A RELATION BETWEEN HOME ENVIRONMENT AND MATHEMATICS ACHIEVEMENT

A THESIS BY

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CERTIFACATE

This is to certify that **Mr Netra Prasad Paudel** a student of academic year 2064/65 with campus Roll No. 262 Exam Roll No. 2140267 and T.U. Regd. No. has completed his thesis under my supervision for the period prescribed by the rule and regulation of Tribhuvan University, Nepal. The thesis entitled, **"A Relation Between Home Environment and Mathematics Achievement**" has been prepared based on the result of his investigation conducted during the period of 2013. I hereby recommend and forward that his thesis is submitted for the evaluation as the partial requirement award the degree of Master's of Education.

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BY

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Entitled

"A Relational Between Home Environment and Mathematics Achievement" has been approved in Partial Fulfillment of Requirement for the Master Degree of Education.

Committee for the Viva- Voce	**Signature**
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August, 2013 Netra Prasad Paudel

ABSTRACT

This study was intended to find **"A Relation Between Home Environment and Mathematics Achievement**" of the students studying at secondary level. It also intended to answer the following questions:

- Does the achievement affect the facilities provided at home?
- Does the achievement affect due to different family structures?
- Does parent's high expectations imply to their children's high mathematics achievement?

For the study, through the purposive sampling, 50 Janjati families and their children were chosen from Sankhuwasava district. The primary data were obtained by the survey form and questionnaires and the secondary data were obtained from the corresponding schools of the children. To analyze and interpretation of the data the researcher found following results:

- The availability of the facilities at home were not sufficient.
- The family structure does not affect the children's mathematics achievement.
- Most of the families were found medium sized.
- Family structure did not seem to have effects on mathematics achievement.
- Certainly, the parental expectations were depending upon the parents' education and social economic status of the family. Average family expected to support their children to get SLC level education.
- Parental expectation had positive relationship with the mathematics achievement of their children.

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Chapter I

INTRODUCTION

Background of the Study

The term “mathematics” is etymologically derived from an ancient Greek word “mathencian” which means “to learn”. This indicates that mathematics is taken as a process of learning and interpreting the natural phenomenon. Sidhu (1990) started “Mathematics is the numerical calculation related to human life & knowledge. It enables us to solve mathematical problem in our daily life, developmental discipline thought cultivating the habit of concentration & self reliance, prepare for technical job such as accounts, mathematics teaching, auditing, engineering etc & reasoning. So we take mathematics as a way of thinking, means of communication and tools of reflective thinking”.

History of mathematics tells us all civilizations have always been striven towards the development of mathematics, whatever its sources, mathematics has come down to present by two main stems of numbers & form. The first developed along with arithmetic and algebra and the second along with geometry (Bell, 1978). The concept of numbers and the process of counting developed so long before the time of recorded history that the manner of this development is largely conjectured. It is not difficult thought to imagine how it probably came about. It seems fair to argue that humans, even in most primitive times had some number sense at least to the extent of recognizing more or less when some objects were added to or taken a small group, for studies have shown that some animals process such a sense with the gradual evolution of society, simple counting become imperative.

A tribe had to know how many members it had and how many enemies, and a man found it was necessary to if his flock of sheep was decreasing in size.

Probably the earliest way of keeping a count was by some simple tally method, employing the principle of one-to-one corresponding (Eves, 1983).

Today's world cannot move and nobody can live without mathematics. People have been utilizing mathematics to solve the difficulties arisen due to natural calamities, political proposes, economic development planning, etc. Other social events can be perceived from the early history of mathematics of different civilizations. Mathematics is taken as the science of all sciences and art of all arts.

It is also the queen of science. Croft & Futter (1982) stated, "Knowledge of mathematics is indispensable to our daily life, counting objects, reading and writing numbers are tasks most people perform in their life. A strong background in mathematics is necessary for almost all technical careers in society. Competence in mathematics has been identified as a critical skill directly related to educational and occupational choice."

Mathematics has been given a priority in school level curriculum around the world including Nepal. The formal education of Nepal was started from Durbar School in Ashwin 27, 1910 B.S. established by Junga Bahadur Rana. Before the establishment of Durbar School, mathematics had not been any particular formal curriculum, but there might have so many mathematics practitioners. We see those mathematical features were used in many aspects of human behavior and social function. There was not any specific course at national level in both ancient and medieval period. During the Rana period after the establishment of Durbar School in 1910 B.S. by Junga Bahadur Rana, mathematics had been taught in school followed by Indian curriculum prescribed by the colonial British Government. This school was at first opened especially for royal family only. At that time Basic Arithmetic at lower level and Algebra and Geometry at upper level were taught. After the establishment

of SLC board in 1934 AD the first curriculum was introduced for secondary level in which mathematics was divided into compulsory and optional part and out 800 full marks, 100 marks was give for each part.

The higher education of mathematics in Nepal was started from Trichandra College in 1918 AD. At that time, there were two facilities, namely Humanities and Social Sciences, Science & Technology in which mathematics was included at intermediate or pre-bachelor level. A mathematics class at bachelor level was started in 1932 AD (Humanities) and 1942 AD (Science) respectively at the same college.

After the rise of democracy in1951 AD people felt the need of educational development for national development. In that year, mathematics was optional for women & compulsory for men in Secondary level. Nepal Educational System Plan (NESP, 2028 BS) introduced national level curriculum at first in which mathematics became core curriculum. Next, Nepal Education Commission (NEC, 2049) had implemented. It also focused mathematics as major subject in its curriculum. Now mathematics is compulsory subject through the grade one to ten and extra optional subject for last two years of secondary education. Holistically, in Nepalese context, mathematics is charged as complex subject and a cause of failure of student in school education. The high achievement in mathematics is a social prestige and a door for higher education but in the present context, such opportunity has been available for students of all cultural groups.

There are several factors which affect student's mathematics achievement. These factors may be related to the school environment or home environment or even individual differences. The home is considered as the first school for children. They learn preliminary social requisites and acquire primary education foundations in their home before they go to school. The home

environment plays a decent role in social and educational development of a child.

The educational development of a child depends not only on part would be played by teachers but also on the home environment like family structure, facilities provided at home, parents awareness, interest, expectation and knowledge about handling & guiding their children. In other words a great deal of children's total development, including their academic achievement level, is the combined product of home environment and school inputs.

Supporting this view Malakar (1989) adds :

"The best way that the parents can contribute towards the continued progress in study of their children is to provide them with a secure and happy home and make them feel that they are loved and well taken care of. And at the same time they must make available almost unlimited facilities for free reading from well graded children's books and magazines and provide opportunities for a great variety of games and plays in which they can exercise their physical & cognitive powers & get a balanced sense of emotional satisfaction. Time to study, encouragement to study & material to study are necessary conditions that can accelerate progress of the learning for the children".

The quality of education that a student receives depends not only upon the relevance & appropriateness of the curriculum, text books and school activities but is also will be affected by attitudes & behavior of his parents towards his education. Parent's positive attitude towards various aspects of education and their capacity to provide necessary facilities for the children's learning are in fact, two very important factors in ensuring quality education (CERID, 1985). So, the responsibility of parents will make necessary facilities available for their children to study at home.

In this extent, Detjen and Detjen expressed, "*Parents will be impressed with the necessity of showing an interest in what the child is doing and treating his efforts with respect they will provide the child with a proper place to study where he is free from interruption".* They will arrange a schedule for study with each child help him stick to it by not making conflicting demands on his time and check to see that he gets his work done. Parents at home always will participate with the child in locality materials, making experiments, sharing knowledge and discussing ideas but they will never do the work for the child.

From the above statements of scholars it is clear that the relationship between home environment and mathematics achievement. There are many elements to effect home environment so that the researcher raised the statement of the problems on the topic "A Relation Between Home Environment and Mathematics Achievement of Yakkha and Magar Students in Sankhuwasava District".

Statement of the Problem

Every child spends more time at home than at school. The children can learn more at home than at school. So, it is natural to think about the support of the home environment for the children's learning outcomes. The home environment would play an important role in children's mental as well as physical development. The world researching and scholars have pointed out that the home environment has effects on children's achievement. In case of our country, some research is done yet about the relationship between home environment and child's mathematics achievement.

This study was mainly concerned with the effects of home environment in mathematics achievement of students at secondary level. In general it seems that if the home environment is supportive for learning then the achievement

would be better. This study attempted to seek the answer of the following questions:

- What is the relationship between facilities provided at home and mathematics achievement of the Yakkha and Magar student in Sankhuwasava district?
- Did the family structure effect the mathematics achievement of Yakkha and Magar in Sankhuwasava district?
- What is the effect of home environment to study mathematics of Yakkha and Magar in Sankhuwasava district?
- What was the role of the parent to make academic environment to their children of Yakkha and Magar student Sankhuwasava district?

Objectives of the Study

The study aims to test the influence of different home environment on children's mathematics achievement. This study also intended to analyze the relationship between family structure & children's learning. The students reflect the family's nature, culture, civilization and its status. So the effect of good family environment can be seen in their learning behavior too. Children are generally guided by the home environment and parents in their education and socialization. Different beliefs and environment of a family may ultimately influence the children's way of learning and doing mathematics. Of course, a home environment is comprised of parent's beliefs towards education and towards their children and through this study the researcher tried to compare the expectations of the parents towards their children's mathematics learning and the children's mathematics achievement. If the student aims to get the first position in his class he will probably stand in top five positions in his class but if he only wishes to pass the class then he may fail too. It means if the

expectation is higher than the motivation would be higher which may lead to the higher achievement. Similarly, if the parents expect their children to achieve higher academic result they would be provided with higher facilities, good counseling and so on. In such a case children would obviously do better in studies.

Objectives formulated for this study are:

- To find out the relationship between facilities provided at home and mathematics achievement of the Yakkha and Magar children in Sankhuwasava district.
- To find out the effect of family structure in the mathematics achievement of Yakkha and Magar students in Sankhuwasava district.
- To find out the effect of home environment to study mathematics of Yakkha and Magar students in Sankhuwasava district.
- To find out the role of the parents to make academic environment to their children of Yakkha and Magar students in Sankhuwasava district.

Significance of the Study

Many parents in Nepal are aware of their responsibilities towards the education of their children. They think that the schools and teachers are fully responsible for their children's education. Parents should not forget that the children go to school for six hours and they play at home about eighteen hours. It means that the children spend more time at home with family members where they get love, care and other facilities where they are more emotionally attached comparing to school family environment and school environment. So, to know the effect of the home environment, family relation and expectations on the children's learning outcomes is worthwhile. Because of the existing discrimination in caste system in Nepal. The Janjati are falling behind in

educational sector. So, this study would focus on the comparison of home environment of Janjati families and their children's mathematical achievement. This study fruitful in the following aspects:

- It would provide necessary information to create better home environment for learning to the such esthetic group
- The study would be help to know the impact of family structure on learning mathematics.
- This research would be helpful to find how parent's educational expectations help for the better achievement of their children.
- This study would provide information for concerned agencies and persons especially related to teaching learning mathematics.

Statement of the Hypothesis

This is a quantitative research to find the relation between home environment and mathematics achievement of their children. Thus, the researcher had set the statistical hypothesis for testing the research hypothesis. The researcher tested the following hypotheses in the course of this study

Null Hypothesis

- There is no significant correlation between the facilities provided at home and children's mathematics achievement.
- There is no significant correlation between the family structure and children's mathematics achievement.
- There is no significant correlation between the parent's educational expectations and children's mathematics achievement.

Statistical Hypothesis

- H_0 : r, = 0 (null Hypothesis)

  H_1: $r_1 \neq 0$ (alternative Hypothesis)

  Where, r_1 is the corresponding correlation between facilities at home & children's mathematics achievement.

- H_0 : $r_2 = 0$ (null hypothesis)

  H_1: $r_2 \neq 0$ (alternative hypothesis)

  Where, r_2 is the corresponding correlation between the family structure and children's mathematics achievement.

- H_0 : $r_3 = 0$ (null hypothesis)

  H_1: $r_3 \neq 0$ (alternative hypothesis)

Where, r_3 is the corresponding correlation between parent's educational expectations and their children's mathematics achievement.

Delimitation of the Study

The meaning of delimitation is a process. it is a process of setting limitations. when a study for delimitation is done they take all factors into account set the , boundaries and limits that must be adhered to.

Due to the limited time and budget, the study was done on following limitations:

- The study was limited on Sankhuwasava district only.
- This study was limited on Ankhibhuin VDC and Yakkha and Magar cast.
- This study included only the children of the selected home who were studying in grade IX of the academic year 2069/70.

- Factors except family structure, facilities at home and parental expectations which may have effects on learning were supported to be intravenous variables to Sankhuwasava control. Other factors like gender, age, disability, ethnicity, could not controlled in this study.
- The randomization could not be done while selecting the sample and home environment of the student of sample school was purposive.

Definition of the Related Terms

Some terms especially related to this research would define as follows in order to limit the vagueness of the terms.

Home Environment: Environment means the conditions that affect the behavior and development of somebody or something.

Family Structure: It comprises the number of members in the family (small, medium or large in size) or simply the nature of the family like single or nuclear; joint or united or extended family.

Facilities: Availability of textbooks, additional books, daily newspaper, weekly or monthly magazines, play and geometrical instruments, computer & video games, radio – television, electricity, separate study room, time table to play, use of leisure and holiday, study and eat, etc are the factors considered within facilities provided at home which supposed to be very important in helping children for better achievement.

Expectations: In this study, expectations mean the strong beliefs of the parents about the ways their children will study and get certain level or standard in mathematics.

Achievement: Achievement is the intellectual capacity or gain in certain subject during courses of study through formal or informal education.

Cast: Any of the Hindu social class or any exclusive social class. A social class system based on difference in family, origin, rank, wealth, etc.

Chapter II

REVIEW OF RELATED LITERATURE

The home is the child's first school and parents are the child's first and the most influential teachers because a child spends more time at home than in school. Not only they spend more time at home but also learn all the discipline, habits and manners within family environment. So, the home environment wields a very strong influence over the learning behaviors of the children. That's why the home environment will be clean, healthy and supportive; if possible a single corner would be providing for a child to study. Parents and elders always care and love to their children so that the child feels confident and happy to engage himself/ herself in the learning activity.

Learning time table will be managed by parents, necessary instruments, reference books and materials will be provided at home. Parents will not neglect on which their children are involving whether they are positive or negative motivation. Hence the researcher here would be wanted to examine the effects of home environment on children's mathematics achievements and some literatures related to this study are as following:

A student's family has specific educational and cultural possessions at home. In the rural areas of Nepal, people are using their children as child labor. A study "*Determinants of Educational Participation in Rural Nepal*" states:

"*The young children help the parents in household chores which partially given them more time to be engaged in production. The group of children does the job of grazing animals, fetching firewood, etc and is occasionally engaged in wage earning activities. Thus, the children's role in household activities has directly or indirectly implications for economy of a family."*

Adhikari (2001), studied on "A comparative study of Achievement in Mathematics of Primary level students Related to Parent's Income" concluded

that the achievement of high-income group is higher than middle income and low-income group. But the achievement of middle-income group was not found significantly higher than the lower-income group.

Chaudhary (2000), on his research "A comparative study of Achievement in Mathematics of primary level student Related to Parent's Educational status" concluded that the mathematics achievement of literate parent's children was found to be higher that illiterate parent's children. It might be because the parents who are literate simply try to make their home environment favorable for their children's study and their expectations towards them might be higher than illiterate parents towards their children.

The number of books in a pupil's home can be regarded as a reading resource. Elley (1992) states that in most countries in the world, the availability of books for children to read is highly conductive to better levels of reading achievement. EDSC (1999) concluded that students who study other books in addition to the prescribed textbooks were likely to score higher than those who studies only the textbook (47.7% students studied additional books than the textbooks) and students who had electricity at home were likely to score higher than those who did not have electricity (55.9% students lived in the house with electricity).The students who spoke Nepali at home were likely to score higher than those who do not (73.8%) students spoke Nepali at home. Furthermore, daily newspaper, weekly or monthly magazine, radio, television set, video cassette recorder, cassette player, television, refirigerator, car, notorcycle, bicycle, electricity, piped water and a table to write on are likely to support in the achievement of the students. One of the very impotent factors of home environment is the availability of regular meals.

Dhakal (2006), did a research entitled "learning mathematics out of school children: A case study of Badi Community" and found that family

background of children of that community are not aware to their children development (education, health, and other facilities), no special education program is provided to these children, no governmental and non-governmental organization are ready to uplift this community in these days and all the knowledge they have is due to the social construction.

So, the review of above literature helped the researcher to know that there were some researchers concerning the learning process of out of school children and also that of Janjati community as well as the constructivism and constructivist theories. However, there were some researches concerning the effect of home environment in mathematics learning of Janjati community. So the researcher was interested to undertake this study.

Malakar (1987), on her article, "Parental Involvement in Education of children" mentioned a study of 250 California elementary schools revealed that parental involvement is related both to parent are satisfaction and students achievement." The curriculum of the Home" that includes parents-child discussion about everyday occurrences, monitoring and viewing television together, encouragement to read and discuss the matters of reading and emotional support & interest in the child's world was reported to lead together academic achievement. In 29 controlled studies 91 percent of the children in the program benefited where the learning environment at home was improved.

Pillitt (1990), in support of this has pointed out that poor nutrition results in a lack of concentration and reduced perseverance in school. Regularity of meals is therefore seen also as a factor likely to influence the acquisition of reading skills. Similarly, Save the Children (2006), mentioned that children from medium sized family (5-7 persons) were more likely to opine their interest to schooling (58%) followed by children from small family size (57%) and children from large family size (54%).Slightly more children from landless

households (57%) compared to households with some agriculture land (56%) expressed their interest to sent their children to school. Interest of going of working only children was likely to increase as the extent of family level income insecurity increases.

The following were some of the suggestions given to parents by Research Center for Educational Innovation and Development (1987) feeling the great importance that needs to be given parental support for children's education:

- Parents should show enthusiasm for children's education.
- Parents should establish a good relationship with children.
- Children should feel to talk and interest with elders.
- Parents should always encourage children in studies by asking them about their lessons, school, teachers and other co-curricular activities.
- The home environment should be healthy and clean, if possible a separate quiet corner should be provided for the children to study at home.

Tiwari (2002) cited that "Seventy percent of the children reported that they helped their parents in everyday aspect of household activities. More girls than boys are involved in any types of economic activities of the household of their family". Now the question is that how a child can give enough time for his/her study if he/she has to participate in household activities. In such a case the home environment is not definitely favoring children's learning and one cannot expect more for their achievements. Mostly, in the subjects like mathematics and science that need more time for practicing them, the children normally cannot progress. Then we can easily imagine that why the failure in mathematics is higher in our country. It is because the home environment is not supportive enough what so ever may be the reasons. If the child does not have

allocated timetable for studies and other facilities then the achievement can be expected better.

Upadhyay (2001) did a research entitled "Effect of construction in mathematics achievement of grade V students in Nepal". The researcher's main target was to explore the fact if construction approach turn to be effective to Yakkha student's achievement in terms of immediate learning retention and net gain, from this research the researcher had concluded the possibility of constructivism in Nepalese schools with significant differences in achievement that conventional method of teaching.

A study report of **"Innovation Forum for community Development (1997)",** states that parental encouragement to children seemed to motivate children a lot in studying when there is no supervision from parents, children tended to quit the classes or attended irregularly. Parental education is very important and can be related to pupil's achievement because educated parents can be able to check progress. Case studies showed that all children without exception were engaged in the household responsibilities based on gender and age. Girls stated that had to go and get fodder, fetch water, tend the cattle, look after the younger siblings and so on while boys seemed to be engaged in shepherding the cattle, feeding the cattkle, working in the field and working in the shop, etc. Some children were also working for other families thus earning money to support the family. Some case study students reported that they couldn't continue the study because their fathers drank a lot and did not look after their families.

So, the review of above literature helped the researcher to know that there were some researchers concerning the learning process of out of school children, and also that of Janjati community as well as the constructivism and constructivist theories. The students have motivation and persistence to pursue

mathematics success although the learning environment may be undesirable. So, the researchers are interested to undertake this study.

Theoretical Framework of the Study

The theoretical discussion is needed for the interaction of the finding of the study. There are many theories about the learning and development of children such as cognitive, behaviors, humanist, and social constructivism.

Learning means the relatively permanent change in behavior which occurs as a reinforced practice. According to behaviorists, learning is the stimulus response process. They mentioned that learning is the interaction between human being & external environment. If response of the learner is rewarded, a kind of habit is formed. If something is repeated continuously, then the learner shows some kind of behavioral change which is called learning according to them.

There were various learning theories in teaching learning field like, communicative theory, constructivism theory, behaviouristic theory, cognitive theory. Among constructivism is one of the important creative theories. According to this theory the leaner had learnt knowledge through family environment and social interaction.

Constructivism is basically a theory based on observation and scientific study about how people learn. It says that people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences when we encounter some things new, we have to reconcile it with our previous ideas and experiences may be changing what we believe or may be discarding the new information as irrelevant. In any case, we are active creators of our own knowledge. To do this, we must ask questions, explore and assess what we know. Constructivism stands on its three axioms that are as follows:

- Learners learn knowledge from their active participation.
- Learners gain knowledge while reflecting on their own action.
- Learners gain knowledge when they try to convey their solution to others.

Vygotskian Constructivism

Vygotsky has developed "Socio-cultural theory" and believed that children are active seekers of knowledge, but he did not view them as solitary agents. In this theory, rich, social, and cultural contexts profoundly affect children's cognition. Knowledge is being constructed in social situation of negotiations rather that being the reflection of the objective reality, which is termed as social constructivism. Social constructivism believes on the multiple constructivism of the world.

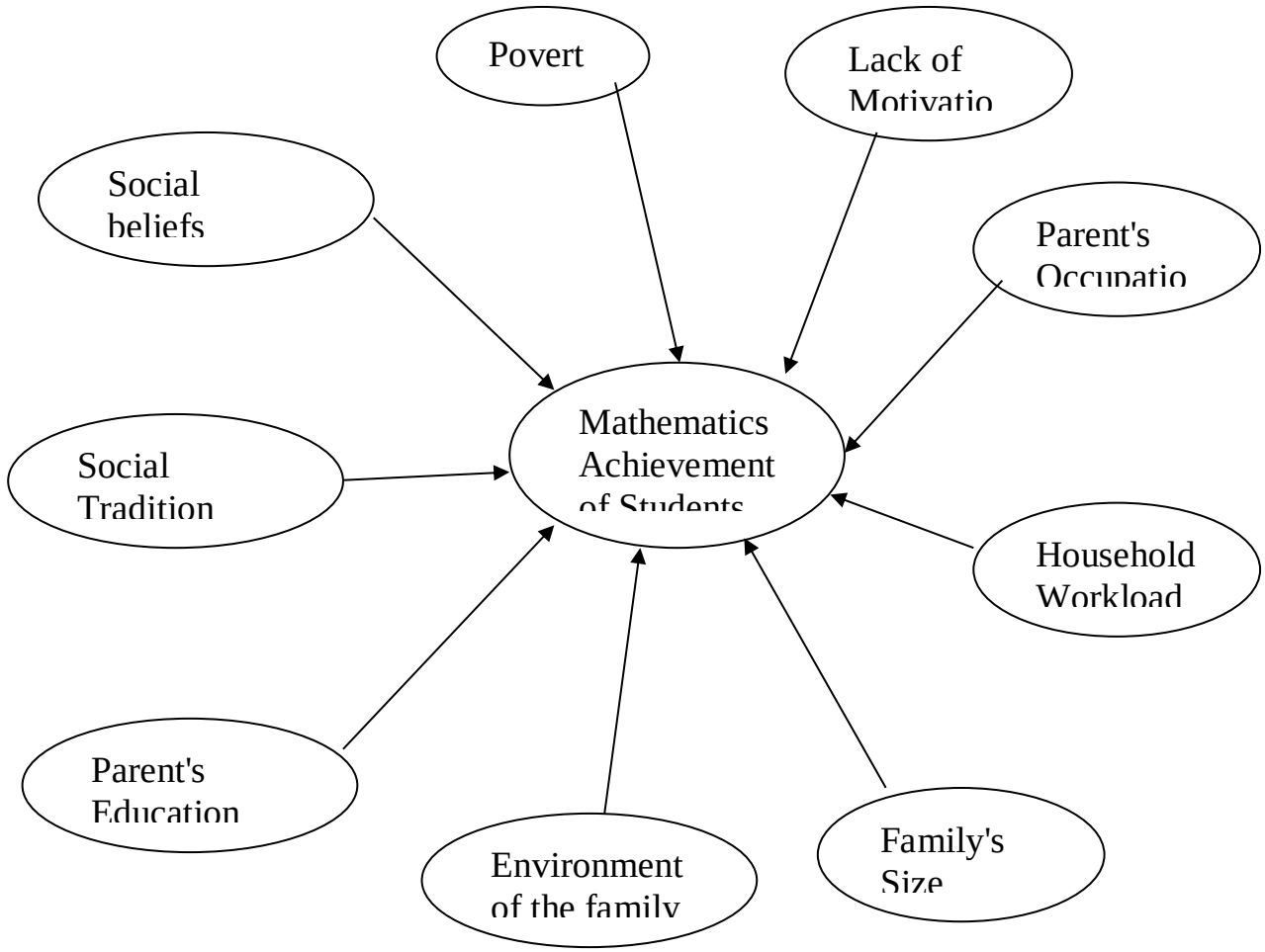
According to the social constructivist Vygotsky, knowledge is constructed in two ways in social context. Firstly, social interaction influence on the nature of knowledge that is constructed and process of individual use to construct that knowledge. Thus the constructions are socially centered and involve process of understanding, constructing meaning and making senses. The knowledge constructed by child is not only through his own capacity but from also the context and interaction with more knowledgeable others. Vygotsky proposed that child's knowledge could be predicted if we could understand the social context

Framework of Study

This study was related to the effect of home environment is mathematics learning of Yakkha & Magar students of Ankhibhuin V.D.C. in Sankhuwasava district of government school which is based on the theory of constructivism for learning. Social constructivism assumes more collaboration of learning

environment which is proposed the effective learning procedure to develop the new knowledge for Janjati students which indicate in a framework for the study.

Conceptual framework of the constructivism theory



From the above figure the factor effecting the home environment are described as follows:

- **Family Size**

Those parents who have the small family size can provide the educational, economical and other facilities than middle and large family size parents. There is large family of Yakkha & Magar in Ankhibhuin V.D.C. So it is difficult to maintain the educational need of children to their parents.

- **Poverty**

According to the Human Resource Development Report 1990, 42% of all Nepalese are living in poverty. Eight years later in (2004/2005), this figure was dropped to 31%. Poverty seemed to vary according to land ownership and major sources of livelihood.

- **Social belief**

Yakkha & Magar were socially dominated. They were backward in every field. Landlessness and ignorance are the major const Yakkhants for their better livelihood. It is an undeniable fact that poor economic position of Yakkha& Magar community is one of the major hurdles for achieving social prestige in the society, because Janjati are regarded as entertaining groups. There previous jobs were soldiers & farming at various places, which influenced them to adopt the easy way for earning. Their children were not equal to other children. So, such beliefs affect the mathematics achievement.

- **Household workload**

Janajati were generally poor. They work hard and get less. They had the problem of hand to mouth. Yakkha & Magar parents need the help of their children. Sometimes they had to go the work to others as a labor to earn money.

So, household workload is the main factor to affect their mathematics achievement.

- **Social Tradition**

Social tradition was one of the major obstacles of the society. They were affecting the students' performance. Their society, mathematics was hardest subject & female would not read the subject. The society had a conventional belief that education for Yakkha & Magar is useless. Education was not useful for janjati female students due to workload of house after school periods. So, social tradition was the main factor to affect their mathematics achievement.

- **Parents Occupation**

The role of parent's occupation affects the children's achievement. Those parents who had engaged in facilitate occupation they take care of their children in reading & other activities. But the parents who engaged like agriculture occupation they did not know about importance of education as service holder parents.

Chapter III

METHODS AND PROCEDURES

The study was focused of find out the relationship among the facilities provided at home, family structure and parent's expectations towards their children and children's mathematics achievement. Of course, the facilities at home, family structure and parent's expectations were affected by social economic status of the family, parent's education, occupation & so on. Thus this study is more quantitative in nature including some description of the phenomenon.

The Population of the Study

Sankhusawava district lies in the eastern development region. There are 47 secondary school in Sankhasawava district. The populations of the study consisted of all the students of secondary public school of the district.

Sample of the study

The researcher had selected two secondary school of Ankhibhuin V.D.C. purposively where the population of Janjati was higher. The researcher was a member of same community who was teaching in a school of that community so that the researcher used conventional method .So he had easy access in that community to collect data. From these two schools 25/25 Janjati students' families were selected purposively. Hence the total sample was 50 Janjati students & their parents & teachers.

Instruments

There were four instruments that would be used in this research. They are as follows:

Survey Form

A single survey is made of at least a sample**,** a method of data collection and individual questions or items that become data can be analyzed statically. A single survey may focus on different types of topics such as preference, opinions, or factual information depending on its purpose.

A survey form was developed to get the required information of the family situation of the students. This survey form contained 20 different facilities that should be provided by parents at home to make home environment better.

Questionnaire

A questionnaire is a device consisting of a series of questions dealing with some psychological, social, educational etc. topic sent or given to an individual or a group of individuals, with object of obtaining data with regard to some problems under investigation.

Furthermore, there were two types of questionnaires used to obtain the data. One questionnaire was developed for parents that included the questions related to parent's education, attitudes, occupation and educational expectations towards their children. And the second questionnaire was developed for the students which could obtain the information about student's attitudes towards their family and mathematics as well as their educational expectations.

Interview

The interview is a data collection procedure involving verbal communication between the researcher and respondent either by telephone or in face to face situation.

The purpose of interviewing was to find out. What is in and on the participant's mind and their views in relation to their action and activities? Interview is the most effective method which is used in collecting primary data. It is media to express internal thoughts, interests, concept and thinking of a person. I had collected the data from the illiterate parents by asking some questions face to face.

Achievement Test

A achievement test is a systematic procedure for comparing the behavior of two or more persons at a particular time or one or more persons at different times.

The first objective of the study is to find out the level of achievement of Yakkha and Magar students in mathematics. Achievement test was prepared by making 30 multiple choice questions accordingly the area of content and domain covered by the specification chart of grade IX mathematics.

Item Analysis

The researcher administered the pilot test among 30 students of Shree Amaruwa Higher Secondar school ,Ankhibhuin-7, Sankhuwasava, for the corresponding questions from the view of difficulty prospectus. Before administering the test paper, researcher instructed the students how to respond the test. To finalize the item of the test, item analysis was done by researcher himself. Level of difficulty (D) and power of discrimination of each item was calculated from 27% of higher scores i.e. 8 students from higher scores and 27% of lower scores i.e. 8 students from lower scores.

The table of item analysis shows the level of difficulty (P%) and power of discrimination (D) of each items. After item analysis some questions were modified and some were cancelled. The items having D value above 0.20 and P

value between 30% and 70% were accepted. The items having D value less than 0.20 were modified and the items with P value above 80% and below 30% were cancelled.6 items of a pilot study were cancelled and one question was modified. Finally 30 questions were included for the final achievement test .

Reliability and Validity of the Data

To ensure the good quality of the test, the validity and reliability should be checked of the test. To establish the reliability of the test, every test item was piloted before it was administered. In present study, the split half method of reliability of the test was determined The reliability of the test was found 0.73. It indicates that test was reliable. For the validity of the questionnaire, questions were based on the theoretical perspective of taxonomy of affective domain of Benjamin bloom 1973. The researcher was followed the suggestion of supervisor while preparing these tools so it assumed that the tools were reliable. . At last questions were refined by modifying and cancelling some of its item according to subject expert and thesis supervisor.

Validation of the Tools

For the establishment of reliability and validity of the survey form and questionnaires the pilot study was conducted. The survey form and questionnaires were applied to 10 families, parents & their children who were studying in grade IX in public school and then thesis supervisor and subject experts evaluated these tools & some language modifications were done. Further, to ensure the validity on the collected data triangulation was made among the surveyed data and the data obtained by the parent's & student's questionnaires.

Scoring Procedure

Facilities provide at Home

This variable was measured by means of a 5 point rating scale. Weight age of 5,4,3,2 and 1 were assigned to each of the statements if the response was “very good”, “good”, “satisfactory”, “poor”, and “very poor” respectively The score distribution was as ranking from very good facility 5 to poor facility 1.

Family Structure

If the numbers of family members was less than 4 it was considered as a small family and if the family contains members 4 or 5 it was consider a medium family. Family having six or seven members was categorized in big family and the families which have more than seven members were classified under very big family. For this, weightage of 4,3,2 and 1 were assigned to each of the statements if the response was “small”, “medium”, “Large”, and “very large” respectively.

Parent’s Educational Expectation toward Their Children

The expectations of the parents were scored according to will of the parents for their children to achieve certain level of education and what sort of person the parents wanted their children to be in future. If the parent’s expected that their children would only get class 9/10 level then the expectation was categorized as a low expectation and the score 1 was given to it. Similarly scores 2,3,4,5 were assigned for SLC, Plus Two Bachelor and Master Levels respectively. Parental expectations like making their children doctor, engineer, teacher, businessman, etc were also consider while scoring.

Design of the Study

Research design was a process in which researcher makes plan, structure and strategy of research. It includes the method to be used, to collect the data and to analyze the data. This implied that how the research objectives would be reached and how the research problem would be tackled for. This study attempt to analyze the primary data as well as secondary data. So it was the survey design.

This study was intended to find the relationship among family factors, parental factors & mathematical achievement of the children studying at the secondary level. The facilities provided at home, family structure and parental educational expectations which are supposed to have effect on creating good homes were hypothesized i.e.

Factors	Home Environment	Children's Achievement
Family Factors	Facilities at Home	Achievement in Math
Family Factors	Family Structure	Achievement in Math
Parental Factors	Educational Expectations	Achievement in Math

Data Collection Procedure

The study was carrying out in Janjati families (mainly Yakkha& Magar castes) in Ankhibhuin V.D.C. of Sankhusawava district to obtain the primary data. Then the secondary were obtained from the annual exam results of the students from selected families in mathematics from Shree Amaruwa Higher secondary School and Shree Mahendra Jyoti secondary school of Ankhibhuin V.D.C. for the comparison of achievement.

Then investigator visited each of the sample family to collect the data. The survey form was filled up by the researcher himself by direct observation of the family situation & interviews with parents and family members.

Secondly, the researcher went to the corresponding schools of the students whose family was visited & surveyed. With the help of the head masters, the researcher distributed the questionnaires to the students. These questionnaires were collected after half an hour & the student's annual exam results in mathematics will take from the school too.

Finally, the questionnaires for the parents were given to the students and the parents were asking to fill them up by the parents. Necessary instructions and explanations were giving to the students to help their parents to answer the questionnaires. The parent's questionnaires were collected after two days.

Data Analysis and Interpretation

For the purpose of data analysis mean and S.D. was used to find the existing conditions of the facilities available at homes, structure of the family and the expectations of the parents. The collected data were classified, tabulated and analyzed according to the objectives of the study and verified the hypothesis of the study. The obtained data were statistically analyzed and interpreted by using t-test, mean weights and standard deviation. Also the given responses were analysis descriptively

Chapter IV

ANALYSIS AND INTERPRETATION OF DATA

A survey of the sampled families helped to find out and analyze the existing condition of the family factors like facilities available at homes, family structures and parental expectations towards the children. This chapter deals with analysis and interpretation of the data obtained from the 50 students of three different schools by the achievement test administrated. The collected data were classified, tabulated and analyzed according to the objectives of the study and verified the hypothesis of the study. The obtained data were statistically analyzed and interpreted by using t-test, mean weights and standard deviation.

Sankhuwa sabha is a hilly part of Nepal. It is east of Nepal. It is far from the Yakkha side. It is good for visit. In this district many mountains & savapokhari, siddakali etc for visit. In this district a lot of forest and water. This district good for farm. This district beauty of natural side. It district good for visit and farm. Sankhuwa sava is a Magarwan rajya. In the district we got Yakkha, magar . It district good for health. In this district not hut & not cold. It district is middle place for living human & animal. This district's area is little big other districts. It district far from Kathmandu. It district is uneducated district of Nepal. it is a very beautiful place. In this district we get all things are natural. So it district is rich from natural side.

Yakkha is an indigenous ethnic group of Nepal (identical with its Kirat family consisting of Magar, Yakkha and Sunuwar of Mongoloid physiognomy). It is one of the progenies of Nepal's prehistoric Kirat dynasty of around 100 BC. The Yakkha people are subsistence farmers who inhabit the lower Arun valley in eastern Nepal. They number only a few thousand and their language is nearly extinct.

Today, the *Yakkha Motherland* is considered a patch among the historic Kirat region (i.e., east of the Kathmandu valley). During the so-called National Unification of Nepal by Prithvi Narayan Shah, the traditional bases of the Kirat Lands were merged. The Far Kirat (Pallo Kirat) of the Ten Magarwan area to the east of the Arun River was divided into seventeen Thums. Among these Seventeen Thums, the Panch (5) Khapan, Panch (5) Majhiya and Das (10) Majhiya; Tin Thum Yakkhalen are regarded as the traditional area of the Yakkhas. This Yakkha area is the Southern part of Sankhuwasabha district bordering the Terhathum District and Taplejung District in the East; Dhankuta District in the South; and Bhojpur District in the West; of the Eastern Nepal. *Sibhuwa, Syabun, Wana, Dadagau, Swachi, Yangsijong* are the names of 5 Khapan; *Madi Mulkharka, Tamafok, Mamgling, Ankhibhuin, Chanuwa, Dandagaun,* etc. are the names of the 10 Majhiyas and *Hattisudhe, Kingring, Chapabhuin,* etc. are the name of 5 Majhiyas.[4]

The Yakkhas have a distinct language, culture and tradition. The Yakkha language is a Tibeto-Burman language. The onset of modernism and influence from external factors have caused a rapid disappearance of the Yakkha language.[5] The Yakkhas practice the Kirati religion of nature worship. There are 32 family names (Thar) in the Yakkhas. Each Thar also has a sub-group called the Sameychong. Marriages do not occur between families sharing the same Sameychong.

As per the national census of Nepal 2001, there are 17,003 Yakkhas in Nepal, of which 81.43% were Kirats, 14.17% were Hindus and 1.04% were Buddhists. A few thousand Yakkhas live in Darjeeling district, Sikkim and the North-Eastern states of India.

Magar is one of the indigenous ethnic nationalities of Nepal. It is one of the bravest communities with its own ancient rich culture. The regions that the

Magar tribe inhabit are the destricts of Palpa, Gulmi, Argha khanchi, ,Syangja Baglung, Parbat, Myagdi, Tanahun, Gorkha, Nawalparasi, Rupandehi in the Western region, Rolpa, Rukum, Dolpa, Dailekh, Jajarkot, Pyuthan in the Mid-Western region and Ilam, Taplejung, Dhankuta, Sunsari, Sarlahi, Okhaldhunga in the Eastern region. Besides these areas there are small pockets of Magars spread out in the regions of the hot taYakkha both east and west, and also in the hills and the areas around the Central region of Nepal. Magars follow Buddhism with priest called Bhusal, the social process of Sanskritization has drawn some southern Magar population to develop a syncretic form of Hinduism that combinesanimist and Buddhist rituals. Under the main ones beings Ale, Thapa, Pun and Rana. There are more than 700 sub THARS (family names) of Magar.According to Nepal's 2001 census 1,622,421 people (excluding Magars living abroad) identified themselves as belonging to the Magar ethno linguistic group representing 7.4% of Nepal population and making them the largest indigenous ethnic group in the country. It is estimated that there are 5 million Magars around the world today.In the past Magars had their own small states called Chaubise raja or Bahar Magarant and Ath Magarant. They also played vital roles on making of today's great Nepal. Despite their glorious history and legend Magars are lagging behind in the socioeconomic and political strata of Nepal, which is an effect of Sanskritization or "Braman Bad"With its own script called "AKHA LIPI" Magar language has four dialects which marginally differ in some aspects to each other its because according to the places into which they were drifted apart from other groups and were in isolation for long time during the course of the history. This language is rooted in the Tibeto-Barman family.Medium built, wheatened in complex oval or round face, black hair, razor cut eyes generally describes the physiques of Magars in nature they are cheerful, peace loving kind hearted, gentle honest and brave people. During their leisure or at the time of festival they like to be involved in merry making by singing and performing their traditional dances like Sorathi, Ghantu, Jhyaure,

Dohri, Rodhi, Kaura Chutka. Salaijo and many more.Magars traditionally engage in subsistence, agriculture, pastoralism craftsmanship, hunting and fishing. However these days Magars are also in the field of other professions like medicine, education civil services, laws, journalism, development, aviation and politics. The Magars are

The Magar range from the ones who have been inhabiting taYakkha to the high Himalaya areas like Dolpa, thus they do exhibit differences in physiques and features, and however, this can be described generally to encompass the tribe.The physiques of the Magars are thick set and sturdy, though. They are an average height of 5 feet to 5 feet 7 inches, though some of the northern Magar people are very tall. Whitened in complex oval or round face, black hair, razor cut eyes generally describes the physiques of Magars in nature they are cheerful, peace loving kind hearted, gentle honest and brave people.

The family structure of these people is quite similar to the other tribes scattered throughout the country, however, there are some differences which make them different and a tribe apart. The main family splits into nuclear ones as the children marry, but there are families where the system of staying joint is existent, where they live in the same house and eat at one kitchen.The most distinctive element in the Magar family kinship is the strong connection between a maternal uncle and his nephew. Each has to respect the other equally and the uncle is permitted to call his nephew as jawai meaning son-in-law. The reason for this is that the nephew has the first claim to marry his matrilateral cross cousin.This show that the Magar people or society sanction and prefer tribal endogamy and integration of family, but this practice is gradually vanishing due to the pressure of modern and educated Magar youths.

Achievement Level of the Students

To determine the achievement level of grade IX students in mathematics, the mean and the standard deviation of the total sample were computed.

Achievement Level of the Yakkha and Magar Students in Mathematics

Number of Students	Mean	Standard deviation	Co-efficient of variation
50	12.22	3.22	26.36%

Table shows that the mean achievements level of IX grade Yakkha and Magar students of Ankhibhuwin V. D. C. of Sankhuwasava district is 12.22 and standard deviation is 3.22 and the co-efficient of variation is 26.36%, which shows that there is less variability in IX grade students achievement score on Sankhuwasava district.

Also the data was analyzed using mathematical tools correlation coefficient and t-test at 5% level of significance. Which were computed as bellow:

Table 1

		Achievement
Facilities at Home	Pearson Correlation	0.78
	Significance (2 tailed)	5.23
	N	20
Family Structure	Pearson Correlation	0.37
	Significance (2 tailed)	0.45
	N	50
Parental Expectations	Pearson Correlation	0.55
	Significance (2 tailed)	2.95
	N	50

The table 1 about shows that the facilities provided at home found to be highly associated with the mathematics achievement of the children. The correlation coefficient (r) between them was 0.78 and the significance or coefficient of correlation 5.24 was greater than the tabulated value 2.064 at 5% level of significance with degree freedom 24. Therefore the null hypothesis "there is no positive impacts of the facilities provided at home to the mathematics achievement of the children" was rejected. This means there is positive impact of the facilities provided at home to their children's mathematics achievement.

But it was surprising to see that there was a negligible correlation between the family structure and the achievement of the children in mathematics. Its correlation coefficient (r) was 0.37 and significance of the coefficient of correlation was 0.45 which was less than the tabulated value 2.064 at 5% level of significance. hence the null hypothesis There is no significant correlation between the family structure and children's mathematics achievement. So that the null hypothesis was rejected i.e. the structure of the family does not affect the children's mathematics achievement.

The correlation coefficient(r) was 0.55 and the significance 2.95 was greater than the tabulated value 2.064 at 5% level of significance with degree of freedom 24. Therefore the null hypothesis "There is no significant correlation between the parent's educational expectations and children's mathematics achievement." was rejected. This means there is positive impact of the parental expectations to their children's mathematics achievement. Furthermore, the relationship between parental expectations towards their children and the children's mathematics achievement was seen substantial. There was a remarkable relationship between them.

The correlation coefficient (r) was significance in two tailed test. The significance of coefficient of correlation was calculated and was found less than the tabulated value. So, the correlation was not significance. But it is very difficult to generalize the result because there is no enough evidence to explain either the achievement was affected by the parental expectation or the parental expectation were differed because the children were already better achievers in mathematic. For this a detailed further study should be carried out. But we can generally claim that the higher expectation of the parents lead to better achievements because the parents expect higher and encourage their children to study harder obviously the results will be better. Secondly, if the parents want their children get better marks they become more concerned and buy necessary materials or even reference materials.

Facilities at Home, Family Structure and Parental Expectations

A survey form was administered to get the information about the available facilities at home directly observing the family situation and asking questions to the parents and the family members. Twenty different facilities were categorized considering some basic essential facilities like food (availability) of morning meals, lunch, snacks and dinner), housing text books and stationeries common to each family.

The following tables indicate the availability of the facilities in fifty different families which latter were quantified and compared.

Table 2

Availability of the facilities at Home

Facilities /Family	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Total %
Uniforms /Shoes	-	√	√	√	√	√	√	√	√	√	√	-	-	√	√	√	√	√	√	√	√	√	√	√	√	
Separate copies	√	√	-	√	√	√	√	√	-	√	-	-	-	-	-	√	√	-	-	-	√	-	-	-	-	
Geometry Box	-	√	-	√	√	√	√	√	-	√	-	-	-	-	-	√	√	-	-	-	√	-	-	-	-	
Study Time Tablea	√	-	-	√	√	√	-	-	-	-	-	-	-	√	-			-	-	-		-	-	-	-	
Play Time Table	-	-	-	√	-	-	-	-	-	-	-	-	-		-	√		-	-	-		√	-	-	-	
Games/ Toys	-	-	√	√	-	-	√			√		-	-		-	√		-	-	√	√	-	-	√	√	
Electricity	√	√	√	√	√	√	√	√	√	√	√	-	-	√	-	√	√	-	√	√	√	√	-	√	√	
School (Near √/far-)	√	√	√	√	√	√	√	√	√	√	√	-	-	√	√	√	√	√	√	√	√	√	√	√	√	
Radio	√	√	√	√	√	√	√	√	√	√	√	-	-	√	-	√	√	-	√	√	√	√	-	√	√	
Television	√	√	√	√	√	√	√	√	√	√	√	-	-	√	-	√	√	-	√	√	-	√	-	√	√	
Musical Instruments	-	-	√	√	-	-	√	-	-	√	-	-	-	-	-	√	-	-	-	√	-	√	-	√	√	
Extra Books	-	-		√	-	-	-	-	-	-	-	-	-	-		√	-	-	-	-	-	-	-	-	-	
Magazines	-	-		√	-	-	-	-	-	-	-	-	-	-		√	-	-	-	-	-	-	-	-	-	
Newspapers		√		√			-	-	-	-	-	-	-	-		√	-	-	-	-	-	-	-	-	-	
Leisure & Vacation	√	-	-	√	√	√	-	-	-	-	√	√	-	-	-	√	-	√	-	-	-	√	√	-	-	
Can go to School Regularly	-	-	√	-	-	√	-	√	-	-	-	-	√	√	-	-	√	-	-	-	-	-	-	-	√	
Parent's Education	-	√	√	-	-	-	-	-	-	√	-	-	-	√	-	-	-	-	-	-	-	-	-	-	-	
Separate Study Room	-	-	-	√	-	√	-	-	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-	-	√	
Study Table / Furniture	-	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√	
Computer/ Related games	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	7	7	9	17	9	11	9	8	5	10	6	2	5	8	2	15	8	3	5	7	9	8	3	7	10	
Percentage	35	35	45	85	45	55	45	40	25	50	30	10	25	40	10	75	40	15	25	35	45	40	15	35	50	

Table 3

Availability of the Facilities at Home

Facilities / Family	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	Total %
Uniforms	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	-	√	√	√	√	√	√	√	47/94%
Separate Copies	-	√	-	√	-	√	√	√	√	√	-	√	√	√	√	√	√	√	√	√	√	√	-	-	-	31/62%
Geometry Box	-	√	-	√	-	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	-	-	√	√	30/60%
Study Time Table	-	-	-	-	-	√	-	√	-	√	-	-	√	√	-	√	-	-	-	-	-	-	-	-	-	11/22%
Play time table	-	-	√	-	-	-	-	√	-	-	-	-	√	-	-	√	-	-	-	-	-	-	√	-	-	7/14%
Games /Toys	-	√	√	-	√	√	√	√	-	√	-	-	√	-	-	√	-	-	√	√	-	-	-	-	√	22/44%
Electricity	√	√	-	-	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	-	44/88%
School (Near / Far)	√	√	√	√	√	√	√	√	√	√	√	√	√	√	-	√	√	-	-	√	-	-	-	√	-	43/86%
Radio	√	√	-	√	√	√	√	√	√	√	-	√	√	√	√	√	√	√	√	√	√	√	√	-	√	41/82%
Television	√	√	-	√	√	√	√	√	√	√	-	-	√	√	√	√	√	√	-	√	√	√	-	-	-	37/74%
Nusical Instrucments	-	√	√	-	√	-	√	-	-	-	-	-	-	√	-	√	√	√	-	√	-	-	√	-	-	21/42%
Extra Books	√	-	-	-	√	-	-	-	-	-	-	-	-	-	-	√	-	-	-	√	-	-	-	-	-	8/16%
Magazines	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-	-	-	-	√	-	-	-	-	-	4/8%
Newspapers	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-	-	-	-	-	√	√	-	√	-	√	5/10%
Leaisure &vacation	-	-	-	-	-	√	√	√	√	√	√	√	√	√	√	√	-	-	-	-	√	√	√	√	√	26/52%
Can go to School Regularly	-	-	-	√	-	-	√	√	-	√	-	-	√	√	√	-	-	-	√	-	√	√	√	-	-	18/36%
Parents Education	√	-	√	√	-	-	√	√	-	√	-	-	√	√	-	√	-	-	-	√	-	-	-	-	-	14/28%
Separate Study Room	-	-	√	-	-	-	-	√	-	√	-	-	-	-	-	√	√	√	-	-	-	-	-	-	-	9/18%
Study Table / Furniture	-	-	√	-	-	-	-	√	-	√	-	-	-	-	-	√	√	-	-	√	-	-	-	-	-	9/18%
Computer / Related games	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9/18%
Total	7	9	8	9	8	10	12	15	8	14	5	7	13	13	9	16	10	7	7	14	9	7	9	6	7	0
Percentage	35	45	40	45	40	50	60	75	40	70	25	35	65	65	45	80	50	35	35	70	45	35	45	30	35	44%

Tables 2 and 3 show the list of available facilities at homes included in the sample. These tables also show the absolute as well as the percentage description of the extent of a availability of the facilities.

As evident from the tables 2 and 3 96 percent of the surveyed families had provided uniforms to their children. 82 percent family had radio at their homes followed by the families having television sets, 74 percent the distance from the home to the school was found to be short in the majority cases i.e. 86 percent sampled houses were in the walking distance of half an hour or less. 60 percent families provided geometry boxes to their children where 62 percent of them provided separate exercise books to the children. 88 percent families had electricity at homes. Games/ toys and musical instruments where provided by 44 and 42 percent families respectively. but only 22 percent families made time table for their children's study at home.

Less than 20 percent families provided playing time table, extra books, magazines, news paper, separate study room and table or furniture to study. Only 18 percent families found to provide a separate study room for the children and it was impressive to see that families who had separate room for their children to study table and furniture too. Similarly, extra books, play time table, news papers and magazine were found in 16, 14, 10 and 8 percent families respectively.

Students from 26 percent families could go to school regularly if not most of the children had to take care of their young siblings or look after the house or participate in planting and harvesting the rice or go for grazing cattle. The children from 18 percent families would go for leisure and vacation. The main place of go for vacation was to be their maternal uncle's home. About 14 percent parents had completed their school level

education. In this study if the parents were found with high school education then it was considered as one of the facilities at home because the parents could help their children for the study in some extent. There was no computer facility available in the surveyed families.

Similarly, 18 percent families had provided 60 percent or more facilities and 30 percent families had provided 50 percent or more facilities that means about 70 percent families were providing less than 50 percent facilities to the children.

In an average only 44 percent facilities were found out of 20 facilities that should be available in the families. So the facilities provided at home were not adequate. Availability of other facilities like food. (Morning meals, lunch, snakes and dinners), own house, text books and exercise books were supposed to be basic facilities which were found in each family.

If the numbers of family members was less than 4 it was considered as a small family and if the family contains members 4 or 5 it was consider a medium family. Family having six or seven members was categorized in big family and the families which have more than seven members were classified under very big family. For this, weight age of 4,3,2 and 1 were assigned to each of the statements if the response was “small”, “medium”, “Large”, and “very large” respectively.

Table.4

Family Structure

Family	Family Structure			
	Small	Medium	large	very large
1		√		
2		√		
3	√			
4	√			
5	√			
6	√			
7			√	
8	√			
9	√			
10	√			
11		√		
12		√		
13		√		
14		√		
15		√		
16			√	
17		√		√
18				√
19				
20		√	√	
21				
22		√		
23		√		
24		√		
25		√		
26			√	
27				√
28	√			
29		√		
30		√		
31			√	
32		√		
33	√			
34			√	
35	√			
36		√		

37			√	
38				√
39	√			
40			√	
41			√	
42		√		
43		√		
44			√	
45			√	
46			√	
47		√		
48		√		
49		√		
50			√	
Total %	11/22 %	22/44%	13/26%	4/8%

Table 4 indicates that there were 44 percent medium sized families i.e. the families having 4 family members. Families having six or seven members were categorized as large families. 26 percent families from the sample families were found to be large in structure.

Similarly, 8 percent families were very large in structure. In this category more than 7 members of a same family sharing the same kitchen were grouped. 22 percent families were identified as small family where the number of family members would be less than four.

Normally the children from the medium sized family had better mathematics achievements than from a large or a small family. It might be possible because in the medium sized family normally bigger brother and sister seemed to help in younger children's study. But in the smaller families the children has less possibility to share their ideas and get less supported environment comparatively. In larger families because of many member the home environment because more disturbing.

The expectations of the parents were scored according to will of the parents for their children to achieve certain level of education and what sort of person the parents wanted their children to be in future. If the parent's expected that their children would only get class 9/10 level then the expectation was categorized as a low expectation and the score 1 was given to it. Similarly scores 2,3,4,5 were assigned for SLC, Plus Two Bachelor and Master Levels respectively. Parental expectations like making their children doctor, engineer, teacher, businessman, etc were also consider while scoring.

Table 5

Parental Expectation

Family	Parental Expectations				
	Class 10 or less	SLC	+2 Level	Bachelor	Masters
1		√			
2		√			
3			√		
4			√		
5		√			
6		√			
7		√			
8		√			
9	√				
10		√			
11			√		
12			√		
13	√				
14		√			
15	√				
16				√	
17		√			
18		√			
19				√	
20		√			
21			√		
22	√				

23			√		
24			√		
25		√			
26		√			
27			√		
28		√			
29		√			
30				√	
31		√			
32		√			
33			√		
34	√				
35		√			
36		√			
37	√				
38		√			
39		√			
40			√		
41			√		
42			√		
43		√			
44		√			
45		√			
46		√			
47		√			
48			√		
49		√			
50		√			
Total %	6/12%	28/56%	13/26%	3/6%	0

Table 5 shows that 56 percent parents expected that their children would get SLC level education. The parents who expected their children to get SLC only wanted to make their children either teacher or farmer of businessman.

Very few of them i.e. 12 percent of the surveyed parents believed that their children would even not get their SLC as the parents did not have enough means to support for their education or the children were not

very good in studies . They wanted to make their children policeman, political leaders or social worker.

26 percent parents hoped to support their children to get higher secondary level education. Parents of this category wanted to make their children teacher, government employee or nurses.

It was interesting to see that only 6 percent parents expected that their children should get bachelor degree anyhow. The parents who believed and wanted their children to get their bachelor degrees wanted to make their children doctors, engineers or big persons. There was no expectation for the master degree level.

The most interesting thing was that almost of the children answered that they would like to be either a doctor or on engineer when they were asked what they wanted to be in future. It was just a natural and spontaneous answer. There was no relationship of this answer with mathematics achievement.

My further query was about the factors that affected their mathematics achievement. To dig out the factors affecting their achievement, I did not rely solely on the data received through questionnaire, but I also used my own observation, linked the data with related theories, and also interviewed some teachers, students and parents for collecting relevant data.

Major Factors involved in the home environment of Yakkha and Magar Students

Poverty

According to the Human Resource Development Report 1990, 42% of all Nepalese are living in poverty. Eight years later in (2004/2005), this

figure was dropped to 31%. Poverty seemed to vary according to land ownership and major sources of livelihood. I n Nepal rich people are very rich and poor people are very poor. Rich people are being rich and poor people are poor and poor. at present 23.2%.

Yakkha and Magar is the caste of the backward community. In Nepal economic condition of the Yakkha and Magar family is very low. In the Sankhuwasava district Yakkha and Magar are very poor. Yakkha and Magar of Ankhibhuin V.D.C. also could not be prevented from poverty. Their problem is of hand to mouth. They have to work to others to fee up themselves. The guardians were illiterate because of the poverty. During the interview of parents, the following responses were found on the question about the economic condition:

Due to the poor economic condition, we could not send all of the children to school and we have not enough money to buy books, exercise book, pen, school uniform etc. for the children who are studying. (Parent A)

"I don't have enough money so I cannot invest much money for study and I don't except from them." (parent B)

It need more practice for mathematics, so we cannot provide sufficient books, copies and pens." (parent C)

The respondent parents expressed that they were bearing the poor condition. So they said that they will educate children anyhow. But some of them said that they have to end the study in secondary level because higher education is expansive and they have to send their children away from the village because there is no higher educational institute. It was expansive to manage them outside the village for them.

"Higher education provides a lot of opportunities but they are away from our access because they need money but we have to earn for our family." (Student A)

"Parents are jobless and to get economic support from them and we aren't succeeded to get good achievement in mathematics."(Student B)

"It is difficult to join hand to mouth. What can I do" (Student C)

From the above response the researcher concluded that most of the parents were jobless. Yakkha and Magar students' don't get opportunity for the higher education. They said that they do not have own land and some of them have very few land. So they have to work to other to handle the family. They believe that poverty is the great barrier for them. They said the poverty makes it more difficult for them to send their children to school and make good education for them.

Parents Education

Most of the Yakkha and Magar parents are illiterate and they are not aware educationally. So they could not give the attention to their children's education. Also they are careless in making the studying environment in the home. They could not help their children to make up the suitable family environment to study for their children. They could not help their children in their subject matter. It is also found that they were not interested in their children's education. Even they do not tell their children to study at home. One of the Yakkha and Magar parents said that what to do by study person like them. The Yakkha and Magar parent's padam said that they could not be able to give higher education to their children what they do only passing S.L.C., they could not get job. So they seemed to be frustrated from education.

"I have no answer when my parents ask me the possibility of getting job after my study". (Students D)

The above view shows that the Yakkha and Magar students are not sure for their future.

When the parents were asked *"how does their education affect their children's education?"*

" I don't know about their study." (parent E)

"I am helpless, leave them to themselves." (parent A)

"I could not help their study. Only I tell them study at home". (parent B)

From the above responses we can say that all of the Yakkha and Magar parents were illiterate. They don't know anything about the study of their children. But some of them said they have briar this back warded condition because of lack of education. So they would educate their children anyhow. This shows that parent's education affects their children's education.

Environment of the Family

In the field of the study the environment of the family affects directly on their education. In the respondent, Yakkha and Magar family there is no one educated. Who help on their study? It is seemed that they were not interested on study because they could not see any one studying in periphery and in the home. They see the people in their society spending leisure time talking each other. It is found that there is no one in the family to create the suitable environment to study.

"I have not separate room to study, it is difficult to concentrate the mind in the study sitting among all member of the family at a room."(student A)

They could not prepare the lesson. So they failed in the school.

"My younger brother scatters my books and neighbor uncle talks about crops". (Student G)

The above view shows that Yakkha and Magar students nobody help in their home. They fail mainly in mathematics so the family environment is the responsible factor affecting on the study of the students.

Social Belief

Yakkha and Magar are socially dominated. Belief of our society is that the Yakkha and Magar are the people for social service. The researcher asked the question about the social belief to Devi Yakkha, she said that the upper caste people think them as servant. They dominate them in social affairs. When the researcher asks this question to another Magar people undetermine their tribes. They think them they are the people to service the other castes in the society. So, sum kinds of thinking affect Yakkha and Magar students learning in mathematics.

Social Traditions

Yakkha have their own culture. They give more emphasis in their culture and tradition. If Yakkha boys are physically fit then they want to go generally in 'Indian Army', U.K. or foreign country to earn money. Those who are not interested to go foreign job are interested to study, take the subjects free from mathematics.

One of the Yakkha parents said that *"what to do by study person like them, if we send in Indian or UK army it is better to us."*

The researcher asked the question about social tradition to a guardian Ram Yakkha and Magar , he said that

"I teach them how to purchase goods in the local market." (parent C)

While analyzing the above response given by the respondents, the researcher concluded that most of the parents teach their children how to solve the behaviouristic problems like finding the interest of debt, selling and buying technique in the local market and preparing appropriate size and shape of daily used utensils like sickles and spade etc.

"It is only selling and buying of bookkeeping nothings else." (student F)

"Mathematics is very difficult in school level but it is affected by own culture." (student A)

From the above response the researcher concluded that mathematics is used in every aspect of life or in their daily activities but their school mathematics affected by their own socio-culture. So social tradition is one of the major obstacles of the society for them. In the developed community Yakkha and Magar students get educational opportunity. But in the backwards community they are not conscious about education.

Household Workload

Yakkha and Magar are very poor. They work hard and get less. They have the problem of mouth to hand. To conduct the daily life they

have to work on their own land and to others. Because of the household work load they could not involve in directly productive work.

"I used to say do better in mathematics but I have no leisure time to guide them." (parent A)

"always, I became busy in my landlords work. So, at that time I cannot help them." (parent C)

"Usually, I go to India to earn money when I am at home that I suggest them to do homework of mathematics." (Parent E)

From the above response, the researcher concluded that most of parents want to make better their children's mathematics but they were illiterate.

"No leisure time for the study at home before 8 pm." (Student A)

"At first I help my parent and after that I do homework." (Student B)

From the above response, the researcher concluded that most of children spend their time in their manual work rather than their study.

Yakkha and Magar female have more workload at home then make. According to them they have to help their parents in cooking, washing clothes, cleaning pots, cutting grass, caring animals etc. Sometimes they have to go to the works to others as labor to earn money. So they have to absent in the school. One of the Yakkha and Magar students said that if he absent at school, next day he could not understand anything in the class.

"My sister cooks food and I look after goats in the morning then we go to school". (Students E)

The above view shows that Yakkha and Magar students should be help their family for work. According to them they could not get enough time to practice on the mathematics problem. Mathematics is hard subject so they need enough time to practice. But they could not get time. So their performance in mathematics is not good. So house hold workload is the main factors to affect their achievement.

"They do not practice at home and always report about their household work". (Teacher)

The above view shows that Yakkha and Magar students are not do homework at home.

Lack of Motivation

Motivation is a factor which plays important role in the learning of the children. According to the respondents guardian to encourage the Janajati students for study they need motivation. In the school there is not special program for Yakkha and Magar students. Fee should be discounted in conducted program such as field study, tuition, coaching etc. But the school sees generally to the Yakkha and Magar students.

"Motivation fosters learning however neither they receive from home nor we have given".(Teacher).

The above view shows that Magar students no body gives any suggestion and motivation. There was not any special program for Yakkha and Magar students to promote their performance. So that their performance was going back.

Family Size

Obviously the number of family member affects in every aspect of family life. Where is large number of family there are different kinds of problem. They always have to fight against of basic needs. How do they invest their children's learning?

The following responses were found on the question do you realize that your family environment has affected in their mathematics study?

"It is easy to teach and guide if they are few children." (Parent A)

"Small family inspires to teach and learn mathematics."(Parent C)

"There is much difficult to care if there are many children." (Parent B)

From the above response, the researcher concluded that most of parents have realized that small family was good environment because it inspires them to each and facilitate materials.

The following responses were found on the question does the family size affects in mathematics learning?

"It's good and fruitful to learn mathematics having a few brothers and sisters." (Student F)

"It is easy to collect mathematics instruments and other requirements in small family." (Student B)

"There is vital role of family to improve our every aspects so the influence in mathematics learning."(Student G)

From the above response, the researcher concluded that large family has many problems and it is difficult to manage and fulfill their requirements.

Chapter V

SUMMARY, FINDINGS, CONCLUSION AND RECOMMENDATION

This last and concluding part of the study concerns with summary, finding, conclusion and recommendation. After the analysis and interpretation of collected data, an attempt has made to summarize and list the findings, conclusion and some recommendations for further study. This chapter contains the following sections;

SUMMARY OF THE STUDY

The purpose of this study was to find the relationship among family factors, parental factors and children's mathematics achievement. the main objectives of the study were:

- To find out the relationship between facilities provided at home and mathematics achievement of the Yakkha and Magar children in Sankhuwasava district.
- To find out the effect of family structure in the mathematics achievement of Yakkha and Magar students in Sankhuwasava district.
- To find out the effect of home environment to study mathematics of Yakkha and Magar students in Sankhuwasava district.
- To find out the role of the parents to make academic environment to their children of Yakkha and Magar students in Sankhuwasava district.

This was a survey type study. For this 50 Janjati families whose children were studying in the secondary level were chosen from Ankhibhuin VDCs of Sankhuwasava district. Survey from and questionnaires were the main tools used for the data collection. These tools were developed by the researcher with the help of previous studied and thesis supervisor. Also the researcher visited and surveyed all the sample families and requested parents to fill up the questionnaires.

Finally, the researcher visited the corresponding schools and met the authorities, explained about the purpose of the visit and requested to provide the annual results of the students and also got permission to administer the questionnaire for the students. For the purpose of data analysis the statistical methods were used.

After analysis and interpretation of the obtained data the researcher found that the availability of facilities at home was adequate and it has positive impact on children's achievement. The family structure was mainly a medium sized or large sized but it was found that there was no significant relationship between the mathematics achievement of the children and their family structure. Surprisingly, the parental educational expectations had positive correlation with the mathematical achievement of their children.

FINDINGS

The findings of this study on the basis of analysis of the collected data are as following:

- The mean score of the janajati students was 12.35, standard deviation was 7.03 and coefficient of variation was 30.5.

- The structure of family does not affect the children's mathematics achievement.
- The Yakkha students do not get opportunity to learn mathematics at home.
- Parent's higher education directly influences their child's achievement in mathematics.
- Presented regularly in math class influence high achievement in mathematics.
- They fail because they cannot attain the class regular.
- The children of Yakkha community become shy to ask any question about the problem.
- Most of the parents expected their children to get their SLC level education and it was found that relationship between parental expectations and the students' achievement in mathematics.

CONCLUSIONS

The following conclusions have been drawn from the analysis of findings.

- It was concluded that the availability of the facilities at home were not sufficient.
- The structure of the family does not affect the children's mathematics achievement.
- Most of the families were found medium sized.
- Family structure did not seem to have effects on mathematics achievement.

- Certainly, the parental expectations were depending upon the parents' education and social economic status of the family. Average family expected to support their children to get SLC level education.

- Parental expectation had positive relationship with the mathematics achievement of their children.

RECOMMENDATIONS

Upon the fixed objectives, applied methodologies and data collection and interpretation procedures I have reached to stage of making recommendations for the further research that helps to complete the study area more rigorously.

- This study was limited to the small purposive population of Janjati community. Hence the researcher could not be generalizing the finding of the study to all the castes and social economic status group. So, the similar study should be done in a high population and comparatively in different castes and ethnic groups.

- Facilities provided at home should be made sufficient so that the study environment will be better which will lead to the better achievement.

- This kind of study should be conducted in all the levels of school students.

- In this study there was a strong relationship between parental expectation and students' achievement. But there is no enough evidence to say either the students were intelligent naturally so the parents expected higher or the parental expectations were higher that

leaded to better achievement. So, further detailed study should be made to make it clear.

- This study doesn't include other factors of home environment like parent’s occupation, income, gender, beliefs of the parents, etc. Hence, similar study should be done including these factors too.

Questionnaire

Dear students and parents,

I am Netra Prasad Paudel student of Master of Mathematics Education, Sukuna Multiple Campus Indrapur,Sankhuwasava. I am going to conduct a thesis research entitled on "A Relation Between Home Environment and Mathematics Achievement in Secondary Level", for the partial fulfillment of master degree in mathematics education, with the objectives:

- To find out the relationship between facilities provided at home and mathematics achievement of the Yakkha and Magar children in Sankhuwasava district.
- To find out the effect of family structure in the mathematics achievement of Yakkha and Magar students in Sankhuwasava district.
- To find out the effect of home environment to study mathematics of Yakkha and Magar students in Sankhuwasava district.
- To find out the role of the parents to make academic environment to their children of Yakkha and Magar students in Sankhuwasava district.

So, to complete this thesis I have prepared some questionnaire which is prepared for you. Researcher is very much thankful for your valuable help and would like to express gratitude to you and your institution. I request to fill this questionnaire as follows:

- Please read carefully and respond as you fell.
- You are requested not to leave blank for any question.
- If you do not understand any questions in the questionnaire please asked those question to the researcher to clarify.

Student's Bio Data Form

Name of the student: Gender: Male/Female

Name of studying school:

Father's education:

Occupation of your father:

Mother's education:

Occupation of your mother:

Total member in the family:

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Introduction of Magar and Yakkha *Rewried from "http/www.google search on 6Aug 2013*

Vygotskian Constructivism *Rewried from "http/www.google search on 6Aug 2013*

APPENDIX I

Questionnaire for Student

Student's Name : Age :

School Name : Roll No :

Father's Name :

Mother's Name :

Address :

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APPENDIX II

Questionnaire for Parents

Parent's Name : Size of Family:

Father's Name : Age :

Mother's Name : Age :

School : Class :

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10. tkfFO{sf 3/df aRrfaRrLx?n] cfjZos kbf{ s;/L 3/sf] sfddf ;xof]u ub{5g\ <

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11. s] tkfFO{sf aRrfx?\ 3/df k9\g] ;do tflnsf agfO k9\5g\<

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12. olb tflnsf agfP/ k9\b}gg\ eg] ;a} ljifo s'g ?kdf s;/L k9\5g\ tkfOnfO{ yfxf 5 <

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13. tkfOsf aRrfx?n] ljBfno hfg' cl3 / a]n'sL slt a]nf vfgf vfG5g\<

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14. tkfOsf] kl/jf/df vfgf s;n] tof/ ub{5 <

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15. tkfFO{nfO{ ul0ft ljifon] b}lgs sfo{df sltsf] ;xof]u k'¥ofPsf] 5 <

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16. tkfOn] cfˆgf aRrfaRrLnfO{ d]xgt ug{ s;/L k|f]T;fxg ug'{x'G5 <
==========
==========
==========
17. tkfFOsf] larf/df ul0ft / cGo ljifo s'g\ ufx|f] 5 <
==========
==========
==========
18. tkfFO{sf aRrfx?sf] ul0ft ljifo k|ltsf] wf/0ff s:tf] 5 <
==========
==========
==========
19. s] tkfFO{ cfˆgf aRrfx?;Fu ul0ft ljifosf] af/]df 5nkmn ug'{x'G5<
==========
==========
==========
20. s] tkfFO{ cfˆgf aRrfx?nfO{ lgoldt ljBfno k7fpg'x'G5 <
==========
==========
==========

21. s] tkfFO{sf aRrfx?n] tkfFO{nfO{ 3/fo;L sfo{df ;xof]u u5{g\ <

==========

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22. tkfFO{ cfˆgf aRrfx?nfO{ elaZodf s] aGg] xf};nf k|bfg ug'{x'G5 <

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23. tkfFO{sf aRrfx? k/LIffdf c;kmn xF'bf ufln ug'{ x'G5 ls x'Fb}g <

==========

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24. tkfFO{ ;kmntfdf xf};Nff k|bfg ug'{ x'G5 <

==========

==========

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25. tkfFO{ hLjgdf s:tf] lf]qdf pbfx/l0fo JolQTj aGg' eof] <

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26. tkfFO{sf aRrfx? v'l; ;fy ljBfno hfG5g jf hfg bafa lbg' k5{ <

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27. k9fO{ lsg dxTjk'0f{ 5 <

==========

==========

==========

28. ul0ft lsg dxTjk'0f{ 5 <

==========

==========

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29. s] xfld ul0ft lagf afFRg ;S5f}F <

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30. tkfFO{ cfˆgf aRrfx?nfO{ s'g tx;Dd cWoog u/fpg'x'G5 <

==========

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31. tkfOsf] 3/fo;L sfd v]taf/L vghf]t afnL /f]Kg] uf]8d]n ug]{ sfd ePsf] a]nf ljBfno nfu]df 5f]/f5f]/LnfO{ sfd ;s'Gh]n ljBfno k7fpg' x'G5 sL x'b}g <\

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APPENDIX III

Survey Form

Parents Name : Age : Qualification :

Father's Name : Age : Qualification :

Mother's Name : Age : Qualification :

School Name :

Student's Name : Age : Class : Roll No :

Address :

Facilities at home

1. cltl/Q k':tsx?sf] pknAwtf M

   s_ 5 v_ 5}g

2. kqklqsfsf] pknAwtf M

s_ 5 v_ 5}g

3. v]nsf ;fdu|Lx?sf] pknAwtf M

s_ 5 v_ 5}g

4. v]Ngsf] nflu ;do tflnsf M

s_ 5 v_ 5}g

5. km';{b / labfsf] ;dosf] k|of]u M

s_ u5'{ v_ ul{b{g

6. sDKo"6/ / v]nsf] k|of]u M

s_ u5'{ v_ ul{b{g

7. /]l8of]sf] pknAwtf M

s_ 5 v_ 5}g

8. 6]lnlehgsf] pknAwtf M

s_ 5 v_ 5}g

9. aRrfx?sf] nflu 5'§} sf]7fsf] pknAwtf M

s_ 5 v_ 5}g

10. k9gsf] nflu ;do tflnsf M

s_ 5 v_ 5}g

11. vfgfsf] pknAwtf M

s_ 5 v_ 5}g

12. 3/df af]Ng] efiff / ljBfnodf k|of]u x'g] efiffdf km/s M

s_ 5 v_ 5}g

13. efO{alxgLx?sf] x]/rfx ug'{ M

s_ k5{ v_ kb}{g

14. s[lif If]qdf sfo{ ug'{ M

s_ k5{ v_ kb}{g

15.3/fol; sfddf ;xof]u ug'{ M

s_ k5{ v_ kb}{g

16.Hofldlto ;fd|uL / emf]nfsf] pknAwtf M

s_ 5 v_ 5}g

17. 3/sf] x]/rfx ug'{ M

s_ k5{ v_ kb}{g

18.3/df ljB'tsf] pknAwtf M

s_ 5 v_ 5}g

19.ljBfno / 3/sf] ef}uf]lns b'/Lsf] cjZyf M

s_ glhs v_ 6f9f

20.kf]zfs ,cGo n'uf ,h'Qf / rKknsf] pknAwtf M

s_ 5 v_ 5}g

21.ltld ljBfno lgoldt hfG5f} M

s_ hfG5' v_ hfFlbg

22.5§} cEof; k'l:tsfsf] pknAwtf M

s_ 5 v_ 5}g

APPENDIX VI

Item Analysis Chart

Students / Items	Upper Right 27%									Lower Right 27%								P %	D	Remark
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
1	1	1	1	1	1	1	1	1		0	1	1	1	1	0	0	1	81.25	0.37	Acceptable
2	0	1	0	1	1	1	1	1		0	0	0	0	0	0	0	0	37.5	0.75	Acceptable
3	1	1	1	1	1	1	0	1		1	1	0	1	0	1	0	0	68.75	0.37	Acceptable
4	1	1	0	0	1	0	1	1		0	0	0	0	0	0	0	0	31.25	0.62	Acceptable
5	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	100	0	Cancelled
6	0	1	1	1	1	1	1	1		0	0	0	1	0	0	1	1	62.5	0.5	Acceptable
7	1	1	1	1	1	1	1	1		0	0	1	0	1	1	0	0	68.75	0.62	Acceptable
8	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	100	0	Cancelled
9	1	1	1	1	0	1	1	1		0	0	0	0	1	1	1	1	68.75	0.37	Acceptable
10	1	1	1	1	1	1	1	1		0	1	0	1	0	0	0	1	68.75	0.62	Acceptable
11	1	1	1	1	1	1	1	1		1	0	1	0	1	1	1	0	75	0.37	Acceptable
12	1	1	1	1	1	1	1	1		0	0	1	0	1	1	1	1	81.25	0.37	Acceptable
13	1	1	1	1	0	1	0	0		0	1	0	0	0	1	0	0	43.75	0.37	Acceptable

14	1	0	1	1	1	1	1	1		0	0	0	1	0	0	1	0	0.5	0.62	Acceptable
15	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	100	0	Cancelled
16	1	1	1	1	1	1	1	1		1	1	1	0	0	1	0	0	75	0.5	Acceptable
17	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	100	0	Cancelled
18	1	1	1	0	1	1	1	1		0	1	0	1	0	0	0	0	56.25	0.75	Acceptable
19	1	1	1	1	1	1	1	1		0	1	0	1	1	1	1	0	81.25	0.37	Acceptable
20	1	1	1	1	1	1	1	1		0	1	1	0	1	0	0	1	75	0.5	Acceptable
21	1	1	1	1	1	1	1	1		0	0	1	0	1	0	0	1	68.75	0.62	Acceptable
22	1	0	1	1	1	1	1	1		0	0	0	1	0	0	1	0	0.5	0.62	Acceptable
23	1	1	1	1	1	1	1	1		0	0	1	1	1	0	1	1	81.25	0.37	Acceptable
24	1	1	1	1	0	1	1	1		1	1	1	1	1	1	1	1	93.75	-0.12	Cancelled
25	1	1	1	1	1	1	1	1		1	0	1	0	1	1	1	0	81.25	0.37	Acceptable
26	0	1	1	0	1	1	1	0		0	1	1	0	0	0	0	0	43.75	0.37	Acceptable
27	0	0	0	0	0	0	0	0		1	1	0	1	0	0	0	0	81.25	-0.37	Cancelled
28	1	0	1	1	1	1	1	1		0	1	0	1	1	0	1	0	68.75	0.37	Acceptable
29	0	1	1	1	1	1	1	1		1	1	0	0	0	1	1	1	75	0.25	Modified
30	0	0	1	1	1	1	1	1		0	0	0	0	0	0	1	1	50	0.5	Acceptable

APPENDIX VII

Split – Half Reliability of the Test

Roll .no. of students	Marks obtain in odd question (X)	Marks obtain in even question(Y)	XY	X^2	Y^2
1	13	9	117	169	81
2	11	7	77	121	49
3	9	8	72	81	64
4	9	8	72	81	64
5	8	10	80	64	100
6	11	6	66	121	36
7	8	10	80	64	100
8	11	8	88	121	64
9	3	5	15	9	25
10	5	3	15	25	9
11	3	4	12	9	16
12	4	3	12	16	9
13	4	5	20	16	25
14	4	5	20	16	25
15	4	4	16	16	16
16	3	5	15	9	25
N = 16	∑X = 110	∑Y = 100	∑XY = 777	$\sum X^2$=938	$\sum Y^2$=708

Reliability of split-half of the test

$$r_{xy} = \frac{N\sum XY - \sum X.\sum Y}{\sqrt{N\sum X^2-(\sum X)^2}\ \sqrt{N\sum Y^2-|\sum Y|^2}}$$

$$= \frac{16\ X\ 777-110\ X\ 100}{\sqrt{16\ X\ 938-\ (110)^2}\ \sqrt{16\ X\ 708-\ (100)^2}}$$

$$= \frac{12432-11000}{\sqrt{15008-12100}\ \sqrt{11328-10000}}$$

$$= \frac{1432}{\sqrt{2908}\sqrt{1328}}$$

$$= \frac{1432}{53.93\ X\ 36.44}$$

$$= \frac{1432}{1965.21}$$

$$= 0.73$$

APPENDIX VIII

Marks Obtained by the Students in Achievement Test

S.N.	Name of Yakkha Students	Marks Obtained	Full Marks
1	Anita Yakkha	13	30
2	Manoj Yakkha	18	30
3	Sujata Magar	14	30
4	Sugam Yakkha	10	30
5	Hari bahadur Magar	16	30
6	Rojesh Yakkha	19	30
7	Nandani Magar	9	30
8	Pooja Magar	8	30
9	Prativa Magar	12	30
10	Sushil Yakkha	13	30
11	Sujan Yakkha	10	30
12	Binaya Yakkha	16	30
13	Suraj Magar	9	30
14	Sandesh Magar	15	30
15	Saroj Yakkha	18	30
16	Ranmin Magar	17	30
17	Amit Magar	10	30
18	Gajendra Yakkha	7	30
19	Sabin Magar	12	30
20	Adesh Yakkha	11	30
21	Nirajan Yakkha	13	30
22	Nikita Yakkha	14	30
23	Deepak Magar	15	30
24	Mamata Magar	8	30
25	Bharat Yakkha	9	30
26	Puja Yakkha	10	30

27	Sanjaya Magar	11	30
28	Susmita Yakkha	10	30
29	Ramu Magar	12	30
30	Prativa Magar	13	30
31	Rupa Yakkha	14	30
32	Sanu Yakkha	7	30
33	Ankit Magar	10	30
34	Mamata Yakkha	15	30
35	Lelin Magar	17	30
36	Narendra Yakkha	16	30
37	Sanumaya Magar	10	30
38	Sabina Yakkha	11	30
39	Prabin Magar	9	30
40	Prakash Yakkha	10	30
41	Nabin Magar	9	30
42	Saurav Yakkha	18	30
43	Prasant Magar	10	30
44	Aash bahadur Yakkha	8	30
45	Rojina Yakkha	7	30
46	Srijana Magar	12	30
47	Junila Magar	13	30
48	Arjun Yakkha	1o	30
49	Sabina Magar	12	30
50	Khemraj Yakkha	11	30

APPENDIX IX

Marks Obtained by the Students in Achievement Test

Facilities	Achievement
10	13
15	18
5	9
4	7
13	16
10	10
16	17
15	18
8	13
10	8
8	11
4	8
7	10
14	15
10	14
10	16
15	9
12	12
17	19
15	17

APPENDIX X

Marks Obtained by the Students in Achievement Test

Achievement of Large and small family	Achievement of Medium family
13	18
14	10
16	19
9	8
12	13
16	9
15	18
17	10
7	12
11	13
14	15
8	9
10	11
10	12
13	14
7	10
15	17
16	10
11	9
10	9
18	10
8	7
12	13
10	12
11	8