

**Efektivitas Model *Problem-Based Learning* terhadap Kemampuan
Representasi Matematis Siswa : Meta-Analisis**

TESIS

Diajukan untuk memenuhi sebagian syarat memperoleh gelar
Magister Pendidikan Matematika



Oleh :

NOVIA PERMATA BARTI

NIM. 1802640

**PROGRAM STUDI MAGISTER PENDIDIKAN MATEMATIKA
FAKULTAS PENDIDIKAN MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS PENDIDIKAN INDONESIA
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Novia Permata Barti, 2021

**EFEKTIVITAS MODEL PROBLEM-BASED LEARNING TERHADAP KEMAMPUAN REPRESENTASI
MATEMATIS SISWA : META-ANALISIS**

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KEMAMPUAN REPRESENTASI MATEMATIS SISWA**

Oleh:

Novia Permata Barti

S.Pd. Universitas Islam Negeri Sultan Syarif Kasim Riau, 2017

Sebuah tesis yang diajukan untuk memenuhi salah satu syarat memperoleh gelar
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Oleh:

Novia Permata Barti
NIM. 1802640

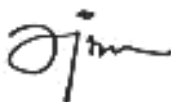
Disetujui dan disahkan oleh:

Pembimbing I



Dr. H. Dadang Juandi, M.Si.
NIP. 19640117 199202 1 001

Pembimbing II



Dr. Dian Usdiyana, M.Si.
NIP. 19600901 198703 2 001

**Mengetahui,
Ketua Program Studi Pendidikan Matematika
Sekolah Pascasarjana Universitas Pendidikan Indonesia**



Dr. H. Dadang Juandi, M.Si.
NIP. 19640117 199202 1 001

Novia Permata Barti, 2021

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ABSTRAK

Novia Permata Barti, (2021). Efektivitas Model *Problem-Based Learning* terhadap Kemampuan Representasi Matematis Siswa : Meta-Analisis.

Penelitian ini bertujuan menginvestigasi efektivitas pengaruh dari implementasi model *Problem-Based Learning* terhadap kemampuan representasi matematis siswa secara komprehensif. Metode penelitian yang digunakan adalah meta-analisis untuk menganalisis pengaruh *effect size* dari studi primer. Data empiris studi yang diperoleh melalui penelusuran terhadap *database* elektronik dari studi primer yang telah dipublikasikan di jurnal nasional tahun 2014-2020. Penelitian ini menganalisis sembilan *effect size* dari Sembilan studi primer yang memenuhi kriteria inklusi. Analisis data dalam penelitian ini menggunakan software *Comprehensive Meta-Analysis* (CMA) dengan memilih rumus Hedges's g untuk menentukan ukuran efeknya berdasarkan pada model efek acak. Analisis bias publikasi dan sensitivitas menunjukkan bahwa seluruh studi yang disertakan dalam analisis ini tidak rentan atau disebut juga tahan terhadap bias publikasi. Pengujian *effect size* dilakukan dengan menganalisis tiga karakteristik studi yaitu tingkatan kelas, ukuran sampel dan lama perlakuan. Temuan penelitian ini menunjukkan bahwa secara keseluruhan, pengaruh implementasi model *Problem-Based Learning* terhadap kemampuan representasi matematis siswa lebih baik daripada pembelajaran konvensional, dengan tingkat pengaruh berada pada kategori efek sedang. Sementara itu, berdasarkan karakteristik studi yang diamati ditemukan tidak ada perbedaan pengaruh antar kelompok dilihat dari karakteristik tingkatan kelas, ukuran sampel dan lama perlakuan. Dengan demikian, penelitian ini berkontribusi literature sebagai pertimbangan dalam implementasi *Problem-Based Learning* terhadap kemampuan representasi matematis siswa dimasa depan.

Kata kunci: , *Problem-Based Learning*, Kemampuan Representasi Matematis, Meta-Analisis.

ABSTRACT

Novia Permata Barti, (2021). Effectiveness of Problem-Based Learning Model on Students' Mathematical Representation Skills: A Meta-Analysis.

The present study aims to investigate the effectiveness of the implementation of Problem-Based Learning Model on the students' mathematical representation skills comprehensively. The meta-analysis method was employed to analyze the effect size of primary studies. The empirical data were obtained through electronic database searches of primary studies published in national journals between 2014 and 2020. Nine effect sizes were analyzed from nine primary studies that met the inclusion criteria. The data analysis was conducted using the Comprehensive Meta-Analysis (CMA) software, by selecting the Hedges' g formula to determine the effect size based on the random effects model. The publication bias and sensitivity analysis resulted in that all studies included in the analysis were not susceptible, meaning resistant to the publication bias. The effect size test was conducted by analyzing three characteristics, i.e., grade level, sample size, and treatment duration. The findings show that, overall, the effect of the implementation of Problem-Based Learning model on the students' mathematical representation skills is better than that of conventional learning, with the level of influence found in the medium category. Meanwhile, based on the characteristics of the observed studies, there is no difference in the effect between groups in terms of grade level, sample size, and treatment duration. Therefore, this study contributes as a literature for consideration in implementing the Problem-Based Learning in determining learners' mathematical representation skills in the future.

Keywords: Problem-Based Learning, Mathematical Representation Skills, Meta-Analysis.

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