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Cultural Phenomenon is the measure problem of Ethnic Students in learning mathematic

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Abstract

The aim of the study was to identify the measure language difficulties in mathematics of the students in basic level class room and relation between language and learning mathematics. The finding of the study indicates that the student's language difficulties in two categories the first one are sematic difficulties. These difficulties include that the student suffering mathematics due to specific terms. The terms having different meaning in other Description in the theorem properties and the use of notation. Another difficulty are synthetic difficulties; this difficulty is use of language; mathematics need to be explained with the help of language. Every language has its specific formal structure and pattern which is called the synthetic language. The study has a hypothesis that the ethnic students have great discontinuity between their everyday life and school activities as the get practical Knowledge in home and theoretical knowledge at school. This study tries to find out the problem faced by the ethnic student in learning mathematics to be making co-operative class environment and to be serious thought while making decision about curriculum and teaching learning process.

Key words: - Ethnic, cultural difference, sematic, synthetic, social- economics.

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Introduction

Education is the process of development from infancy to maturity. It includes the effect of everything which influences human personality. The communities line in the present will guide the activities of the future. Therefore, the education is continuous reorganization and integration of activities and experience. Thus, the education brings changes in the behavior and its main function is to remain more transmission of enrichment of culture and it will fall shorts of its role in dynamic society. It can explore new horizons and brings the vision of the future in to the living reality.

Education is a dynamic force in the life of individual influencing his physical and mental, emotional, social and ethical development. According to the definition formulated by a group of export for the dictionary of education, education is ``the aggregate of all process by which a person develops ability, attitudes and other behavior of practical value in the society in which he lives" the social process by which people are subjected to the influence of a selected and controlled environment, so they obtained the social competence and optimum individual development. This implies that

education as a product is the result of interacting forces including individual insight, intellect, interest and experience as these are utilized through educational procedure towards the modification of individual purpose, knowledge, habit, attitudes and ethnical understanding.

Any organized system of education must meet the real situation of community. It must be in accordance with physical and social need of community. A child is not to be educated in vacuum. He is a member of community in which he lives and education must help him to become a useful member of the society. Therefor education is a constructive agency for improving our society and nation Aryal (1970) has stated " Education is the greatest force for building up a country economically, socially, culturally ". The challenges have to be accepted by educationists who are the real builder for the social welfare for all.

On the other hand, mathematics has a closely and friendly relation with every phase of human life. Mathematics has been developed for fulfilling the daily life problem of man like counting, calculating and remembering. Now a day, mathematics has an important role for the development of science and technology. Mathematics has abstract term, symbols, postulate, theorem and axioms. Its basic elements are logic, institution analysis construction and generality, Mathematics is one of the important subjects in school education. In all major (normal life and official work) and minor (household works) activities of life such as selling, purchasing in market, arranging party, joining profession, celebrating marriage, etc. mathematical considerations are uppermost in human mind. In the study of history, political science, geography, economics, commerce etc. mathematical concepts are applied. It is not so easy to say when and from where it has started but one can see that mathematics as an essential part of human civilization from the time immemorial. It is created to fulfill the daily needs of human life and thus the nature and the structure of mathematics was built with development of human civilization in Roman, Greek, Arabian and Hindu and all Civilizations great mathematicians like Pythagoras, Euclid, Plato, Archimedes, Ptolemy, Pappas, Newton, and Gauss contributed to the development of mathematics likewise the ancient civilization like Babylonian, Egyptians contributed for its development.

Now learning is affected by the cultural phenomenon. The different ethnic groups have their own culture that causes the difficulty in learning.

In our educational institution many children from different cultural background come to acquire education. A major goal of multicultural education as students from diverse racial ethnic and social classes and group will experience educational equality.

Culture generally refers to patterns of human activity and symbolic structure. There are many different definitions of cultural and each of them reflects a different theoretical basis for understanding or criteria for evaluating human activities. The culture as a term includes technology, art, science as well as moral system and characteristics habits of the selected intelligent (Achary, 2013) studies in mathematics education(p-92).

The cultural difference between home and school can influence children's learning. There are so many castes in society; they have difference culture perspective and individual difference. The student who has participated in class-room, they have not same language, culture, religion and belief. Due to this divers students seem to have different achievements. Generally, teaching language at Nepalese schools is in Nepali and English, but those students whose have own martial language, it is the problem to know them. They cannot understand properly, what he taught in class. Therefore, language is one of the measure problem in learning mathematics.

This is not a broad study; there is not involve human resource for the study. This study was conducted as a case study approach. This study was concerned about the difficulties of language diverse student in learning mathematics of grade 8. However, in Nepal no substantial study has been done yet in the area of mathematics. So this research tried to investigate the difficulties learning faced by the language difference school students while adopting their learning mathematics. With reference to this context, it would be worthwhile to study the problem of language difference student in this subject to explore difficulty. It would provide the appropriate information about the difficulty of such students and help to give proper treatment to them in teaching learning process in mathematics, implementation of curriculum, types of modification made in present educational policy, integrating class of student concentrate the government sight over the gape of culture of ethnic student manage their education and also open the door further research in the area of learning problems of language diverse students.

Literature review

The effect of culture diverse need to empower school culture are essential building block for enacting relevant teaching practices for learning. In the socio-cultural present and culturally relevant ethnically, teaching is basic need to teaching learning activities. Teaching materials helps learning to wake efficient use of the resources in order to facilitate self-discovery (Tolmn 1993) said that teaching learning materials and aids includes any materials programs or machine that can be used to help teacher present or explain his/her lesson better.

According to the Laurentian (2002) the difficulties of learning mathematics can be summarized in such a way that (i) in complete knowledge of number facts (ii) computational weakness such as making errors by misread of sign or cry numbers incorrectly or may not incompletely understanding of the language of mathematics.

Ogbu(2000) delineates about the cultural difference, cultural discontinuity theory, that deals with the problems in children's learning caused by the difference and discontinuity between the culture of home and school . Those children whose homes cultures are much similar to the culture of school can cope easily with the system that may result better learning achievement. Similarly, the children with unmatched or dissimilar at home culture with school culture do not have enough attention in their

learning and do not get much recognition of their cultures and they have to work achieving learning outcomes compared to the children with well-matched cultures.

Salving (1987) (cited in Andersen,2009) reviewed so different studies that compare the achievement of the student taught in comparatively learning classroom to the achievement of the student taught in traditionally organized classroom. He reported that 89% of the student in 50 is different student studies earned higher scores on achievement test when they had participated in cooperative learning. Cooperative learning helps to improve racial reaction in school.

Adhikari (2006) carried out the study entitled " culture discontinuity and learning difficulties in mathematics″. In his study; the student who have same culture at home and school the also felt mathematics as difficult subject. In case of Dalit students learning mathematics is challenging and more difficulty process. On the basis of overall study and information provided by students that they do not have same culture in home and school, there is discontinuity between home culture and school culture. There is discontinuity between traditional measurement and modern measurement system. These gaps create influencing factors in learning mathematics such as interpersonal relation is not better using vocabulary is not standard. There is discriminating behavior between son and daughter.

Niure(2014) carried out a study entitled " Indigenous knowledge of tharu's related to education practices implication in formal schooling″. His aim was to study the teaching and learning strategies of tharu and their implication in formal schooling. He raised the research question; what are the knowledge tharu has been using for a long time to run their life successfully?

Tharus have their own teaching and learning strategies that were used from generation to generation. They generally used storytelling, questions, demonstration, discussion, and deductive method by considering children's level, nature of content to teach the diverse indigenous knowledge, skills and values vote difference knowledge skills and values from the real life performance with their active involvement.

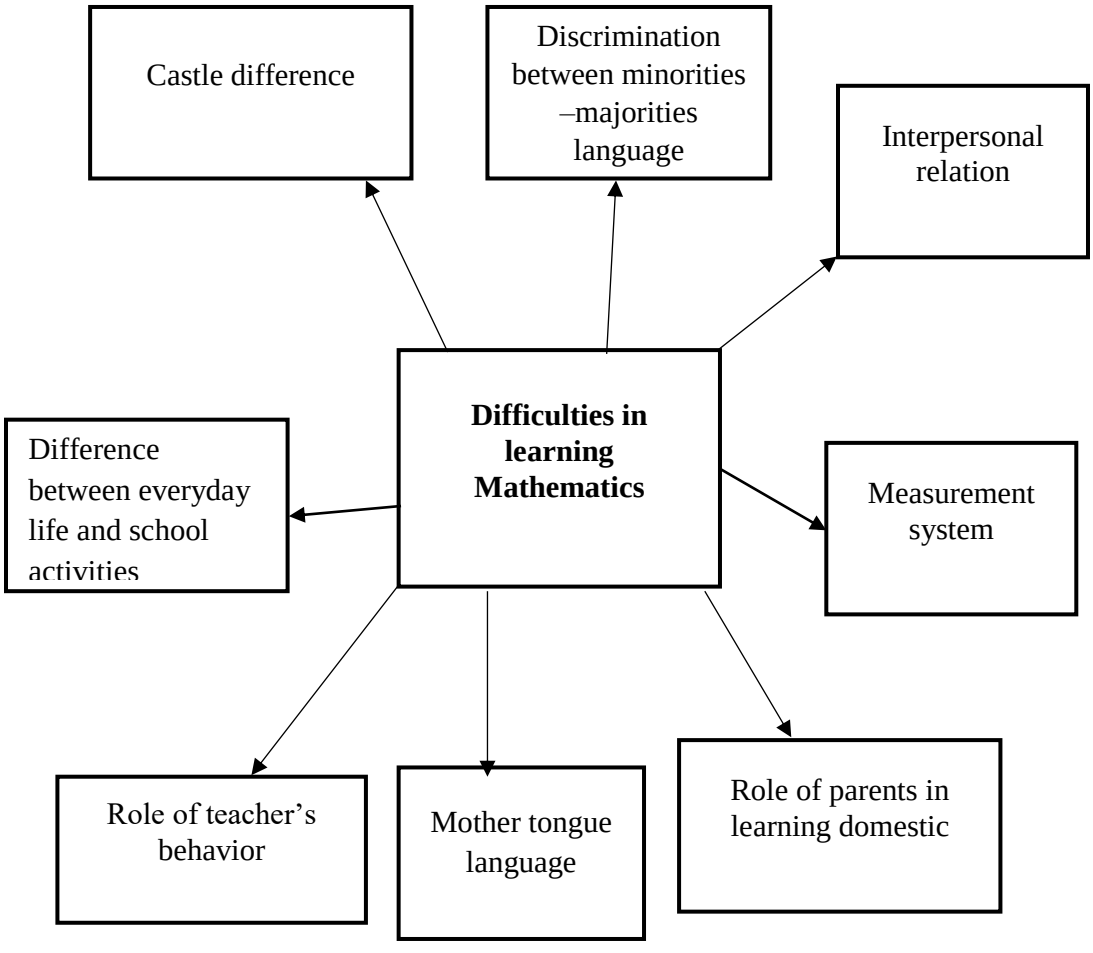
Majhi (2012), carried out a research on a study of ethno mathematical concept practiced by their community in Morang district. He started this research with the objectives to identify ethnographic mathematical concepts to construct artifacts in tharu community.

Varuhese (2009), carried out a research entitled " language difficulties in mathematics courses for student from non-English speaking backgrounds in the transition from secondary to tertiary education " presented some language difficulties in mathematics course. This research investigated the role of language in tertiary mathematics and difficulties faced by second language learners in facing with the specialized vocabulary and discourse features of mathematics. A mixed method interpretive case study methodology was used to prove two components of language, that are of importance in learning tertiary mathematics namely reading and writing as a result of collected findings from three parts. This study has identified several language difficulties experienced by tertiary non-English speaking background student of mathematics and the effect of language

background on the nature and the level of difficulty expedited. Some of the language difficulties presented in the study are (i) Mathematical vocabulary words such as sum, product, isosceles, quadrilateral, numerator or denominator, parallel or perpendicular and reciprocal clearly posed difficulties for many students (ii) it was seen that the student had vast difficulty in producing a written description of a composter geometric figure (iii) a significant difference across language groups was observed through the study.

Conceptual Framework

This research tries to identify difficulties in learning mathematics of language diverse student at secondary level 8,9.
The following frame work in difficulties in learning mathematics is purposed for this research.
Fig: Conceptual frame work of difficulties in learning mathematics



This conceptual framework described about the language difference children that there was great discontinuity between their everyday lives and school activities as they get practical knowledge in

home and theoretical knowledge at school. The castle difference, role of parents is in learning in domestic work. Interpersonal relation role of teacher's behavior in learning mathematics misunderstanding between mother tongue, lack of concept about modern measurement played vital role in learning mathematics.

Methodology

The researchers study was related to learning difficulty in mathematics of language difference school student. The site selection was also a very important task for the work to find the appropriate information related to 'Rai' community in school because the researchers need Rai student who are studying the school the school at grade 8 grade. Obtaining easy access, establishing immediate report with information and gathering data directly related to research where the main criteria for selecting setting.

As the Rai tribes mainly spread in the eastern parts of Nepal like Morang, Sunsari, Bhojpure, Udhayapure, Dhankuta, Terhathum, Illam, panchather, Taplejung etc. district of Nepal. The researcher has selected the Dhankuta district for their study. Rai are residing in different parts of the Dhankuta district. The researchers have chosen a Tribeni Secondary schppl district as a convincing reason for selecting the school. The school has the classes from one to ten including 60 % Rai students are enrolled.

This was the quantitative research, so the researchers have taken 18 Rai students among 30 students and the researcher selected only four Rai student who were low achievers of grade eight in final examination in mathematics who give appropriate and actual information.

The study has got the information during the research through using the tools, observation, interviews, fields notes and the key children diary, the rationale behind the discussion of the different castes is to find out their ways/ difficulties of learning mathematics. The study has adopted the case study of four Rai student, in-depth interviewed participants as well as non-participant observation to get the data for the research.

The key children diary includes the name, address, parent's occupation, his school attendance participation etc. It helped in finding of student's status on classroom learning when the researcher researches in the school he uses key children dairy in data collection process.

A field note includes the huge or thick data obtained by using the interview schedule, observation format. It used in analysis of data the collected data was categorized according to the category of respondent. The categories were students, mathematics teacher and parents of the students.

Analysis and interpretation:

It is totally the description of the four key-student as what and how they act and interact in order to understand their learning and notice their learning in mathematics in the school. The researcher arranged the information and analysis by using the cultural discontinuity theory what difficulties on learning mathematics of language diverse in mathematics classroom. The detail of analysis of the data collected is to get actual conclusion of the research as well expressed below.

Difficulties in learning mathematics of language diverse classroom

Whether the mathematics is learned and taught in a situation of language diversity, student expressed their difficulties in different ways. Some important parts of the students were gathered as their major difficulties as follows.

Vocabulary Difficulties

During the interaction, interview, students have shown the vocabulary matter in mathematics classroom as their difficulties. Mathematical terms and vocabularies that have special meanings were expended by the student as of their difficulties in the classroom. In the interview students were asked the vocabulary problem they face during the class time, most of the students answered as they do not understand the context taught due to some specific terms or words. Mathematics is difficult that lies in the form of verb as well. Some time we can see the use of complex form of the verbs in the book as well as the question papers. In such cases: students have to suffer to know the actual meaning of the sentences. Use of the propositions cerates difficulties to the students. Prepositions such as in, an, on, into, with, before, after, etc. plays important role of the student.

Obstacles in teaching Multilingual class room

The teacher's ability and skills for classroom management have great importance in the multiethnic classroom problem in language, gender, culture sitting adjustment cultural beliefs and perceptions. Racial discrimination and class conflicts among students are some of the issues that should be taken under-duration inside a culturally diverse classroom. Respecting and addressing of cultural issues in education is to provide equal opportunity to the students from various cultural groups. If the language that is spoken in mathematical class is ambiguous and different from that of the language of the students, the exact idea of the subject matter cannot be understood from the cross-cultural communications and the multicultural values are very essential. Therefore, it is essential to design the class room pedagogy to address the problem of students from multi-mother tongue background in a question regarding the obstacles on teaching mathematics in multi-culture classroom.

Relation between language and learning mathematics in classroom.

The notion of mathematical learning and understanding, in value student's construction, deconstruction and reconstruction of their knowing through the proven of language participation,

social interaction and reconstruction of their local activities of the community. In this sense, mathematics is the study of patterns and relationship was learning by doing (Cob and Yakul 1996)

Construction of knowledge is inherently cultural and experimental the researcher has discussed about the language background and mathematics learning of key student which supports to explore the relationship of language and learning mathematics. Hence, by the relative discussion and observation indicates that there were no sufficient changes to teach students themselves. The teacher has a belief that students can learn from forced exposition and adequate drill and practice. Mostly the teacher uses lecture method for teaching mathematics. From above relatives, mathematics has mutual relation. Learning mathematics has affected by different language factor i.e. home environment, school environment, family socio- economic status, discrimination in home and school language etc. However, language and learning mathematics has inter-relationship.

This mathematics approach is presented as a language response to students needs by making connection between their language backgrounds and mathematics. This approach supports the view that mathematics is concerned as a language product which has developed as a result of various activities. The objectives of this perspective are to make the students become familiar of every language that is assumed to have mathematical response with valid contacts for a mathematical classroom. So, all of above relatives and views shows that language and learning mathematics has strong connection. Most of the language factors have shown as it causes difficulties in learning mathematics. So, it is clear that mathematics creates language and learning mathematics.

Cooperative learning in mathematics with relation between language and learning mathematics

Salvin (1987) as cited in Andemenn (2009) reviewed so different studies that compared the achievement of the student taught in cooperative learning classroom to the achievement of student taught in traditionally organized classroom. He reported that 89% of students out of 50 in different studies earned higher scores on achievement tests when they had participated in cooperative learning. Cooperative learning helps to improve racial reaction in school.

In the action research Andemen (2009) investigated the impact of cooperative learning on the engagement, participation and studies of her students. She also investigated the impact of cooperative learning up on her own teaching. She discovered that her students not only preferred to learned in cooperative groups but their levels of engagement and participation their attitude towards mathematics and their quality of work all improved greatly. From the case study of language diverse students, the researcher concluded that mathematical communication can play an important role in learning mathematics. Exchange of knowledge one another is the basis of cooperative learning strategies is the effective culturally response pedagogy in mathematics. When a student communicates mathematically students enhance their understanding of mathematics. Also, it is clear that the classroom teaching is not effective in fact become a while their teacher is not able to address

the multi- cultural and multilingual students. In the base of this fact, the problem also lies in the teacher's capacity to address the students from diverse lingual and culture background.

Students Encouragement and motivation in Multilanguage classroom

Motivation directs controls and clarifies the human behavior. Some students seem naturally enthusiastic about learning, not any need or expect their teachers to inspire challenges stimulate them.

Encouraging the student is one of the effective processes to make their standard better to encourage exposure. Children need to be encouraged to recognize and acknowledge their feeling both negative and positive. Reinforcement can spend up and better their further performance. The research focuses on the constructive guidelines to the students in the classroom for improvement that helps students learning as well as developing positive attitude and belief motivation is also one part of reinforcement. It is equally harmed if that is negative reinforcement.

Students are encouraged to help and share their problem. They are encouraged to as their problem. The researcher believed that poor group discussion and the cooperation between students can make them understand better and enhances effective classroom practice. The teachers let student's discussion and ask for difficulties among themselves.

Findings

From the above-mentioned literature method and analysis of the collected data by field observation, information and interviews the measure findings are explained in different headings as follows

1.Difficulties in learning mathematics of languages diverse classroom

The difficulties are found caused by language diverse classroom in learning mathematics are as follows:

i. The vocabulary related with mathematical term with the difficulties in learning mathematics
ii. Not being able to understand and use the meaning of mathematical operation while solving.
iii. Due to language diversity students are felt uneasy in programming the mathematical term.
iv. Unable to understand the short form used in mathematical problem solving.
v. Difficulties in teaching in multi-language classroom.

2. Relation languages and learning mathematics

It is found that the mathematics and languages are highly related with each other. Language is the medium of communication. And mathematics is related with the solution of every problem which is

not possible without having communication with people. It is also found that language has great impact in understanding the concept of mathematics.

Conclusion

Language diversity in mathematics education in mainly used expansion to discuss question around why students from different culture, ethnic, social-economic and linguistic groups perform differently in their school mathematics. Language of Mathematics is a basic tool of communication. Daily communication invokes the frequent use of mathematical concept and skills for understanding every discipline, mathematics is essential. There are different causes of difficult in learning mathematics of language diverse student at classroom. In this study, the researcher found vocabulary, misuses of the word problem, syntax of mathematics obstacles and difficulties in teaching in multi-language classroom, gender diversity in languages.

Language and learning mathematics are mutually related and cooperative learning is the most effective approach in teaching mathematics in languages diverse classroom. The study entitles "Learning Difficulties of student in language Diverse Classroom" has some educational implications as follow:

i. It is concentrated to identify difficulties in learning mathematics of language diverse student classroom.
ii. It explores the relation between language and learning mathematics.
iii. It is helpful for teacher, students, researchers, institutions, educationist and policy makers.
iv. It has enhanced cooperative learning in teaching mathematics and promote the students centered approach in classroom.
v. It helps equality and equity for the development of inclusive mathematic classroom.

Recommendation

According to the finding and conclusion provided by the study, the recommendations for further study can be presented as:

1. A similar study can be done for secondary level and another subject.
2. School may apply practical knowledge-based activities which can promote their previous experiences.
3. This study is done with limitation and particular area. The broad and general study may be done for overall Rai community.
4. Teacher may play a vital role in bridging the gap between the interpersonal relation among them and the Rai student. They may create an environment to understand their feelings and behaviors.

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