Ilkogretim Online - Elementary Education Online, 2020; Vol 19 (Issue 2): pp. 2174-2183
http://ilkogretim-online.org
doi: 10.17051/ilkonline.2020.02.696802

Mathematical Competence Of Tribal Students In District Rajouri Of Jammu And Kashmir

Dr Mohd Shakeel Assistant Professor, MANUU CTE Srinagar

Introduction

Mathematical competence is the ability to develop and apply mathematical knowledge in day to day life and in classroom interaction in order to solve a range of problems that have been facing by the students. It involves basic mathematical skills like sound mastery of numeracy, adding, subtraction, multiplication and division etc.

Mathematical competence can be read as the capacity to comprehend, assess, evaluate, perform, and apply mathematics in different life situations where mathematics plays an important role. Mathematical competency of an individual can be easily and clearly recognizable and measurable through applying simple practical tests.

Niss Mogens (1999) identified the following eight competencies of mathematics..

- · Thinking mathematically (mastering mathematical modes of thought)
- · Posing and solving mathematical problems
- · Modelling mathematically (i.e. analyzing and building models)
- · Reasoning mathematically
- · Representing mathematical entities (objects and situations)
- · Handling mathematical symbols and formalisms
- · Communicating in, with, and about mathematics
- · Making use of aids and tools (IT included)

SIGNIFICANCE OF THE STUDY

Education acts as an important accelerator of national development. NEP 2020 has asserted the role of education in transformation and development. Numeracy has been the important target to be achieved as per NEP 2020 by every child in the elementary stage. The tribal people of our country have been lagging the educational facilities even in the eve of 75 years of independence. Tribes are living in a very miserable situation even though both central and state governments have been allocating more money for their welfare. Tribes are unable to benefit from the welfare schemes operated by the government because of social, political, cultural and administrative reasons. Yet there is a group of certain tribes which are developed like the people living in plains of India. And they play their full role in strengthening the economy of our country. Educational statistics of tribes is far from satisfactory even after both the central and state government has initiated many educational projects to equip the backward/tribal

community with education. Education process of tribes not only helps for raising their own socio-economic status but they are enhancing the intellectual horizon of the particular population of a locality. Lack of education, information and low level of literacy aggravate the situation of deprivation in all sectors of life of the tribal society.

Hence it is the need of time to investigate the educational status of tribes , especially the mathematical competence of the tribal students in elementary schools. Hence the study is important in the purview of NEP 2020 also.

OBJECTIVES OF THE STUDY

Following are the objectives of the study:

1. To study the mathematical competence of tribal Communities in district Rajouri of Jammu and Kashmir
2. To compare the mathematical competence of tribal students in district Rajouri of Jammu and Kashmir based on Migration
3. To compare the mathematical competence of tribal students in district Rajouri of Jammu and Kashmir based on Gender

HYPOTHESES OF THE STUDY

Based on the objectives the following hypotheses are formulated.

1. There will be no significant difference in the mathematical competence of tribal students in district Rajouri of Jammu and Kashmir based on Migration
2. There will be no significant difference in the mathematical competence of tribal students in district Rajouri of Jammu and Kashmir based on Gender
3. There will be no significant difference in the mathematical competence of male tribal students in district Rajouri of Jammu and Kashmir based on Migration
4. There will be no significant difference in the mathematical competence of female tribal students in district Rajouri of Jammu and Kashmir based on Migration
5. There will be no significant difference in the mathematical competence of migrant tribal students in district Rajouri of Jammu and Kashmir based on Gender
6. There will be no significant difference in the mathematical competence of Non-migrant tribal students in district Rajouri of Jammu and Kashmir based on Gender

METHODOLOGY OF THE STUDY

The present study is descriptive research, where the researcher collected data through a survey method. The district Rajori of Jammu & Kashmir had been selected as the area

for the study. The whole tribal students studying in the government elementary school at district Rajouri of Jammu and Kashmir was the population of the study. Through Stratified sampling technique the investigator had selected 600 samples from the population. Mathematical Competency) were considered as the dependent variables of the present study. Gender and Migration were treated as independent variables for the study. The data was collected using the standardized tool (Mathematical Competency Test For Elementary School students developed by PP Zubair-2015) **-**The statistical Techniques like Mean, Median, Skewness, Kurtosis, Standard Deviation, Percentage techniques, mean difference analysis were used for interpretation of data.

ANALYSIS

The present study was to investigate the "Mathematical Competence of Tribal Students in District Rajouri of Jammu and Kashmir". In order to fulfill the objective the investigator has collected the information regarding mathematical competence of tribal students in District Rajouri of Jammu and Kashmir. The collected data was organized and analyzed in accordance with the objectives and hypotheses of the study using the SPSS package. The comprehensive analysis of the study is described under the following heads

Table 1 Statistical Constants of Mathematical Competence Test Scores of Tribal Students

Sample	N	Mean	Median	SD	Skewness	Kurtosis
Total Sample	600	11.00	09.00	05.73	.49	-1.06
Male	428	11.00	09.00	05.56	.66	-.70
Female	172	12.00	11.00	06.11	.11	-1.59
Migrants	343	07.00	07.00	02.50	0.66	0.32
Non Migrants	257	17.00	17.00	04.12	-.52	-.29

Table 1 showed that the mean, median, standard deviation scores of the Mathematical Competence Test of tribal students for the total sample are 11, 09 and 05.73

respectively. The skewness and kurtosis shows the .49 and -1.06. The result showed that the data is normal. Moreover the table also indicated the normality of the data for the subsample such as Male, female, migrant and non migrants tribal students. From the table it can also be seen that the mean and median scores of other subsamples such as male (11:09) female (12:11), Migrants (07:07) and Non migrants (17:17) are somewhat equal.

Table 2 Mathematical Competence of Tribal Students- Percentages of Total Sample and Subsamples

Sample	N	Above Average	Average	Below Average
Total	600	26	58	16
Male	428	22	63	15
Female	172	30	40	30
Migrants	343	17	74	09
Non Migrants	257	18	60	22

The table 2 exhibits Mathematical Competence of Tribal Students in Jammu and Kashmir. It reflects that 16 percent of the sample falls under the category of below average level in Mathematical Competence, 58 percent shows their sharing in average level and remaining 26 percentage falls in the above average level of Mathematical Competence. The percentage share of Girls students in below average level of Mathematical Competence is 30 percent which is more than the share of boys' percentage (15%) at elementary level. 63 percent of boys fall under the category of average level in Mathematical Competence while 40 percent girls are in average level of Mathematical Competence. The striking point is that 09 percentages of the migrant tribal students fall below average level in Mathematical Competence while the percentage of non migrant tribal students in this category is 22.

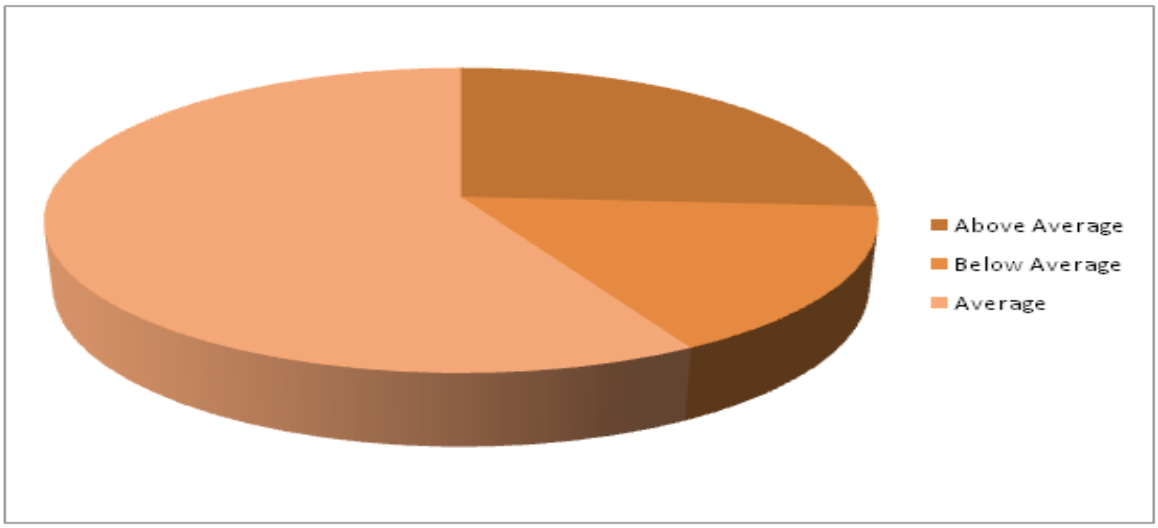

Figure 1 Pie Diagram of Mathematical Competence of Tribal Students- Percentages

Table 3 Data and Results of the t test on Mathematical Competence of Tribe students (Migrant and Non Migrant- Analysis)

Subsamples	N	Mean	Standard Deviation	C.R	Level of Significance
Migrants	343	07	04.12	32.54	0.01
Non Migrants	257	17	02.51		

Table 3 illustrates that the mean score of the Mathematical Competence test of Migrant tribal student and non migrant tribal students are 07 and 17 respectively. The critical ratio obtained for the mean scores is 32.54 which is significant at 0.01 level as it crossed the table value of 2.58. It shows that the mean scores of the Mathematical Competence test of Migrant and Non Migrant tribal Students differ significantly. This indicates that the non migrant tribal students are superior in Mathematical Competence than their migrant counterparts at elementary level.

Table 4 Data and Results of the t test on Mathematical Competence of Tribe students (Gender- Analysis)

Subsamples	N	Mean	Standard Deviation	C.R	Level of Significance
Male	428	11	05.56	01.87	Not Significant
Female	172	12	06.11		

Table 4 depicts that the mean scores of the Mathematical Competence test of Male tribal students is 11 and female tribal Students is 12. The critical ratio obtained for the mean scores of the Mathematical Competence test of Male and female tribal Students are 01.87. The difference in the mean score is not significant as the obtained critical ratio is lower than the tabulated value (critical ratio) of both 0.05 and 0.01 level. It shows that the mean scores of the Mathematical Competence test of Male and female tribal Students do not differ significantly. This indicates that the mathematical competences of tribal students are somewhat at the same level irrespective of their gender.

Table 5 Data and Results of the t test on Mathematical Competence of Female Tribe students (Migrant and Non Migrant- Analysis)

Subsamples	N	Mean	Standard Deviation	C.R	Level of Significance
Non Migrant	84	18	02.85	27.97	0.01
Migrant	88	07	02.29		

Table 5 depicts that the mean scores of Mathematical Competence of Non Migrant female tribal students is 18 and migrant female tribal Students is 07. The critical ratio obtained for the mean scores of Mathematical Competence of Non Migrant and migrant female tribal Students is 27.97. The difference in the mean score is significant as the calculated t value (27.97) is higher than tabulated t value (2.58) at 0.01 level. Hence it is inferred that the mean scores of Mathematical Competence of Non Migrant and migrant female tribal Students differ significantly. This indicates that Non Migrant female tribal students possess higher Mathematical Competence than the migrant female tribal Students.

Table 6 Data and Results of the t test on Mathematical Competence of Male Tribe students (Migrant and Non Migrant- Analysis)

Subsamples	N	Mean	Standard Deviation	C.R	Level of Significance
Non Migrant	173	16	04.55	23.03.	0.01
Migrant	255	07	02.56		

Table 6 depicts that the critical ratio obtained for the mean scores of Mathematical Competence of Non Migrant and migrant male tribal Students is 23.03. The mean scores on Mathematical Competence of Non Migrant male tribal Students is 16 and migrant male tribal Students is 07. The difference in mean scores is significant at 0.01 level as the calculated t value (17.93) is higher than the tabulated value (2.58). It shows that the mean scores of Mathematical Competence of Non Migrant and migrant male tribal Students differ significantly. This indicates that Non Migrant male tribal students are possessing higher Mathematical Competence than the migrant male tribal Students.

Table 7 Data and Results of the t test on Mathematical Competence of Non Migrant Tribal students in Jammu and Kashmir (Gender- Analysis)

Subsamples	N	Mean	Standard Deviation	C.R	Level of Significance
Male	173	16	04.55	03.07.	0.01
Female	84	18	02.85		

Table 7 depicts that the mean scores of Mathematical Competence of Non Migrant male tribal Students is 16 and Non Migrant female tribal Students is 18. The critical ratio obtained for the mean scores of Mathematical Competence of Non Migrant male and female tribal Students is 03.07. The calculated t value is 03.07 is higher than the tabulated t value (2.58) at 0.01 significance level. It shows that the mean scores of Mathematical Competence of Non Migrant male and female tribal Students differ significantly. This indicates that Non Migrant female tribal students possess higher Mathematical Competence than the migrant male tribal Students.

Table 8 Data and Results of the t test on Mathematical Competence of Migrant Tribal students in Jammu and Kashmir (Gender- Analysis)

Subsamples	N	Mean	Standard Deviation	C.R	Level of Significance
Male	255	08	02.56	02.87.	0.01
Female	88	07	02.29		

Table 8 depicts that the mean scores of Mathematical Competence of Migrant male and female tribal Students are 08 and 07 respectively. The critical ratio obtained for the mean scores of Mathematical Competence of Migrant male and female tribal Students are 02.87. The calculated t value (02.87) is higher than the tabulated t value at 0.01 (2.58) significant level. It shows that the mean scores of Mathematical Competence of Migrant male and female tribal Students differ significantly. This indicates that Migrant female tribal students are possessing higher Mathematical Competence than the migrant male tribal Students.

Major Findings of The study

- Among the sample 16 percent the sample (tribal students) are falling under the below average level in Mathematical Competence.
- The 30 percentages of Girls tribal students fall in the group of below average level in Mathematical Competence while boys percentage is 15 in this level.
- The striking point is that 09 percentages of the migrant tribal students are below average level of Mathematical Competence while 22 percent non migrant tribal students are below average level in Mathematical Competence.
- The non migrant tribal students are superior in Mathematical Competence than their migrant counterparts at elementary level
- The mathematical competencies of tribal students are somewhat the same level irrespective of their gender.
- Non Migrant female tribal students are possessing higher Mathematical Competence than the migrant female tribal Students.
- Non Migrant male tribal students are possessing higher Mathematical Competence than the migrant male tribal Students.
- Non Migrant female tribal students are possessing higher Mathematical Competence than the migrant male tribal Students.
- Migrant female tribal students are possessing higher Mathematical Competence than the migrant male tribal Students.

Conclusion

The study reveals that 16 percent of the sample was in below average level of Mathematical Competence, 58 percent was in average level and 26 percentages was crossed the above average level in Mathematical Competence. The percentage of Girls students (30%) was more in below average level of Mathematical Competence than boys (15%) at elementary level. The 63 percent of boys was in average level of Mathematical Competence while the girl was 40 %. The remarkable point was the non migrant students' (22%) dominance in below average level of Mathematical Competence over migrant students (09%).

It is reported that the mean scores of mathematical competence tests among the Migrant and Non Migrant tribal Students differed significantly. Significant high mean scores were noticed for non migrant tribal students than migrant students. Hence it was established the superiority of non migrant tribal students over the migrant tribal students in mathematics knowledge. It was evidenced by the negative impact of migration on education of the tribal students. The results also showed no significant difference in mathematical competence of tribal students based on their gender.

BIBLIOGRAPHY

1. Bhat, Saeed M (2007), Access to education for Gujjars and Bakarwals of Kashmir A case study of District Kupwara. Ph D, thesis, Faculty of Education University of Kashmir, Hazratbal Srinagar, p-02
2. Bisaria (1991). A study of need based ecologically determined and change oriented systems of education for a group of tribals - the Gaddis of Himachal Pradesh. In Buch, M. B. edited Fifth survey of Research in Education, New Delhi, NCERT.
3. Bryant, J. (2005). Children of International Migrants in Indonesia, Thailand, and the Phillipines: A Review of Evidence and Policies. Innocenti Working Paper 2005-05, Innocenti Research Centre, UNICEF.
4. Darshan Singh Manku:Thegujjar Settlem-ents: A Study in Ethnic Geography. Inter India Publications-D-17, Raja garden New Delhi 110015.p,04
5. Hashim, I. (2006). The Positives and Negatives of Children's Independent Migration: Assessing the Evidence and the Debates. Working Paper T 16, Sussex Centre For Migration Research, University of Sussex.
6. Javaid Reshi (2011)The Gujjar tribe of Jammu and Kashmir' Gulshan Books, Residency Road \Srinagar. P-13
7. NissMogens (2002). Mathematical Competencies and the Learning of Mathematics: The Danish Kom Project**,** IMFUFA, Roskilde University, Retrieved from(http://www.math. chalmers.se/Math/ Grundutb/CTH /mve375/ 1112/docs/KOMkompetenser.pdf)

8. Mansuri, G. 2006. “Migration, School Attainment and Child Labour: Evidence from Rural Pakistan.” World Bank Policy Research Working Paper No. 3945, Washington.
9. Mishra K.K. (1997) “Level of Literacy among Dalit Population: A Case Study of Atarra Tehsil V.P., Geographical Review of India, vol.59, pp. 142-150.
10. Smita (2008). Distress Seasonal Migration and Its Impact on Children’s Education. Research Monograph No. 28. Create, University of Sussex.
11. Shakeel Mohd (2020) “Impact of Seasonal Migration on Education of Tribal Communities In Jammu and Kashmir”, unpublished PhD Thesis, Department of Education Desh Bhagat University, Mandi Gobindgarh, PUNJAB