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## RESEARCH ARTICLE

# PROBLEMS OF IX CLASS TEACHING MATHEMATICS OF TEACHERS

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### Abstract

Mathematics has always been regarded as a tool for sharpening the intellect. For this purpose one has to think systematically, logically and precisely. The main objective of the present study is to study the influence of Sex, management and educational qualifications on the problems of teaching mathematics of mathematics teachers. The Check list was adopted from Brahmaiah (2004). The total items are 52. Check-list was simply to sum-up the number of ticks given under each category of response. A sample of 200 mathematics teachers representing all categories of high schools is selected in Andhra Pradesh by following the standardized procedures.  $\chi^2$  test was employed for analysis of the data

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## Introduction

Mathematics is the logical study of shape, size and situation and it is mainly based upon the concepts of numbers and geometry of figures. It has come to play a remarkable role in the engineering of highways, the search for energy, the design for TV sets, the study of epidemics, and the navigation of ships. The career and financial prospects of every individual depend heavily on his mathematical knowledge and having consequently, for social and scientific points of view there has developed a growing interest in how one learns mathematics, and how one's mind works analysis of a mathematical problem. There has been explosion of knowledge in every field of human endeavor including science and technology". Extension research in science and technology resulting in several discoveries and inventions has changed the face of human society by providing things that make modern life happier and more comfortable than local before. At the root of all these, we cannot ignore the role of mathematics. Mathematics is the mother of sciences and as Compte (1964) has rightly said. "All scientific education which does not commence with mathematics is of necessity, defective at its foundation". Hence it is imperative that our educational environment provides opportunity o all students to do worth while and purposeful mathematics work.

## Historical development of mathematics

Mathematics is study of relationships among quantities, magnitudes, and properties and of logical operations by which unknown quantities, magnitudes, and properties may be deduced. In the past mathematics was regarded as the science of quantity, whether of magnitudes, as in algebra. Towards the middle of the 19<sup>th</sup> century mathematics came to be regarded increasingly as the science of relations, or as the science that draws necessary conclusions. This latter view encompasses mathematical or symbolic logic the science of using symbols to provide an exact theory of logical deduction and inference based on definitions, axioms, postulates, and rules for transforming primitive elements into more complex relations and theorems.

Mathematics, like everything else that man has created, exists to fulfill certain human needs and desires. It is very difficult to say at what point of time in the history of mankind, and in which part of the world, mathematics has its birth. The fact that it has been steadily pursued for so many centuries, that it has attracted ever-increasing attention and that it is now the dominant intellectual interest of mankind shows that it appeals very powerfully, to mankind. This conclusion is borne out by every thing that we know about the origin of mathematics. More than 2000 years before the beginning of the Christian era, both the Babylonians and the Egyptians were in possession of systematic methods of measuring space and time. They had the knowledge of rudimentary geometry and astronomy. This rudimentary mathematics was formulated to meet the practical needs of an agricultural population. Their geometry resulted from the measurements made necessary by problems of land surveying. Units of measurements, originally a stone or a vessel of water for weight eventually became uniform over considerable areas under names, which are now almost forgotten. Undoubtedly, similar efforts were made in early ages in the southern part of Central Asia along the Indus and Ganges rivers and in Eastern Asia. Projects related to Engineering, Financing, irrigation, Flood Control and navigation required mathematics again a usable calendar had to be developed to serve agricultural needs. Zero was defined and this at once led to positional notations for whole numbers and later to the same notation for Fractions. The place value system, which eventually developed, was a gift of this period. These achievements and many more of a similar nature are the triumph of human spirit. They responded to the needs of the human society, as it became more complex.

## REVIEW OF LITERATURE

Arockiadoss (2005) studied the correlation between study habits and academic performance of college students (N=025) He reported that the academic performance of college students is influenced by study habits.

Malvinder Ahuja (2006) studied the impact of parental involvement and socio-economic status of the family on academic achievement of IX class students. Their findings indicated that 1. socio-economic status of the family and parental involvement were associated with each other 2. socio-economic status and academic achievement of students were independent of each other 3. academic achievement of high and low parental involvement group were not significantly different. 4. There was an interaction effect of socio-economic status and parental involvement on academic achievement of IX class students.

Ayodya, P. (2007) revealed that Emotional problems did not have any influence on the scholastic achievement in the present day. Life events did not have any influence on the scholastic achievement. No difference was found with regard to socio demographic factors and emotional disorders, scholastic achievement and life events. No association was found between scholastic achievement and intelligence.

Manchala (2007) showed that all the ten areas of study habits inventory have significant influence on scholastic achievement of B.Ed. students. Better study habits is associated with better scholastic achievement.

Subramanyam, K. and Sreenivasa Rao, K. (2008) established that there is no significant difference in the achievement of boys and girls with regard to their emotional intelligence.

Panday, S.N. Md. Faiz Ahmed (2008) conducted a study on a sample of 621 students of XI standard Male Adolescents (417) and Female Adolescents (204) and found that there is no significant difference between male and female adolescents on measures of achievement motivation.

Annakkodi (2008) in her study entitled "study of scientific attitude of pupils of class XI and their achievement in Science, concluded that There was positive significant difference in the scientific attitude of students in relation to their achievement in Science. It was found that there was a high significant difference in the scientific attitude of students based on their type of school, the corporation school students show high mean value of scientific attitude when compared to Government aided schools. It was found that there was high positive significant difference in the scientific attitude of rural and urban students. It was found that there was a significant difference in the scientific attitude of students based on their Gender.

The N.C.E.R.T. (2008): Conducted a mid-term national survey to gauge the learning achievement of class V children. The survey covered Eighty four thousand, three hundred and twenty two (84322) students, Fourteen thousand, eight hundred and ten (14810) teachers and six thousand, eight hundred and twenty eight (6828) schools, across. Two hundred and sixty six (266) districts, in the country. The survey tested the learning achievement of class V level students in mathematical, environmental studies and languages. It concluded that 1. Mother's education is important than father's education. 2. The schools that enjoyed better infrastructure and facilities like T.V, computer, more number of teachers and community participation contributed ten Percent (10%) more in (E.V.S)

Environmental studies, eight point four (8.4%) percent better in mathematics and Nineteen point six (19.6%) percent better in languages.

**Scope of the Study:** The main intention of the present study is to find the relation of problems of IX class teaching mathematics of teachers with sex, management and educational qualifications.

**Objective of the Study:** To study the impact of sex, management and educational qualifications on the problems of IX class teaching mathematics of teachers.

**Hypotheses of the study:** There would be no significant influence of sex, management and educational qualifications of the teachers on the problems of teaching mathematics.

### Tools for the Study

1. The Check list was adopted from Brahmaiah (2004). Check list of problems faced by the teachers with regard to the content, teaching methods, availability and using of teaching, learning materials etc., of the subject. The tool was highly reliable for the investigation. The total items are 52. Check-list was simply to sum-up the number of ticks given under each category of response.
2. Personal data regarding the teacher – 1. Name, 2. Sex, 3. Management and 4. Educational qualifications.

### Data Collection

The study was conducted of Andhra Pradesh state. The state is geographically divided into three regions. They are Rayalaseema, Coastal and Telangana regions. As for education and economy is a concerned Rayalaseema stand in between these two regions with an average level. Among the 4 districts in Rayalaseema, Cuddapah district is selected as randomly for the present study. All the IX class mathematics teachers in Cuddapah District were the universe of the present study. The sampling techniques employed in the present study in selecting the samples were multi-stage stratified random sampling and cluster sampling with 200 sample subjects. In the first phase of the collection of data, the investigator personally administered the tests and personal data schedule relating to the above independent variables to the teachers in the sample. The investigator personally took care to motivate the subjects in order to get valid responses from the teachers. A personal data schedule is also enclosed to the tests in order to get the data from the students about their sex, age, qualifications etc. The data on each variable in the investigation is properly coded to suit for computer analysis. The analysis was carried out on the basis of objectives of the investigation and hypotheses formulated by employing appropriate statistical techniques. The inferential statistical technique  $\chi^2$  test was employed to test hypothesis.

## RESULTS AND DISCUSSION

### 1. Impact of sex of the teachers on the Mathematics Problem

The data regard to the sex of the teacher was collected and its influence on the problems check list was studied. Against each of 52 items in the check list, there are two columns meant for yes and No to knowing the problem in teaching the mathematics. After consolidation the information through the data regarding with the sex on the problems check list is given in table – 1.

**Table–1: Frequencies of male and female teachers who felt and do not felt on the problems of teaching mathematics and the values of  $\chi^2$**

Sl.No.	Male(135)			Female(65)		
	Yes	No	$\chi^2$	Yes	No	$\chi^2$
1	14	121	84.80741	10	55	31.15385
2	12	123	91.26667	6	59	43.21538
3	2	133	127.1185	6	59	43.21538
4	1	134	131.0296	3	62	53.55385
5	6	129	112.0667	4	61	49.98462
6	9	126	101.4	5	60	46.53846
7	23	112	58.67407	33	32	0.015385 @
8	2	133	127.1185	5	60	46.53846

Sl.No.	Male(135)			Female(65)		
	Yes	No	$\chi^2$	Yes	No	$\chi^2$
9	6	129	112.0667	5	60	46.53846
10	110	25	53.51852	57	8	36.93846
11	20	115	66.85185	25	40	3.461538 @
12	61	74	1.251852 @	54	11	28.44615
13	40	95	22.40741	14	51	21.06154
14	30	105	41.66667	16	49	16.75385
15	32	103	37.34074	33	32	0.015385 @
16	23	112	58.67407	20	45	9.615385
17	16	119	78.58519	16	49	16.75385
18	12	123	91.26667	9	56	33.98462
19	7	128	108.4519	11	54	28.44615
20	80	55	4.62963 *	36	29	0.753846 @
21	4	131	119.4741	6	59	43.21538
22	32	103	37.34074	24	41	4.446154 *
23	42	93	19.26667	32	33	0.015385 @
24	26	109	51.02963	54	11	28.44615
25	32	103	37.34074	48	17	14.78462
26	13	122	88.00741	14	51	21.06154
27	60	75	1.666667 @	52	13	23.4 @
28	52	83	7.118519	40	25	3.461538
29	70	65	0.185185 @	54	11	28.44615
30	76	59	2.140741 @	60	5	46.53846
31	45	90	15	44	21	8.138462
32	36	99	29.4	20	45	9.615385
33	78	57	3.266667 @	60	5	46.53846
34	45	90	15	40	25	3.461538 @
35	43	92	17.78519	46	19	11.21538
36	24	111	56.06667	62	3	53.55385
37	14	121	84.80741	20	45	9.615385
39	42	93	19.26667	28	37	1.246154 @
40	67	68	0.007407 @	60	5	46.53846
41	42	93	19.26667	40	25	3.461538 @
42	78	57	3.266667 @	60	5	46.53846
43	45	90	15	43	22	6.784615
44	35	100	31.2963	40	25	3.461538 @
45	84	51	8.066667	55	10	31.15385
46	9	126	101.4	9	56	33.98462
47	43	92	17.78519	50	15	18.84615
48	22	113	61.34074	20	45	9.615385
49	36	99	29.4	40	25	3.461538 @
50	2	133	127.1185	6	59	43.21538
51	38	97	25.78519	40	25	3.461538 @
52	104	31	39.47407	60	5	46.53846

From Table – 1, it reveals that the majority of the male and female teachers were felt that there are adequate problems to carry on effective teaching in Mathematics. As observed from Table – 1, male teachers are felt that the problem No.10, 52 and 45 are ranked 1, 2 and 3 respectively as savior in the problem check list, where as the female teachers are felt that the problem numbers 36, 30, 33, 40, 42 and 52 are ranked 1, 2, 3, 4, 5 and 6 respectively as seniority in the problem checklist. The obtained Chi-Square value for the problem No. 20 is not significant beyond 0.05 level for both sex. In case of male teachers the computed Chi-Square value for the problem Nos. 12, 27, 29, 30, 33, 40 and 42 were found to be not significant beyond 0.01 level. It implies that there is no significant variation in the number of male teachers who feel and do not feel as the problem in Mathematics teaching. In case of female teachers the computed chi-square value for the problem Nos. 7, 11, 15, 22, 23, 28, 34, 38, 39, 41, 49 and 51 were found to be not significant beyond 0.01 level. It implies that there is no significant variation in the number of female teachers who feel and do not feel as the problem in Mathematics teaching.

## 2.Impact of Management of Schools were the teachers working on Mathematics problems

The data regard to the school in which the teachers working were collected and its influence on the problems check list was studied. Against each of 52 items in the check list, there are two columns meant for yes and no to knowing the problem in teaching the mathematics. After consolidation the information through the data regarding with the management of schools where the teachers working on the mathematics problems check list is given in Table – 2.

From Table – 2, it reveals that the majority of the G.H.S., Z.P.H.S. and Private schools teachers were felt that there are adequate problems to carry on effective teaching in mathematics.

**Table–2:Frequencies of Govt. High Schools, Z.P. High Schools and Private School teachers who felt and do not felt the problem of teaching Mathematics and values of  $\chi^2$ .**

Q.S. NO	G.H.S(10)			Z.P.H.S(160)			PRIVATE(30)		
	YES	NO	$\chi^2$	YES	NO	$\chi^2$	YES	NO	$\chi^2$
1	4	6	0.4 @	10	150	122.5	10	20	3.33 @
2	3	7	1.6 @	9	151	126.025	6	24	10.8
3	2	8	3.6 @	4	156	144.4	2	28	22.53
4	1	9	6.4 *	2	158	152.1	1	29	26.13
5	2	8	3.6 @	4	156	144.4	4	26	16.13
6	3	7	1.6 @	7	153	133.225	4	26	16.13
7	9	1	6.4 *	35	125	50.625	12	18	1.2 @
9	3	7	1.6 @	4	156	144.4	4	26	16.13
10	9	1	6.4 *	130	30	62.5	28	2	22.53
12	6	4	0.4 @	81	79	0.025 @	28	2	22.53
13	8	2	3.6 @	38	122	44.1	8	22	6.53 *
14	6	4	0.4 @	30	130	62.5	10	20	3.33 @
15	8	2	3.6 @	30	130	62.5	27	3	19.2
16	3	7	1.6 @	30	130	62.5	10	20	3.33 @
17	6	4	0.4 @	10	150	122.5	16	14	0.13 @
18	5	5	0 @	10	150	122.5	6	24	10.8
19	4	6	0.4 @	8	152	129.6	6	24	10.8
20	6	4	0.4 @	90	70	2.5 @	20	10	3.33 @
21	2	8	3.6 @	6	154	136.9	2	28	22.53
22	7	3	1.6 @	30	130	62.5	19	11	2.13 @
23	4	6	0.4 @	50	110	22.5	20	10	3.33 @

Q.S. NO	G.H.S(10)			Z.P.H.S(160)			PRIVATE(30)		
	YES	NO	$\chi^2$	YES	NO	$\chi^2$	YES	NO	$\chi^2$
24	6	4	0.4 @	50	110	22.5	24	6	10.8
25	8	2	3.6 @	52	108	19.6	20	10	3.33 @
26	7	3	1.6 @	12	148	115.6	8	22	6.53 *
27	2	8	3.6 @	90	70	2.5 @	20	10	3.33 @
28	8	2	3.6 @	60	100	10	24	6	10.8
29	8	2	3.6 @	90	70	2.5 @	26	4	16.13
30	6	4	0.4 @	103	57	13.225	27	3	19.2
31	4	6	0.4 @	60	100	10	25	5	13.33
32	6	4	0.4 @	30	130	62.5	20	10	3.33 @
33	8	2	3.6 @	102	58	12.1	28	2	22.53
34	5	5	0 @	60	100	10	20	10	3.33 @
35	9	1	6.4 *	50	110	22.5	30	0	30
36	6	4	0.4 @	60	100	10	20	10	3.33 @
37	4	6	0.4 @	20	140	90	10	20	3.33 @
38	7	3	1.6 @	30	130	62.5	28	2	22.53
39	5	5	0 @	40	120	40	25	5	13.33
40	7	3	1.6 @	100	60	10	20	10	3.33 @
41	6	4	0.4 @	50	110	22.5	26	4	16.13
42	8	2	3.6 @	110	50	22.5	20	10	3.33 @
43	8	2	3.6 @	50	110	22.5	20	10	3.33 @
44	5	5	0 @	48	112	25.6	22	8	6.53 *
45	9	1	6.4 *	110	50	22.5	20	10	3.33 @
46	2	8	3.6 @	10	150	122.5	6	24	10.8
47	3	7	1.6 @	70	90	2.5 @	20	10	3.33 @
48	6	4	0.4 @	20	140	90	16	14	0.13 @
49	6	4	0.4 @	50	110	22.5	20	10	3.33 @
50	2	8	3.6 @	4	156	144.4	2	28	22.53
51	8	2	3.6 @	46	114	28.9	24	6	10.8
52	4	6	0.4 @	140	20	90	20	10	3.33 @

As observed from Table – 2, in the case of G.H.S. teachers, then are felt that the problem No.7, 10, 35 and 45 are ranked 1, 2, 3 and 4 respectively as seniority in the problems check list. In the Case of Z.P.H.S. teachers they are felt that the problem Nos 52, 10, 42 and 45 are ranked 1, 2, 3 and 4 respectively as savior in the problems check list and where as in the case of private schools teachers, they are felt that the problem Nos. 35, 37, 33, 12 and 10 are ranked 1, 2, 3, 4 and respectively as severe in the problem check list.

The obtained chi-square value for the problem Nos. 4, 7, 10, 35 and 43 are significant beyond 0.05 level for G.H.S. teachers. In case of G.H.S. teachers the computed chi-square value for the remaining problem nos. except 4, 7, 10, 35 and 45 were found to be significant beyond 0.05 level. It implies that there is no significant variation in the number of G.H.S. teachers who feel and do not feel as the problem in Mathematics Teaching. In case of Z.P.H.S. teachers the computed Chi-Square value for the problem Nos. 12, 20, 27, 29 and 47 were found to be not significant beyond 0.05 level. It implies that there is no significant variation in the number of Z.P.H.S. teachers who feel and do not feel as the problem in Mathematics teaching.

The obtained Chi-Square value for the problem Nos. 13, 26 and 44 are not significant beyond 0.05 level for private school teachers. In case of private schools teachers the computed chi-square value for the problems Nos.1, 7, 11, 14, 16, 17, 20, 22, 23, 25, 27, 32, 34, 36, 37, 40, 42, 43, 45, 47, 48 and 49 have found to be not significant beyond 0.05 level. It implies that there is no significant variation in the number of private schools teachers who feel

and do not feel as the problem in Mathematics teaching. It reveals from Table – 2 there is common problems Nos (20, 27 & 47) for teachers working in Govt. H.S., Z.P. High Schools and private schools on the problems on teaching mathematics.

### 3.Impact of Educational Qualifications of the teachers on problems of teaching mathematics check list.

To identify the impact of the educational qualifications of the teachers on the problems of teaching Mathematics check list was collected. The collected data was divided into two parts based on the educational qualifications, i.e., Graduation with B.Ed., and Post Graduates with B.Ed./ M.Ed., After consolidation the results were kept in Table – 3.

**Table–3: Frequencies of graduates and post graduate teachers who felt and do not felt on the problem of teaching mathematics and the values of  $\chi^2$**

NO	Graduates			Post Graduates		
	YES	NO	$\chi^2$	YES	NO	$\chi^2$
1	18	122	77.25714	6	54	38.4
2	14	126	89.6	4	56	45.06667
3	7	133	113.4	1	59	56.06667
4	3	137	128.2571	1	59	56.06667
5	7	133	113.4	3	57	48.6
6	11	129	99.45714	3	57	48.6
8	6	134	117.0286	1	59	56.06667
9	9	131	106.3143	2	58	52.26667
10	125	15	86.42857	42	18	9.6
12	80	60	2.857143 @	35	25	1.666667 @
13	38	102	29.25714	16	44	13.06667
14	36	104	33.02857	10	50	26.66667
15	41	99	24.02857	24	36	2.4 @
16	29	111	48.02857	14	46	17.06667
17	19	121	74.31429	13	47	19.26667
18	12	128	96.11429	9	51	29.4
19	13	127	92.82857	5	55	41.66667
20	70	70	0 @	46	14	17.06667
21	7	133	113.4	3	57	48.6
22	29	111	48.02857	27	33	0.6 @
23	40	100	25.71429	34	26	1.066667 @
24	50	90	11.42857	30	30	0 @
25	60	80	2.857143 @	20	40	6.666667
26	17	123	80.25714	10	50	26.66667
27	82	58	4.114286 *	40	20	6.666667

NO	Graduates			Post Graduates		
	YES	NO	$\chi^2$	YES	NO	$\chi^2$
28	60	80	2.857143 @	32	28	0.266667 @
29	75	65	0.714286 @	49	11	24.06667
30	82	58	4.114286 *	54	6	38.4
31	54	86	7.314286	35	25	1.666667 @
32	32	108	41.25714	24	36	2.4 @
33	90	50	11.42857	48	12	21.6
34	50	90	11.42857	35	25	1.666667 @
35	49	91	12.6	41	19	8.066667
36	60	80	2.857143 @	26	34	1.066667 @
37	20	120	71.42857	14	46	17.06667
38	43	97	20.82857	22	38	4.266667 *
39	34	106	37.02857	36	24	2.4 @
40	89	51	10.31429	38	22	4.266667 *
41	47	93	15.11429	35	25	1.666667 @
42	100	40	25.71429	38	22	4.266667 *
43	44	96	19.31429	44	16	13.06667
44	42	98	22.4	33	27	0.6 @
45	92	48	13.82857	47	13	19.26667
46	11	129	99.45714	7	53	35.26667
47	97	43	20.82857	36	24	2.4 @
48	28	112	50.4	14	46	17.06667
49	43	97	20.82857	33	27	0.6 @
50	6	134	117.0286	2	58	52.26667
51	53	87	8.257143	25	35	1.666667 @
52	108	32	41.25714	56	4	45.06667

It reveals that the 125 Graduate Teachers out of 140 felt the problem No. 10 as very first and fore most problem in teaching mathematics. The problem Nos. 52, 42, 47 and 45 are ranked 2, 3, 4 and 5 respectively as seniority in Teaching Mathematics problems check list. The obtained Chi-Square values for the problem Nos. 12, 20, 25, 27, 28, 29, 30 and 36 are not significant at 0.01 level. In case of post graduate teachers the problem No. 52 is felt by 56 out of 60 teachers as severity in the problems of teaching Mathematics check list. The S.No. of the problems 30, 29, 33 and 45 are ranked 2, 3, 4 and 5 respectively as seniority in the problem check list. The Computed chi-square value for the problems Nos. 12, 15, 22, 23, 24, 28, 31, 32, 34, 36, 38, 39, 40, 41, 42, 44, 47, 49 and 51 are not significant at 0.01 level. It reveals from Table-8, there are common problems (problem No. 12, 28 and 36) for both graduations with B.Ed., and Post Graduation with B.Ed., / M.Ed., teachers in teaching mathematics.



## Conclusions:

In the light of the findings, the following conclusions are drawn. Sex, management and educational qualifications have significant influence on the problems of teaching mathematics of mathematics teacher.

## EDUCATIONAL IMPLICATIONS

It is evident that teachers felt difficulty with a few chapters included in the mathematics text books of IX class. It might be mostly because the organization and presentation of the content in those chapters was not appropriately suited to the ability levels of the teachers it could be because of abstractness and heaviness in terms of both concepts and exercises. Therefore it is suggested that the curriculum experts and the textbook writers should be reoriented to bring suitable changes in the text books.

Further, it is suggested that the teachers of mathematics should come forward with constructive ideas to make the presentation of abstract chapters more concrete so that it would become easy for teachers to teach. Whenever, the curriculum is revised by the authorities, it would be rather essential to plan in-service training programmes to the teachers and to introduce novel ideas, methods and improvisations relevant to the local needs to deal with the new elements of revised curriculum effectively.

It is also found in the study that there are very severe problems faced by the teachers. These problems again relate to content (curriculum in the text books) and the method of teaching and Teaching Aids. To have an effective teaching learning process, the pre-requisites are efficient and committed teachers, congenial physical atmosphere in the institution and the most required academic amenities such as black board, chalk, and Teaching Aids (charts, models etc.). Establishing NCTE, a teacher education statutory body is being treated as the most lucrative enterprise through which one can make abundant profits. With the kind of teachers that these big business centers produce, even if we have congenial atmosphere and good academic inputs, it would not be possible to ensure quality in our school education and more so in mathematics education. Further, there are no minimum facilities in most of the secondary schools to teach mathematics effectively.

The most significant problems faced by the teachers originate at the primary level, as there are no specialist teachers to teach them the basic concepts of mathematics. Mathematics teaching is not related to life. Students are taught abstract principles in the early stages while teaching the four fundamental operations- Addition, Subtraction, Multiplication and Division. Play way, activity oriented methods; reasoning and analytical thinking are not practiced and promoted appropriately by our teachers at the primary level. Multi-grade teaching and teaching of multiple subjects by a single teacher in most of the primary schools and non-availability of specialist teacher also contribution to inefficient teaching of mathematics.

Thus, it is necessary to bring appropriate changes in our curriculum and mathematics text books. The powers that should strengthen both pre-service and in-service training programmes to produce efficient and committed teachers of mathematics, provide minimum infrastructural and academic requirements in the schools to teach mathematics effectively, appoint specialist teachers of mathematics at the primary level, design more para-mathematical activities as curricular inputs, and eliminate the fear of mathematics in children etc for ensuring the quality school education to all the children up to collective level [say 10<sup>th</sup> class]. Beyond this collective level, the programmes of education are selective and those who want to specialize in the area of mathematics and related branches must be competitive with sound of knowledge of mathematics.

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