

ABSTRAK

PENGEMBANGAN MODEL PEMBELAJARAN PRO-CARLO (*PROBLEM ORIENTED LEARNING INTEGRATED CHARACTER AND LOCAL WISDOM*) UNTUK MENINGKATKAN LITERASI SAINS DAN KETERAMPILAN BERPIKIR KREATIF SISWA DALAM MATA PELAJARAN IPA

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Rendahnya literasi sains dan keterampilan berpikir kreatif siswa SMP dalam pembelajaran IPA, serta belum optimalnya integrasi pendidikan karakter dan kearifan lokal pada model pembelajaran yang selama ini diterapkan, melatarbelakangi perlunya pengembangan model pembelajaran alternatif. Penelitian ini bertujuan untuk mengembangkan, memvalidasi, serta menguji kepraktisan dan efektivitas model pembelajaran PRO-CARLO dalam meningkatkan literasi sains dan keterampilan berpikir kreatif siswa SMP. Penelitian menggunakan pendekatan *research and development* (R&D) yang mengombinasikan tahapan prosedural Borg dan Gall dengan kerangka evaluatif *Design Based Research* dari Plomp yang meliputi tahap analisis kebutuhan, perancangan model, pengembangan perangkat, validasi ahli, revisi, uji coba terbatas, dan uji efektivitas. Penelitian dilaksanakan pada siswa SMP negeri di Kabupaten Jembrana dengan melibatkan guru IPA sebagai subjek uji kepraktisan. Instrumen penelitian mencakup lembar validasi ahli, angket kepraktisan, serta tes literasi sains dan keterampilan berpikir kreatif. Analisis data dilakukan secara deskriptif dan inferensial menggunakan MANCOVA dengan mengendalikan pengetahuan awal. Hasil validasi menunjukkan model PRO-CARLO berada pada kategori sangat valid dengan nilai CVI 0,98. Kepraktisan model dari perspektif guru berkualifikasi sangat praktis dengan persentase rata-rata 98,33%, sedangkan kepraktisan siswa menunjukkan persentase 85,51%. Uji efektivitas menunjukkan bahwa model PRO-CARLO secara signifikan lebih efektif dibandingkan pembelajaran PBL yang telah diterapkan sebelumnya dalam meningkatkan literasi sains dan keterampilan berpikir kreatif siswa ($p < 0,05$) dan hasil *effect size* yang tinggi pada literasi sains ($\eta^2p = 0,375$) dan keterampilan berpikir kreatif ($\eta^2p = 0,344$). Dengan demikian, model PRO-CARLO valid, praktis, dan efektif untuk digunakan dalam pembelajaran IPA.

Kata kunci: *model pembelajaran PRO-CARLO; literasi sains; keterampilan berpikir kreatif; pendidikan karakter; kearifan lokal*

**DEVELOPMENT OF THE PRO-CARLO (PROBLEM ORIENTED
LEARNING INTEGRATED CHARACTER AND LOCAL WISDOM)
LEARNING MODEL TO ENHANCE STUDENTS' SCIENTIFIC LITERACY
AND CREATIVE THINKING SKILLS IN SCIENCE EDUCATION**

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ABSTRACT

This study aims to develop, validate, and examine the practicality and effectiveness of the PRO-CARLO learning model in improving junior high school students' scientific literacy and creative thinking skills based on local wisdom. The study employed a research and development (R&D) approach combining the procedural stages of Borg and Gall with the Design Based Research evaluative framework of Plomp, consisting of needs analysis, model design, development of learning materials, expert validation, model revision, limited trials, and effectiveness testing. The research was conducted with public junior high school students in Jembrana Regency, involving science teachers as participants in the practicality evaluation. Research instruments included expert validation sheets, practicality questionnaires, and tests of scientific literacy and creative thinking skills. Data were analyzed using descriptive and inferential statistics through MANCOVA by controlling prior knowledge. The validation results show that the PRO-CARLO model is in the very valid category with a CVI value of 0.98. The practicality of the model from the perspective of qualified teachers is very practical with an average percentage of 98.33%, while the practicality of students shows a percentage of 85.51%. The effectiveness test showed that the PRO-CARLO model was significantly more effective than previously implemented PBL learning in improving students' scientific literacy and creative thinking skills ($p < 0.05$) and the results of the effect size were high on scientific literacy ($\eta^2p = 0.375$) and creative thinking skills ($\eta^2p = 0.344$). Thus, the PRO-CARLO model is valid, practical, and effective for use in science learning.

Keywords: PRO-CARLO learning model; scientific literacy; creative thinking; character education; local wisdom