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## ABSTRAK

Penelitian ini bertujuan mengintegrasikan *scaffolding* pada pendekatan *Realistic Mathematics Education* (RME) untuk menghasilkan pembelajaran yang dapat meningkatkan kemampuan representasi matematis mahasiswa. Penelitian ini menggunakan pendekatan *mixed method* dan secara operasional mengacu pada *Design-Based Research* (DBR) dengan tahapan: *analysis of practical problems by researchers and practitioners in collaboration*; *development of solutions informed by existing design principles and technology; iterative cycles of testing and refinement of solutions in practice; and reflection to produce "design principles" and enhance solution implementation*. Pengumpulan data dilakukan secara kuantitatif dan kualitatif dengan teknik tes dan non tes. Data kuantitatif dianalisis dilakukan dengan teknik statistik deskriptif dan inferensial, data kualitatif dianalisis dengan pendekatan tematik. Hasilnya diintegrasikan dengan *convergent parallel design.* Hasil penelitian menunjukan bahwa integrasi *scaffolding* pada RME menghasilkan pendekatan baru RME-S yang valid (V = 0,871), praktis (P = 4,28), dan efektif (kriteria: rata-rata *posttest* kelas eksperimen lebih tinggi dari kelas kontrol, lebih dari 90% mahasiswa memperoleh nilai di atas 56, *N-Gain* kelas eksperimen lebih baik dari kelas kontrol) untuk meningkatkan kemampuan representasi matematis mahasiswa. Pendekatan RME-S ini memiliki karakteristik pembelajaran kontekstual yang inklusif terhadap ragam kemajuan belajar mahasiswa. Penelitian ini berkontribusi secara teoritis terhadap elaborasi teori konstruktivisme sosial dalam pembelajaran matematika di perguruan tinggi dan secara praktis menghasilkan panduan pembelajaran untuk meningkatkan kemampuan representasi matematis mahasiwa.

**Kata Kunci:** Kemampuan Representasi Matematis, *Realistic Mathematics Education*, *scaffolding*.

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## *ABSTRACT*

*This study aims to integrate scaffolding into the Realistic Mathematics Education (RME) approach to develop learning that enhances students' mathematical representation abilities. This research employs a mixed-method approach and is operationally based on Design-Based Research (DBR), which includes the following stages: analysis of practical problems by researchers and practitioners in collaboration; development of solutions informed by existing design principles and technology; iterative cycles of testing and refinement of solutions in practice; and reflection to produce "design principles" and improve solution implementation. Data were collected both quantitatively and qualitatively using test and non-test techniques. Quantitative data were analyzed using descriptive and inferential statistics, while qualitative data were analyzed thematically. The results were integrated using a convergent parallel design. The study found that the integration of scaffolding into RME led to the development of a new approach RME-S which is valid (V = 0.871) and effective (criteria: the experimental class's posttest average was higher than the control class; over 90% of students scored above 56; and the experimental class's N-Gain was better than the control class) in improving students' mathematical representation skills. The RME-S approach features contextual learning that is inclusive of diverse student learning progress. This study contributes theoretically to the elaboration of social constructivism theory in university-level mathematics education and practically provides a learning guide to enhance students' mathematical representation abilities.*

***Keywords**: Mathematical Representation Ability, Realistic Mathematics Education, scaffolding.*