. The research subjects were students of class VIIIb of Tnas Bangsa Horimoi Mawea Junior High School. School year 2023/2024. The data collection methods used were direct observation, written tests, interviews, and the application of Hypothetical Learning Trajectory (HLT). The analysis technique used was qualitative data analysis technique.*
*This research produced a learning trajectory design for relation and function material using Realistic Mathematics Education (PMR) Learning Method with Neuroscience Approach.*

*This research produced a learning trajectory design for relation and function material using Realistic Mathematics Education (PMR) Learning Method with Neuroscience Approach. Based on the results of written tests conducted after experiencing PMR with the Neuroscience Approach, it was found that (1) 16 students or 73% met the indicators of visual mathematical language representation. (2) 16 students or 73% met the indicators of symbolic mathematical language representation. (3) 15 students or 68% met the indicators of verbal mathematical language representation, so based on these results it was concluded that Realistic Mathematics Learning integrated with the Neuroscience Approach, especially on the material of relations and functions, was effective in improving students' mathematical representation skills for visual, symbolic, and verbal representation types.Based on the results of interviews with all students, it was concluded that students' perceptions related to PMR methods with the Neuroscience Approach had a positive response, namely as many as 20 students (95%).*

***Keywords**: mathematical representation ability, neuroscience approach in learning, PMR, design research, relation and function.*