Children's perception towards parents on learning Mathematics in Sindhuli district

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Abstract

Parental factors play vital role in academic attainment of their offspring. Motivation and counseling stimulate someone to take a desired course of action. This paper attempts to explore the perception of children towards their patents in support, involvement, counseling, and motivation on learning mathematics. This study employed survey research design of the quantitative approach. The total population of the study was90 students (15 students from each six schools) enrolled in Grade ix of Sindhuli district in 2019. The data were collected through self-structured questionnaire using three points-Likert scale items. Mean and standard deviation of each item were calculated and Chi-square test at 5% level of significance was used to test the hypothesis. The finding of this study shows that the parents of Sindhuli district are very conscious about the study of their children whatever their educational level. This study suggests that parent involvement is an inseparable component to promote mathematical achievement of their offspring.

Keywords: Achievement, perception, involvement, parents, motivation

Introduction

Mathematical knowledge is essential for every individual no matter what are his/her occupation/ profession and level of living standard. Mathematics plays a vital role in all aspects of life, whether in everyday matters such as driving, cooking, or jobs such as accounting, finance, banking, engineering, and software(Quddsi,2018).Without knowledge of mathematics, many other subjects cannot be developed beyond a descriptive level. This is particularly true for the physical and social science. According to Einstein (1934, as cited in Karam and Pospiech, 2010),"the actual creative principle in physics lies in mathematics"(p.6). But, the mathematical achievement of students is not satisfactory. Most of the students are not able to perform well in mathematics from the very beginning of the school year. Mathematics makes people bore because it is an abstract subject and most people have limited ability to tolerate abstract thinking. So people can not truly understand logic of math but they learn it by rote (Kurtzman, 2018).

The achievement in mathematics learning of students had gone a negative trend. Average learning by students in mathematics reached -0.4492 in 2018, down from 0.0045 in 2015 (Rauniyar, 2019). The mathematical achievement is the main issue for educationist from local to national level. A national review of government investment in school sector development plan conducted by the Ministry of Education, Science and Technology has shown that 72 percent of students in Grade V have failed to achieve basic minimum learning in mathematics (ibid).A study shows that hardly 28 percent of fifth graders grasp the mathematical concepts as intended in the curriculum while 32 percent of the students don't even learn five percent of their course by the time they complete their grades (Ghimire, 2019).

Students' academic achievement and educational attainment have been studied within different framework such as gender, family structure, parents' educational level, socio-economic status, parent and student attitudes toward school, and parents' involvement. Socio-economic status is determined as a predictor of mathematics achievement. Students from high socio-economic status families showed more interest in learning mathematics, and they

were more likely to participate in classroom discourse(Wang & Li, 2014). Parents' educational status is another important factor to determine the mathematical achievement of children. There is strong positive relationship between parents' education level and students' math-achievement (Pandeya, 2019). Economic status of parents is also an important aspect that effects in studying mathematics of children. Economic status of parents determines their children's education. Parents always think about hand to mouth problems from morning to evening engaging in farming consequently they are unable to spent sufficient amount of money to manage the fees required for extra classes (Acharya, 2017). This is one of the main challenges for the children from the poor family to perform better in mathematics.

Academic achievement of learners in any discipline depends on the attitude of learners towards that subject. The development of a positive attitude toward the subject being studied is probably one of today's most prevalent educational goals. Teachers as well as parents believed that a student's attitudes toward a school subject will affect student's achievement in the subject (Griffin, 2015). Students' attitudes toward mathematics affect how well or how often they do it, and how much enjoyment they derive from it (Moenikia&Zahed-Babelanb, 2010). Students' attitudes are developed over a considerably long period of time and have powerful impacts on their effective engagement, participation and achievement in mathematics. (Khun-Inkeeree, Omar-Fauzee&Haji Othman, 2016).

The children from highly educated family may get lots of educational opportunities in their communities. Highly educated parents in the US more likely to enroll their children in the best private schools and they are also enrolled their children in music lessons, science and computer programs, and educationally relevant summer camps (Eccles, 2005). The family and the home environment can be thought of as a promising source of mathematical thinking and activity of children (Jay, Rose, & Simmons, 2018).Parent educational involvement at home may include providing help with homework, discussing the children's schoolwork and experiences at school, and structuring home activities (Lee & Bowen, 2006).

As far as I know, no previous research has investigated view of parents to identify their perception on mathematical achievement of children. A new approach is therefore needed to know the parents' support, motivation, and involvement in learning mathematics from the children's point of view. Thus, this study aims to explore the children's perception towards their parents on learning mathematics.

Literature review

A student's home environment may influence their attitude toward mathematics and parental involvement can increase student achievement. Though some parents do not have the mathematical content knowledge or pedagogical knowledge for teaching, parents feel more competent in their mathematical ability and interact more with their children when teachers reach out to them (Jacobbe, Ross, &Hensberry 2012). Although some parents do not have the mathematical content knowledge or pedagogical knowledge for teaching but many researches show that parents support and involvement is crucial in mathematical achievement of children. All parents are not able to help their children to solve mathematical problem but their motivation and participation play a vital role in learning mathematics. A child can do better when his parents are with him and encourage him to do better by talking positive aspect of mathematics. Fan and Chen (2001) argued that parental aspiration and

expectation of their child's achievement has a strong relationship with academic success, which in turn is related to their child's attitude toward the subject.

There is a long history of studying parental involvement in students' education. The home was recognized as the base of education and the role of parents in their children's education continues to be recognized today.Roy and Giraldo-García(2018) believed that support to develop the social/emotional skills in their children's lives which help them to achieve the highest standards, both in school and in all other aspects of their lives(p.30). Parents who are involved in their child's education contribute not only to higher academic achievement but also to positive behaviors and emotional development. Although values and attitudes may not directly influence academic outcomes, they may enhance an academic achievement indirectly by promoting children's motivation and persistence in challenging educational tasks(El Nokali,. Bachman, and Votruba-Drzal, 2010). Specifically, mothers who were high in behavior and cognitive involvement had children who felt more competent in school and more in control of school outcomes than those who were less involved. In turn, these motivational resources predicted school grades (Grolnick&Slowiaczek, 1994).Parents may be a role model for children, a resource provider and motivator. If a children's parents are reading books, attending ongoing education classes and taking him along to the museum and they are engaging him in a number of direct-learning experiences that will help him value achievement and success (Eccles, 2005). Parents serve as a role model and a guide in encouraging their children to pursue high educational goals and desires by establishing the educational resources on hand in the house and holding particular attitudes and values towards their children are learning (Gunaseelan,&Pazhanivelu, 2016). Research has shown that parents' educational level not only impact student attitudes toward learning but also impact their math achievement scores.

Attitudes, emotions, and beliefs make up the affective domain in mathematics education (McLeod, 1992). We know attitudes about mathematics develop over time, and teachers, peers, and parents, as well as the environment can influence a student's attitude. Students' attitudes may also be established from their self-perceived abilities, self-efficacy, or social support from teachers and parents. Wilkins and Ma (2003) claimed that teachers', peers', and parents' positive support help students develop positive attitudes about the social importance of mathematics. Hon and Yeung (2005) suggested that when students are surrounded by positive inûuences; they will be affected in a positive way. Basically, the parents who have low income status and involving in traditional occupations like farming and mason are likely to help their child more with reading than with mathematics because they claim mathematics is not as important to everyday life. To do good performance in mathematics main stakeholder children, patents, subject teachers' combined effort is essential. Bringing together school and family communities into one may be beneficial to students' achievement and students' attitudes toward mathematics(Mohr-Schroeder, Jackson, Cavalcanti, Jong, Schroeder, &Speler,2017).Parents either directly help their children to learn specific mathematics content or indirectly by providing emotional and resource support (Cai, Moyer & Wang,1999). Both direct and indirect supports are important for better achievement in mathematics. Jenna (2018)says "creating a welcoming school climate, providing family's information about child development and supportive learning environments,

establishing effective school-to-home and home-to-school communication, strengthening families' knowledge and skills so they may continue their child's learning at home" (p.7).

The basis for research is provided by theoretical perspectives and it inspires scholars to go ahead. According to Lauricella, Barr, & Calvert(2014),Vygotsky's socio cultural theory focuses on the importance of language and social interactions and parents assists the child in using and understanding cultural tools such as language and media that transmit knowledge (p.18). He discusses the zone of proximal development, or the distance between the child's current developmental level and the level of their potential development. He defined ZPD as, "the distance between the actual developmental level as determined by the independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, as cited in Chaiklin,2003, p.40). Tekin (2011) claim Children's interaction with their family members in the community is so important for their learning and development since their first teacher is the family and their first learning takes place in the community(p.5).Prior & Gerard (2006) said that "mathematics and literacy skills have been shown to improve when parents are involved in the educational experience"(p.13).

There is a gap between the expectation of parents, teachers, school management, and other stakeholders of education business and mathematical achievement of children. The achievement of children in mathematics always make worry to every stake holder in the world. Educationists carried out many researches on various topics that influence in achievement of mathematics. The existing studies mainly focus students' attitude towards the subject, socio- economic condition of country, school environment, family back ground, subject teacher, and parents' academic qualification, occupation, and their involvement and motivation. But the question arises here that only educated parents involve and motivate their children. The uneducated patents cannot help their children to solve mathematical problem, however, they could motivate, inspire and encourage them in different ways that play significance role in better academic achievement. Though, this gap has not been investigated clearly in the existing literature. Thus, the present study hypothesized that there is no significance different between the involvements of patents on the learning of children and educational level of parents. The researcher believes that this study helps to add new knowledge in education field in the present context of Nepal.

Methodology

The survey research design was applied in this study. Quantitative research focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon (Labaree, 2020). The population of this study was of 9th grade students of Sindhuli district in academic year 2019. Three institutional and three public schools were selected purposively from Kamalamai Municipality of Sindhuli district and 90 students (15 students from each six schools) of Grade IX were selected randomly.

The data were collected through self-structured questionnaire with three rating scale as never, sometimes and always ranging from 1 to 3. The instrument used to collect the primary data for this study was a self-structured questionnaire. A questionnaire is a research instrument consisting of a set of standardized questions to gather statistically useful information on some subject from one or more respondents (Pahwa, 2019). The questionnaire contains

12 items of which items to know the students' perception towards parental support, involvement and motivation in mathematical learning of children with three rating scale never, sometimes and always. All the information gathered from primary data has been processed, analyzed and interpreted quantitatively. Participants responded to the questionnaire 3 for always, 2 for sometimes, and 1 for never and coding was reversed for negative statement. Mean and standard deviation of each item were calculated and Chi-square test at 5% level of significance was used to test the hypothesis.

Results and Discussion

The data was analyzed in the following themes:

Parents Support and Involvement

Parents' support and involvement play vital role in educational attainment of their offspring. In fact, children are emotionally attached to their parents (and vice versa), are dependent on them for protection and care, and learn skills within home that may prove useful outside it; these facts are not questioned (Harris, 1995). This study tries to investigate the support and involvement of parents on study of their children. In this study to know parents' support and involvement the researcher focuses on help of patents on doing homework, their response on achievement of parents after examination and visit of school. The result is presented in the table 1 according to the descending order of the mean.

Table 1.*Students response about Parents Support and Involvement*

Q.N.		Number of Responses(percentage)			Mean	Standard
	Statement	Never	Sometimes	Always	(M)	deviation(S)
1.	Your parents respond to your study.	4(4.44)	36(40)	50(55.56)	2.51	0.59
2.	Your parents check your School report after your terminal or final exam.	17(18.89)	18(20)	55(61.11)	2.42	0.79
3.	Your parents attend meetings at school, like PTA meeting or teacher parent meeting.	5(5.56)	49(54.44)	36(40.00)	2.34	0.58
4.	Your parents check your homework/class work.	4(3.33)	63(70.00)	23(25.56)	2.21	0.51
5.	Do your parents visit your school to inquiry your study	23(25.56)	25(27.78)	42(46.67)	2.21	0.83
6.	Do your parents stay with you when you are doing your homework?	12(13.33)	62(68.89)	16(17.78)	2.04	0.57
7.	Do your parents help on doing your homework of Mathematics?	31(34.44)	40(44.45)	19(21.11)	1.87	0.74

Table 1 shows that the students' perception towards parent's support and involvement. The statement number 1,'Your parents' respond to your study' has highly positive answer with mean value 2.51 and standard deviation 0.59. In this statement 55.56% students responded in always and 40% responded in sometime and 4.44% responded in never. The statement number 2, ' your parents check your school report after your terminal or final exam' has second high positive response with mean value 2.42 and standard deviation 0.79 respectively.

According to the students response61.11% parents always check the school report after terminal or final exam, 20% parents sometimes check the school report after terminal or final exam and 18.89% parents never check the school report after terminal or final exam. This result shows that parents are very conscious about the study of their children.

Only 40% students responded that their parents always attend school meeting, 54.44% responded some times and 5.56% responded never attend school meeting. The statement number 3', your parents attend meetings at school, like PTA meeting or teacher parent meeting, has mean value 2.34 with standard deviation 0.58. Likewise, 25.56% students responded that their parents always check homework, 70% responded some time and 3.33% responded never check homework. The statement number 4' your parents check your homework/class work' has mean value 2.21 with standard deviation 0.51. In statements number 5, 46.67% parents always visit school to inquire the study of children, 27.78% parents sometimes visit school to inquire the study of children and 25.56% parents never visit school to inquire the study of children. This statement has mean value 2.21 with standard deviation 0.83.

The statement number 6, Do your parents stay with you when you are doing your homework? has mean value 2.04 with standard deviation 0.57. In this statement 17.78% parents always stay with their children when they were doing homework, 68.89% parents some time stay with their children when they were doing homework, and 13.33% parents never time stay with their children when they were doing homework. The statement number 7 ' Do your parents help on doing your homework of Mathematics?' has mean value 1.86 with standard deviation. In this statement 21.11% parents always help their children to do mathematics homework, 45.45% parents sometimes help their children to do mathematics homework and 34.44% parents never help their children to do mathematics homework.

Parents Motivation and Counseling

Counseling is a process that is designed to help an individual solve some of his/her problems or assist the individual in planning the future (Musika&Bukaliya, 2015). Basically, it follows that counseling an interpersonal communication which has an objective of assisting students to understand their problems individually and to restore them according to their ability without external advice. Motivation is the act of stimulating someone to take a desired course of action. The parents can counsel their parents to do better in mathematics. Motivation is also power fool tool to inspire the children in creative works. The situation of counseling and motivation in Sindhuli district in learning mathematics has been presented in the table 2

Table 2.*Counseling and Motivation of Parents*

Q.N.		Number of Responses(percentage)			Mean(M)	SD(S)
	Statement	Never	Sometimes	Always		
1	Do your parents motivate you to do well in Mathematics?	3(3.33)	46(51.11)	41(45.55)	2.42	0.56
2.	Your parents praise you for doing well in Mathematics.	13(14.45)	30(33.33)	47(52.22)	2.38	0.73
3.	Your parents counsel you about your future study.s	4(4.44)	50(55.56)	36(40.00)	2.36	0.51
4.	Your parents threaten you punish for not doing well in mathematics.	24(26.67)	54(60.00)	12(13.33)	2.13	0.62
5.	Do you have friendly talk with your parent about your Mathematics problem?	12(13.33)	67(74.44)	11(12.22)	1.99	0.51

Table 2 shows that 45.55% parents always motivate the children to do well in mathematics, 51.11% % parents motivate some times to their children to do well in mathematics and only 3.33% % parents never motivate the children to do well in mathematics. Similarly,52.22% parents always praise the children to do well in mathematics, 33.33% parents some time praise the children to do well in mathematics and 14.45% parents never praise the children to do well in mathematics. 40% parents always counsel their children about future study, 54.44% parents counsel some time to their children about future study and 5.54% parents counsel their children about future study.

In this statement, 13.33% parents always threaten of punishment for not doing well in mathematics, 60% parents some time threaten of punishment for not doing well in mathematics and 26.67% parents never threaten of punishment for not doing well in mathematics. 12.22% parents always talk with their children about their mathematical problem, 74.44% parents some time talk with their children about their mathematical problem and 13.33% parents never talk with their children about their mathematical problem.

Academic Qualification of Parents and their Response on Education of Children

The academic qualification of parents and their response on learning of children has been presented the following table. To study academic qualification of parents and the response on learning mathematics of their children chi-square test at 5 % significance has been used.

*Table 3.*Academic Qualification of Parents and their Response

	Response			
Qualification	Never	Sometime	Always	Total
Below SLC	6(14)	22(52)	14(33)	42
SLC Pass	5(18)	13(46)	10(36)	28
12 Pass	1(10)	5(50)	4(40)	10
Bachelor & Above	2(20)	4(40)	4(40)	10
Total	14(16)	44(49)	32(36)	90

Out of 90 students, 42 parents have qualification below SLC, 28 passed SLC, 10 passed class 12 and 10 have academic qualification bachelor & above. Again 16% parents never response the study of their children, 44% response sometimes and 36 % response always. On the basis of parents' academic qualification; 33% parents whose academic qualification below always

Response and 32% whose academic qualification is bachelor and above always reaction about the study of their children. Similarly, 20% parents having academic qualification above Bachelor degree and 14% parents having academic qualification below SLC never reaction about the study of parents.

Table 4. Test of Hypothesis

Null Hypothesis(H_o)	Degree of freedom	χ^2-value	p-value	Result
Involvement of parent on the learning of children is independent of academic qualification of parent	6	0.9375	0.9879	Accept H_o

We test the hypothesis that the involvement of parent on the learning mathematics of children is independent of academic qualification of parent or not at 5% level of significance. Table 4

shows that Pearson's Chi-squared value is 0.9375 and p-value 0.9879 which is greater than the 0.05, so there is no reason to reject the null hypothesis. Hence, we conclude that the response of parent on the learning of their children is independent of the academic qualification of parents. According to socio cultural theory of Vygotsky focuses on the social interactions and parents' assists is worth to transmit knowledge. A fundamental aspect of Vygotsky's theory is the zone of Proximal Development. He emphasizes that it is too difficult for an individual to be master alone, but can be mastered with the assistance or guidance of adults. This theory can be applied in the leaning process in several ways.

Conclusion

The majority of parents of Sindhuli district were found focused on final or terminal examination to their children. They check school report after terminal or final examination and very few of them check the homework regularly. The number of parents who themselves visit school to inquire the study of children was less than the parents who attain in school meeting. Hardly any parents can help their children to do mathematics homework but they respond the study by checking school report, homework and visiting school to inquire about their study. The parents in Sindhuli district counsel and motivate to do better in mathematics but they sometimes threaten the children of punishment if the children not do well in mathematics. There found good practice that children friendly talk with their parents about their math problem. Hence, over all perception of children towards their parents in support, involvement, counseling and motivation on leaning mathematics is positive. The parents help their children in learning mathematics in various ways as they can do. The finding of this study shows that the parents of Sindhuli district are very conscious about the study of their children whatever their educational level is. The parents always want better performance of their children in mathematics no matter what their educational status is.

This study can be one of the reference materials for learners and its stakeholders. Specifically, the school management and subject teacher can use the result of this study. The teacher must not ignore any children as per the family environment and academic level of parents. All parents may not solve the mathematical problem of children but they can support them other ways as they always eager to see better performance of their children.

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