ETHNOMATHEMATICAL STUDIES ON THE HERITAGE OF THE THARUS

A Dissertation

Submitted to the Tribhuvan University Faculty of Education in Partial Fulfillment of

the Requirement for Master of Philosophy in Education

By

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ACCEPTANCE AND RECOMMENDATION

The undersigned certify that we have read the thesis entitled “Ethnomathematcal Studies on the Heritage of the Tharus” submitted by Mr. Indra Prasad Adhikari and have approved and recommended to Faculty of Education, Tribhuvan University for acceptance in partial fulfillment of the requirements for the degree of Master of Philosophy in Education with specialization in developmental studies.

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SUPERVISOR'S DECLARATION

This is to certify that Mr. Indra Prasad Adhikari, the student of academic Year 2007- 08 with T. U. registration number 2857- 85 has completed his M. Phil. thesis under my supervision for the period prescribed by the rule and regulation of Tribhuvan University. The Dissertation entitled "*ethnomathematcal studies on the heritage of the tharus*" embodies the results of the study conducted during the period 2008 A.D. under the M. Phil. Program of the Faculty of Education Tribhuan University. I recommend and forward that his thesis be submitted for the evaluation for awarding the degree of Master of Philosophy in Education.

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Thesis supervisor

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ABSTRACT

The present study is entitled ‘ETHNOMATHEMATICAL STUDIES ON THE HERITAGE OF THE THARU’. It is a fresh attempt made at searching Tharus' mathematical knowledge, ideas and concepts with respect to their practical work basis. This study is carried on cultural, historical, pedagogical and mathematical perspective. It emphasizes the kind of mathematical process that are involved, in basketry, clay work, dancing and house painting. It also links those processes with mathematics curriculum. The researcher adopted the qualitative research methods to unveil local ideas of mathematics to interpret Tharus’ mathematical concepts. Seven informants were selected purposively in which three are women and four are men. For data colletion, the reshercher used in-depth interviews; participants' observation and photos of Tharus' goods used and made which are linked up with their society. All the possible information was recorded with the help of field notes and photos.

The major findings of this study on basketry, clay, dancing, and house painting works are: i) while making baskets Tharus construct geometrical shape such as spherical, globular, height globular, truncated globular, cylindrical, cubical, and combined of these shapes. They also make triangular, hexagonal, check, wrap, square, parallel and coil patterns. For this they use estimation, counting, fingers measuring, and making equal size of weft, the rapping equal number of weft, and taking equal amount of coil material. ii) For clay work, they make rectangular, cubical, truncated cubical, half globular, elliptical, basin and parallelepiped shapes. In this work, they used estimation, making same size of coil material, counting coil numbers, measuring inner diameter, diagonal, sides and moulding. iii) With regard to dancing they use the

concept of arrangement of row, column, and circle, center of circle, motion, and repetition of action, rotation, reflection, reduction and enlargement. The estimation, counting, walking step counting, seeing others' actions guessing are used while dancing iv) For house painting they use rectangle, square, parallel line, triangular pattern, ratio and proportion, position, location, gap between figure, flower, zoomorphic, and anthropomorphic figures. For this they use counting, measuring, estimating, guessing, and trial and error.

The dissertation is divided into six chapters. The Chapter 1 includes socio-cultural, economical and educational background of Tharus in Dang, statement of the problem, rationale of the study and research question. The Chapter 2 is the literature review of ethnomathematical ideas, history, philosophy, pedagogy and technology. The Chapter 3 includes methodology, its design and strategies. The Chapter 4 deals with the mathematical process and ideas that are analyzed with respect to practical activities. The Chapter 5 comprises mathematizing Thars' mathematics. The Chapter 6 discusses educational implication, finding, and suggestions for further research, glossary, reference and appendixes.

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