

## ABSTRAK

**Margareta Retno Dwi Purwaningsih. 2019. Kajian Etnomatematika Terkait Aktivitas Pembuatan Kerajinan Pahat Batu di Dusun Sidoharjo, Desa Tamanagung, Kecamatan Muntilan, Kabupaten Magelang, Jawa Tengah dan Implementasinya Dalam Pembelajaran Matematika. Skripsi. Program Studi Pendidikan Matematika, Jurusan Pendidikan Matematika dan Ilmu Pengetahuan Alam, Fakultas Keguruan dan Ilmu Pendidikan Matematika, Universitas Sanata Dharma.**

Tujuan dari penelitian ini untuk mengetahui aspek historis, aspek filosofis pada kegiatan pahat batu di Sidoharjo, Tamanagung, Muntilan, untuk mengetahui aspek fundamental matematis menurut Bishop pada kegiatan pahat batu dan implementasinya dalam pembelajaran matematika sebagai permasalahan kontekstual.

Jenis penelitian ini adalah penelitian deskriptif kualitatif dengan mengambil narasumber penelitian terdiri dari perintis kegiatan pahat batu, pemahat batu, pengelola sanggar, pengusaha batu dan pedagang kerajinan pahat batu. Metode pengumpulan data yang digunakan adalah observasi, wawancara dan dokumentasi, dimana peneliti menjadi instrumen utama.

Hasil penelitian menunjukkan bahwa awal mulanya kegiatan pahat batu berawal dari keluarga Salim Joyo Pawiro bersaudara yang berprofesi sebagai *jlagra*. Kemudian bakat dan ketrampilannya diwariskan terus menerus kepada generasinya sehingga menghasilkan barang-barang kerajinan yang mempunyai nilai seni tinggi sampai saat ini. Makna lain dibalik kegiatan pahat batu (aspek filosofis) diantaranya kegiatan pahat batu dijadikan sarana untuk melestarikan kebudayaan leluhur dengan berpegang teguh kepada nilai-nilai kepercayaan setempat dan juga sebagai wujud ungkapan syukur, masyarakat menggelar Sapanan Merti Dusun. Aspek matematis pada kegiatan pahat batu menurut Bishop diantaranya; a) *Counting* meliputi perkiraan (*approximation*) harga bahan baku, harga jual patung, penentuan upah pegawai, ketepatan (*accuracy*), perhitungan menggunakan jari tangan (*finger and body counting*) dan menentukan banyaknya pegawai, b) *Locating* meliputi jarak (*distances*), lokasi lingkungan (*enviromental location*), penggunaan garis lurus dan garis lengkung (*straight and curved lines*), bentuk melingkar (*circle*) ataupun elips (*ellips*), pembagian lahan untuk proses produksi, c) *Measuring* meliputi kualitas (*qualities*), perkiraan (*estimation*) waktu (*time*), memaksimalkan luasan (*area*) atau volume (*volume*), d) *Designing* meliputi desain (*design*), bentuk (*shapes*), ukuran besar (*large*), kecilnya (*small*), proporsi (*proportion*), perbandingan (*ratio*), pembesaran skala (*scale-model enlargements*), simetri (*simetris*), dan nilai seni/keindahan pada patung (*aesthetics*), e) *Playing* meliputi prediksi/berspekulasi (*prediction*), melakukan rencana (*plans strategies*), model (*modelling*) dan f) *Explaining* meliputi penjelasan (*explanation*) dan simbol (*symbol*) makna tertentu. Adapun implementasinya dalam pembelajaran matematika digunakan sebagai pembuatan permasalahan kontekstual pada tingkat SMP meliputi materi; Operasi Hitung Bilangan Bulat dan Pecahan, Persamaan dan Pertidaksamaan Linear Satu Variabel, Perbandingan, Aritmetika Sosial, Pola Barisan, Luas Permukaan dan Volume Bangun Ruang Sisi Datar dan Volume Bangun Ruang Sisi Lengkung.

**Kata Kunci** : Aspek Matematis, Aspek Filosofis, Etnomatematika, Seni, Kegiatan Pahat Batu

## ABSTRACT

**Margareta Retno Dwi Purwaningsih. 2019. *Ethnomathematics Study Related to The Activity of Creating Stone Carving Crafts in Sidoharjo, Tamanagung Village, Muntilan District, Magelang Regency, Central Java and Its Implementation in Mathematics Learning. Undergraduate Thesis. Mathematics Education Study Program, Department of Mathematics and Science Education, Faculty of Teacher Training and Education, Sanata Dharma University.***

*The purpose of this study was to find out the historical aspects, philosophical aspects of stone carving activities in Sidoharjo, Tamanagung, Muntilan, to find out the fundamental mathematical aspects according to Bishop in stone carving activities and their implementation in mathematics learning as a contextual problem.*

*The type of this research was a qualitative descriptive study by taking research resources persons consisting of pioneers of stone carving activities, stone carvers, managers of studios, stone entrepreneurs and traders of stone carving crafts. The data collection methods were observations, interviews and documentation in which the researcher acted as the main instrument.*

*The results of the study showed that the beginning of the stone carving activities originated from the family of Salim Joyo Pawiro brothers who worked as jlagra. Then his talents and skills were inherited continuously to his generations to produce handicrafts which have high artistic value up till now. Other meanings behind the stone carving activities (philosophical aspects) including stone carving activities that were used as a mean to preserve ancestral culture by adhering to local belief values and a form of gratitude expression by holding Saparan Merti Dusun. The mathematical aspects of the stone carving activities according to Bishop were (a) Counting: Estimating (approximation) of raw material prices, selling prices of statues, determining employee wages, accuracy, calculations using fingers and body counting and determining the number of employees, (b) Locating: Distance (distances), environmental location (enviromental location), the use of straight lines and curved lines (straight and curved lines), circular shapes (circle) or ellipses (ellipses), division of land for production processes, (c) Measuring: quality (qualities), estimate (estimation) time (time), maximize area (area) or volume (volume), (d) Designing: design (design), shapes (shapes), large (large), small (small), proportion, comparison (scale), scale-model enlargements, symmetry (symmetry), and artistic value / aesthetics, (e) Playing: Prediction, making plans (plans strategies), models ( modeling), and (f) Explaining: Explanation (explanation) and symbols (symbols) of certain meanings. In conclusion, the implementation in mathematics learning process is used to create contextual problems in junior high school level materials including algebra, social arithmetic, area and circumference of squares, number sequence patterns, and geometry.*

**Key words :** *Mathematical Aspects, Philosophical Aspects, Ethnomatematics, Art, Craft Carving Stone*