PROBLEMS FACED BY STUDENTS IN LEARNING MATHEMATICS AT HIGHER SECONDARY LEVEL

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Abstract—**Today the learners who learn Mathematics are facing major problems not only in learning the mathematical content or problems due to ineffective teaching methods but also in understanding some specific problem factors. Here I wish to highlight certain problems that are faced by the students in Learning Mathematics. I used the validated problem checklist as a tool for this study. The Statistical Techniques used for analyzing data are t-test and correlation. Here t-test was used to find the significant difference between the means of the students and their problems. Correlation is used to find the relationship between the academic achievement and the problems of the students. Besides these, I would like to bring out the Academic Achievement of the students in learning mathematics in relation to the identified problems.***Index Terms*— **Education, Facebook, Myspace, Open Access, Privacy, Social Networking.**

Key Words: Problem Check list, t-test, Correlation, Learning Mathematics and Academic Achievement.

I. INTRODUCTION

Mathematics in its widest sense is the development of all types of formal deductive reasoning. Generally it is said to be a Science of calculation. It has also been stated in The National Policy on Education (1986) as follows, "Mathematics should be visualized as the vehicle to train a child to think, reason out, analyze, and articulate logically. Apart from being a specific subject, mathematics should be treated as a concomitant to any subject involving analysis and Meaning"[1]. Cocke said "Mathematics is a way to settle in the minds of children a habit of reasoning"[2].Mathematics as a subject has lot of practical utility in the future especially for the students who are in the Higher Secondary Level. Young justified by saying "wherever we turn in these days of iron, stream and electricity, we find that Mathematics have been the pioneers"[3]. It has become the basis of the world's entire business and commercial system.

The primary aim of Teaching Mathematics is to enable the students to develop understanding and skills related to Mathematical concept[4]. According to the findings of Kothari Commission, "Mathematics should be taught on compulsory basis to all pupils as a part of general Education during the first ten years of schooling."[5] The use of Mathematics in our daily life is immense. Higher secondary students in general are at the threshold of deciding their future course of studies. To achieve their goal mathematics plays a vital role.

II. BACKGROUND OF THE STUDY

I have experienced some problems that are faced by the students while I was teaching Mathematics. This motivated me to identify the problems faced by the students in learning mathematics.

A. PROBLEMS IN LEARNING MATHEMATICS

Mathematics is a logical structure. It is a mode of thinking. Mathematics is a subject which requires high concentration of mind and application of logical reasoning[6]. Some people are of the opinion that mathematics is a dry and difficult subject. Students' take little interest in learning mathematics. If the student fails to have interest for this subject, then this subject would become less applicable. Many students perform poorly in Mathematics and find the subject as a very difficult one; the reason may be some economic factors which are the causes for the poor performance of such students. Heavy curriculum may be one of the reasons. Lack of Library facilities and other adequate facilities would have made the students difficult to learn mathematics. It is also true for all the subjects, but Mathematics occupies an integral position in the academic climate as it has a special value in all walks of life. Yet, for most of the students it seems to be a

sort of peculiar allergy. It is due to the reason that Mathematics is full of puzzles and problems[7]. They find difficult to memorize all the formulae. They are not able to understand some Mathematical concepts. The poor academic background of the students in Mathematics makes them to feel that the subject is very difficult for them to understand. Some students come from poor families. They are not able to pay their school fees. They do not get help at home in doing exercise problems. Overcrowded classes may also be one of the reasons.

B. . PROBLEM FACTORS AND THE ACADEMIC ACHIEVEMENT OF THE STUDENTS

The Investigator has identified the problem factors such as

Health problem (P_1)

Finance problem (P_2),

Family problem (P_3),

School problem (P_4),

Social problem (P_5),

Relationship problem (P_6),

Personal problem (P_7) and Future problem (P_8)

are the variables of this study. Besides these, the investigator has found out the achievement of the learners in Mathematics in relation to the identified problems. For assessing the Academic Achievement, the marks obtained by the students in the half yearly exam were taken for this study.

III. OBJECTIVES OF THE STUDY

The Objectives of the study are:
➢ To find out the significant difference between the students (Boys and Girls) and their problems.
➢ To find out the relationship between the problems and the Academic Achievement of the students (Boys & Girls)

A. HYPOTHESES
➢ There will be no significant difference between the students (Boys & Girls) and their problems.
➢ There will be no significant relationship between the problems and the Academic Achievement of the students (Boys & Girls)

IV. SAMPLE DESIGN

A Random sample consisted of 100, +2 Mathematics group students, from difference schools were selected.

A. THE PROBLEM CHECK LIST

A well designed problem check list consisting of 50 list of problems related to Health, Finance, Family, School, Social Relationship, Personal and Future was distributed to the selected students. The problem check list

is given below:

S. No.	Problem Area	Items
1	Health Problem (P_1)	6
2	Finance Problem (P_2)	5
3	Family Problem (P_3)	6
4	School Problem (P_4)	8
5	Social Problem (P_5)	7
6	Relationship Problem (P_6)	6
7	Personal Problem (P_7)	6
8	Future Problem (P_8)	6
	Total	50

Table 4.1 Distribution of the items in the problem check list for students

The students have to go through the list of problems which they are facing and select one of the columns (Always, often, sometime, Rare No) and put a tick mark in the column to show the level in which that particular problem is affecting them. The instrument was developed because of simplicity in administration and scoring and it is within the limits of the students understanding.

B. SCORING

In the case of the positive statements the responses Always gets 5 points, Often 4, Sometimes 3, Rare 2, and No. 1. In the case of negative statements the scores were assigned in the reverse order. A high score indicates that the subject is having more problems in the particular area.

V. STATISTICAL TECHNIQUES

Statistical Techniques used for analyzing the data are,

T-test was used to find out the significant difference between means of students and their problems.

Correlation was done to find the relationship between the Academic Achievement and the problems of the students.

A. ANALYSIS OF DATA

This table highlights the difference between the Boys and Girls in the problem factors

S. No.	Variables	Gender	Mean	S.D	't' Value	Level of Significance
1.	(P_1)	Boys	10.12	1.98	1.63	NS
		Girls	10.40	2.27		
2	(P_2)	Boys	9.68	2.97	2.59	0.01
		Girls	11.10	2.41		
3	(P_3)	Boys	8.94	3.00	0.97	NS
		Girls	9.56	3.37		
4	(P_4)	Boys	10.30	2.44	2.19	0.05
		Girls	11.54	2.99		
5	(P_5)	Boys	9.88	2.88	1.10	NS
		Girls	9.20	2.95		
6	(P_6)	Boys	9.40	2.70	3.05	0.01
		Girls	11.48	2.75		
7	(P_7)	Boys	8.66	2.65	1.23	NS
		Girls	9.34	2.64		
8	(P_8)	Boys	11.10	2.41		0.01
		Girls	9.66	3.02	0.73	

Table 5.1 Problems of students in learning mathematics - Boys vs. Girls

There is no significant difference between the Boys and Girls in the problem factors of Health Problem (P_1), Family (P_3), Social (P_5) Personal (P_7). There is a significant difference between Boys and Girls in the problem factors of Finance (P_2), Relationship (P_6), and Future (P_8), are at the 0.01 level of significance which are in favor of Girls. The problem factor School (P_4), is at 0.05 level of significance in favor of Boys.

B. RELATIONSHIP BETWEEN ACADEMIC ACHIEVEMENT AND PROBLEM FACTORS

Variable	Boys VS Girls
AA	+1.00
P_1	-0.17
P_2	0.28
P_3	0.22
P_4	0.18
P_5	0.52
P_6	0.40
P_7	-0.08
P_8	-0.07

AA means Academic Achievement

Table 5.2 Relationship of criterion variable with correlates

This analysis reveals that the problem variables have substantial positive relationship with Academic Achievement in social problem (P_5) and Relationship problem (P_6) of +2 students. Problem factors such as Finance (P_2), Family (P_3), School (P_4) and Relationship (P_6) have low positive correlation with Academic Achievement of +2 students. Problem factors such as Health (P_1), Personal (P_7), and Future (P_8) have low negative correlation with Academic Achievement of +2 students.

VI. CONCLUSION

Thus we infer that most of the students studying at +2 levels succeeded in their studies through strong motivation and hard work in spite of the problems due to ill health, financial constraints, social, personal, relationship, anxiety about future and the conflicts with parents, elders, Teachers and school administration. The students have derived motivations and inspiration from the educated persons in the society. Besides this inspiration, the students have learnt to accept and challenge Psycho-social-physical problems. Therefore this study reinforces the view that the problems and crisis lead the students to self-motivation, strong motivation leads one to work hard and hard work leads one to success.

In future, similar studies can be taken up on all other subjects. Similar study as the present one may be conducted with a much larger sample of teachers and students with more variables.

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