

Rahma Diani. 2025. *Model Pembelajaran PRISMA-E'xi Berbasis Multi Representasi Terintegrasi STEM yang Berorientasi pada Peningkatan Kemampuan Creative Problem Solving*. Disertasi. Promotor: Dr. Viyanti, M.Pd. Co-promotor 1: Dr. Tri Jalmo, M.Si. Co-promotor 2: Dr. Dewi Lengkana, M.Sc. Program Studi Doktor Pendidikan, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Lampung.

ABSTRAK

Penelitian ini bertujuan untuk mengembangkan model pembelajaran PRISMA-E'xi, yaitu model pembelajaran berbasis multi representasi yang terintegrasi dengan pendekatan STEM dan berorientasi pada peningkatan kemampuan *creative problem solving* (CPS) peserta didik. Jenis penelitian ini adalah penelitian dan pengembangan (*research and development*) yang mengacu pada model Borg dan Gall (2003). Uji coba terbatas untuk menilai aspek kepraktisan dilaksanakan di satu sekolah dengan melibatkan 2 pendidik dan 37 peserta didik kelas XI SMA. Selanjutnya, uji coba skala luas menggunakan pendekatan kuantitatif dengan desain *quasi-experiment* tipe *non-equivalent control group design*, dengan subjek penelitian terdiri dari 350 peserta didik kelas XI SMA yang terbagi dalam dua kelompok: eksperimen (175 peserta didik) dan kontrol (175 peserta didik), masing-masing mewakili tiga kategori wilayah (rural, sub-urban, dan urban). Analisis data untuk mengukur efektivitas model mencakup perhitungan *n-gain*, *independent t-test*, *effect size*, *one-way ANOVA*, dan MANOVA. Hasil penelitian menunjukkan bahwa model pembelajaran PRISMA-E'xi valid, praktis, dan efektif. Efektifitas model ditunjukkan oleh rata-rata *n-gain* tinggi pada kelompok eksperimen, perbedaan signifikan berdasarkan uji *t* dengan *effect size* besar, tidak terdapat perbedaan signifikan rata-rata *n-gain* antar wilayah sekolah (rural, sub-urban, dan urban), serta pengaruh signifikan terhadap seluruh indikator kemampuan CPS berdasarkan uji MANOVA dan univariat, khususnya pada aspek *solution finding*, *objective finding*, dan *fact finding*. Dengan demikian, model pembelajaran PRISMA-E'xi terbukti layak digunakan sebagai model pembelajaran inovatif dalam pembelajaran fisika tingkat SMA di berbagai wilayah (rural, sub-urban, dan urban). Implikasinya, model ini dapat menjadi alternatif strategis dalam mendesain pembelajaran yang menekankan pengembangan kemampuan CPS.

Kata kunci: *creative problem solving*, model pembelajaran PRISMA-E'xi, multi representasi, pembelajaran fisika, STEM

Rahma Diani. 2025. *The PRISMA-E'xi Learning Model: A STEM-Integrated Multi-Representation-Based Approach Oriented Toward Enhancing Creative Problem-Solving Skills*. Dissertation. Promoter: Dr. Viyanti, M.Pd. Co-Promoter 1: Dr. Tri Jalmo, M.Si. Co-Promoter 2: Dr. Dewi Lengkana, M.Sc. Doctoral Program in Education, Faculty of Teacher Training and Education, University of Lampung.

ABSTRACT

This study was designed to develop the PRISMA-E'xi learning model, an instructional framework based on multiple representations, integrated with a STEM approach, and aimed at enhancing students' creative problem-solving (CPS) skills. The research employed a research and development (R&D) methodology following the Borg and Gall (2003) model. A small-scale trial was conducted in one senior high school to examine the model's practicality, involving two teachers and 37 Grade-XI students. Subsequently, a large-scale field trial was implemented using a quantitative quasi-experimental design of the non-equivalent control group type. The large-scale trial involved 350 Grade-XI students, divided into an experimental group ($n = 175$) and a control group ($n = 175$), each representing three school settings: rural, suburban, and urban. Data analysis to evaluate the model's effectiveness included n -gain computation, independent t -test, effect size estimation, one-way ANOVA, and MANOVA. The results of the study demonstrate that the PRISMA-E'xi learning model is valid, practical, and effective. Its effectiveness is evidenced by a high average normalized gain (n -gain) in the experimental groups, a significant difference confirmed by the t -test with a large effect size, no significant differences in mean n -gain across school regions (rural, suburban, and urban), and a significant impact on all indicators of CPS skills based on both MANOVA and univariate analyses, particularly in the aspects of solution finding, objective finding, and fact finding. These findings indicate that the PRISMA-E'xi learning model is a feasible and innovative instructional model for senior high school physics across diverse contexts (rural, suburban, and urban). The study implies that this model can serve as a strategic alternative for designing instruction that explicitly fosters students' CPS abilities.

Keywords: *creative problem solving, PRISMA-E'xi learning model, multi representation, physics learning, STEM*