

**ATTITUDES OF MATHEMATICS TEACHERS TOWARD
THE USE OF TEACHING MATERIALS**

A

THESIS

BY

DHANA NARAYAN SHRESTHA

**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
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त्रिभुवन विश्वविद्यालय
शिक्षा शास्त्र केन्द्रीय विभाग
गणित शिक्षा विभाग

विश्वविद्यालय क्याम्पस
कीर्तिपुर, काठमाडौं, नेपाल

UNIVERSITY CAMPUS
Kirtipur, Kathmandu, Nepal

TRIBHUVAN UNIVERSITY
CENTRAL DEPARTMENT OF EDUCATION
DEPARTMENT OF MATHEMATICS EDUCATION

पत्र संख्या:-
Ref.

मिति:
Date:

LETTER OF APPROVAL

Thesis Submitted

By

DHANA NARAYAN SHRESTHA

Entitled

ATTITUDES OF MATHEMATICS TEACHERS TOWARD THE USE OF
TEACHING MATERIALS

has been approved in partial fulfillment for the requirements for the Degree of Master
of Education.

Committee for the Viva-Voice

Signature

1. Asso. Prof. Laxmi Narayan Yadav

.....

(Chairman)

2. Prof. Uma Nath Pandey

.....

(External)

3. Dr. Eka Ratna Acharya

.....

(Member)

Date:.....



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CENTRAL DEPARTMENT OF EDUCATION
DEPARTMENT OF MATHEMATICS EDUCATION

पत्र संख्या:-
Ref.

मिति:
Date:

CERTIFICATE

This is to certify that Mr. Dhana Narayan Shrestha, a student of academic year 2062/064 with Campus Roll No. 614, Symbol No. 280710, T.U. Regd. No: 43114-92 and Thesis No. 1189 has completed this thesis under my supervision for the period prescribed by the rules and regulations of Tribhuvan University, Nepal. The thesis entitled "**Attitudes of Mathematics Teachers toward the Use of Teaching Materials**" has been prepared based on the results of his investigation conducted during the period of 2075 BS. I recommended and forward that his thesis be submitted for the evaluation as the partial requirements to award the degree of Master of Education.

.....
(Asso. Prof.Laxmi Narayan Yadav)

Head

.....
(Dr. Eka Ratna Acharya)

Supervisor

Date.....

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Dhana Narayan Shrestha

Date:

ABSTRACT

The study entitled "**Attitudes of mathematics teachers toward the use of teaching materials.**" It was also aimed to compare the attitudes of urban and rural mathematics teachers toward the use of teaching materials. In the same way it aimed to compare the attitudes of male and female mathematics teachers towards the use of teaching materials. According to the objectives of the study, corresponding hypothesis were formulated. The questionnaire and interview schedule were the tools for collecting data.

A set of questionnaire consisting of 25 statements based on the categories-receiving, responding, valuing, organization and characterization were constructed and validated. The questionnaire was administered to 90 teachers included in the sample. More than the questionnaire, an interview schedule was developed and administered to 4 teachers selected out of the 90 teachers in the sample.

The Mean weightage and χ^2 -test was used to find out the attitude and significance of teachers respectively z-test was used to compare the attitude of rural and urban teachers. χ^2 and z-test was applied at 0.05 level of significance. The information from the interview schedule was obtained in qualitative and descriptive form. The data from interview was given descriptive, qualitative interpretations. The analysis of data on questionnaire indicated that the primary teachers of mathematics of Kavreplanchok district held positive attitude towards teaching material. No significant difference in attitudes was found between rural and urban as well as male and female teachers. Hence it concludes that the teacher should use the teaching materials for to be perfect teaching learning at classroom.

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REFERENCE

- Adhikari, K.P. (2001). *Attitudes of lower secondary level students and teachers towards arithmetic*. Master Thesis, FOE, T.U., Kathmandu.
- Amatya, B.P. (1978), *A Study of the Effectiveness of Teaching Mathematics with and without the use of Instructional Materials*. Master Thesis, FOE. T.U. Nepal.
- Bhatt, I.D. (2015). *Attitudes of secondary level students and teachers toward arithmetic*. Master Thesis, FOE, T.U., Kathmandu.
- Bhattarai, S.P. (2005). *Mental Arithmetic Efficiency of the Students of Grade-8*, Master Thesis, FOE, T.U., Kathmandu.
- CERID (2001), *A Study on the Feasibility of Parallel Question Papers for the SLC Examination*, Research Center for Educational Innovation and Development, Balkhu, Kathandu, Nepal.
- Ghimire (1997), *A Study on Factors Affecting Teaching Learning Mathematics at Secondary Level*, Master Thesis, FOE. T.U. Nepal.
- Gupta, S.C. (1992). *Fundamentals of statistics*, Himalaya Publishing House, Delhi: India.
- Gyanwali, C.(2011),*Attitude of Lower secondary Teachers of Nuwakot District Towards Mathematics*. Master thesis, FOE, T.U. Nepal.
- Haan (1961), *Elementary School Curriculum: Theory and Practice*. Allyn and Bacon (P) Ltd., Boston.
- Judith, O. (1995). *Shedding Some New Light on Old Truth: Students Attitude to School in Terms of Year Level and gender*. New Orleans: American Education Research Association.

- Kerlinger, F.N. (1993), *Foundation of Behavior Research*, New Delhi, Surjeet Publication.
- Khanal, P. (2003), *Research Methodology*, Kathmandu, Students Book Publisher and Distributor.
- Kharel, P. K. (2006), *Attitudes towards using instructional materials of primary Mathematics teacher*. Master Thesis, eFOE. T.U Nepal.
- Kothari, C.R. (1995), *Research Methodology*, Second Edition, New Delhi, Viswa Prakashan.
- Koul. L. (2000), *Methodology of Education Research*, Third Edition, New Delhi, Vikas Publishing House.
- Maharjan, H. B., Paudel, L.N. and Upadhyay, H.N. (2068). *Teaching mathematics in secondary schools*. Buddha Academic Publishers and Distributors, Kathmandu, Nepal.
- Pandit, R.P. (1980), *Attitudes of Secondary School Students and their Parents Towards Mathematics and Other Subjects of Instructions*, Master Thesis, FOE, T.U. Nepal.
- Parajuli, B.K. (2013). *Attitude of primary level mathematics teachers towards teaching mathematics and their classroom practices*. Master Thesis, FOE, T.U., Kathmandu.
- Upadhyay, H.N. (2014). *DEMYSTIFY MATH for schools*, Self-published by the author.
- Upadhyay, H.P. (2064), *New Trends in Mathematics Education*, Kathmandu, Vidhyarthi Prakashan.

Young, P.V. (1988), *Scientific Social Survey and Research*, New Delhi, Prentice Hall.

<http://www.google.com> 2075/11/10

<http://www.mydigitalpublication.com>article> 2075/11/14

<http://www.shodhganga.inflibnet.ac.in>bitstream> 2075/11/16

<http://www.verywellmind.com> 2075/11/20

APPENDIX-A

Statements of the questionnaire for Mathematics Teacher

Respected Sir/Miss/Madam

As a student of master's degree in mathematics education, the researcher going to conduct a study on topic: "Attitude of Mathematics Teacher toward solid teaching materials on primary level". The attitude scale is presented to you under the assumption that your practical experiences in the related field could become the best clues on working in my research. You are requested to study the statements carefully and give your opinion by putting tick mark () on any one of the following five rating of each statements.

Name:-..... Age:-..... Sex:-..... School:-
.....

Post:-..... Qualification:-.....

Teaching Experience:-..... Training:-.....

Address:-.....

S.N.	Statements	Measurement scales				
		S.A.	A.	N.	D.	S.D.
1.	It is advantage to use teaching material in mathematics teaching.					
2.	Teacher should have the knowledge to use teaching materials in classroom.					
3.	Teacher should have the skills to use teaching material in classroom.					
4.	Manipulative materials are useful to teach in exploratory level.					
5.	Most of the time should be given to making and using teaching materials.					
6.	The knowledge about of importance of teaching material.					
7.	First priority should be given in using teaching materials in the beginning of new subject matter.					
8.	Training should be given to each mathematics					

	teacher about using teaching materials.					
9.	Teaching materials helps to teaching for understanding.					
10.	Teaching materials are useful to teaching for performance.					
11.	Teaching materials is a useful tool to understand mathematical facts.					
12.	Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory.					
13.	The students are curious and active in mathematics teaching when using teaching materials.					
14.	Each school should have a mathematical laboratory.					
15.	A certain amount of money /budget should be differentiating for the management of teaching materials in local level.					
16.	The teacher should stimulate to students in manipulating teaching materials.					
17.	Use of teaching materials is useful and important to Multiple- intelligence classroom.					
18.	Use of teaching materials is important in mathematics teaching rather than other subjects.					
19.	It is behavioral to use teaching material in every mathematics classroom in term of cost.					
20.	It is behavioral I to use teaching materials in every mathematics classroom.					
21.	I am very favor towards using teaching material					
22.	Teachers feel fun and enjoy in using teaching materials					
23.	Teacher should make an organized teaching about to use of using teaching materials.					
24.	It is behavioral teaching material in every mathematics classroom in terms of time.					
25.	It is behavioral to use teaching materials in every mathematics classroom in terms of classroom.					

Appendix-B

Mean score of teacher on each statements and the whole with Conclusion.

S.N.	Statements	Mean weightage on each statement	Mean weightage on whole
1.	It is advantage to use teaching material in mathematics teaching.	4.61	4.36
2.	Teacher should have the knowledge to use teaching materials in classroom.	4.6	
3.	Teacher should have the skills to use teaching material in classroom.	4.58	
4.	Manipulative materials are useful to teach in exploratory level.	4.37	
5.	Most of the time should be given to making and using teaching materials.	4.09	
6.	The knowledge about of importance of teaching material.	4.56	
7.	First priority should be given in using teaching materials in the beginning of new subject matter.	4.44	
8.	Training should be given to each mathematics teacher about using teaching materials.	4.44	
9.	Teaching materials helps to teaching for understanding.	4.72	
10.	Teaching materials are useful to teaching for performance.	4.47	
11.	Teaching materials is a useful tool to understand mathematical facts.	4.37	
12.	Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory.	4.59	
13.	The students are curious and active in mathematics teaching when using teaching materials.	4.49	
14.	Each school should have a mathematical laboratory.	4.67	
15.	A certain amount of money /budget should be differentiating for the management of teaching materials in local level.	4.39	
16.	The teacher should stimulate to students in manipulating teaching materials.	4.31	
17.	Use of teaching materials is useful and important to Multiple- intelligence classroom.	3.99	
18.	Use of teaching materials is important in mathematics teaching rather than other subjects.	3.92	
19.	It is behavioral to use teaching material in every mathematics classroom in term of cost.	3.84	

20.	It is behavioral I to use teaching materials in every mathematics classroom.	3.8	
21.	I am very favor towards using teaching material	4.39	
22.	Teachers feel fun and enjoy in using teaching materials	4.61	
23.	Teacher should make an organized teaching about to use t using teaching materials.	4.72	
24.	It is behavioral teaching material in every mathematics classroom in terms of time.	3.94	
25.	It is behavioral to use teaching materials in every mathematics classroom in terms of classroom.	4.21	

Appendix-C

Chi-square value of statements in administered attitude scale to urban teachers

S.N	Statement	Total score	χ^2 - Value	Significance
1	It is advantage to use teaching material in mathematics teaching.	210	80.00	S
2	Teacher should have the knowledge to use teaching materials in classroom.	209	76.89	S
3	Teacher should have the skill to use teaching materials in classroom.	207	72.00	S
4	Manipulative materials are useful to teach in exploratory level.	198	50.89	S
5	Most of the time should be given to making and using teaching materials.	173	28.67	S
6	The knowledge about of importance of teaching material.	200	52.22	S
7	First priority should be given in using teaching materials in the beginning of new subject matter.	195	46.67	S
8	Training should be given to each mathematics teacher about using teaching materials.	205	68.89	S
9	Teaching materials helps to teaching for understanding.	215	102.22	S
10	Teaching materials are useful to teaching for performance.	207	78.67	S
11	Teaching materials is a useful tool to understand mathematical facts.	203	60.89	S
12	Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory.	202	57.56	S
13	The students are curious and active in mathematics teaching when using teaching materials.	205	68.89	S
14	Each school should have a mathematical laboratory.	215	27.00	S
15	A certain amount of money /budget should be differentiating for the management of teaching materials in local level.	210	80.00	S
16	The teacher should stimulate to students in manipulating teaching materials.	210	80.00	S

17	Use of teaching materials is useful and important to Multiple-intelligence classroom.	185	36.78	S
18	Use of teaching materials is important in mathematics teaching rather than other subjects.	190	46.22	S
19	It is behavioral to use teaching material in every mathematics classroom in term of cost.	180	46.67	S
20	It is behavioral to use teaching materials in every mathematics classroom.	177	50.67	S
21	I am very favor towards using teaching material	205	68.89	S
22	Teachers feel fun and enjoy in using teaching materials.	215	102.22	S
23	Teacher should make an organized teaching about use of using teaching materials.	220	135.56	S
24	It is behavioral teaching material in every mathematics classroom in terms of time.	195	46.67	S
25	It is behavioral to use teaching materials in every mathematics classroom in terms of classroom.	195	46.67	S

APPENDIX-D

Chi-square values of statements in administered attitude scale to rural teacher

S.N	Statement	Total score	χ^2 - Value	Significance
1	It is advantage to use teaching material in mathematics teaching.	205	68.89	S
2	Teacher should have the knowledge to use teaching materials in classroom.	205	68.89	S
3	Teacher should have the skills to use teaching material in classroom.	205	68.89	S
4	Manipulative materials are useful to teach in exploratory level.	195	46.67	S
5	Most of the time should be given to making and using teaching materials.	185	35.56	S
6	The knowledge about of importance of teaching material.	210	80.00	S
7	First priority should be given in using teaching materials in the beginning of new subject matter.	205	68.89	S
8	Training should be given to each mathematics teacher about using teaching materials.	195	46.67	S
9	Teaching materials helps to teaching for understanding.	210	80.00	S
10	Teaching materials are useful to teaching for performance.	195	46.67	S
11	Teaching materials is a useful tool to understand mathematical facts.	190	35.56	S
12	Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory.	211	83.56	S
13	The students are curious and active in mathematics teaching when using teaching materials.	199	49.11	S
14	Each school should have a mathematical laboratory.	205	68.89	S
15	A certain amount of money /budget should be differentiating for the management of teaching materials in local level.	185	35.56	S
16	The teacher should stimulate to students in manipulating teaching materials.	178	23.11	S

17	Use of teaching materials is useful and important to Multiple-intelligence classroom.	174	18.00	S
18	Use of teaching materials is important in mathematics teaching rather than other subjects.	163	9.78	S
19	It is behavioral to use teaching material in every mathematics classroom in term of cost.	166	18.00	S
20	It is behavioral to use teaching materials in every mathematics classroom.	165	18.89	S
21	I am very favor towards using teaching material	190	35.56	S
22	Teachers feel fun and enjoy in using teaching materials	200	52.22	S
23	Teacher should make an organized teaching about use of using teaching materials.	205	68.89	S
24	It is behavioral teaching material in every mathematics classroom in terms of time.	160	30.00	S
25	It is behavioral to use teaching materials in every mathematics classroom in terms of class control.	184	50.89	S

APPENDIX-E

Attitude score obtained by urban teachers.

S.N	Statement	Measurement scale						
		S.A.	A.	N.	D.	S.D.	T.S.	\bar{x}
1	It is advantage to use teaching material in mathematics teaching.	150	60				210	4.67
2	Teacher should have the knowledge to use teaching materials in classroom.	145	64				209	4.64
3	Teacher should have the skills to use teaching material in classroom.	135	72				207	4.60
4	Manipulative materials are useful to teach in exploratory level.	125	60	9	4		198	4.40
5	Most of the time should be given to making and using teaching materials.	100	60	15	6	2	173	3.84
6	The knowledge about of importance of teaching material.	125	60	15			200	4.44
7	First priority should be given in using teaching materials in the beginning of new subject matter.	100	80	15			195	4.33
8	Training should be given to each mathematics teacher about using teaching materials.	150	40	15			205	4.56
9	Teaching materials helps to teaching for understanding.	175	40				215	4.48
10	Teaching materials are useful to teaching for performance.	160	32	15			207	4.60
11	Teaching materials is a useful tool to understand mathematical facts.	140	48	15			203	4.51
12	Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory.	135	52	15			202	4.49
13	The students are curious and active in mathematics teaching when using teaching materials.	150	40	15			205	4.56
14	Each school should have a mathematical laboratory.	175	40				215	4.78
15	A certain amount of money /budget should be differentiating for the management of teaching materials in local level.	150	60				210	4.67
16	The teacher should stimulate to students in manipulating teaching materials.	150	60				210	4.67
17	Use of teaching materials is useful and important to Multiple-intelligence classroom.	75	80	30			185	4.11
18	Use of teaching materials is important	80	92	18			190	4.22

	in mathematics teaching rather than other subjects.							
19	It is behavioral to use teaching material in every mathematics classroom in term of cost.	50	100	30			180	4.0
20	It is behavioral to use teaching materials in every mathematics classroom.	40	104	33			177	3.93
21	I am very favor towards using teaching material	150	40	15			205	4.56
22	Teachers feel fun and enjoy in using teaching materials	175	40				215	4.78
23	Teacher should make an organized teaching about to use of using teaching materials.	200	20				220	4.89
24	It is behavioral teaching material in every mathematics classroom in terms of time.	100	80	15			195	4.33
25	It is behavioral to use teaching materials in every mathematics classroom in terms of classroom.	100	80	15			195	4.33

S.A. = Strongly Agree

A. = Agree

N. = Neutral

D. = Disagree

S.D. = Strongly Disagree

T.S = Total Score

APPENDIX-F

Attitude score obtained by Rural teachers.

S.N	Statement	Measurement						
		scale						
		S.A	A	N	D	S.D	T.S	\bar{x}
1	It is advantage to use teaching material in mathematics teaching.	125	80				205	4.55
2	Teacher should have the knowledge to use teaching materials in classroom.	125	80				205	4.55
3	Teacher should have the skills to use teaching material in classroom.	125	80				205	4.55
4	Manipulative materials are useful to teach in exploratory level.	100	80	15			195	4.33
5	Most of the time should be given to making and using teaching materials.	75	80	30			185	4.11
6	The knowledge about of importance of teaching material.	150	60				210	4.67
7	First priority should be given in using teaching materials in the beginning of new subject matter.	150	40	15			205	4.56
8	Training should be given to each mathematics teacher about using teaching materials.	125	40	30			195	4.33
9	Teaching materials helps to teaching for understanding.	150	60				210	4.67
10	Teaching materials are useful to teaching for performance.	100	80	15			195	4.33
11	Teaching materials is a useful tool to understand mathematical facts.	100	60	30			190	4.22
12	Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory.	155	56				211	4.69
13	The students are curious and active in mathematics teaching when using teaching materials.	130	64	15			199	4.42
14	Each school should have a mathematical laboratory.	150	40	15			205	4.56
15	A certain amount of money /budget should be differentiating for the management of teaching materials in local level.	100	40	45			185	4.11
16	The teacher should stimulates to students in manipulating teaching materials.	100	40	30	6	2	178	3.96
17	Use of teaching materials is useful and	75	60	30	8	1	174	3.87

	important to Multiple- intelligence classroom.							
18	Use of teaching materials is important in mathematics teaching rather than other subjects.	75	40	30	16	2	163	3.62
19	It is behavioral to use teaching material in every mathematics classroom in term of cost.	55	56	45	10		166	3.69
20	It is behavioral to use teaching materials in every mathematics classroom.	50	60	45	10		165	3.67
21	I am very favor towards using teaching material	100	60	30			190	4.22
22	Teachers feel fun and enjoy in using teaching materials	125	60	15			200	4.44
23	Teacher should make an organized teaching about to use of using teaching materials.	150	40	15			205	4.56
24	It is behavioral teaching material in every mathematics classroom in terms of time.	25	80	45	10		160	3.56
25	It is behavioral to use teaching materials in every mathematics classroom in terms of classroom.	65	104	9	6		184	4.09

APPENDIX-G

Attitude score obtain by male teacher

S.N	Statement	Measurement						
		scale						
		S.A	A	N	D	S.D	T.S	\bar{x}
1	It is advantage to use teaching material in mathematics teaching.	135	72				207	4.6
2	Teacher should have the knowledge to use teaching materials in classroom.	140	68				208	4.62
3	Teacher should have the skills to use teaching material in classroom.	140	68				208	4.62
4	Manipulative materials are useful to teach in exploratory level.	105	76	12	2		195	4.33
5	Most of the time should be given to making and using teaching materials.	100	72	15	2	1	190	4.22
6	The knowledge about of importance of teaching material.	135	68	3			206	4.58
7	First priority should be given in using teaching materials in the beginning of new subject matter.	125	60	15			200	4.44
8	Training should be given to each mathematics teacher about using teaching materials.	150	40	15			205	4.56
9	Teaching materials helps to teaching for understanding.	165	48				213	4.73
10	Teaching materials are useful to teaching for performance.	125	56	18			199	4.42
11	Teaching materials is a useful tool to understand mathematical facts.	120	60	18			198	4.40
12	Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory.	150	44	12			206	4.48
13	The students are curious and active in mathematics teaching when using teaching materials.	135	52	15			202	4.49
14	Each school should have a mathematical laboratory.	175	28	9			212	4.71
15	A certain amount of money /budget should be differentiating for the management of teaching materials in local level.	135	40	24			199	4.42
16	The teacher should stimulate to students in manipulating teaching materials.	135	40	15	4	1	195	4.33
17	Use of teaching materials is useful and important to Multiple- intelligence classroom.	80	68	27	4	1	180	4.00

18	Use of teaching materials is important in mathematics teaching rather than other subjects.	80	60	30	8		178	3.96
19	It is behavioral to use teaching material in every mathematics classroom in term of cost.	35	68	48	10		161	3.58
20	It is behavioral to use teaching materials in every mathematics classroom.	35	80	48	40		167	3.71
21	I am very favor towards using teaching material	130	96	15			241	5.36
22	Teachers feel fun and enjoy in using teaching materials	165	36	9			210	4.67
23	Teacher should make an organized teaching about to use of using teaching materials.	175	28	9			212	4.71
24	It is behavioral teaching material in every mathematics classroom in terms of time.	60	80	30	6		176	3.91
25	It is behavioral to use teaching materials in every mathematics classroom in terms of classroom.	60	100	18	4		182	4.04

Appendix-H

Attitude Score obtain by Female teacher

S.N	Statement	Measurement						
		scale						
		S.A	A	N	D	S.D	T.S	\bar{x}
1	It is advantage to use teaching material in mathematics teaching.	140	68				208	4.62
2	Teacher should have the knowledge to use teaching materials in classroom.	130	76				206	4.58
3	Teacher should have the skills to use teaching material in classroom.	120	84				204	4.53
4	Manipulative materials are useful to teach in exploratory level.	120	64	12	2		198	4.40
5	Most of the time should be given to making and using teaching materials.	75	68	30	4	1	178	3.96
6	The knowledge about of importance of teaching material.	140	52	12			204	4.53
7	First priority should be given in using teaching materials in the beginning of new subject matter.	125	60	15			200	4.44
8	Training should be given to each mathematics teacher about using teaching materials.	125	40	30			195	4.33
9	Teaching materials helps to teaching for understanding.	160	52				212	4.71
10	Teaching materials are useful to teaching for performance.	135	56	12			203	4.51
11	Teaching materials is a useful tool to understand mathematical facts.	120	48	27			195	4.33
12	Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory.	140	64	3			207	4.60
13	The students are curious and active in mathematics teaching when using teaching materials.	135	52	15			202	4.49
14	Each school should have a mathematical laboratory.	150	52	6			208	4.62
15	A certain amount of money /budget should be differentiating for the management of teaching materials in local level.	115	60	21			196	4.36
16	The teacher should stimulate to students in manipulating teaching materials.	115	60	15	2	1	193	4.29
17	Use of teaching materials is useful and important to Multiple- intelligence classroom.	70	72	33	4		179	3.98

18	Use of teaching materials is important in mathematics teaching rather than other subjects.	75	72	18	8	2	175	3.89
19	It is behavioral to use teaching material in every mathematics classroom in term of cost.	70	88	27			185	4.11
20	It is behavioral l to use teaching materials in every mathematics classroom.	55	84	30	6		175	3.89
21	I am very favor towards using teaching material	120	44	30			194	4.31
22	Teachers feel fun and enjoy in using teaching materials	135	64	6			205	4.56
23	Teacher should make an organized teaching about to use of using teaching materials.	175	32	6			213	4.73
24	It is behavioral teaching material in every mathematics classroom in terms of time.	65	80	30	4		179	3.98
25	It is behavioral to use teaching materials in every mathematics classroom in terms of classroom.	105	84	6	2		197	4.38

APPENDIX-I

Statistical formulae used for data analysis

1. $\chi^2 = \frac{\sum(f_o - f_e)^2}{f_e}$

Where f_o = observed frequency

f_e = expected frequency

2. z-test for sample

$$z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}\right)}}$$

Where, degree of freedom is $N_1 + N_2 - 2$.

\bar{X}_1 = Mean of the first sample

\bar{X}_2 = Mean of the second sample

N_1 = Number of items in first sample

N_2 = Number of items in second sample

S_1^2 = Variance of the first sample

S_2^2 = Variance of second sample

APPENDIX-J

Out sketch of Interview Schedule for teachers

(Interview Form)

Name:

School's Name:

Address:

Sector: Private/Public

Qualification/Training:

- In which level are you teaching? Why have you been teaching mathematics with teaching material? What is the reason behind it?
- Does teaching material helps to solve the all type of problems? If yes, could you give some most common example of it?
- What particular problems have you been facing in teaching material?
- Do you think that you could improve the situation so that students would be motivated towards teaching material? How could you do so?

APPENDIX-K

The Responses Obtained from Interview

“I teach mathematics in primary level. I have been teaching mathematics to increase mathematical knowledge and to develop positive attitude of students towards mathematics. Teaching material helps students to focus in their study. It encourages students to study mathematics like as other subjects. It creates familiar environment in the classroom. Interaction between teacher and students are more important in the classroom. And teaching material increases the interaction between teacher and students. Active participation in teaching material helps students to solve the problems in a easy way. All the students are not equally talent in all subjects. So, by the use of teaching material in the classroom helps all the students to solve any kind of problems. Students are able to solve the problems after a long time. Then students can solve the problems easily which motivates them towards mathematics.” Nibadha Ghising.

“I teach mathematics in primary level. I have been teaching mathematics to remember mathematical concepts, skill and relation for a long time and to develop mathematical knowledge it helps to solve our daily life problems. It is difficult to remember and understand mathematical symbols and terms. So, students are not interested in learning mathematics. But mathematics is a compulsory subject in primary level so the students cannot leave this subject. Then, only the way is to teach the mathematics in an interesting way. Teaching material helps the students to learn mathematics in a easy way and can remember mathematical symbols and terms easily. Teaching material creates fun in the classroom which helps to attract students in their study. Teaching material helps to increase the interaction between teacher and

students which creates good relationship between teacher and students.”Pasang Tamang.

“I teach mathematics in primary level. I have been teaching mathematics to increase my mathematical knowledge as it is related with the daily activities of human life. I have been teaching mathematics with the help of teaching material because it helps to teach easily. Teaching material creates curiosity to the students and focus on the classroom. It helps to solve the problems in a easy way so that students can easily understand. Students can feel that mathematics is important in our daily life activities. Then they are excited to do their homework. Teacher also spends full time on classroom. Students are loyal to the teacher and raise the questions if they are confused or misunderstand. Students attain good marks in exam which encourage teacher to use such material in the classroom. Then students develop positive attitude and attraction towards mathematics. ”Devi Gautam.

“I teach mathematics in primary level. I have been teaching mathematics using teaching material. In my own opinion it is easier to teach the students and improving their mathematics subject. I found that students make noise in the class which disturbs the whole class and study is not efficient, before using teaching material. After using such teaching material in the classroom, students interact with me and discuss about the questions. Students are curious and active in mathematics teaching when using teaching material. Use of teaching material is useful and important to multiple intelligence classrooms. Both the teacher and students enjoy and feel fun in using teaching material. It is behavioral to use teaching material in every mathematic classroom in terms of class control. Parents are also agreeing in terms of using

teaching material in mathematic classroom. Teaching material helps the students in their learning mathematics. So, they are motivated towards teaching material.”Anjana Pokhrel.