PENINGKATAN LITERASI MATEMATIS DAN PERUBAHAN *SELF-REGULATED LEARNING* DENGAN MODEL *PROBLEM-BASED LEARNING* DAN PENDEKATAN *REALISTIC MATHEMATICS EDUCATION* SISWA SMP

TESIS

diajukan untuk memenuhi sebagian syarat untuk memperoleh gelar
Magister Pendidikan Program Studi Pendidikan Matematika

Oleh:

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PROGRAM STUDI MAGISTER PENDIDIKAN MATEMATIKA

FAKULTAS PENDIDIKAN MATEMATIKA DAN ILMU PENGETAHUAN ALAM

UNIVERSITAS PENDIDIKAN INDONESIA

2024

LEMBAR HAK CIPTA

PENINGKATAN LITERASI MATEMATIS DAN PERUBAHAN *SELF-REGULATED LEARNING* DENGAN MODEL *PROBLEM-BASED LEARNING* PENDEKATAN *REALISTIC MATHEMATICS EDUCATION* SISWA SMP

Oleh

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S.Pd. Universitas Khairun Ternate, 2016

Sebuah tesis yang diajukan untuk memenuhi salah satu syarat memperoleh gelar Magister Pendidikan (M.Pd) pada Program Studi Pendidikan Matematika

LEMBAR PENGESAHAN TESIS

ABDURRAHMAN DO. MUHAMAD NASER

PENINGKATAN LITERASI MATEMATIS DAN PERUBAHAN *SELF-REGULATED LEARNING* DENGAN MODEL *PROBLEM-BASED LEARNING* DAN PENDEKATAN *REALISTIC MATHEMATICS EDUCATION* SISWA SMP

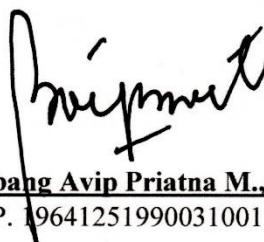disetujui dan disahkan oleh pembimbing:

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LEMBAR PERNYATAAN

Dengan ini saya menyatakan bahwa tesis dengan judul:

PENINGKATAN LITERASI MATEMATIS DAN PERUBAHAN *SELF-REGULATED LEARNING* DENGAN MODEL *PROBLEM-BASED LEARNING* DAN PENDEKATAN *REALISTIC MATHEMATICS EDUCATION* SISWA SMP

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Atas pernyataan yang saya buat, saya siap menanggung segala resiko atau sanksi jika di kemudian hari ditemukan adanya pelanggaran terhadap etika keilmuan atau adanya klaim dari pihak lain terhadap keaslian karya saya.

Demikian surat pernyataan ini dibuat dengan sebenar-benarnya.

Bandung, Agustus 2024

Yang membuat pernyataan

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ABSTRAK

Abdurrahman Do. Muhamad Naser. (2208674). Peningkatan Literasi Matematis dan Perubahan *Self-Regulated Learning* dengan Model *Problem-Based Learning* dan Pendekatan *Realistic Mathematics Education* siswa SMP.

Literasi matematis adalah kemampuan siswa menggunakan matematika dalam berbagai konteks kehidupan nyata untuk membuat keputusan tepat. Ini mencakup pemahaman, penggunaan, dan interpretasi informasi matematis. Pengembangan literasi matematis memerlukan *self-regulated learning* (SRL) yang kuat, yang membantu siswa mengatur dan mengontrol proses belajar mereka dengan menetapkan tujuan, memilih strategi efektif, dan mengevaluasi kemajuan secara terus-menerus. SRL dan literasi matematis saling terkait erat, karena SRL memfasilitasi pengembangan kemampuan matematika yang efektif dan berkelanjutan. Untuk mengembangkan SRL dan literasi matematis siswa, penting untuk menerapkan model PBL dengan pendekatan RME. Model ini menekankan pada pemecahan masalah nyata yang relevan dengan kehidupan sehari-hari siswa, memungkinkan mereka menghubungkan konsep matematika dengan situasi kehidupan nyata. Penelitian ini bertujuan untuk menganalisis peningkatan literasi matematis dan perubahan SRL siswa yang memperoleh PBL dengan pendekatan RME, PBL dan DI, serta menganalisis peningkatan literasi matematis dan perubahan SRL siswa berdasarkan KMA dengan ketiga model tersebut. Penelitian ini menggunakan pendekatan kuantitatif dan metode *quasi eksperimen* dengan desain penelitian *non-equivalent control group design*. Populasi dari penelitian ini adalah siswa kelas VIII di salah satu SMP Negeri di Kota Bandung tahun ajaran 2023/2024. Sampel yang diambil sebanyak 95 orang siswa kelas VIII yang terdistribusi ke dalam tiga kelas. Instrumen yang digunakan dalam penelitian ini terdiri dari tes literasi matematis dan angket SRL yang telah diuji validitas dan reliabilitasnya. Penelitian ini memperoleh temuan: (1) Terdapat perbedaan peningkatan kemampuan literasi matematis yang signifikan antara siswa yang memperoleh PBL dengan pendekatan RME, PBL, dan DI; (2) Terdapat perbedaan perubahan SRL yang signifikan antara siswa yang mendapatkan PBL dengan pendekatan RME, PBL dan DI; (3) Tidak terdapat perbedaan peningktan kemampuan literasi matematis yang signifikan antara siswa yang memiliki KMA dengan kategori tinggi, sedang dan rendah; (4) Tidak terdapat perbedaan perubahan SRL yang signifikan antara siswa yang memiliki KMA tinggi, sedang, dan rendah; (5) Tidak terdapat perbedaan rata-rata rankning peningkatan kemampuan literasi matematis secara signifikan antara siswa yang memperoleh PBL dengan pendekatan RME, PBL, dan DI untuk kategori KMA tinggi, terdapat perbedaan peningkatan kemampuan literasi matematis secara signifikan antara siswa yang memperoleh PBL dengan pendekatan RME dan DI untuk kategori KMA sedang, serta terdapat perbedaan peningkatan kemampuan literasi matematis secara signifikan antara siswa mendapatkan PBL dengan pendekatan RME dan DI, dan antara siswa yang mendapatkan PBL dan DI untuk kategori KMA rendah; (6) Tidak terdapat perbedaan perubahan SRL secara signifikan antara siswa yang memperoleh PBL dengan pendekatan RME, PBL, dan DI untuk kategori KMA tinggi, sedang, rendah; dan (7) Terdapat hubungan yang signifikan antara peningkatan kemampuan literasi matematis dan perubahan SRL siswa.

Kata Kunci: Literasi Matematis, *Problem-Based Learning*, *Realistic Mathematics Education*, *Self-Regulated Learning*.

ABSTRACT

Abdurrahman Do. Muhamad Naser. (2208674). Improving Mathematical Literacy and Changes in Self-Regulated Learning through Problem-Based Learning and Realistic Mathematics Education Approach in Junior High School Students.

Mathematical literacy is the ability of students to use mathematics in various real-life contexts to make appropriate decisions. It encompasses the understanding, application, and interpretation of mathematical information. The development of mathematical literacy requires strong self-regulated learning (SRL), which helps students manage and control their learning process by setting goals, selecting effective strategies, and continuously evaluating their progress. SRL and mathematical literacy are closely related, as SRL facilitates the effective and sustained development of mathematical skills. To enhance students' SRL and mathematical literacy, it is essential to implement PBL model with RME approach. This model emphasizes solving real-world problems that are relevant to students' daily lives, enabling them to connect mathematical concepts with real-life situations. This study aims to analyze the improvement of mathematical literacy and changes in SRL among students who receive PBL with RME approach, PBL, and DI. Additionally, it examines the improvement of mathematical literacy and changes in SRL based on students' prior mathematical abilities across these three instructional models. The research employs a quantitative approach and a quasi-experimental method with a non-equivalent control group design. The population of this study consists of eighth-grade students from a public junior high school in Bandung for the academic year 2023/2024. A sample of 95 eighth-grade students was selected and distributed across three classes. The instruments used in this study include a mathematical literacy test and an SRL questionnaire, both of which have been validated for reliability and validity. The findings of this research are as follows: (1) There is a significant difference in the improvement of mathematical literacy skills among students who received PBL with the RME approach, PBL, and DI; (2) There is a significant difference in the changes in SRL among students who received PBL with the RME approach, PBL, and DI; (3) There is no significant difference in the improvement of mathematical literacy skills among students with high, medium, and low KMA categories; (4) There is no significant difference in the changes in SRL among students with high, medium, and low KMA categories; (5) There is no significant difference in the average ranking of the improvement of mathematical literacy skills among students who received PBL with the RME approach, PBL, and DI for the high KMA category. There is a significant difference in the improvement of mathematical literacy skills among students who received PBL with the RME approach and DI for the medium KMA category, and there is a significant difference in the improvement of mathematical literacy skills among students who received PBL with the RME approach and DI, and among students who received PBL and DI for the low KMA category (6) There is no significant difference in the changes in SRL among students who received PBL with the RME approach, PBL, and DI for the high, medium, and low KMA categories. (7) There is a significant correlation between the improvement of mathematical literacy and changes in students' self-regulated learning.

Keywords: Mathematical Literacy Skill, Problem-Based Learning, Realistic Mathematics Education, Self-Regulated Learning.

KATA PRAKATA

Puji syukur penulis panjatkan ke hadirat Allah SWT, karena atas rahmat dan hidayah-Nya penulis dapat menyelesaikan penulisan tesis ini dengan judul **"Peningkatan Literasi Matematis dan Perubahan *Self-Regulated Learning* dengan Model *Problem-Based Learning* dan Pendekatan *Realistic Mathematics Education* siswa SMP"** dengan baik.

Penulisan tesis ini merupakan upaya untuk mendalami dan menggali lebih dalam mengenai peningkatan literasi matematis dan perubahan *self-regulated learning* (SRL) dalam konteks pendidikan matematika di tingkat Sekolah Menengah Pertama (SMP). Model *problem-based learning* dengan pendekatan *realistic mathematics education* dan model *problem-based learning* dipilih sebagai model utama dalam penelitian ini, karena diyakini dapat meningkatkan kemampuan literasi dan perubahan *self-regulated learning* siswa secara signifikan. Selain itu, penelitian ini juga menganalisis peningkatan kemampuan literasi matematis dan perubahan *self-regulated learning* siswa berdasarkan KMA dengan model *problem-based learning* dan pendekatan *realistic mathematics education, problem-based learning* serta *direct instruction*.

Penulis mengucapkan terima kasih yang sebesar-besarnya kepada semua pihak yang telah memberikan dukungan, bimbingan, dan motivasi dalam proses penyelesaian tesis ini. Semoga hasil penelitian ini dapat memberikan manfaat dan sumbangan positif bagi pengembangan pendidikan matematika di Indonesia.

Akhir kata, penulis menyadari bahwa penulisan ini jauh dari kata sempurna. Oleh karena itu, kritik dan saran yang membangun dari pembaca sangat penulis harapkan guna perbaikan dan pengembangan di masa yang akan datang.

Bandung, Agustus 2024

Abdurrahman Do. Muhamad Naser
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UCAPAN TERIMA KASIH

Penulis ingin mengucapkan rasa syukur kepada Allah SWT, Yang Maha Pengasih dan Maha Penyayang, yang telah memberikan segala limpahan rahmat, hidayah, serta kesempatan bagi penulis untuk menyelesaikan penelitian ini. Penulis ingin menyampaikan apresiasi yang tulus yang sebesar-besarnya kepada semua pihak yang telah mendukung dan membantu dalam menyelesaikan penelitian ini. Oleh karena itu, dengan penuh kerendahan hati, penulis ingin menyampaikan ucapan terima kasih kepada:

1. Prof. Dr. H. Nanang Priatna, M.Pd dan, M.Si. selaku pembimbing I, yang telah memberikan bimbingan, arahan, dan kesabaran dalam bimbingan dari awal hingga akhir penelitian ini. Bapak telah memberikan wawasan yang berharga, masukan yang mendalam, serta kritik yang membangun untuk memperbaiki kualitas penelitian ini. Bimbingan Bapak telah menjadi sumber motivasi dan semangat yang tak ternilai. Semoga segala kebaikan dan dedikasi yang Bapak berikan mendapat balasan yang berlimpah.

2. Dr. Bambang Avip Priatna Martadiputra selaku pembimbing II, yang telah meluangkan waktu, kesabaran, dan perhatian yang Bapak berikan selama penyusunan tesis ini. Nasihat dan masukan Bapak sangat berharga dalam membantu saya mengatasi berbagai tantangan yang muncul selama proses penelitian. Bapak selalu memberikan pandangan yang tajam dan saran yang bijaksana, yang membantu saya untuk terus berkembang dan memperbaiki kualitas karya ini.

3. Ketua Prodi Magister Pendidikan Matematika, Prof. Al Jupri, S.Pd., M.Sc., Ph.D., terima kasih atas bimbingan, dorongan, dan dukungan yang telah diberikan dalam proses penulisan tesis ini.

4. Dekan FPMIPA UPI, Bapak Prof. Dr. Tatang Herman, M.Ed., terima kasih atas segala bantuan yang telah diberikan demi kelancaran penulisan tesis ini.

5. Seluruh dosen dan staf tata usaha di Prodi FPMIPA dan sekolah pascasarjana Universitas Pendidikan Indonesia yang telah memberikan kontribusi positif.

6. Kepala SMP Negeri 5 Bandung, Guru, dan Staf, atas izin dan kerjasamanya dalam melibatkan siswa-siswa Kelas VIII dalam penelitian ini. Terima kasih atas dukungan serta waktu yang telah diberikan dalam menyelenggarakan penelitian.

7. Kepada kedua orang tua, yang telah memberikan doa, dukungan, dan cinta tanpa batas selama perjalanan studi. Terima kasih atas pengorbanan dan dorongan moral yang selalu telah di berikan.

8. Sahabat dan teman-teman dekat, yang selalu memberikan semangat, dukungan, dan nasihat berharga dalam setiap langkah penulisan tesis ini. Terima kasih atas kebersamaan dan kehangatan yang selalu Anda berikan.

9. Siswa-siswi Kelas VIII SMP yang telah berpartisipasi dalam penelitian ini dengan memberikan waktu dan perhatian mereka. Terima kasih atas kerjasama dan kontribusi yang sangat berarti bagi keberhasilan penelitian ini.

Semoga Allah SWT senantiasa melimpahkan rahmat dan karunia-Nya kepada semua pihak yang telah membantu dalam perjalanan penyusunan tesis ini. Amin.

Bandung, Agustus 2024

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DAFTAR ISI

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