

**KAJIAN ETNOSAINS KAIN TENUN RANGRANG SERAYA
KARANGASEM SEBAGAI PENDUKUNG MATERI PEMBELAJARAN
IPA SMP**

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ABSTRAK

Latar belakang penelitian ini berangkat dari pentingnya mengaitkan pembelajaran IPA dengan konteks budaya lokal agar konsep sains lebih bermakna bagi peserta didik. Penelitian ini bertujuan untuk menganalisis kajian etnosains pada kain tenun rangrang khas Seraya, Karangasem sebagai pendukung materi IPA SMP. Penelitian menggunakan jenis penelitian kualitatif deskriptif dengan pendekatan etnosains. Subjek penelitian meliputi pemilik usaha, 2 penenun di Desa Seraya serta 3 guru IPA di SMP Negeri 3 Amlapura yang dipilih melalui *purposive sampling*. Data dikumpulkan melalui observasi, wawancara semi terstruktur, dan angket, kemudian dianalisis menggunakan model Miles dan Huberman melalui tahap reduksi data, penyajian data, dan penarikan kesimpulan. Hasil penelitian menunjukkan bahwa proses pembuatan kain tenun rangrang memuat berbagai konsep sains antara lain klasifikasi dan perubahan materi pada penggunaan pewarna alami (indigo, mengkudu, dan lainnya) dan proses pemintalan kapas hingga menjadi benang, prinsip pesawat sederhana pada penggunaan alat tradisional, konsep kalor dan perpindahannya pada proses perebusan, konsep pH pada proses pewarnaan dan penguncian warna, serta konsep gaya, gerak, dan usaha pada aktivitas menenun. Kesimpulan penelitian ini menunjukkan bahwa keseluruhan proses pembuatan kain tenun rangrang memiliki keterkaitan kuat dengan materi IPA SMP dan dapat digunakan sebagai sumber belajar kontekstual berbasis budaya lokal. Integrasi etnosains ini dapat membantu peserta didik memahami konsep sains secara lebih nyata sekaligus menumbuhkan kesadaran terhadap pelestarian budaya dan lingkungan.

Kata Kunci: Etnosains, Pembelajaran IPA, Tenun Rangrang, Seraya, Karangasem

**ETHNOSCIENCE STUDY OF RANGRANG WOVEN FABRIC FROM
SERAYA KARANGASEM AS SUPPORTING MATERIAL FOR JUNIOR
HIGH SCHOOL SCIENCE EDUCATION**

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ABSTRACT

The background of this study stems from the importance of linking science education to the local cultural context so that scientific concepts become more meaningful to students. This study aims to analyze ethnoscience studies on the traditional rangrang woven cloth from Seraya, Karangasem, as a supporting material for junior high school science. The study employs a descriptive qualitative research design using an ethnoscience approach. The research subjects included business owners, two weavers in Seraya Village, and three science teachers at SMP Negeri 3 Amlapura, selected through *purposive sampling*. Data were collected through observation, semi-structured interviews, and questionnaires, and analyzed using the Miles and Huberman model across the stages of data reduction, data presentation, and conclusion drawing. The results of the study indicate that the process of making rangrang woven fabric incorporates various scientific concepts, including the classification and transformation of materials in the use of natural dyes (indigo, noni, and others) and the process of spinning cotton into thread, the principles of simple machines in the use of traditional tools, concepts of heat and its transfer during the boiling process, pH concepts in the dyeing and color-fixing processes, as well as concepts of force, motion, and work in weaving activities. The conclusion of this study shows that the entire process of making rangrang woven cloth has a strong relationship with junior high school science materials and can be used as a contextual learning resource grounded in local culture. This integration of ethnoscience can help students understand scientific concepts more tangibly while fostering awareness of cultural and environmental preservation.

Keywords: Ethnoscience; Science Education; Rangrang Weaving; Seraya; Karangasem