

# **PENGEMBANGAN MODEL PEMBELAJARAN INTERAKTIF BERBASIS ETNOSAINS BIMA UNTUK MENINGKATKAN LITERASI SAINS DAN PRESTASI BELAJAR KONSEP DASAR IPA MAHASISWA PGSD**

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## **Abstrak**

Literasi sains dan prestasi belajar konsep dasar Ilmu Pengetahuan Alam (IPA) mahasiswa PGSD masih tergolong rendah. Diakibatkan pembelajaran yang kurang kontekstual dan minim keterlibatan aktif mahasiswa. Penelitian ini bertujuan mengembangkan model pembelajaran interaktif berbasis etnosains Bima untuk meningkatkan literasi sains dan prestasi belajar mahasiswa. Penelitian menggunakan metode *Research and Development* (R&D) dengan jenis pengembangan Borg and Gall meliputi: (1) penelitian dan pengumpulan informasi awal, (2) perencanaan, (3) pengembangan produk awal, (4) uji coba terbatas, (5) revisi produk awal, (6) uji coba lapangan utama, (7) revisi produk operasional, (8) uji coba operasional, (9) revisi produk akhir, dan (10) diseminasi serta implementasi. Subyek uji coba sebanyak 27 mahasiswa pada uji coba-1 serta mahasiswa dari tiga perguruan tinggi pada uji coba-2. Instrumen yang digunakan terdiri dari instrumen tes dan non tes berupa angket. Analisis data terdiri dari analisis deskriptif dan inferensial. Hasil penelitian menunjukkan bahwa model pembelajaran memiliki tingkat validitas sangat tinggi dengan rata-rata skor validasi 4,694 dan persentase kecocokan 93,89%, sedangkan perangkat pendukung memperoleh skor 4,823 dengan persentase kecocokan 96,44%. Kepraktisan model berada pada kategori sangat baik dengan skor keterlaksanaan pembelajaran 4,80 pada uji coba-1 dan 4,73–4,80 pada uji coba-2. Keefektifan model ditunjukkan oleh peningkatan literasi sains mahasiswa dari skor rata-rata 2,981 menjadi 19,389 dengan nilai *n-gain* 0,78 (kategori tinggi), dengan peningkatan per indikator sebesar 0,88 pada kemampuan menjelaskan fenomena ilmiah, 0,93 pada kemampuan mengevaluasi dan merancang penyelidikan ilmiah, serta 0,67 pada kemampuan menafsirkan data dan bukti ilmiah. Prestasi belajar mahasiswa meningkat dari skor rata-rata 2,541 menjadi 4,138 dengan nilai *n-gain* 0,65 (kategori sedang), sedangkan pada uji coba-2 peningkatan literasi sains dan prestasi belajar berada pada kategori sedang dengan nilai *n-gain* masing-masing 0,52–0,63 dan 0,58–0,63, sehingga model pembelajaran interaktif berbasis etnosains Bima dinyatakan valid, praktis, dan efektif serta layak digunakan dalam pembelajaran konsep dasar IPA di perguruan tinggi.

**Kata kunci:** model pembelajaran interaktif, etnosains Bima, literasi sains, prestasi belajar, konsep dasar IPA, mahasiswa.

**DEVELOPMENT OF AN INTERACTIVE LEARNING MODEL BASED  
ON BIMA ETHNOSCIENCE TO IMPROVE SCIENTIFIC LITERACY  
AND LEARNING ACHIEVEMENT IN BASIC SCIENCE CONCEPTS OF  
PGSD STUDENTS**

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*Abstract*

*Science literacy and learning achievement in Basic Science Concepts among Elementary School Teacher Education (PGSD) students remain relatively low. This condition is caused by learning processes that are less contextual and provide limited opportunities for active student engagement. This study aimed to develop a Bima Ethnoscience-Based Interactive Learning Model to improve students' science literacy and learning achievement. The study employed a Research and Development (R&D) approach using the Borg and Gall development model, which consists of: (1) research and information gathering, (2) planning, (3) development of the preliminary product, (4) preliminary field testing, (5) revision of the preliminary product, (6) main field testing, (7) operational product revision, (8) operational field testing, (9) final product revision, and (10) dissemination and implementation. The participants included 27 students in Trial I and students from three higher education institutions in Trial II. The instruments consisted of test and non-test instruments in the form of questionnaires. Data were analyzed using descriptive and inferential statistical techniques. The results indicated that the learning model achieved a very high level of validity, with an average validation score of 4.694 and a suitability percentage of 93.89%, while the supporting learning materials obtained a score of 4.823 with a suitability percentage of 96.44%. The practicality of the model was categorized as excellent, with implementation scores of 4.80 in Trial I and ranging from 4.73 to 4.80 in Trial II. The effectiveness of the model was demonstrated by an increase in students' science literacy scores from a mean score of 2.981 to 19.389, with an N-gain score of 0.78 (high category). Improvements were also observed across science literacy indicators, including 0.88 in explaining scientific phenomena, 0.93 in evaluating and designing scientific investigations, and 0.67 in interpreting scientific data and evidence. Students' learning achievement increased from a mean score of 2.541 to 4.138, with an N-gain score of 0.65 (moderate category). In Trial II, improvements in science literacy and learning achievement were also categorized as moderate, with N-gain scores ranging from 0.52 to 0.63 and from 0.58 to 0.63, respectively. Therefore, the Bima Ethnoscience-Based Interactive Learning Model is considered valid, practical, and effective, making it suitable for use in teaching Basic Science Concepts in higher education.*

**Keywords:** *interactive learning model, Bima ethnoscience, scientific literacy, learning achievement, basic science concepts, students.*