

Unraveling Ethnomathematics in Oyster Farming for K-12 Mathematics

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Abstract

Purpose – To determine the sociocultural characteristics and unravel the ethnomathematics in *Panaeaba* or oyster farming of the fourteen *Manugtaeaba* (oyster farmer) purposively chosen as informants and paired the mathematical concepts and principles found in *Panaeaba* to K12 Mathematics.

Method – This focused ethnographic study was generally governed by the epistemological umbrella of constructionism and symbolic interactionism as its interpretive approach for the thematic, ethnomathematical and document analyses. Data gathered through ethnographic interview and observation and collection of artifacts.

Findings – Ethnomathematics along Numbers and Number Sense, Algebra, Measurement, and Geometry were used in *Panaeaba*. The Ethnomathematical Knowledge, Practices and Skills (EKPS) on numbers and number sense used by *Manugtaeaba* were rational numbers, counting, equality and inequality, estimation, fundamental, ratio and proportion. For EKPS along algebra includes the parabola, relations, and functions in line with size or area of oyster shell, density of spat collection, buoyancy, and navigational speed. Also, the EKPS along measurement includes how farmers used standard and alternative measurement on area, volume, distance, height, length, and time in oyster farming. The EKPS along geometry includes angles, and parallelism. These EKPS are influenced by the sociocultural characteristics in terms of *Manugtaeaba*'s beliefs and attitude towards family and work.

Significance – From the unraveled EKPS in *Panaeaba*, the researcher came up with the matrix of the mathematical concepts and principles and K-12 learning competencies known as TALAMATH. From this TALAMATH (Teaching A Localized and Actualized Mathematics), lesson exemplars that can be used in the teaching of mathematics and will serve as guide for the development of instructional materials contextualized in oyster farming were made.

Keywords: Contextualization, Ethnomathematics, K-12 Mathematics, Oyster farming.