

ABSTRAK

Selly Lovilla Santi. 211414021. 2025. Kajian Etnomatematika pada Bangunan Pura Mrajan dan Pembuatan Modul Ajar untuk Materi Bangun Ruang. Skripsi. Program Studi Pendidikan Matematika, Jurusan Pendidikan Matematika dan Ilmu Pengetahuan Alam, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Sanata Dharma, Yogyakarta.

Fokus penelitian ini adalah kajian secara etnomatematis bangunan Pura Mrajan dan implementasinya pada modul ajar materi luas permukaan bangun ruang. Penelitian ini bertujuan untuk: (1) mendeskripsikan proses pembuatan bangunan pura di Kecamatan Way Panji, Kabupaten Lampung Selatan, serta aktivitas fundamental matematis yang terkandung di dalamnya; (2) mendeskripsikan bagian-bagian arsitektural pura beserta aktivitas matematis yang menyertainya; dan (3) mengembangkan modul ajar matematika dengan konteks budaya lokal menggunakan pendekatan Pendidikan Matematika Realistik (PMR) untuk materi bangun ruang kelas VII SMP dan mengkaji bagaimana modul tersebut dapat mendukung pengembangan kemampuan pemecahan masalah siswa.

Penelitian ini merupakan penelitian kualitatif. Subjek dalam penelitian ini adalah dua orang pengusaha pembuatan pura di Kecamatan Way Panji, Kabupaten Lampung Selatan. Objek pada penelitian ini adalah (1) filosofi dan proses pembuatan pura di Way Panji dan (2) bagian-bagian pura serta maknanya. Data dikumpulkan melalui wawancara, dokumentasi, dan observasi. Data selanjutnya dianalisis dengan melakukan (1) reduksi data, (2) penyajian data, dan (3) penarikan kesimpulan.

Proses pembuatan bangunan pura dimulai dari upacara matur piuning, kemudian masuk ke tahap perencanaan, setelah itu adalah ke pembangunan pondasi sampai dengan selesai. Bangunan pura memiliki tiga bagian yaitu Nista Mandala, Madya Mandala, dan Utama Mandala. Aktivitas matematis yang terkandung dalam proses pembuatan bangunan pura dan bagian-bagian dari pura di Kecamatan Way Panji, Kabupaten Lampung Selatan, yaitu: (1) *counting*: pada perhitungan banyak karyawan, banyak bagian-bagian pura, banyak pelanggan, (2) *locating*: pada bagian-bagian pura, (3) *measuring*: perhitungan dan alokasi dana, perhitungan rata-rata penghasilan, (4) *designing*: pada desain arsitektur, keseimbangan estetika, (5) *playing*: pada pemasaran pura, pembagian tugas tenaga kerja, dan (6) *explaining*: pada makna dan fungsi dari bangunan Pura.

Penelitian ini menghasilkan modul ajar yang menggunakan konteks pura untuk pembelajaran materi bangun ruang, khususnya luas permukaan balok, limas, dan tabung. Modul ini dirancang dengan pendekatan Pendidikan Matematika Realistik (PMR), di mana siswa diajak untuk menyelesaikan masalah nyata terkait bangunan pura, seperti menghitung luas permukaan atap pura yang berbentuk limas dan biaya penggantian kain pada tiang pura.

Kata kunci: Etnomatematika, Pura, Pendekatan Pendidikan Matematika Realistik, kemampuan pemecahan masalah, Bangun Ruang.

ABSTRACT

Selly Lovilla Santi. 211414021. 2025. Ethnomathematics Study on Temple Buildings Mrajan and Making Teaching Modules for Spatial Building Materials. Thesis. Mathematics Education Study Program, Department of Mathematics Education and Natural Sciences, Faculty of Teacher Training and Education, Sanata Dharma University, Yogyakarta.

The focus of this research is an ethnomathematical study of the Mrajan Temple building and its implementation in the teaching module for the surface area of spatial structures. This research aims to: (1) describe the process of building a temple in Way Panji District, South Lampung Regency, as well as the fundamental mathematical activities contained therein; (2) describe the architectural parts of the temple along with the accompanying mathematical activities; and (3) develop a mathematics teaching module with a local cultural context using the Realistic Mathematics Education (PMR) approach for spatial structures for grade VII junior high school and examine how the module can support the development of students' problem-solving abilities.

This study is a qualitative study. The subjects in this study were two temple-making entrepreneurs in Way Panji District, South Lampung Regency. The objects of this study were (1) the philosophy and process of building a temple in Way Panji and (2) the parts of the temple and their meaning. Data were collected through interviews, documentation, and observation. The data were then analyzed by conducting (1) data reduction, (2) data presentation, and (3) drawing conclusions.

The process of building a temple begins with the matur piuning ceremony, then enters the planning stage, after that is the construction of the foundation until completion. The temple building has three parts, namely Nista Mandala, Madya Mandala, and Utama Mandala. The mathematical activities contained in the process of building a temple and parts of the temple in Way Panji District, South Lampung Regency, are: (1) counting: in calculating the number of employees, the number of parts of the temple, the number of customers, (2) locating: in parts of the temple, (3) measuring: calculation and allocation of funds, calculation of average income, (4) designing: in architectural design, aesthetic balance, (5) playing: in marketing the temple, division of labor tasks, and (6) explaining: in the meaning and function of the temple building.

This research produces a teaching module that uses the context of the temple for learning about spatial construction materials, especially the surface area of cuboids, pyramids, and cylinders. This module is designed with a Realistic Mathematics Education (RME) approach, where students are invited to solve real problems related to temple buildings, such as calculating the surface area of a pyramid-shaped temple roof and the cost of replacing cloth on a temple pillar.

Keywords: Ethnomathematics, Temple, Realistic Mathematics Education Approach, Problem Solving Ability, Spatial Structure.