# PARENTAL INVOLVEMENT IN MATHEMATICS LEARNING OF THEIR CHILDREN: PARENTAL PERCEPTIONS

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A Dissertation

Submitted to

School of Education

in Partial Fulfillment of the Requirements for the Degree of

Master of Education in Mathematics Education

Kathmandu University

Dhulikhel, Nepal

January, 2014

AN ABSTRACT OF THE DISSERTATION OF

Anjan Kumar Bhandari for the degree of Master of Education entitled *Parental Involvement in Mathematics Learning of Their Children: Parental perceptions* presented on 30th January 2014.

Abstract Approved _____

Mr. Binod Prasad Pant

Dissertation Supervisor

The purpose of this study is to understand about parental perceptions about their involvement in mathematics learning of their children. Specially, this study sought to know about parental perceptions about why do or why don't they involve themselves in their children's mathematics learning. This study sought to know parental perceptions for their involvement by studying: (1) their beliefs about educating their children and their beliefs about understanding mathematics, (2) their own mathematics experience and level of education, and (3) invitation from their children and invitation from mathematics teacher.

I used qualitative approach to interpret the understanding of the parents. I employed in-depth interviews to capture their views on the basis of my research questions to know about how do they perceive their role for their involvement in mathematics learning of their children and how do they make decisions about their involvement. I found that parental perceptions regarding to their involvement in their children's mathematical learning was influenced by parents' belief about involvement, learning experience and level of education and invitations by child and math teacher. I

further found that the beliefs about their role for educating their children guided parents for why to involve. Learning experiences and level of education helped parents for how to help his/her child to learn mathematics. Invitations from children and mathematics teachers motivated parents for involvement in their children's mathematics learning.

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# DECLARATION

I hereby declare that this dissertation has not been submitted for candidature for any other degree.

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I understand that my dissertation will be a part of the permanent collection of Kathmandu University Library. My signature below authorizes release of my dissertation to any reader upon request.

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# ACKNOWLEDGEMENT

I would like to acknowledge the following persons who assisted me in the completion and submission of this dissertation work.

Prof. Dr. Tanka Nath Sharma, Dean of School of Education, KU, for providing an encouraging environment.

Dr. Bal Chandra Luitel, coordinator of Mathematics program, School of Education, KU for his pivotal role for making this thesis work completed.

My supervisor, Mr. Binod Prasad Pant, for his time, patience and guidance throughout this study.

My parent participants for their warm welcome and cooperation that made this research possible.

Mr. Kiran Kumar Kuwar for working closely with me and assisting where necessary.

Lastly, to those all who directly or indirectly contributed to this my research work.

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# ABBERVIATIONS

| | |
|---|---|
| I.A | Intermediate in Arts |
| SLC | School Leaving Certificates |
| B.A | Bachelor in Arts |
| B.B.S | Bachelor in Business Studies |
| M. A | Master in Arts |
| TU | Tribhuvan University |
| KU | Kathmandu University |
| M. Ed. | Mathematics Education |
| CBS | Central Bureau of Statistics |
| SMC | School Management Committee |
| IT | Information Technology |

# CHAPTER I

# INTRODUCTION

## Chapter Overview

In this chapter I describe my personal and professional background since my childhood days that lead me to carry out this research. I have included my childhood experience about parental involvement, my professional career experience, general parental practice about educating their children and their understanding of mathematics. Furthermore, I have articulated problem statement, purpose of the study, research questions, significance and delimitations of the study in this chapter.

## My Background: My Research Issue

I have identified research issue from my personal and professional experience. Believing that personal experience may enable to engage in the research, I chose my professional journey of being a student and a teacher.

### My Childhood Experience

I saw my friends being helped by their parents/ guardians in their mathematics works in my school level. I always found them scoring good marks in mathematics. I remember some cases of parental involvement of my childhood when I was a student in a public school in the village of Sankhuwa Sabha. There was uncle living next to my house. His house was few steps down to my house. Every day, I could see him teaching his children. He had three daughters. His elder daughter studied with me. She was always

good in mathematics. She was also good in other subjects. I remember that we both learned in the same classes and in the same school around some 25 years ago (around 1990 A.D). The uncle taught his children at home and also would visit teachers at school. He was one of the educated persons in the village. He was a secretary in the Village Development Committee office of the same village. According to him, he had finished his I. A. study, joined B.A but later gave up his study. He was of the opinion that the girls children should be taught as the boys. He always encouraged people to teach their girls children. He would give moral pressure to the parents to send their girls children to schools. He usually closely monitored his children both at school and home. He frequently asked to the teachers about the activities of his children at schools. I found his children always doing well in examination. There was another uncle in the village who also taught his children at home. He was a teacher in the school where I studied. He was a primary level teacher. He was strict both in the school and at home. He believed that children should be taught at home. But there were few other uncles who would not teach their children. Those uncles would go for playing cards or would go for playing games like volleyball and football. Some of those uncles were well educated though they would not teach their children at home. I wondered why they did not teach their children at home. I grew in a joint family. My cousin brother and my father taught me at home until I was there in primary level. My cousin brother left house finishing SLC[1] examination and

[1] The School Leaving Certificate also abbreviated as SLC is the final examination in the secondary school system of Nepal. The SLC examinations are designed to assess the learning achievement level of grade 10 students, the terminal grade for the school education. The SLC examinations are administered centrally by the Office of the

went Kathmandu, the capital city of Nepal, for his higher studies. My father also went out as he was transferred in another district's school in his teaching profession. Then my parents invited a teacher to stay in our house. The teacher stayed in our house for some years. He would teach both science and mathematics. I think that my parents hired the teacher for us realizing that we needed learning help at home.

**My Teaching Career Experience**

During my college level I taught home tuitions. I taught children reaching into their homes. I taught them almost all the subjects but my priority remained mathematics all the time. I met number of parents in my tuition career and have got the opportunity to understand them. Most of the parents I met in my tuition career were well educated but I did not find many of them being involved in their children's mathematical learning. The question always remained with me that why these parents do not help their children in their children's learning.

Last year, I started teaching mathematics in a private boarding school as a teacher. I taught students mathematics in class 6, 7 and 8. I would ask students to do homework. They would do the homework but I could find that many students were copying from others. I could find the same process in most of the copies. If answer would be wrong in the copy of known students, other students also would have the wrong answer in the identical line. I asked them to read the formulas but most of the students would not read the formula. If I would give them some problems to solve which had already been taught

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Controller of Examinations (OCE), a constituent organization within the Ministry of Education (MoE).

they would not find correct answer. In that time I felt that if their parents had forced them to read or practice mathematics at home they would do better. Still today I am taking tuitions at homes. I feel that if the parents force their children to read and help their children in their learning would probably help students to improve their mathematics. I have felt parents' absence being involved in their children's mathematical learning. So I wanted to know parental perceptions that why or why don't they involve in their children's mathematical learning.

**Mathematics and Parents**

I have found many parents understanding that mathematics is an important subject in my twenty years teaching career. They can understand that mathematics is essential in science, accountancy, engineering, commerce and in many other fields. Mathematics is compulsory and major subject in our school system. Students usually encounter two mathematics subjects in S.L.C examination. Students overall grading largely depends upon his/her performance in mathematics. Good mathematical understanding facilitates higher studies. Good mathematics may provide good job opportunities. Parents want to see their children scoring good marks in SLC. I have found parents being worried about their children's mathematical performance. But SLC results continuously show that many students fail in math subject. Students and parents both think that mathematics is a difficult subject. Mathema and Bista (2006) analyzing mathematics test materials in their study "Study on Student Performance in SLC" states:

> *Mathematics has longer been an integral part of school education. It is one of the six core subjects, carrying 100 marks each in Grade IX and X. It is considered to*

> *be one of the most difficult subjects. Most of the failure in SLC can be attributed to failure in math (p. 151).*

**Parents' Motivation**

Parents take care of their children since from their birth. They do give highest priority to their children's welfare and prosperity. They do sacrifice so many things for the happiness and wellbeing of their children. They do take care of children by keeping them in warmth during cold, prevent themselves from injuries and give nutritious food to their children. When their children grow they look for their children's education. They do teach alphabets, numerical, addition, subtraction, multiplication at home. I don't remember but my father and mother said that they had taught me a, b, c, d alphabets; Ka, Kha, Ga, Gha, Nepali alphabets; Multiplication tables. Parents always had desire to input good culture in their children. Parents are the first teacher teaching their children. When a child grows to his/her school age, parents find a good school for their children and admit their children in school. They have duty to feed their children, dress up their children and take them to the school. They also prepare tiffin for their children. They again go to school to receive their children. When their small child returns from the school parents help their children for doing homework. Parents keep teaching multiplication table, counting numbers, addition, subtraction etc. at home. Malakar (1989 as cited in Acharya, 2010) in her article "Parental involvement in education of children" says that:

> The parents are the children's first and most influential teachers. Because a child spends more time at home than at school, the parents wield a very strong influence over this learning. So, the appropriate guidance in the form of providing necessary help is an essential factor for the better learning of children. To this

> end, it is the responsibility of parents to make necessary facilities available for their children to study at home (p. 142).

When child keeps going in higher classes parents gradually change their roles. The child gradually becomes able to go to school alone. The child finds his/her way to do his homework in his/her own. Slowly parents' involvement towards the learning of children decreases. When child grows, parents gradually limit themselves for buying teaching and learning materials and paying school fees. I have seen some parents just paying fees and buying teaching materials required to their children in my teaching career. In the interactions and discussions I have found them saying that it is schools' and teachers' duty to look after the children's' learning it is because they have paid huge amount of money for their children learning. Studies continue to show that many parents are not aware of the important role they play in their child's education and have a limited understanding of their role in their children's learning (DCSF, 2009). In the mean time I have found some parents being involved with their children learning. They believe that they can provide their children with a supporting and encouraging environment and may also teach their wards.

**School and Parents**

In my experience, I have found that private schools generally treat parent as a customer paying fees of their children. In our context, I have also felt that these private schools do not give importance to the parental roles that parents can play for helping their children at home. Schools do not call parents until the child is good at his studies. But when a child fails in the subject, the school invites parent to appear in the school. Schools do not talk about what roles parents can play for the learning improvement of their

children. Instead the parents are told to send their children for extra class in school or parents are asked to keep their children in the hostel. School does not generally talk about the role parents can play at home.

**Literacy and Parents**

The demographic data shows that literacy rate is increasing. The literacy rate of Nepal has increased from 54.1 in 2001 to 65.9 in 2011 (CBS, 2011). This indicates that today's parents are more literate than the parents before. They are more conscious about their children. But why can't I see more parents involving in their children's mathematics learning? This factor also influenced me to know about what are parental perceptions about why or why don't they involve in their children mathematical leaning.

## Statement of the Problem

According to Jeyens (2003), parental involvement influences the children's success in learning. Parental involvement is defined as motivational parental attitudes indented to influences children's educational well-being. According to Epstein (1995), parental involvement is parental engagement in school based education of their children's. So I felt that parental involvement is more essential for mathematical learning of children. If it is more essential then I felt that how parental involvement influenced by the factors. Parents are engaging them on their student's mathematical learning but I felt, some factors that are influencing the involvement of parents'.

Parental involvement includes activities and interactions between parents and their children. Even though there is more impact of parental involvement in learning of child, parental involvement is influenced by different factors. Parental beliefs about involvement and beliefs about understanding of mathematics influence the parental

involvement. According to Sheldon (2002), the lack of education may also influence their perception of whether or not they possess the skills to positively influence their children's education. This view of self has a major effect on whether or not parental involvement becomes a reality.

Parental involvement is a crucial force in children's development, learning and success of learning. But the parental perceptions about their involvement is influenced by parental beliefs, parental level of education, learning experience and invitations from children and teachers. Therefore, the problem statement of this research was intended to conduct a research to explore the parental perceptions regarding to their involvement in mathematics learning of their children and to analyze the factors that influences the parental involvement.

## Purpose of the Study

The purpose of my study is to know the parental perceptions so as to know about why do or why don't they involve themselves in their children's mathematics learning. I would like to know how different factors like parental beliefs about involvement, their learning experience, education level and invitations from their child and math teacher influence their involvement in children's mathematics learning. So I like to find parental perceptions about why do or why don't parents involve themselves in their children's mathematical learning. I want to find out about what are the influences of their beliefs about educating their children, beliefs about understanding of mathematics, their learning experience, their educational level and invitations from their children and math teachers to their involvement in their children mathematics learning.

## Research questions

I knew that research questions were the most critical part of my research. I took time to formulate my research questions. I asked many questions to myself and I answered. I understood about my research issue and purpose of my study and set the following research questions. The major research question is:

What are parental perceptions about why do or why don't they involve themselves in their children's mathematical learning?

To investigate about the major research question above I have formulated the following subsidiary research questions:

a) How do parental beliefs about their roles for educating their children and their beliefs about understanding mathematics influence their perceptions regarding to their involvement?
b) How do parental education and their own learning experience influence their perceptions regarding to their involvement in their children's mathematics learning?
c) How do invitations from children and their mathematics teachers influence their perceptions regarding to their involvement?

## Significance of the Study

In my literary search I found very few research studies in my research area There is lack of research study for finding out parental perceptions about why do or why don't they involve themselves in mathematics learning process of their children in Nepalese context. I believe that until we know the influencing factors in their involvement we cannot add parental involvement as one more variable in the learning process. I have

made an interpretive inquiry to find out parental perceptions about why or why don't they involve themselves in mathematics learning of their children and have tried to unfold parental perceptions for them being or not being involved in mathematics learning of their children. I believe that this study can help to identify the reasons for the parents being or not being involved in children mathematics learning and hence will be valuable for the stakeholders for carrying out the necessary policies for making parental involvement in their children's mathematics learning process as a successful learning variable.

Finally, its finding may help for involving more parents at home in their children's mathematics learning hence an interactive learning between children and parents can be established at home. The findings will be beneficial for other researchers to conduct this kind of research in higher level. This study may help policy makers to design training for parents and design parent's friendly curriculum so as to add parents in their children's mathematics learning. I can be benefited from the results of this research and also may use them as a reference for reflecting on and rethinking about my own practice.

## Delimitations of the Study

Though the subject of the study is wider, its area of study is limited due to the nature of the study. In this study, I have focused on parental involvement in mathematics learning of their children from the parents' perspective only. I did not observe rest of the aspects which may have to say something to the parental involvement. Due to time constraint and lack of resources, the study is limited in among few parents. Participants are parents of grade 7 and 8 from the boarding school. All my research participants completed intermediate or above level.

## Dissertation Plan

I have divided my study in seven chapters according to the nature and importance of my study. In chapter first, I have presented what lead me to choose the topic, then with the problem statements and purpose of the study and research questions. I have also expressed about the significance and delimitation of the study in chapter first. In chapter second, I have reviewed the relating literatures and have included different research findings. I have also included parental belief system and self-efficacy theories as theoretical review. Likewise, in chapter third, I have described about the methodology and methods of data collection and interpretation including quality standard and ethical consideration. Chapter fourth, fifth and sixth are framed as per the research questions. So chapter four, five and six are answer of my three research questions. Finally, chapter seven concludes my research study including reflections and conclusion.

# CHAPTER II

# REVIEW OF LITERATURE

Literature review is one of the important chapters in any research. According to Bryman (2008) literature review helps researcher to engage in scholarly review based on researcher's reading and understanding of the work of others in the same field. Literature review helps researcher to understand what is already known about the area and what concepts and theories are relevant to the area. It further helps researcher to understand inconsistencies, controversies and unanswered questions in the area. Understanding the importance of literature review as told by the Bryman, I have tried to describe about understanding of what parental involvement is, why it is important, what are the factors influencing parental involvement. I have further described about parental beliefs and their sense of efficacy as a theoretical review. This chapter also talks about the researches done by some scholars in our context in this area.

## Understanding of Parental Involvement

The general understanding of parental involvement is the participation of parents in different activities of their children. As I went through different literature review I found that defining parental involvement in a single sentence has been difficult. Parental involvement keeps multiple meanings. Much broader meanings of parental involvement are evolving. Many academicians have given its different meanings. Some academicians have limited parental involvement within home and some have included it to both school and home. In general, "the language of parental involvement is used when schools are

unit of analysis and children's academic achievement is the primary focus" (Lawson, 2003). In Lawson's view parental involvement mean working within the design of school. Squelch and Lemmer (1994) define parental involvement as the active and willing participation of parents in a wide range of school based and home based activities which may be educational or non-educational. It extends from supporting and upholding the school cultures or supervising children's homework at home. According to them parental involvement implies mutual cooperation, sharing and support.

Epstein & her colleagues (Epstein & Dauber, 1991) include both school and homes as sites for parental involvement. So the broader meaning of parental involvement includes activities in both schools and at home. In addition to traditional school based activities, more modern conceptualizations of parent involvement include activities and interactions between parents and their children at home and in their communities (e.g., supervision and monitoring, daily conversations about school, and visiting local community institutions for learning purposes) as well as parental expectations about learning (Ginsburg-Block et al., 2010; Jeynes, 2010; McWayne, Campos, & Owsianik,2008; Pomerantz, Moorman, & Litwack, 2007as cited in Vukovic et al, 2013). Though academicians are defining parental involvement in number of ways but I think that their common focus is there for being involved in both educational and non-educational activities. In this research, my concern is parent's involvement in their children educational activities primarily focused in their mathematics learning. So I have focused parental involvement in their children mathematical learning and found Cai's defining parental roles is best fitting in my study. According to Cai (2003 as cited in Muir 2012) identified five parental roles in middle school students learning of mathematics:

motivator, monitor, resource provider, mathematics content advisor, and mathematics learning counselor.

## Parental Involvement and Learning of Children

Parental involvement is getting more attention in the last some years. While reviewing literature I found that many researchers have focused study in the parental involvement. Parental involvement in education has been a topic of interest for many years who are concerned with improving academic achievement for children (Hoover-Dempsey and Sandler, 1997). Children spend much time at home than in the school. As a student I have experienced that students do not find time to read and practice mathematics at school as they need to read different subjects at school. My experience being a teacher says that a teacher also cannot solve all the mathematical problems at school and asks children to solve them at home. Hence, home becomes another learning centre for the children. The importance of parental involvement is identified by NCTM (The National Council of Teachers of Mathematics. (NCTM, 2000)' highlights the importance of working with parents as partners to bring change to mathematics education of all K-12 students. NCTM identifying parents as learning component clearly describes about the importance of parental involvement in their children's mathematics learning.

Many researchers say that parental involvement has positive impacts in learning of mathematics of their children. Research has also shown that successful students have strong academic support from their involved parents (Sheldon, 2005).Their involvement helps children to perform well. Later researches have shown that parental involvement in mathematics learning has affect in their children achievement. Sirvani (2007, as cited in Erlendsdottir, 2010) agrees with this and claims that parental involvement contributes

significantly to achievement of both primary and secondary school students in math. Sirvani views offered strength to my study as my study is focusing the involvement of parents in their middle school children's mathematics learning. Ghimire (2006 as cited in Acharya, 2010) investigated that pupils' achievement in mathematics depend not only on the role played by the teacher but also on the parents' awareness, interest and knowledge about guiding their children at home. Research has provided ample evidence that parental involvement affects achievement in core subjects such as reading, mathematics and science, and the behavior of the students, their school attendance and their attitude and adjustment to school (Sheldon 2009). Shelldon and Epstein (2005) found that activities that engage families and children in discussing mathematics at home can contribute to higher academic performance in mathematics when compared to other type of involvement. In addition these students are more likely to continue further in mathematics (Sheldon, 2009). According to Epstein, discussing mathematics at home alone can bring a higher academic performance, I wonder if parents fully engage in mathematical activities with their children certainly they can produce better academic performance in mathematics of their children.

The study of different literatures relating to parental involvement has helped me to state that there is both need and demand for increased parental involvement in mathematics learning of their children. Besides England, Australia, USA and Canada other countries are moving towards increased mandatory parental involvement (Mitchell, 2008). So, it could be understood that many countries are identifying parental involvement as an integral factor in the learning of their children. In Nepal also

researchers are showing their interest doing research in parental involvement in learning of their children.

## Factors Influencing Parental Involvement in Mathematics Learning

As my study is about parental perception about their involvement in their children mathematical learning, it is important for me to review literature about the factors that affect their involvement. I tried to find literature about the factors that influence their involvement in their children's mathematics learning. As I went through the literature I found that involving parents in their mathematics learning is still looking a new approach. There have not been many researches in Nepal about what is the systematic way to involve parents in their children's mathematics learning. In the area of mathematics education, there are few attempts to systematically involve parents in their children's mathematics learning (Epstein & Dauber, 1991).

The literature on parental involvement highlights several factors that influence parents' involvement in their children's education (Henderson & Mapp, 2002). As a researcher, this statement gives space for me that I am going to address some of the factors that influence parental involvement in their children's mathematics learning in my study. I believe that there is need to address such factors that can present barriers for achieving parental involvement.

Parents have their own perceptions for their involvement. They have their own belief systems about educating their children. Their beliefs guide their role for helping their children. Beliefs relating to education are the beliefs parents have about the way their children, or children in general, are educated. These beliefs concern the parents educational principles (rules of daily life, accountability of children, consideration of

child's needs etc.) as well as the role parents feel they play in their children's education (Tazouti, 2003). From this statement, it can be said that parents define their role as per their beliefs for educating their children. The parents who believe that their duty is to just send their children in the school are less likely to involve in their children's mathematics learning. While as the parents who believe that they should help their children in their learning at home is more likely to involve in their children mathematical learning. Georgiou and Tourva (2007) noted the involvement of a parent in his or her child's school depended on the parent's belief in his or her role in the child's progress. Hence parental beliefs could be influencing factors for their involvement in their children's learning mathematics.

Parents may have their own interpretation and experience of mathematics. Their interpretation and experience of mathematics also influence their involvement. Research findings indicate that many adults in relation to mathematical tasks admit to feeling of anxiety, helplessness, and fear and dislike (Haylock, 2007 as cited in Muir, 2012). Many parents in our country are still illiterate. The literacy rate just crosses 65% (CBS, 2011) indicating that many parents are still illiterate. In my small survey (see appendix I), I found that many parents did not continue mathematics in higher level. Hence, parents' qualification for teaching their children mathematics can be considered as one of the factors for influencing their involvement. Hence, parental level of education also could come as barrier for their involvement. Parents having better qualification are likely to involve in their children mathematics learning while as parent having low qualification does not like to involve in their children's mathematical learning. Acharya (2010) in his research "Parents involvement and their children mathematics achievement" found

positive relationship in the issue. He found that level of parent's education was the most influencing factor for parent to be involved in their children's mathematical learning.

Parents views of mathematics are shaped by their own experience of mathematics and their attitude towards mathematics have an impact on their children's attitude. Children whose parents show an interest in and enthusiasm for mathematics around the home will be more likely to develop that enthusiasm themselves (Hartog and Brosnan 2002). At the same time, it is possible that parents with negative experiences of mathematics may pass these attitudes on to their children (de Kock 1999 as cited in Hartog and Brosnan 2002).

Parents sometime do not understand mathematics of children it is because the curriculum changes over period of time. They sometime do not find the chapter they had learnt and find new chapters in children's mathematics book. Rockliffe (2001) suggests that parents often lack depth of understanding about their child's math curriculum and that teachers' perceive parents as lacking the confidence necessary to help their children learn math. Sometime parents find difference in the way they had learned and their children are learning mathematics. Abreu and Cline (2005 as cited in, McMullen and Abreu 2009) found that many parents were confronted with difference between their own ways of tackling mathematics and methods their children learned at school. For parents whose experience of learning mathematics was algorithmic rather than conceptually based new methods of learning may remain inaccessible and they may be expected to support their children learning in ways that don't make sense of them (Remillard & Jackson, 2006 as cited in McMullen and Abreu 2009). Hence the difference between the

way of learning of parents and their children may also come as influencing factors in parents' involvement in their children's mathematics learning.

McNamara et al. (2000; as cited in Muir 2012) found that parent's own lack of skill, knowledge and confidence was a recurring theme, with math in particular being a source of much family angst. Issue of lack of confidence, feeling inadequate at mathematics, and feeling alienated were common among Civil's (2001as cited in Muir, 2012) participants in a 'Math for Parents' course. This statement may be interpreted as parental skill, their knowledge and confidence act as a barrier in their involvement in their children's mathematics learning. People's knowledge and skill level in specific domain is critical to their thoughts and actions. Applied to the parent involvement area, parent's perceptions of their own knowledge and skills are an important influence on their involvement choices in their children's education (Hoover-Dempsey and Sandler, 1995).

A welcoming and responsive school atmosphere and clear and manageable suggestions for parent's home- based support of the child's learning are some example of general school invitations (Walker et al. 2005). Specific teacher invitations have been identified as an influential motivator in parent involvement (Simon, 2004).

## Policy Review

Parental involvement in education has become a far cry in Nepal. There is no policy of the government recognizing parents as a learning variable in education. The Education Act 2028(1971) and regulations 2059(2002) amended in 2061(2004) has made provision of forming School Management Committee (SMC) for the management of institutional school. According to the clause 12 of the Act the SMC of institutional school

consists of seven members that that one male and once female parent (As cited in Tripathi 2008, p.28). So, yet, there is no policy for parents engaging in their children learning activities. Schools yet do not recognize parents as a part of learning of their children in our context.

## Parental Beliefs

As my major research question was to know about parental perceptions about why or why don't parent involve in their children's mathematical learning I had to know about their existing beliefs about what they were thinking about their parental role for educating their children. As I went through different literatures I found varying definitions about the parents' beliefs. In this regard Thompson (1992 as cited in Hirsjarvi, 2001) thinks that for the most part, researchers have assumed that readers know what beliefs are. Thompson is probably saying that the readers take the subjective meaning of belief. If I do say "there is God". May be saying that there is God is my belief". Beliefs are any simple propositions, conscious or unconscious, inferred from what person says or does, capable of being preceded by the phrase ' I believe…'"(Rokeach, 1968, p. 113 as cited in Hirsjarvi, 2001)

Parental beliefs about what they are supposed to do in their children's education influence their involvement. Researchers in numerous places have shown that parents' beliefs and parental involvement in students learning have a significant impact on students' cognitive, psychological and social developments (Okagaki and Sternberg 1993). Epstein and Dauber (1991) pointed out that " There is consistent evidence that parent's encouragement, activities, interest at home and their participation at school affect their children's achievement, even after the students' ability and family socio economic status is taken into account"( p. 262). A review of literature (Hess, Chang &

McDevit, 1987; Hoover-Dempsy & Sandler; 1995, Okagaki & Steinberg, 1993 as cited in LAM et al, 2002) shows parent's belief on education include at least the dimensions: (1) Attribution of success: motivation of children, persistence, effort (2) Willingness to contribute for children's education (3) Self efficacy of one's effort on helping children to learn and (4) Sense of responsibility. As a researcher, I find parental beliefs seem to have great influence in their involvement in their children's mathematics learning as my research is to know the parental perceptions about why do or why don't parents involve in their children's mathematical learning.

## Parents Sense of Efficacy for Helping the Child

Parents' sense of efficacy for helping children succeed in school has been set within the general body of literature examining the power of self-regulation or thoughts about one's own role and influence in a situation (e.g, Bandura, 1977, 1986b; Grusec, 1992 as cited in Hoover-Dempsey and Sandler 1997). Self-efficacy is a significant factor in decisions about the goals one chooses to pursue as well as effort and persistence in working toward the accomplishment of the goals (Bandura, 1977). Self-efficacy theory suggests that parents make their decision about involvement in part by thinking about the outcomes likely to follow their actions (Bandura 1997; Hoover-Dempsey, 1992 as cited in Hoover-Dempsey and Sandler 1997). Parents high in efficacy will tend to make positive decisions about active engagement in the child's education; further, they are likely to persist in the face of challenge or obstacles and work their way through difficulties to successful outcomes. Relatively weak self-efficacy for involvement is often associated with lower parental expectations about outcomes of effort to help the child succeed in school and relatively low persistence in the face of challenges (Hoover-

Dempsey and Sandler, 1997). Grolnick et al. (1997, as cited in Hoover-Dempsey and Sandler, 1997), who examined elementary parents perceptions of personal efficacy in relation to children's education, reported higher involvement among parents with stronger efficacy across all three domains of involvement: behavioral( participating in school activities and helping the students at home), cognitive- intellectual (Parent's engagement with children in intellectually stimulating activities), and personal( monitoring the child's school progress). I found this self-efficacy theory might be applicable to my research participant and thought to choose this theory as one of a guiding theory in my research.

## Review of Related Research Studies

In my literature review I found that research consistently show that parental involvement both at home and at school is associated with higher academic achievement. The studies have demonstrated that increase in parental involvement in elementary and middle school lead to increase in achievement. Researches on pre-kindergarten children show that parental involvement at home and at school boosts program effectiveness and promotes all aspects of school readiness, including math and language skills, motivation, and social skills. Reviewing literature I found that parents of elementary school students tend to be more involved in their children's education than parents of older students. Various studies have shown that active parental involvement in their children's education declines the older the children become (Sirvani, 2007; Richardson 2009 as cited in Erlendsdottir 2010, p.27).

While reviewing related research studies, I have focused reviewing related research in my own context. Shrestha (1973 as cited in Acharya, 2010) investigated that

pupils' achievement in mathematics depend not only on the role played by the teacher but also on the parents' awareness, interest and knowledge about guiding their children at home. So, Shrestha finds that awareness, interest and knowledge are crucial for guiding the children. Bista (2004 as cited in Tripathi, 2008), who studied parental involvement in schools of Nepal, had identified some critical problems. According to him, parents and teachers act as adversaries rather than as partners. There is lack of adequate policies on parental involvement. The attitude of school and administration and staff is generally unfavorable in investing parental involvement. There is a lack of training on the part of teachers. Language barrier between the teachers and parents and job pressure on the parents are other reasons barring parental involvement in their children's learning process. Bista (2004 as cited in Tripathi, 2008) also suggested that parents may support in education in a great deal through a number of ways that include- i) as supporters, ii) as teachers, and iii) as advisor through mutual collaborations with the teachers, school management, and students in praising the children's success, rewarding the performance, doing home assignments, showing interest in day- to- day school events, as well as acting as the sources of information required for better learning. Bista's study is more focused in involving parents in school activities. In his study, he identified some problems barring parents from being involved in schools. But in the meantime he suggested that parental involvement was crucial in children learning. He recommended that parents could help their children for better learning.

Kharel (2005 as cited in Acharya 2010) conducted a research on "Effectiveness of parental involvement on mathematics achievement" concluded that the proper parental involvement in school education increased the mathematics achievement. The scholar's

result has given hope for parental involvement may produce increased mathematics achievement. Tripathi (2008) conducted a research entitled “Parental Participation in Children's learning process of Nepalese Institutional secondary school of Kathmandu district”. The purpose of his study was to explore the parental participation in teaaching learning process of institutional schools.In his research, he found that the SMC was fully committed to involve parents in the school teaching learning process but the head teachers were found not fully ready to involve parents. According to him the school had not had policy and program for parental participation. They were not aware of the need of parental participation. He further found that most parents perceived that their main responsibility was to provide financial support and tutorial services. In his research he studied that the background of the parents such as education level, social status, economic status and occupation profession and expectation from their children were the affecting factors for parental participation in school teaching learning activities. The scholar in his research has talked about most parents perceiving their responsibility was to provide financial support and tutorial service. The scholar’s finding has given me a ground for looking forward to parental beliefs about their role for educating their children in my research.

Acharya (2010) in his dissertation titled “Parents involvement and their children mathematics achievement” conducted a survey research that aimed to find out parental involvement and mathematics achievement of their children. The study was designed to investigate the relationship between the grade nine student’s academic achievement in mathematics and selected involvement such as monitoring television viewing, interaction with the teacher, creating learning environment at home and monitoring homework. He

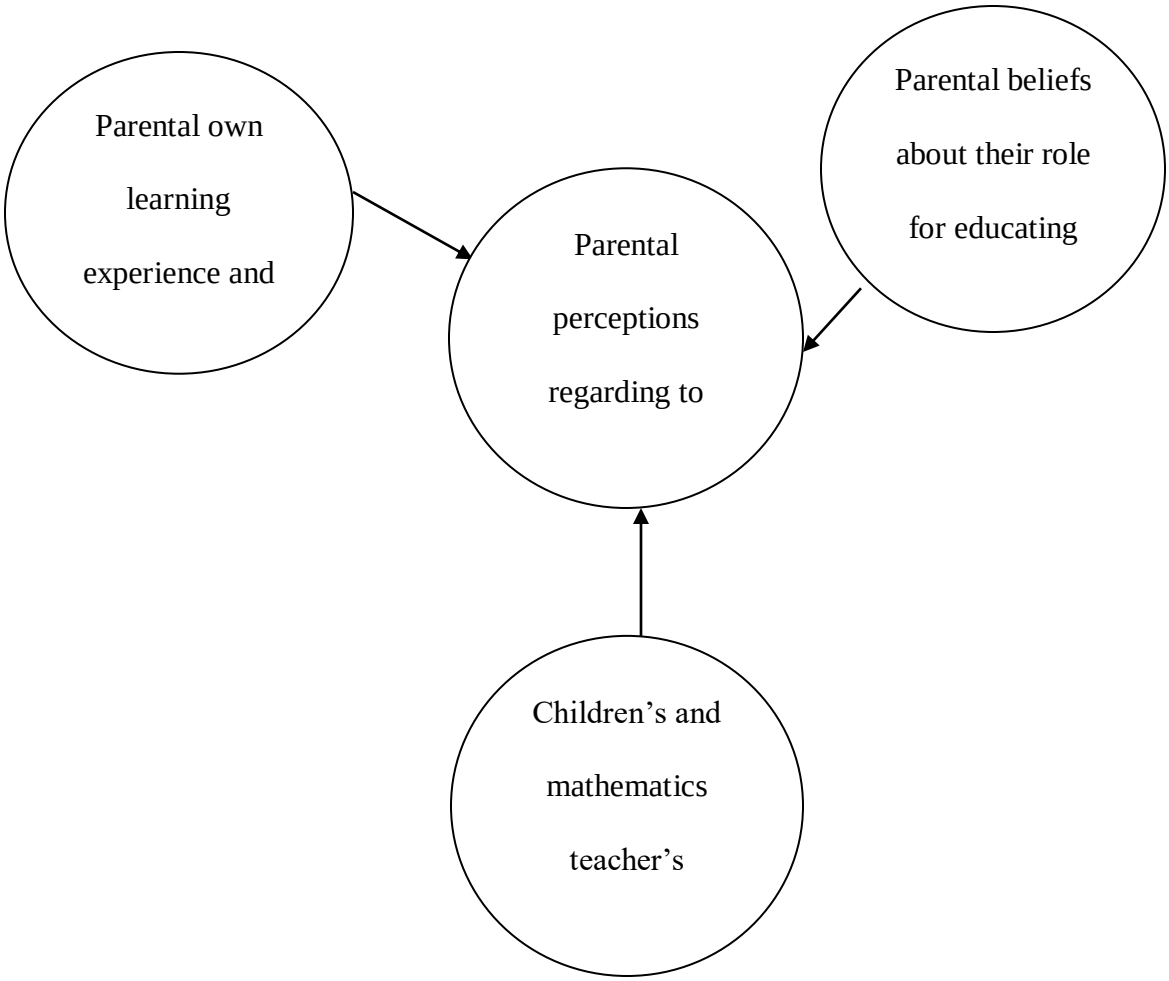
found positive relationship in the issue. He also found that level of parent's education was the most influencing factor for parent to be involved in their children's mathematical learning. Hence, Acharya (2010) has indicated that parental education being one of the influencing factors in their involvement. The scholar has left a ground for other factors also being responsible for their involvement. In this research I have tried to unfold possible other factors influencing parental involvement in their children's mathematics learning including one being parental level of education as told by Acharya (2010).

## Research gap

I read some related materials and thesis about parental involvement in their children's learning in both our context and foreign context. I found several researches focusing in the involvement of parents in their elementary level and primary level children. In my research I have tried to unfold parental perceptions about why do or why don't parents of middle school children involve in their children's mathematics learning. Researches in our context are generally focused on parental involvement in school and their involvement in monitoring and supervising their children at home. Basically there have been quantitative researches in the issue. Most of the research findings are suggesting that there is positive relationship between parental involvement and their children's mathematics achievement but researches do not talk about how parents approach their involvement in mathematics learning of their children. The researches, I have found, are not focused studying the influencing factors for the level of parental involvement in their children's mathematics learning in our context. I did not find the studies investigating about parental perceptions about why or why don't parents involve in their children's mathematics learning. I think that scholars have not focused research in

the area finding the factors influencing parental involvement in mathematics learning of their children in our context. I felt that we should first find the reasons behind why do or why don't parent involve themselves in their children's' mathematics learning from parental perspective and hence chose this topic to investigate parental perceptions about why do or why don't parents involve in their children's mathematics learning.

**Conceptual Framework of My Study**



The conceptual framework explains about the factors influencing parental perceptions hence influencing their involvement in mathematics learning of their children. The framework was to provide a framework that guided my research.

## Chapter Summary

The chapter describes different aspects relating to parental involvement. Related theory, different researches on related topic with thematic view have been included. I have furnished this chapter on the basis of the research purpose, review of literature and research questions. I have developed the conceptual framework of the study in this chapter that was described at the end of chapter.

# CHAPTER III

## RESEARCH METHODOLOGY

A researcher while doing research goes to the field with some agendas or research questions. Some answers do come in the form of numbers and some answers do come in the form of text. These things depend upon the research questions a researcher makes. Those data and text give shape to the research. A researcher decides his/her approach for getting answers of his/her research questions. For this, a researcher makes a mental map or a framework for his/her research that we call a paradigm. Wills (2007) say that research paradigm is a comprehensive belief system, world view of framework that guides research and practice in a field. Paradigms provide philosophical, theoretical, instrumental and methodological foundations for conducting research and in addition provide researchers with a platform from which to interpret the world (Morgan, 1983 as cited in Myers, 2000).

My research topic is 'Parental involvement in their children's mathematics learning: parental perceptions'. So my aim in the research was to know the existing parental perceptions about their involvement in their children's mathematics learning. I wanted to know parental perceptions about why they do involve in their children's mathematics learning or why they do not involve in their children's mathematics learning. It was not possible for getting those answers in the form of data but the information would come in the form of text hence I decided to adopt qualitative approach. Further, I had to know the parental perceptions about their involvement in their

children's mathematics learning. I knew that I had been taking in-depth interviews with my parent participants to get information from them to get answer of my research questions. Hence I chose interpretive research paradigm.

## Ontological Consideration

Ontology is the branch of philosophy that deals with nature of existence. It is concerned with the beliefs about what is to know about the world. Ontology literally means the science or study of being and is concerned with the nature of reality and their stances (Richards, 2003). What is reality or truth is determined by the position of ontology as Wills (2007) says that ontology is concerned with the nature of reality and various ontological positions reflect different prescription of what can be real and what cannot be. While doing course in M. Ed mathematics in the Kathmandu University, I read about different philosophical foundations. I understood that people makes their own meaning for defining anything being subjective or objective. Some people believe that there being a reality and other argues that there is no universal reality. Some people further say that reality differs with time and contest. According to them ideas looking true for one period may not come true for another period. Also the ideas seeming to be true for one context may not seem true for another context. I do put the same belief that people constantly make sense of their own world shaped by their ideas and experiences. They possess internally experienced sense of reality. I believe that there are multiple realities and parents have their own realities about their involvement practice. I believed on subjective knowledge within my research participants. My research participants constructed their realities in their own way during interviews. So, for me different parental perceptions about their involvement have been realities in my research study.

## Epistemological Consideration

I believe that realities are constructed and reconstructed with the interaction of the people. Epistemology is the branch of philosophy concerning with ways of knowing. The science of study of knowledge refers to the views we have about knowledge and the relationship between knower and know (Richards, 2003). It means that the aim of epistemology is to provide a foundation for what we consider to be true knowledge. As my research paradigm is interpretive research paradigm which focuses on subjective reality believing that my participants construct meanings as they engage with the world. I inquired about parental perceptions having interactions with my participants. I viewed each participant as a source of knowledge. My research was based on discussion and interviews with my participants. So, my epistemology was to construct knowledge through interaction.

## Axiology in My Research

Axiology is the branch of philosophy related with values. So it is theory of value (Richards, 2003). Richards (2003) says that all truths like all investigations and understanding are value-laden. Axiology studies how people think and determine the value of different things. Value is affected by individual perceptions. Axiology of interpretive paradigm believes that everyone is guided by certain values and decides the worth of any knowledge. I fully valued the knowledge I gain from my participants. I respected everyone's value and interpreted the data using my own value in my research. I believed that no values are wrong but they are different only. I have various value systems to carry out this research. These all value such as realities are contextual; they

are relative and co-existed with the human being. I use such value systems that are relevant in this research context.

## Research Method

I started with the research topic 'Parental involvement in mathematics learning of their children: Parental perceptions'. Under this topic, I wanted to know parental perceptions about why or why don't they involve them in their children's mathematics learning. I knew that the parents were the prime sources of information for getting answer of my research questions. Parents have their experience being a student/ guardians. I thought that my conversations with them will give shape to my research. I was fully convinced that I would get the text from the parents I required. I chose interpretive inquiry as my research method thinking that the parents would tell about their perceptions and views in the form of interviews and conversations. Interpretive inquiry in the research is my qualitative approach. Defining qualitative research, Denzin and Lincoln (2005) says:

> Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that makes the world visible. These practices transform the world. They turn the world in to the series of representations, including field notes, interviews, conversations, photographs, recordings, memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural setting, attempting to make sense of, or to interpret phenomena in terms of meaning people bring to them (p.3).

By means of un-structured interviews and observation, I have studied things in natural setting of my participants. The details of the events shared by parents in the form of interpretive inquiry have been important for giving shape to my research.

**Selection of Participants and Research site**

I conducted a small survey to select my participants. It took couple of weeks to select my research participants. I reached to two schools nearby to my resident and distributed questionnaires forms (see Appendix I) to some 80 students from class 7 and 8 for getting primary information. The questionnaires were handed out to parents to complete through their children. Out of some 80 questionnaires, 60 questionnaires were returned. The survey helped me to learn so many things. I had put the questions about if the parents were helping their children at home or not. I had asked the qualification of their parents. I was excited getting the information. Many parents had replied that they had been helping their children until when their children were in lower classes. Some had said that they were still helping their children in mathematics learning. With my surprise, some parents involved in filling the questionnaire form were known to me. I took time to select my participants. I looked for the participants who were appropriate for my research questions. I looked for the participants who could represent the wider group. I decided that I would select the parents who were of the qualification Intermediate or above thinking that they could be the rich informants for my study who could provide me the in–depth information. I visited my selected participants' homes and put my research issue to them. I informed them about my research purpose. I talked about my role and their roles in the research. They were ready to cooperate with me. I contacted other parents and finally chose 5 parents as my research participants. All five participants were the parents

of grade 7 and grade 8 students studying in boarding schools nearby to my resident at Gaushala in Kathmandu. Hence my research site was Kathmandu.

## Collection of Field Text

I employed interview and observation method to generate data in my study. In order to gain rich data, I developed interview guidelines focusing on the research questions. I did a rehearsal of an interview with my colleague before its actual implementation in the field. I did necessary modification in my interview guidelines. I used interview guidelines for employing interview in the field. The interview guidelines helped me to flow interview with parents. The interview questions were open-ended. According to Cohen, Manion and Morrison (2007), " Qualitative interviewer can range from unstructured to highly structured but interviews are open-ended in that respondent can answer in whatever way and to whatever extent they wish and in that there is some interaction with the interviewer who may probe, extend question or raise new topics". I asked parents about their perceptions about their involvement in their children mathematical learning. I asked them open questions to facilitate conversations. I asked questions like: can you tell me about why exactly you could not help your children? Sometime I asked them the probing questions like: what else can you tell about the way you read mathematics in your school life? I some time asked them the direct question like: Earlier you said you had helped your child in his/her learning, how does that relate to your opinion that you did not think you should help your child? These types of questions helped participants to share their views. I managed time for interview and home visit individually. I visited their home in the morning or in the evening or during holidays

when parents felt comfortable. I recorded interviews in my cell phone and later transcribed and analyzed to gain acquired data.

My observations also helped to enrich my field texts. I would observe the events and would note it down. For example, I sometime I would find parents teaching their children. Sometime I would not find parents at home. I sometime found some of the parents being involved in their children's learning and would sometime find some parents being not involved in their children learning. I frequently made a field visit and observed the participants involvement. I observed parents in their home to find out how they linked their perceptions in their home.

## Data Analysis and Interpretation

I knew that data analysis was a challenging job for doing any research. The same thing was applied to me as well as. I had difficult time for getting common themes of the data. I spent time for reading and re-reading the data that I had got from the field. I read my research questions number of times. I collected piece of information. I highlighted the information I needed. I looked for the common themes and looked it from different angles. In this regard Cohen, Manion and Morrison (2007) state, "Qualitative data analysis involves organizing, accounting for and explaining data, in short, making sense of data in terms of the participants' definitions of the situation, noting patterns, themes, categories and regularities". I finalized some themes then went through different literature to organize my data together. I do believe that I have tried my best to give possible answers to the research questions I had put for the topic.

## Quality Standard

Trustworthiness is my quality standard in my research. Trustworthiness demands attention on credibility, transferability, dependability and conformability of the findings. I have done the following to maintain trustworthiness.

i) Prolong engagement: I paid several visits to the home of parent participants in the period of three months in this research and have observed some events personally.

ii) Peer debriefing: I was in all time contact with a friend who was also doing Hermeneutic inquiry for his research. I have exposed myself to him and had got feedback that has provided me an opportunity for purifying my work.

iii) Member check: I have made several conversations with the parents who were my participants. I have tested their previous views in each of my next visit. I

iv) the overall purpose of the have used to the data only after becoming sure for their information.

## Ethical Issue

I had informed parents about research. They have taken part in the research voluntarily. I have maintained strict confidentiality of the information gathered about participants. The pseudo names are used for my participants. I believe that ethics is a normative science of human conduct. Thus I tried to maintain the norms of the human believe system. I attempt to maintain the ethics of care and ethics of benevolence. So that no one in the research would get hurt.

# CHAPTER IV

# BELIEFS ABOUT ROLE AND BELIEFS ABOUT UNDERSTANDING MATHEMATICS AND INVOLVEMENT

## Chapter Overview

In this chapter I elaborate the parental beliefs about their role for educating their children and their beliefs about understanding mathematics influencing their perceptions regarding to their involvement. I have discussed the data that those were collected from my research participants. I have discussed the data to include the themes that are generated in response to the research question "How do parental beliefs about their roles for educating their children and their beliefs about understanding mathematics influence their perceptions regarding to their involvement?" In response to this research question I have organized this chapter into following sub section: parental beliefs about their role and parental beliefs about their understanding of mathematics and parental involvement.

## Parental Beliefs about their Role

My participants in this study are from different social and cultural background so they have their own beliefs. They have their own beliefs about their roles for educating their children. Their beliefs guide their roles and behavior. " Beliefs are mental constructions of experience – often condensed and integrated into schemata or concepts that are held to be true and that guide behavior" (Sigel 1985, as cited in Hirsjarvi 2001). The parents determine their roles as per their beliefs. These beliefs guide their activities and behavior they show to their children. One of my parent participants Laxman, whose

daughter studies in class eight, believes that his duty is to send his daughter in to a renowned boarding school so as to fulfill his parenting role towards his daughter's education. In this regard, he says:

> *I have sent my daughter in a good boarding school. She was previously in another school. She could not do well in that school. So we changed her school. The new school is expensive. Now we hope that her learning will be alright.*

Parent Laxman believes that the previous school was not a well-known school so his daughter could not do well there. Explaining further he told that the school had not hired good teachers and there were more weak students in the school. He further told that he could then sleep soundly thinking that he has fulfilled his duty by admitting his daughter in a reputed school and believes that his daughter's learning will go right in the new school. So he did not think that he should pay special attention to her mathematics learning. There is another parent Kumar who has almost similar belief. He sends his daughter to school around at 7 a.m. and receives her at around at 5 p. m. (I found parent Kumar sending his daughter to the school or receiving his daughter from the school in the bus station nearby to his home in my some of the field visits). He says that he is happy with his parenting roles he is playing for his daughter. Along this line, Kumar says:

> *The school bus picks her up at 7: 30 am in the morning and she does come at 4 o'clock in the evening. She takes her day meal at school. The school should look after her as she is a day boarders.*

Admitting her daughter as a day boarders he feels that he has shifted the responsibility of educating his daughter to her school. Parent Anil has quite similar belief

about teaching his son as that of parents Laxman and Kumar is having. In this regard he says:

> *We are not reading; he is reading. He should know what he should learn. We have been giving him food on time and sending him to school and also buying books, copies for him.*

Parent Anil is probably saying that his duty is not to read but it is his son's duty to read because his son is a student. According to him the student should know what they should learn. Parent Anil believes that it is his responsibility to send his son in the school and to provide him with learning materials. But parent Dipak and Arun have different beliefs about their roles for educating their children. They both believe that they should look after their children at home and should also teach them at home. Making his statement clearer Dipak says:

> *A teacher cannot teach all the things at school. The students should learn those things. If we can help in their learning at home we should teach them. If we did not teach them they cannot still ask to their teacher because the teacher will be starting new lesson the next day.*

Dipak being a parent understands that teacher cannot teach all the mathematical problems or lessons in a limited period of 40-45 minutes. Hence, teacher gives homework to the student so as to cover the chapter or asks students to practice the problems at home. According to him teacher does not find time to revise the chapter as he/she needs to move to the new lesson the next day. He is of the opinion that parent should teach them at home. The same belief is there in parent Arun. In this regard, he says:

*If we did not involve in their learning they won't learn. We should help them in their problems so that they can understand the problem and finish their homework.*

According to him parent should involve in their children's learning otherwise their children do not put focus in the study. He believes that parent should help their children in their learning difficulties primarily in their homework. According to him, children learn better if their parents teach them. According to Hoover- Dempsy and Sandler (1997) parents involve in students learning because parents believe that their involvement help to make positive sense of learning for success in school.

**Beliefs about Understanding Mathematics**

All parent participants understood that mathematics is an important subject but in the mean time they found it is a difficult subject. Four parent participants expressed that "mathematics is a difficult subject". My four parent participants who felt mathematics as a difficult subject expressed that they had negative experience of mathematics. Research findings indicate that many adults in relation to mathematical tasks, admit to feeling of anxiety, helplessness, fear and dislike ( Haylock, 2007 as cited in Muir, 2012).Only one parent participant who is also a science teacher expressed that despite some difficulties in some situations he enjoyed mathematics learning and had a positive experience of mathematics.

**Mathematics in Daily Life**

I asked few semi- structured questions to capture their views about their understanding of mathematics. In this regard parent Laxman said:

> *Mathematics is a good subject. If a person is good in mathematical knowledge, s/he will be successful in many professions. It is an important subject. Without mathematics nothings can run.*

Explaining further in the discussion, he said:

> *Mathematics is needed at home while paying the workers, while paying the bills or while going there in the market.*

Expressing his beliefs about understanding mathematics, he replied:

> *It is easier for those who know mathematical ideas and difficult for those who don't know mathematical ideas. It is a boring subject because one need to remember formula and process but If one knows formula and uses his brain finds mathematics a easier one subject. If one does not pay attention finds this subject a difficult one. Who does not pay attention by the time teacher teaches finds the subject difficult. If one does not do practice feels it a difficult one.*

Parent Laxman finds mathematics as an important subject needing in daily life and believes that good mathematics learning provides a good job. He expresses that mathematics become a bore subject if formula and process are not memorized.

**Is Mathematics a Difficult Subject?**

Although many parents consider mathematics to be important, they also tend to think it is dull and boring based on the memorization of rules and procedures (Onslow, 1992 as cited in Muir 2012).

Parent Laxman is of the opinion that paying attention to the subject, reading formulas and doing practices help to overcome the learning difficulties in mathematics. In response to my question, whether this belief of understanding mathematics has

helped/has not helped his involvement in mathematics learning of his daughter, he replied:

> *My belief about understanding mathematics is that one should pay attention to the subject and should read formulas and do more practices. So, I do counsel my daughter to pay attention in the subject mathematics. I also advice her for reading formulas and doing more practice*.

Parent Laxman urges his daughter to pay attention in the subject mathematics. He is also counseling his daughter to do more practice in mathematics. His belief about understanding mathematics has helped him for being a mathematics counselor. In the same regard parent Kumar said:

> *Mathematics is very important subject. People need mathematics in every aspect of life.*

Explaining further in the discussion, he said:

> *Mathematics is everywhere. You can see mathematics even in politics. Counting vote is mathematics. Forming government needing 301 lawmakers is also mathematics.*

Expressing his beliefs about understanding mathematics, he replied:

> *Mathematics is difficult for those who do not learn and pay attention to the subject. Students, who, pay attention for learning it and listen to their teacher at classroom do not find it difficult.*

Parent Kumar also finds mathematics is a very important subject. According to Marshall and Swan (2010), it is also important to acknowledge the tension that exists between how mathematics is taught today compared with how it was learned by parents. Parent Kumar

found mathematics even in politics. According to him, a mathematical calculation also continues there in politics. Parent Kumar is of the opinion that paying attention in the subject and listening carefully to the teacher at the classroom helps student to understand mathematics. In response to my question, whether this belief of understanding mathematics has helped/has not helped his involvement in mathematics learning of his daughter, he replied:

> *My belief about understanding mathematics says that one should listen to their mathematics teacher to understand mathematics in the classroom. So, I do advice my daughter to listen to her teacher carefully in the classroom.*

Parent Kumar believes that listening to the teacher at classroom helps understanding mathematics. So, he counsels his daughter to listen to mathematics teacher at class. Mathematics learning counseling has been defined as a kind of parental involvement by Cai. Cai (2003 as cited in Muir 2012) identified five parental roles in middle school students learning of mathematics: motivator, monitor, resource provider, mathematics content advisor, and mathematics learning counselor.

In the same regard parent Anil said:

> *Mathematics is very important subject. Without mathematics nothing runs in human life. Mathematics may have different form or look but is everywhere there.*

Explaining further in the discussion, he said:

> *Mathematics is there in astrology, there in accountancy, there in science.*

Expressing his beliefs about understanding of mathematics, he replied:

> *The students do not want to put stress in their mind so they feel it difficult. They want to get everything easily. When one get sink in the mathematics do like to do*

*more mathematics. The curriculum is not making mathematics interesting hence students feel it a difficult subject.*

Parent Anil finds mathematics as an important subject. He thinks that mathematics is everywhere being applicable in different field. He does not see mathematics a difficult subject. As Copes (1979) stated mathematics is absolutism, which views mathematics as a collections of facts whose truth is verifiable in the physical world. Parent Anil said that students do not like to use their brain and want to know mathematics without hard work. Anil also blamed the mathematical curriculum for not making mathematics interesting. In response to my question, whether this belief of understanding mathematics has helped/has not helped his involvement in mathematics learning of his son, he replied:

*I give advice to my son for not using the calculator. I believe that to use calculator mean not to use own brain. One should use his/her brain to solve mathematics problems. I also give advice him to practice more mathematical problems.*

Parent Anil has been advising his son that it is not good to use of calculator for his son believing that use of calculator prevent students from using their brain. So he shows his involvement being a mathematics counselor for his child.

In the same regard, parent Dipak said:

*Mathematics is a subject in which the world is dependent.*

Explaining further in the discussion, he said:

*Where ever we go we find mathematics. You need mathematics when you go in a bank. You need mathematics to calculate interest and percentage. If you go to*

*engineering or science you need mathematics. In science, when you go to the molecular things it is all about mathematics.*

Expressing his beliefs about understanding mathematics, he replied:

*If you try to understand logical things it's an easier and interesting subject. If you don't understand logic it will be very difficult.*

Parent Dipak thinks that mathematics is highly important subject that makes the word dependent on it. As Mulero, Segura and Sepulcre (2012) stated that mathematics expresses itself everywhere, in almost every facet of life, in nature all around us and in the technologies in our hands. Parent Dipak finds mathematics everywhere. He looks mathematics there in the molecular level of science. He emphasized for understanding the logical things in mathematics so as to find the subject both easier and interesting. In response to my question; whether this belief of understanding mathematics has helped/has not helped his involvement in mathematics learning of his son, he replied:

*I used to advice my children to understand logical things in mathematics.*

In the same regard, parent Arun said:

*In this world how many things are there all related to mathematics. If there is no mathematics we cannot talk about science and development.*

Explaining further in the discussion, he said:

*You need mathematics everywhere. In daily life, you need to calculate your income and expenses. While you buy or sell land you need mathematics.*

Expressing his beliefs about understanding mathematics, he replied:

*Students need concentration in mathematics. Who pay concentration and follow the techniques feel mathematics an easier one otherwise they feel difficult.*

> *Further, who look for and understand why this, why mathematical process find mathematics easier.*

Parent Arun thinks that we would not have seen science and development in today's form if there had been no mathematics. He thinks that mathematics is so important needing in day to day life in different areas. According to him knowing techniques and knowing the way how mathematical terms have come help to overcome the difficulties in mathematics. Linking his beliefs about understanding mathematics and his perceptions regarding to his involvement, he told:

> *I have understood that while teaching our children mathematics we should teach them the process logically and we should keep counseling them in their mathematics learning.*

Parent Arun believes that his beliefs about understanding mathematics have helped him to teach his child mathematics more logically. His opinion reflects that counseling helps children to improve their mathematics learning.

## Chapter Summary

I have introduced parental beliefs about their role for educating their children and their understanding of mathematics and its influence in their involvement in mathematical learning of their children in this chapter. In this chapter I have reflected on the different views on beliefs about role for involving in mathematics learning of their children and understanding of mathematics and their involvement through different related research studies and through participants' viewpoints. Then I interpreted the information that I obtained from the text in reference to few previous research studies and participants viewpoints.

# CHAPTER V

# MATHEMATICS LEARNING EXPERIENCE, LEVEL OF EDUCATION AND INVOLVEMENT

## Chapter Overview

In this chapter I tried to elaborate the parental mathematical learning experience and level of education and its impact in involvement of parents in their children's mathematical learning. This chapter contains the discussion of the data that I collected from my research participants. I have discussed their views including the themes that are generated in response to the research question "How do parental mathematical learning experience and level of education influence their perceptions regarding to their involvement?" In responding to this research question I have organized this chapter into following sub section: parental mathematical learning experience, level of education of parents and their involvement.

## Parent's Learning Experience and Involvement

Learning experience guides parents' "How to present their mathematical knowledge with their children." In the case of helping a child for learning mathematics by their parent is influenced by the learning experience of parent. How did a parent experience about learning mathematics in his/her schooling, s/he does behave with their children in the same way. A parent who believes that parental help is essential for the students to learn mathematics involves him/herself actively. McMullen and Abreu (2009) focuses that parents past experiences influences the way in which they construct their

mathematical identities and their representations of different mathematical practices, and these factors influence the ways they interact with their children's learning.

**Learning Mathematics: Needing Hard Effort**

Parental involvement behavior is influenced by the experience that a parent has. How a parent experience mathematics influence how s/he involve in their children's' mathematical learning. According to Hoover-Dempsey and Sandler (1997), the parental involvement behavior varies according to past experience of parents. In response to my research question related to this, a participant Laxman replied:

> *I learned in a government school. I was not so good in mathematics but I would practice mathematics and ask teacher questions wherever I would not understand the problem. My brother would teach mathematics to me. I would put extra effort to mathematics because I was weak in mathematics.*

Parent Laxman said that he was not good in solving mathematics. He usually practiced mathematics more. When he found difficulties in any problem to solve it he took help from his brother and teacher. As NCTM (1989) stated that some emphasize doing mathematics rather than knowing. Parent Laxman thought that he was weak in mathematics and he put extra effort to learn. In this process his brother helped him. Further recalling his past he said:

> *I was weak in mathematics and hence did not take optional mathematics. I felt arithmetic a difficult one in my school level but I would do the algebra and geometry quite easily than arithmetic. I don't know why I felt arithmetic a difficult one.*

Parent Laxman is probably saying that he was not good in learning mathematics at that time. He felt that mathematics was hard to learn and its arithmetic part was difficult than other parts. Talking about his past study he told:

*I did not take mathematics in higher level as a major subject.*

According to him students can take optional Mathematics if a student solve mathematics or he or she can feel mathematics is easy to learn. Linking his experience to his involvement practice, he told that:

*My brother usually taught me mathematics while I was in school. His teaching helped me a lot. So I feel that I should also teach my daughter. I taught her until she was there in class five.*

Parents' beliefs about the importance of learning mathematics have been related to the involvement practice of parents.

**Learning Mathematics: Active Interaction**

A parent who has experienced that mathematics can be learnt actively is associated with a parental experience about learning mathematics. According to this learning of mathematics can be active, while learning process is more interactive. In this regards Patrikakou et al. (2005) stated that "families have a profound impact on children's cognitive, social and emotional development." In response to the questions, regarding to mathematics learning experience of childhood, another participant Kumar said:

*I learned in a government school. I was quite good in mathematics until when I was there in class 8. Then slowly I fell weak in mathematics and could hardly pass the SLC examination in mathematics. There was no one to teach me at home.*

Parent Kumar says he could solve and learn mathematics in lower classes of school. At that time, according to him, he was quite good in mathematics. Up to grade eighth he was good in learning but he said that he got hardly pass mark in SLC examination. During the series of conversation, he recalled his past and said:

> *I was good in multiplication. I can still tell the mathematical table up to 20. I could not understand geometry in class 9 and 10. I felt arithmetic also a difficult one.*

Kumar says he is still remembering the mathematical table up to 20. He says that while he started his grade nine he failed to understand geometry as well arithmetic. According to Henderson (1987), parent involvement is an important factor in a student's educational success all the way to the high school level. Talking about his higher level of education he obtained, he told:

> *I did not continue mathematics in higher level. There was no one to teach me in home while I was in school level so I couldn't do better in mathematics. So I couldn't continue mathematics for further study.*

Linking his experience to his involvement practice, he told that:

> *I have known from my experience that children need help for doing better in mathematics. So I have thought that I will hire a tuition teacher for her when she will be in class 9.*

Parent Kumar believes that he could not do well in mathematics in his school life because there was no one to help him at home. His experience led him to thought about hiring a tuition teacher to assist his daughter in her mathematics learning at home. In the same regards, recalling childhood experience of mathematics a parent Anil said:

*I do homework in my own. I would try the problem in my own from different ways. I did not ask problems to the teacher as he was not friendly. I did not take optional mathematics as my father did not encourage me to take optional mathematics.*

Anil says, his teacher was not friendly with him. He tried to solve problem by his own. He didn't take optional mathematics because his father didn't encourage him to learn mathematics. Linking to his experience to his involvement practice, he told,

*I did not take optional mathematics and did not continue mathematics in higher level. Though I know little mathematics of his level but I think that I may not help him in the way his teachers teach him in the school.*

Parent Anil believed that his teaching may not produce good outcome in his son's mathematics learning. He is having doubt in his teaching ability and so does not like to teach his son at home. In the same regards self-efficacy theory suggests that parents make their decision about involvement in part by thinking about the outcomes likely to follow their actions (Bandura 1997; Hoover-Dempsey, 1992, as cited in Hoover-Dempsey, 1997).According to Ontario Ministry of Education (2004), Children learn easily when they can connect math concepts and procedures to their own experience. By using common household objects (such as measuring cups and spoons in the kitchen) and observing everyday events (such as weather patterns over the course of a week), they can "see" the ideas that are being taught.

**Parental Level of Education and their Involvement**

According to Scales and Leffert (2004), there are different internal and external factors that assets the individual successful development. An individual success in

academics is influenced by many factors. External assets are the relationships and opportunities available in one's environment. Internal assets are competencies and values that an individual develops within him or her.

**I don't know Mathematics: I can't Help my Child**

Parental education may influence the willingness or ability for parents to become involved in children's learning (Bogenschneider, 1997). Parental educational level is a characteristic that affect the amount of parental involvement. A parent's more involvement in their child's schooling help to perform better academically and reaches a higher level of achievement. The parents who have lower levels of education are more involved, the effect is greater and more positive than when parents who have higher levels of education are involved (Hill et al., 2002). Parents with lower level of academic qualification or education feel incapable to assist their child. But in contrast it seems that parents with lower level of education do become involved because of a desire for their child to have upward mobility in the world and so their child achieves things they themselves could not. Parents with a higher education level typically have more opportunities to become more involved in children's learning for their academic success. In response to the question, what is the connection of his/her level of education to his involvement in mathematics learning of his children, a participant Kumar said:

> *I did not continue mathematics in higher level. I did B. A in Political Science. Sometimes I tried to help my child to learn mathematics but it is difficult for me, so I don't involve more.*

This parent says that he was good in mathematics up to class eight, but he didn't take mathematics for his further study in higher level. He said that his involvement in his

daughters mathematics learning went reducing as his daughter stepped in higher classes. Exploring further he said:

> *I taught my child until she was there in 3 and 4 after that I could not teach her. I found different new chapters in her book which we had not learned in our time.*

Kumar says that without content knowledge there are difficulties in helping children's mathematics learning process.

**I Know Mathematics a Bit: I Help My Child**

According to Tavani and Losh (2003) parents who have higher level of education can help for certain expectations that are important to their child. Parents who have higher education are more academically involved and put greater emphasis on their children's academic level. In response to the question, what is the linking of his level of education to his involvement in mathematics learning of his children, a parent Dipak said:

> *I was not so good or so bad. I was very good in class 6 or 7 then fell to become average student there in class 9 and 10. I found theorems and construction difficult in geometry. I would practice mathematics a lot. I was afraid of the teachers and would not ask them because they were not supportive. I would sometime do homework from my friends.*

Parent Dipak is probably saying that he was average student in school level. He could solve mathematics but thought that he was not an excellent student. Parent Dipak said that geometry and its parts were difficult to him. He practiced mathematics a lot. Talking about his higher level of education he obtained, he told:

*I completed Intermediate in Science with mathematics and completed B.Sc. in Physics. I have learnt and understood mathematics. I know that how to teach mathematics to the children. I do help my son in his mathematics learning.*

Parent Dipak says that he is feeling comfortable to help his child because he is from mathematics background with higher level of education. He is helping his child to learn mathematics. He involved himself more in his child's mathematical learning because he believed that his teaching would help his child to learn mathematics better. In this regards Bandura (1977) stated that self-efficacy is a significant factor in decisions about the goals one chooses to pursue as well as effort and persistence in working toward the accomplishment of the goals. Sandefur (2006) states that parents can find the most convenient form and way that best fit their lifestyle to be involved in their child's academics. Although a parent Anil says he was good in mathematics in school level and he gave more priority to mathematics but in talking about his higher level of education he told:

*I was good in mathematics. I would give more priority to mathematics. I remained good in mathematics throughout my school life. I did not continue mathematics in higher level. I completed B. A. in Nepali and Political science.*

Parent Anil says that he has learnt and understood mathematics. He says he knows that how to teach mathematics to the children. He is helping his son in his mathematics learning. In this regards a Parent Arun said:

*I was very good in school level but I found different mathematics in higher level. The mathematics we learned in the higher level at that time is being learned by student in class 5 and 6.*

Further recalling his past, he said:

> *Initially, I had my brother to teach me mathematics but later on there was no one to assist me and I had to work harder myself.*

Talking about his higher education he obtained, he told:

> *I took mathematics in intermediate and bachelor level. I completed master degree in Public health. I am helping my son in his mathematics learning. My child believes that I can teach him. Now, he is in class eight. I am teaching my son mathematics throughout his classes.*

Parent Arun said that he took mathematics in higher level and he is helping his son in his mathematics learning. According to Ermisch and Pronzato (2010), parental education is of course just one aspect of family background that influences children's subsequent achievements as adults, but an important one. Parent's educational background has a large impact on their children's learning which affects children's aspirations. Children's education is likely reflecting a true causal effect of parent's education.

## Chapter Summary

In this chapter I have introduced about parental learning experience of mathematics and level of education of parent's. I have reflected different views about this topic through my participants' views point and from the related research study. In this chapter I have collected different voice of participants and interpreted those information collected. I have interpreted the text that I obtained from previous related research study and participants view's.

# CHAPTER VI

# INVITATIONS AND INVOLVEMENT

## Chapter Overview

In this chapter I discuss the parental involvement in their children's mathematical learning according to their children's and teachers invitations. This chapter contains the discussion of the data that I collected from my research participants. I have tried to include the themes that are generated through the response to the research question "How do invitations from child and teacher influence their perceptions regarding to their involvement?" In response to this research question I have organized this chapter into following sub section: invitation from children and invitation from mathematics teachers.

## Invitation from Children and Involvement

Parental involvement is influenced by invitations from their children. According to Hoover-Dempsey and Sandler (1997), Children's invitation influences the parental involvement. Children may hold more emotional influence over parental decisions because they have personal relationship. That emotion influence to a parent for his/her involvement. Parental involvement decisions are influenced by children's invitations. Epstein (1986) says parents' also become involved in children's learning because they perceive invitations from their children. Those invitations influence parents' involvement in learning. Children themselves also have the potentialities to promote or discourage parental involvement in their learning.

Children's willingness for participation and invitation can promote parental involvement in their learning if children tell their parents' about the school day and other thing that related to their learning. In this regard a parent Laxman said:

> *Until my daughter was there in class five I taught her. Now she does not invite me to teach her mathematics.*

Parent Laxman says his daughter does not invite him to teach. According to General Teaching Council for England (2006) children who are passive to promote or to invite their parents, in such situations parents are not actively involved in their children's learning. Without invitation by his daughter parent Laxman is not involving himself in mathematics learning of his daughter. Most parents want their children to succeed in school and everywhere. Parents are willing to help them in as many ways as possible, but without invitations from children, parents won't be active. In the same context parent Kumar said:

> *My daughter says she will learn from her friend. She would invite me to teach her until when she was there in primary level. I also do not find time to teach her. I do go in the morning walk and in the evening I do generally go in the get together with friends.*

In this regard a parent Anil said:

> *I read in Nepali medium. My child does not like teaching him in Nepali medium. So he does not invite me to teach him.*

Parent Kumar says that he does not have time to teach his daughter. His daughter is learning mathematics from her friends. Due to the lack of time and invitations from his daughter, he is not helping her daughter in learning mathematics. Another parent Anil

also involved himself few in his child's learning. He says his son does not invite him to teach so he is not involving himself more. In response to the same question a parent Dipak said:

> *Generally, my child takes my teaching positively. Sometime he says that the teacher in a school taught him in a different way than I had taught him but I can handle that.*

In the same case a parent Arun said:

> *My son asks me his mathematical problems. I do teach him. He is taking my teaching positively.*

These parents Dipak and Arun are involving themselves because their children's are accepting their teaching style and inviting them to teach. Dipak says he is using different methods for teaching his son than his teacher does but his son is accepting him. Arun is also helping his son to learn because his son is asking him while he cannot solve. Abreu and Cline (2005 as cited in, McMullen and Abreu 2009) found that many parents were confronted with difference between their own ways of tackling mathematics and methods their children learned at school. Parent Dipak also feels the same but his child invites him to teach so he involves himself.

**Invitations from Teacher and Involvement**

According to Eccles & Harold (1993), patterns of teacher attitudes and invitations are important to many parents' decisions about participations in children's learning. Invitation for involvement presented by teacher for well complement of child mathematical learning influences on parent's involvement decisions. According to Epstein (1986), parents are highly involved in their children's learning, while teacher

invites parents in children's mathematical activities. Parental involvement is positively influenced according to teachers' invitations.

The invitation presented by teacher in the learning of children to the parents creates parents' involvement. The basic decision of parents about involvement is influenced by invitation that proposed by teacher. Inviting parents by teacher has a positive impact upon parent's role in teaching their children. In this regard a parent Kumar said:

> *My daughter is not asking any relevant mathematical problem to me. Similarly her mathematics teacher never invites me to participate on different programs, in discussion. Her teacher never talks me on the matter of her learning. Her teacher never calls me for discussion so I don't know, about the real condition of my daughter in mathematics learning.*

Parent Kumar says his daughters' teacher does not invite him for discussion on the matter of mathematics learning. He is not involving himself for teaching his daughter in home because no one invites him. In response to the same question a parent Laxman said:

> *I taught my daughter until she was in Grade five. At that time her teacher used to call me and discussed on the matter of her learning mathematics. Now her teacher is not calling me, so I could think that my help is not necessary to her.*

Parent Laxman also feels the same as Kumar feels. He is not motivated in involving himself in his child's learning. In the same regard a parent Dipak said:

> *Last week I went in my son's school. His teacher called me and made a plan to meet at school. His teacher talked me about my son's mathematical learning. His*

*teacher requested me to teach my child at home. Many times I went there and teacher invites me to involve in my son's mathematical learning. So I am helping my sons these days.*

Parent Dipak is invited by teacher so he says he is teaching mathematics to his son. Teacher usually talks him on the matter of his sons' mathematical learning. That invitation made him to involve him in learning mathematics. According to Comer & Haynes (1991, as cited in Hoover-Dempsy & Sandler, 1997), understanding about parents help to increase parents' involvement and that helps to improve students' performance.

## Chapter Summary

In this chapter I have introduced about invitation by child and by math teacher to their parents and its influences in parental involvement. I have reflected different views about this topic through my participants' views point and from the related research study. In this chapter I collected voice of participants and interpreted that information. I have interpreted the text that I obtained from previous related research study and participants view's.

# CHAPTER VII

# REFLECTIONS AND CONCLUSION

## Chapter Overview

This is the final chapter of my research study. As final chapter the study concludes my study which I had drawn from Chapter I to Chapter VI. As final chapter this chapter has been developed in three different sections: chapter summary, constructing research problem and questions, key findings and discussion, insights and conclusion. The chapter tries to establish a value of overall study and its approaches. In this chapter key findings and discussion are described. Conclusion of this research study is described in the last section as conclusion and necessary insights for corrective measures are recommended for various stakeholders in last section of this chapter.

## Summary of Chapters

This research study was designed to study the parental perceptions regarding to their involvement about why do or why don't parent involve in mathematics learning of their children. Related research studies and related types of questions were used to explore the parental perceptions regarding to their involvement.

The first chapter of this research study was begun with the background of the area under study with experiences of the researcher. The background of study presented a brief exploration of the existing situation of parental involvement perception in mathematics learning of their children. Other essential component of the chapter were the teaching career experience of the researcher, literacy and parents, statements of the

problem, purpose of the study, research questions, significance of the study, delimitations of the study and dissertation plan were included.

The second chapter of this research study dealt with the related literature review which constituted thematic reviews and theoretical reviews with the study objectives. For overall research study the conceptual framework was developed in this chapter.

Similarly in the third chapter the detailed procedures needed to do this research were included. The third chapter entailed the detailed procedure of the study approach as research methodology. The qualitative approach used in this study was discussed in this section. This chapter described the philosophical standpoints of the study; selections of participants and research site, data analysis and interpretation, quality standard and ethical issue were described.

In the fourth chapter, the analysis of parental beliefs about their role and parental understanding of mathematics and their perceptions about their involvement has been included with various references of research study and viewpoints of the participants. This chapter explained the parental beliefs through review of related literatures and the information collected through interview.

In the fifth chapter, the mathematics learning experience of parents and their level of education have been analyzed and discussed so as to investigate parental perceptions regarding to their involvement in mathematics learning of their children.

In the sixth chapter invitation by children and invitation from the child's math teachers and their influences were included. This chapter dealt with the impact of invitation by child and mathematics teacher to the parents for making perceptions about their involvement in their children's mathematics learning.

The seventh is the last chapter of this research study. This chapter summarizes major findings of the research. In this chapter the reflection of the research, developing conceptual basis, the way of designing research, the responds of the research questions, key findings and discussion, conclusion and insights of the study are described.

## Constructing Research Problem and Questions

At the beginning of this research, I had no idea about the research. I chose this topic for my research after going through some literatures and previous research works. At the time of starting this research, I was totally confused. I couldn't find the appropriate way of research. I started writing but I felt that I was simply filling the pages with text. I was not quite aware about what things to include and what things to exclude in my research. As suggested by my supervisor, I started writing my past experiences in a narrative way. In many instances I could not link my experience with my research topic. I had difficulty for finalizing my research questions. I thought about multiple aspects those could be responsible for parental decisions about their involvement in their children's mathematical learning. It was not possible for me to include so many questions in my research because of various reasons. But I was clear about my research topic that I wanted to know about how parents perceive their role in their children's mathematical learning. I wanted to know what factors are influencing their perceptions regarding to their involvement in their children's mathematics learning. I went through some articles, journals, reports, dissertations and books and finalize my research questions. Those references helped me to find some related answers to the research questions. Continuous guidance and instruction from the teacher and supervisor helped me to keep moving ahead in research.

I had tried to find the parental perceptions about their involvement in their children's mathematical learning. I developed some texts from the different researches. Those texts helped me to go further steps in my research. I prepared some interview guidelines through those texts and went to the field. Moving into the field was both exciting and challenging. I was excited being there in the field because I had been there in the field for my research work that aimed to explore parental perceptions about their involvement in mathematics learning of their children in our context. I would feel proud collecting texts thinking that I aim to generate new understanding of parental perception in my research. I had a chance to meet parents of different social and cultural background and got an opportunity to know about their ideas in their natural setting. There were also some challenges in the field work. There had been problem for time management. I would not find parents at scheduled time at home. Sometime I had difficulties for maintaining the flow of conversation. I had to always think about comfort of my parent participants. I always tried to shape myself as per the feeling of my parent participants. The text created through reading different related research helped me to talk with participants in different fields that helped me to know parental perceptions regarding to their involvement.

The research questions guided my whole research process though research questions were restructured and modified for several times according to purpose of my research study. I had prepared the following research questions for my research.

a) How do parental beliefs about their roles for educating their children and their beliefs about understanding mathematics influence their perceptions regarding to their involvement?

b) How do parental education and their own learning experience influence their perceptions regarding to their involvement in their children's mathematics learning?

c) How do invitations from children and their mathematics teachers influence their perceptions regarding to their involvement in their children's mathematics learning?

I used interpretive inquiry as a method of my research. The methodology showed the path of research study whereas research questions guided my research study. So in my research my methodology helped me to find the answers to those research questions. The answers to my research questions are included in chapter IV, V and VI in more descriptive form. From the help of those chapters I tried to make answers to different research questions that I made.

**a) How do parental beliefs about their roles for educating their children and their beliefs about understanding mathematics influence their perceptions regarding to their involvement?**

From the participants views I found that parental beliefs about their roles for educating their children appeared to be one of the most influential factors for parental decision about their involvement in mathematics learning of their children. As Hoover-Dempsy and Sandler (1995, as cited in Hoover-Dempsy & Sandler, 1997) stated, that parents involve themselves in students learning because parents believe that their involvement help to make positive sense of learning for their children's success in school. My parent participants have mixed voices about their role for educating their children. Some parent, in my study, expressed that their duty simply was to admit their children in

good boarding school or to keep their children as day scholar in the school. They further expressed that they have been fulfilling their parental role for educating their children by sending them to school and buying necessary teaching and learning materials for their children. But responding the same the other parents expressed that it is also their duty to look after their children's learning at home. They expressed that their children need help in their mathematics learning at home to improve their mathematics learning. From the study I found that, the parents who believed that it is school's responsibility to teach their children mathematics at school were found to be less involved in their children mathematics learning in comparison to the parents who believed that it is also their duty to help their children in their mathematics learning at home.

In my study, I found that many parents had similar belief recognizing mathematics as an important subject. In the meantime many parents in my research expressed that mathematics is a difficult subject which still resides in their mind. The parents who felt mathematics as a difficult subject expressed that they had negative experience of mathematics. Parents who could understand mathematics had a positive experience of mathematics. Parents believed that mathematics is an important subject that is useful in daily life and also believed that good mathematics learning provides a good job. Some of the parent expressed that they know mathematics is an important subject but the formula and process that should be memorized is making mathematics a boring subject. Onslow (1992, as cited in Muir 2012) also said many parents consider mathematics as an important as well boring subject because of memorization of rules and procedures. Many parent understood mathematics as an important subject hence they encouraged their children to focus on mathematics in one or other ways.

As my research question was to know about parental perceptions regarding to their involvement by knowing about their beliefs about understanding mathematics, I employed probing questions to unfold their beliefs about understanding mathematics. In my study I found that parents had diverse beliefs about understanding mathematics. In this regard, some parents expressed that understanding mathematic mean was to remember formulas required for solving the problem. Some other said that understanding mathematics for them was mean to know the logic or to know the process or was ability to solve the mathematical problems.

I found through the texts that parents tried to involve themselves in their children's mathematics learning as per their understanding of mathematics. Parent who believed that understanding mathematics mean to remember formulas expressed that they encouraged their children to memorize formula. The parent who believed that understanding mathematics mean to able to solve the problem expressed that he is counseling his children to focus on problem solving. Parental beliefs about understanding mathematics influences their involvement perception in their children's mathematical learning. I found through the texts that parents are involving themselves in their children's mathematical learning as a motivator or as a counselor as they are having beliefs about understanding mathematics.

**b) How do parental education and their own learning experience influence their perceptions regarding to their involvement in their children's mathematics learning?**

The parental mathematical learning experience and level of education make impact in involvement of parents in their children's mathematical learning. The learning

experience of parent influences the way parents help their children's mathematical learning. Parent who believed that parental help is essential for the students to learn mathematics involve him/herself actively. From the text that I have generated through participants view point and previous related research, parents past experiences influences the way in which they construct their mathematical identities and their representations of different mathematical practices, and these factors influence the ways they interact with their children's learning. A parental experience about mathematics influences how s/he involves in their children's' mathematical learning.

In my study, I found that the parent who had experienced that mathematics can be learnt easily if assisted by someone at home was tend to be more involved in his child's mathematics learning. From the text I found that the parents who felt the need of assistance in their childhood expressed that they tend to involve in their children's mathematics learning. If parents learn mathematics through the connecting concepts and producers to their own experience, they involve themselves as they learn mathematics because they said their involvement helped their children to be a good learner of mathematics. So experience of parents' about mathematics influence the parental perceptions regarding to their involvement.

I had designed my interview guidelines to know the parental level of education so as to get the answer of my second research questions. From the literature I had understood that another factor that influences parental perceptions regarding to their involvement is parental education. Parental educational level is one of the factors that affect the amount of parental involvement. A parent's involvements in their child's schooling help to perform better academically and reach a higher level of achievement.

Form the text I found that the parents who have lower levels of education were more involved when their children were in lower classes. It seems that parents with lower level of education do become involved because of a desire for their child to have upward mobility in the world and so their child achieves things they themselves could not. From the participants I found that parents who have higher level of education were more involved in mathematics contents of their children. The parent with higher mathematics qualification expressed that they were comfortable to teach their children in the middle school, whereas, the parent with lower mathematical qualification expressed that they had already left their children teaching the mathematics contents. Parent who has higher education are more academically involved in comparison to the parents with lower level of education. So I found that level of education influenced the parental involvement perception.

**c) How do invitations from children and their mathematics teachers influence their perceptions regarding to their involvement?**

My third research question had aim to unfold the parental perceptions about their involvement depending upon the invitations from their children or from their mathematics teachers. From the literature I had known that children's invitation influences the parental perceptions regarding to their involvement. Children may hold more emotional influence over parental decisions about their involvement because they have personal relationship. Parental involvement decisions are influenced by children's invitations. From the text I found that children who were passive to share their mathematics learning experience and did not like to ask questions to their parents or reject their parents' participation in their mathematics learning, their parents were not

actively involved in their children's learning. In the other hand the children who desired to be helped by their parents and invited their parents in their mathematics learning, their parents were tend to be more involved in their children's mathematics learning. In my study I found that parents are willing to help their children in many ways but without invitations from their children, they are not supposed to help their children in a way they want.

Teachers' invitations are important to many parent's decisions about participations in children's learning. Invitation for involvement presented by teacher for well complement of child mathematical learning influences on parent's involvement decisions. In my study I found that many parents have not got invitation from the mathematics teacher to teach their child at home. According to the text from the participants I found that the invitation presented by teacher and children influenced parental perceptions regarding to their involvement.

## Key Findings and Discussion

Parental perceptions regarding to their involvement in their children's mathematical learning is influenced by parents' belief about involvement, learning experience and level of education and invitations by child and mathematics teacher. In my research study I found that most of participants said the same. According to them parental beliefs about learning mathematics determine why and why don't parent's participated in children's learning.

According to Hoover-Dempsey and Sandler (1995), parents become involved because they construct role as including personal involvement in their children's education. Through interpreting the participants view points and previous related research

studies to this research study, this study identified that the involvement of parents in mathematical learning of their children is determined by parents' belief about involvement of parents. From the research, I concluded that with the positive and higher level of beliefs of involvement made higher and active level of involvement of parents. Participants described their practices in the same way, where their beliefs work. Parental perceptions regarding to their involvement depend upon the belief of parents towards involvement.

The research study helped me to know parental perceptions regarding to their involvement in mathematics learning of their children. There is a notable consensus a cross education policy statements and practice guidelines in many countries that parents are children's first and most enduring educators (OCED, 2012). In this, participants' views helped me to find parental perceptions about why do or why don't parents involve in mathematics learning of children. According to participants view, parents are involved as guided by the learning experience of them. Learning experience and level of education influenced their involvement. Without strong mathematical background of parents involvement is looking poor.

Invitations by teacher and by their child also determine the parental perceptions regarding to their involvement towards mathematical learning of their children. Invitations by children inspire parents to involve themselves and invitation by math teachers of children demand their need for involving in their children's mathematics learning. Parents involve themselves in learning mathematics of their children according to invitations from their children and their math teachers.

From the study I found that parents found one or other ways to involve themselves in their children mathematical learning depending upon their beliefs about their role, beliefs about understanding mathematics, their experiences, their level of education and invitation from their children and their mathematics teachers. All the parent participants wanted their children to improve their mathematics learning and found their own way to involve themselves in their children's mathematics learning. The degree or the tendency of involvement perception varied among participants depending upon the influencing factors like their beliefs, experience, education and invitations. The parent participants perceived their role as motivator, mathematics content advisor, mathematics learning counselor etc. depending upon the influencing factors stated above.

## Key Insights

Based on findings of this research, I describe the key insights of the research for parents, teachers and researcher.

### For Parents

This research focuses on parental perceptions regarding to their involvement in mathematical learning of their children. This study furthermore has carried out the answer of parental perceptions about why do or why don't parents involve themselves in their children's learning. This research study includes the answer of this question through the view of parental beliefs about involvement, learning experience and level of education and invitations by teacher and their children. So from the research it can be concluded that this research study can be beneficial for parents to identify their roles to help their children to learn mathematics at home. This study may help parents for playing different involvement roles to help improve their children's mathematics learning.

**For Teacher**

From the perspective of teacher, teacher should know the parental perceptions regarding their involvement in mathematical learning of students. Parental involvement helps to learn more for each child. To facilitate students to learn mathematics at home teacher can invite parents to involve in learning process. Teacher invitations increase the parental involvement and parental involvement help to enhance teaching learning activities. Hence this research could be useful for teachers to make relations with the parents.

**For Researcher**

From the perspective of researcher, the study might support to explain parental perceptions regarding to their involvement to their children's mathematical learning. This research study includes the answer of research question why and why don't parent involve in their children's learning. This research finding might be beneficial for other researcher to carry out this type of research to explore more about parental involvement in mathematics learning of their children. This research may also help to open a way to find the different research related to this field.

## Conclusion

The main focus of this section is to discuss the findings of research study. This major focus concentrated with the parental perceptions regarding to their involvement in mathematical learning of their children. In this section the focus is concentrated with parental beliefs about their role for educating their children, their beliefs about understanding mathematics, learning experience, educational qualification, and invitations by child and mathematics teacher to parents.

From this research I understand that parental perceptions regarding to their involvement in mathematical learning of child is influenced by their beliefs about their role for educating their children, their beliefs about understanding mathematics, learning experience, qualification and invitations by child and math teacher. The beliefs about their role for educating their children guide parents for why to involve. Learning experiences and level of education help parents for how to help his/her child to learn mathematics. Invitations from children and mathematics teachers motivate parents for involvement in their children's mathematics learning.

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# APPENDIX I

## Initial survey for identifying parent participants

Respected Parent

I am a M. Ed Mathematics student in the Kathmandu University. I am conducting an inquiry about parental perceptions regarding to their involvement in their children's mathematics learning. I am sending this questionnaire from to you via your child. Your cooperation in the accurate completion of this questionnaire and participation in the inquiry about your mathematics experience will be highly appreciated. Please complete this questionnaire. Please place a tick next to your choice. (Only one parent will complete this questionnaire)

1. Your highest mathematics qualification

   Master or above ( ) Bachelor ( ) Intermediate ( ) SLC ( )

2. How often you visit your child's school to find out about your child's progress?

   Regular ( ) Seldom ( ) Never ( )

3. Are you able to assist your child with his/her mathematics work/homework?

   Yes ( ) No ( )

4. Did you assist your child with his/her mathematics work/homework when he/she was in lower classes?

   Yes ( ) No ( )

5. What was your experience of mathematics during your school hood?

   Positive ( ) Negative ( )

Name:

Address: Contact No.

You can reach me to at 9841946958 or anjan_anjan_anjan@hotmail.com

Please return to this questionnaire form in a sealed envelope.