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A Study on Attitude towards Mathematics in Relation to Development of Skills and Individual Outlook

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Abstract
The Mathematics as a subject has been a very popular area of study and has attracted the response of the researchers in mathematics for active resarch. This research focuses on the development of skills and individual outlook over the effect of mathematics. The samples for the study were 1188. The samples were collected on a random sampling method basis. From the study that was taken in the City of Chennai it is very well known that people are agreeing towards the fact of development of problem solving skills that would indeed a part of the development of skills and individual outlook.

Keywords: *Focus, Sampling, Skill Development, Individual Outlook, Educational Research*

I. INTRODUCTION

The Mathematics is an inseparable part of our life and plays an important role in moulding various spheres of our life.Since the students who study mathematics as a core subject in basic and secondary education struggle to understand it is mandatory to learn mathematics in the very initial stage of the formal education which may help them to enhance their analytical skills and construct appropriate mathematical models for any problem they encountered. It is understood from various studies that many students have a negative approach towards the learning of mathematics which leads a massive failure of students in mathematics. The teaching methods that are used by teachers in the subject invariably affect the performance of the students in their final examinations. The area that is still in dark is the influence of teachers' attitude on students' attitude towards the study of the subject. Educational researchers are trying towards finding a solution for poor attitude and performance in Mathematics. Students' positive approach towards learning of mathematics and identity in competency in the subject mainly depend on the relationships that develop in the class room.Teacher's attitude is an important element in shaping the ideas and skills of the students. The main focusof the studyis to find out the attitude of the students over mathematics in relation to development of skill in mathematics and individual outlook towards mathematics.

II. OBJECTIVES

1. To study the wider applicability of mathematics in everyday life

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2. To study the attitude towards mathematics
3. To study the relationship between applicability and development of skill
4. To study the association between profit of the respondents and applicability and development of skill
5. To study the significant difference between profile of the respondents and applicability and development of skill

III. REVIEW OF LITERATURE

Megan LoefFranke (Jan 2001) has studied the documents how teachers who participated in a professional development program on understanding the development of students' mathematical thinking continued to implement the principles of the program 4 years after it ended.

Melanie Parker (2005) has looked at undergraduate students' scores on a mathematics placement exam, mathematics courses taken and grades received, and persistence toward a degree. Thus data suggests that students tend to maintain the level of mathematics skills with which they entered college, and students who graduate in four years seem to increase their knowledge of elementary mathematics during this time.

MenuchaBirenbaum (Feb 2005) The study focused on the effects of gender and culture on Excellency in mathematics on a countywide test and on outlook towards the study of mathematics among small sample Jewish and Arab eighth graders in Israel.

M. Speer (Mar 2005) has examined the obvious contrast result due to lack of shared understanding between teachers and researchers of the meaning of terms used to define theories and practices.

Gina Gresham (Oct 2007)explored the fluctuation in levels of mathematics unease among pre-service instructors in six diversesegments of a mathematics method courses for early childhood/elementary learning pre-service instructors. Thus outcomes of the study have indications for instructor education programs concerning how coming teachers are proficient, the extent of mathematics anxiety levels among pre-service teachers, and the determination of specific contexts in which mathematics concern can be construed and abridged.

Margaret Brown (Sep 2008) has discussed the improving participation rates in specialist mathematics after the subject ceases to be compulsory at age 16 is part of government policy in England. Thus an analysis of the effects of schools, demonstrates that enjoyment is the main factor differentiating schools with high and low participation indices.

Ellen L. Usher (Jan 2009) has discussed to develop and validate items with which to assess A. Bandura's (1997) theorized sources of self-efficacy among middle school mathematics students. Thus the results suggest that the sources scale is psychometrically sound and could be adapted for use in other domains.

Geary (Nov 2011) has identified the beginning of 1st grade quantitative competencies that predict mathematics achievement start point and growth through 5th grade. Thus the results identify the early quantitative competencies that uniquely contribute to mathematics learning.

FengfengKe (April 2014) has established that partakers developed ominously more optimisticoutlooks toward mathematics after computer game making. Thus mathematical intelligentand experiences wereentangled within the process of computer game authoring.

Rongjin Huang (July 2016) has discussed synthesis of the state-of-the art studies on lesson study with in-service mathematics teachers and an outlook on the entire issue. Thus the literature review and the other articles in this special issue provide a ground for readers to reflect critically on the current research on and practice of lesson study and to discuss future directions for the development of lesson study.

IV. METHODS AND MATERIALS

Methodology:

Descriptive research (Non-law) method is used for the study. Both principal and ancillarybases of facts are dealt. The crucial data was composed by

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proposing Questionnaire to the general public through direct survey method. Various books and journals were used as secondary sources to collect data.

Sampling Method:

The method used for the purpose of study is Convenient sampling.

Sample Size:

A total of 1188 samples were collected.

Sample Tools:

The tools used for the processing of data are the Correlation, Chi-Square, Anova, Descriptive Analysis, %age Analysis,

Independent Variable:

1. Age
2. Gender
3. Occupation

Dependent Variable:

1. The Development of Skills
2. The Individual Outloo

DATA ANALYSIS AND INTERPRETATION

%AGE ANALYSIS

Statistics

		Gender	Age	Education	Employed in
N	Valid	1188	1188	1188	1188
	Missing	0	0	0	0

Gender

		Number of persons	%	Valid %	Cumulative %
Valid	Male	566	48	48	48
	Female	622	52	52	100
	Total	1188	100	100	

Age

		Number of persons	%	Valid %	Cumulative %
Valid	Below 20	232	20	20	20
	21 -30	371	31	31	51
	31-40	360	30	30	81
	Above 40	225	19	19	100
	Total	1188	100	100	

Education

		Number of persons	%	Valid %	Cumulative %
Valid	SSLC	115	9.7	9.7	9.7
	HSC	254	21.4	21.4	31.1
	UG	462	38.9	38.9	70.0

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	PG	216	18.1	18.1	88.1
	Professional education	141	11.9	11.9	100.0
	Total	1188	100.0	100.0	

Employed in

		Number of persons	%	Valid %	Cumulative %
Valid	Government sector	281	23.7	23.7	23.7
	Private sector	495	41.6	41.6	65.3
	Self-employed	412	34.7	34.7	100.0
	Total	1188	100.0	100.0	

Inferences:

1. Sample size is 1188
2. 52.4 per cent of the respondents are female whereas 47.6 % are male.
3. 31.3 per cent of the respondents are in the age group of 21-30 years followed by 30.3 per cent are in 31-40 years, 19.5 per cent are in below 20 years, and 18.9 % are in the age group of above 40 years
4. 38.9 per cent of the respondents are undergraduates, followed by 21.4 per cent HSC , 18.1 per cent PG, 11.9 per cent professional education and 9.7 per cent SSLC
5. 41.6 per cent of the respondents are employed in private sectors, 34.7 per cent are self-employed and 23.7 per cent are in government sectors.

V. DESCRIPTIVE ANALYSIS

Development of Skill

Statistics

	1. Mathematics imparts system in life	2. The skill in using mathematical symbols helps a person in solving many complicated problems	3. I can construct so many things with paper, chart, card board or waste materials which require geometrical knowledge of size, shape etc.,	4. Mathematics does not teach us the skill to live economically	5. Mathematics inculcates the skill of doing graphical work
Valid	1188	1188	1188	1188	1188
Missing	0	0	0	0	0
Mean	3.604	3.430	3.526	3.258	3.141
Median	4.000	4.000	4.000	3.000	3.000
Mode	5.0	4.0	4.0	3.0	3.0

It is observed that the respondents strongly agree to the statement “Mathematics imparts system in life”, agree to the statements “The skill in using mathematical symbols helps a person in solving many complicated problems” and “I can construct so many things with paper, chart, card board or waste materials which require geometrical knowledge of size, shape etc” but neutral to the

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statement "Mathematics does not teach us the skill to live economically" and " Mathematics inculcates the skill of doing graphical work"

Individual Outlook

Statistics

	1. I do not like mathematics teacher	2. Mathematics should be compulsory subject in school curriculum	3. I love to attend mathematics period daily	4. I do my homework in mathematics daily	5. I feel pleasure whenever I solve difficult sums without any one help
Valid	1188	1188	1188	1188	1188
Missing	0	0	0	0	0
Mean	3.477	3.327	3.136	3.171	3.524
Median	4.000	3.000	3.000	3.000	4.000
Mode	5.0	4.0	3.0	3.0	4.0

It is observed that the respondents strongly agree to the statement "I do not like mathematics teacher", agree the statements "Mathematics should be a compulsory subject in school curriculum" and "I feel pleasure whenever I solve difficult sums without any one help" but neutral to the statements "I love to attend mathematics period daily" and . "I do my homework in mathematics daily"

VI. CORRELATION

Null Hypothesis: There is no significant relationship between development of skill and individual outlook

Alternative Hypothesis: There is significant relationship between development of skill and individual outloo

Correlations

		DEVELOPMENT OF SKILL	INDIVIDUAL OUTLOOK
DEVELOPMENT OF SKILL	Pearson Correlation	1	.511
	Sig. (2-tailed)		.000
	N	1188	1188
INDIVIDUAL OUTLOOK	Pearson Correlation	.511	1
	Sig. (2-tailed)	.000	
	N	1188	1188

Inference: Since the correlation is 0.511, there is positive and moderate relationship between development of skill and individual outlook.

ANOVA

Personal profile and development of skills

Null hypothesis: There is no significant difference between the profile of the respondents and development of skills

Alternative hypothesis: There is a significant difference between the profile of the respondents and development of skills

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ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Gender	Between Groups	15.726	20	.786	3.270	.000
	Within Groups	280.614	1167	.240		
	Total	296.340	1187			
Age	Between Groups	43.600	20	2.180	2.180	.002
	Within Groups	1167.185	1167	1.000		
	Total	1210.785	1187			
Education	Between Groups	39.422	20	1.971	1.582	.050
	Within Groups	1454.413	1167	1.246		
	Total	1493.835	1187			
Employed in	Between Groups	29.133	20	1.457	2.618	.000
	Within Groups	649.422	1167	.556		
	Total	678.555	1187			

Inference: Since the significant value is less than the p value 0.05, the null hypothesis is rejected. Therefore there is a significant difference between personal profile of the respondents and wider applicability of mathematics.

Personal profile and individual outlook

Null hypothesis: There is no significant difference between the profile of the respondents and individual outlook

Alternative hypothesis: There is a significant difference between the profile of the respondents and individual outlook

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Gender	Between Groups	13.367	20	.668	2.756	.000
	Within Groups	282.973	1167	.242		
	Total	296.340	1187			
Age	Between Groups	52.967	20	2.648	2.669	.000
	Within Groups	1157.818	1167	.992		
	Total	1210.785	1187			
Education	Between Groups	33.851	20	1.693	1.353	.137
	Within Groups	1459.984	1167	1.251		
	Total	1493.835	1187			
Employed in	Between Groups	34.132	20	1.707	3.090	.000
	Within Groups	644.423	1167	.552		
	Total	678.555	1187			

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Inference: Since the significant value of age, gender and employed in are less than 0.05, the null hypothesis is rejected. Hence there is a significant difference between gender, age, employed in and non-intellectual development. The significant value of educational qualification of the respondents is greater than 0.05, the null hypothesis is accepted. Therefore there is no significant difference between educational qualification and intellectual development.

CHI-SQUARE

Personal profile and development of skills

Null hypothesis: There is no significant association between profile of the respondents and development of skills

Alternative hypothesis: There is significant association between profile of the respondents and development of skills

S.No	Personal profile and development of skills	Chi-square value	df	Sig
1	Gender and development of skills	63.046[a]	20	.000
2	Age and development of skills	142.908[a]	60	.000
3	Educational qualification and development of skills	147.692[a]	80	.000
4	Employed in and development of skills	94.913[a]	40	.000

Inference: Since the significant value 0.000 is less than the p value 0.05, the null hypothesis is rejected. Therefore there is significant association between personal profile of the respondents and development of skills

Personal profile and individual outlook

Null hypothesis: There is no significant association between profile of the respondents and individual outlook

Alternative hypothesis: There is significant association between profile of the respondents and individual outlook

S.No	Personal profile and individual outlook	Chi-square value	df	Sig
1	Gender and individual outlook	53.586[a]	20	.000
2	Age and individual outlook	152.490[a]	60	.000
3	Educational qualification and individual outlook	133.833[a]	80	.000
4	Employed in and individual outlook	100.605[a]	40	.000

Inference: Since the significant value 0.000 is less than the p value 0.05, the null hypothesis is rejected. Therefore there is significant association between personal profile of the respondents and individual outlook.

VII. CONCLUSION

Thus the research hasunveiled that the students' approachtowards subject is very much favoured towards the hypothesis that is framed and it could be observed that the public agree towards the point that Mathematics imparts a system in life and is very much needed in solving the day to day problems in our life. Moreover attitude of the teachers also acts a mainpart in agreement to students' attitude as it is the teacher who inculcates the attitude of making the students go in depth to the subject to understand it. This may help students to develop a positive outlook towards the subject, learn it without any embarrassment and hence improve their performance.

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