

ABSTRAK

Muhamad Purnama, 1212050105 (2026). “Pengembangan *Hypothetical Learning Trajectory* Berbasis *Contextual Teaching and Learning* Untuk Meningkatkan Kemampuan Pemecahan Masalah Matematis Peserta Didik”

Penelitian ini bertujuan mengembangkan *Hypothetical Learning Trajectory* berbasis *Contextual Teaching and Learning* pada materi relasi dan fungsi yang valid, praktis, dan efektif untuk meningkatkan kemampuan pemecahan masalah matematis peserta didik. Penelitian menggunakan metode *design research* model Gravemeijer dan Cobb yang menempuh tiga tahap, yaitu *preliminary design*, *teaching experiment*, dan *retrospective analysis*. Tahap *teaching experiment* dilaksanakan melalui uji coba skala kecil (*pilot*) dan uji coba skala kelas (*main experiment*) pada peserta didik kelas VIII SMP Negeri 1 Plered, Kabupaten Cirebon. Produk yang dikembangkan berupa lintasan belajar, modul ajar, dan Lembar Kerja Peserta Didik. Data dikumpulkan melalui lembar validasi ahli, angket respons peserta didik, observasi keterlaksanaan pembelajaran, dan tes kemampuan pemecahan masalah matematis. Hasil penelitian menunjukkan bahwa produk memenuhi kriteria kevalidan, dengan lintasan belajar, modul ajar, dan Lembar Kerja Peserta Didik berkategori sangat valid serta desain berkategori valid. Dari aspek kepraktisan, produk memperoleh kategori sangat praktis dengan respons yang meningkat dari uji coba skala kecil ke uji coba skala kelas. Dari aspek keefektifan, ketuntasan klasikal meningkat dari kategori efektif menjadi sangat efektif, meskipun tahap memeriksa kembali menjadi tahap yang paling lambat berkembang. Dengan demikian, *Hypothetical Learning Trajectory* berbasis *Contextual Teaching and Learning* layak digunakan sebagai alternatif desain pembelajaran relasi dan fungsi untuk mendukung kemampuan pemecahan masalah matematis peserta didik.

Kata Kunci: *Hypothetical Learning Trajectory, Contextual Teaching and Learning, relasi dan fungsi, kemampuan pemecahan masalah matematis, design research*

ABSTRACT

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This study aimed to develop a valid, practical, and effective Hypothetical Learning Trajectory based on Contextual Teaching and Learning for the topic of relations and functions to enhance students' mathematical problem-solving ability. It employed a design research method following Gravemeijer and Cobb, comprising three stages: preliminary design, teaching experiment, and retrospective analysis. The teaching experiment was conducted through a small-scale trial (pilot) and a classroom-scale trial (main experiment) involving eighth-grade students at SMP Negeri 1 Plered, Cirebon Regency. The developed products consisted of the learning trajectory, a teaching module, and student worksheets. Data were collected through expert validation sheets, student response questionnaires, observations of learning implementation, and a mathematical problem-solving test. The results show that the products met the validity criteria, with the learning trajectory, teaching module, and student worksheets categorized as highly valid and the design categorized as valid. In terms of practicality, the products were categorized as highly practical, with student responses increasing from the small-scale trial to the classroom-scale trial. In terms of effectiveness, classical mastery improved from the effective category to the highly effective category, although the looking-back stage developed most slowly. Therefore, the Hypothetical Learning Trajectory based on Contextual Teaching and Learning is feasible as an alternative instructional design for teaching relations and functions to support students' mathematical problem-solving ability.

Keywords: *Hypothetical Learning Trajectory, Contextual Teaching and Learning, relations and functions, mathematical problem-solving ability, design research*