

## Bangladesh の中等理科教育に対する女子生徒の忌避傾向の調査 - 男女の比較を通して -

### An Investigation into the Causes of Backwardness of Girls in Comparison to Boys at the Secondary Science Group in Bangladesh

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**要旨：** Bangladesh 人民共和国の中等理科教育における、女子生徒の「理科」に対する忌避傾向の理由を調べるために、 Bangladesh の中等学校の生徒および教師に対してアンケート調査を行った。アンケート調査は、グレード9および10（中等学校）の270名の生徒および87名の教師を対象に、選択式および自由記述式の項目を用意して行った。必要に応じて生徒の両親に対しても、インタビュー形式で同様の調査を行った。アンケート調査の結果から、 Bangladesh の文化的および社会的な背景が、女子生徒の理科に対する忌避傾向に強く影響していることがわかった。また科学技術分野で活躍する女性の科学者や技術者が Bangladesh に極端に少ないこと、理科を学習する女子生徒に対する十分な家族のサポートが期待できないこともあり、そのようなことが女子生徒の理科に対する意欲を失わせていることが判明した。これらの女子生徒の理科に対する忌避傾向をなくすためには、女子生徒に対する理科の学習意欲の向上、両親達の良心の向上などが不可欠である。また女子生徒に対する奨学金の充実や、関連する科学技術分野への登用などの政策立案も加えて必要である。

**キーワード：** Bangladesh, 中等理科教育, 忌避傾向

**Abstract :** This study has been done to find out the reasons of backwardness of girl students studying in science. Open and close type questionnaire were used to collect data from both students and teachers. Data have been collected from 270 grade 9 and grade 10 students and 87 secondary school teachers. Data were also collected from the students' parents by the interview method. However in Bangladesh Cultural and social backwardness have strong influence for the girls' less enrollment in science. Also there is lack of motivation for girl students because the prominent woman scientist or worker in the science related field is very few. There is not enough family support for the girl students to study science. So the eradication of these reasons for backwardness, motivation creation for girl students and conscience among the parents should be raised. Also the policy maker should take steps such as the female science stipend project and increasing of job quota for the woman in science related field.

**Keywords :** Bangladesh, Secondary science education, Backwardness

#### 1. INTRODUCTION

Bangladesh is a male dominating society. So any good opportunity for female comes after male. When it comes to education, females were inside the house for a long time. Doing house hold work, bringing up the children was the females' job. This was the situation of Bangladeshi women in the British period and later in Pakistan period. In 1971, after

Bangladesh achieved independence from Pakistan, things started to change slowly for females. Government took some important steps to increase girl student in the school. As the half of the nations population is female, there is no way other than educating them for country's overall development. In 1991 population census, the literacy among the female was 20 percent which is one of the lowest in the world. Government started the secondary school female

stipend program in 1994. After starting this program there was a drastic change in females' enrollment in secondary school. Female enrollment became the same with boy whereas before the stipend program it was just one third of the boys. But in science education, the situation is still different. In education system of Bangladesh, students divided into three groups: science, humanities and business after grade 8. 25.7% (BANBEIS 1997) of total girl students studied in science education whereas 46.8% of boys student (BANBEIS 1997) studied in science education. The enrollment in the science education for both boy and girl students should be equal for the country's overall development. This research has been done to find out the reasons for backwardness of girl students in science education with compare to boy students so that we can eradicate those reasons and go ahead for development.

## 2. OBJECTIVES

The objectives of this research are:

- 1) To find the reasons for backwardness of the girl in science education
- 2) To analyze the reasons for the backwardness of the girl students in science education
- 3) Recommend to eradicate the reasons for backwardness of the girls in science education based on the analysis

## 3. IMPORTANCE OF THE RESEARCH

In Bangladesh, almost half of the population is woman, but in science education it is not reflected. We need our women's power in science education for the over all development. If we look at the picture of general education system the enrollment of girl students in both elementary and secondary education is almost same with the boy students. But in secondary science education it is not true. To consider these things we need to conduct research in this area so that we can find the reasons and solve the problem.

## 4. RESEARCH METHODOLOGY

Data have been collected for this research by questionnaire method from grade nine and grade ten students and secondary school teachers. Both quantitative and qualitative data have been collected through close and open type questionnaire. Interview method was also used to collect data from the parents of the students. 15 questions for teachers and 22 questions for students have been used in

Table 1: Number of responses

	Number of responses	Number of schools
Student	270	17
Teacher	87	12

questionnaire. In the Table 1 we can see the total responses of the students and teachers. 270 students of grade 9 and 10 from 17 schools and 87 teachers from 12 secondary school had answered the questionnaire.

In this research we have considered five factors for collecting data.

- 1) Family's financial situation
- 2) Personal thinking
- 3) Family member's opinion
- 4) Friend's opinion
- 5) Job opportunities
- 6) Quality of school

## 5. DATA ANALYSIS

Figure 1 shows the percentage of students by type of school who took part in the questionnaire.

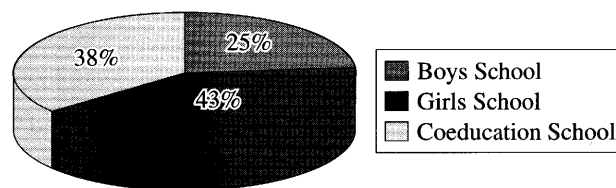


Fig 1 Percentage of students by type of school who took part in the questionnaire

68 students from boys' school, 116 students from girls' school and 86 students from coeducation school have taken part in the questionnaire.

Now we look at the percentage of the students according to the course after finishing grade 8. The students were asked the following questions.

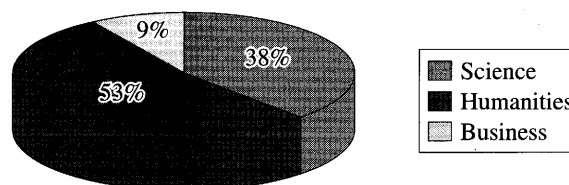


Fig 2 Percentage of students who take part in the questionnaire according to the group

## ANALYSIS OF DATA FROM STUDENT

### QUESTION 1

*Do you think that girl students avoid studying science because they don't like it?*

Response to this question is described by the following

Figure.

162 students replied yes to this question, which is 60% of the total responses.

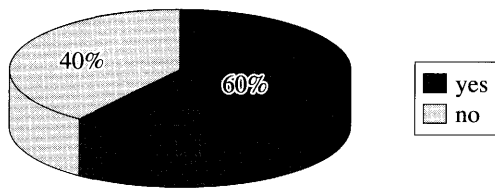


Fig 3 Percentage of responses whether girl students like or dislike science

**QUESTION 2**

If the answer to the previous question is yes then which subjects, girl students dislike most? Figure 4 shows that most of the girl students dislike mathematics.

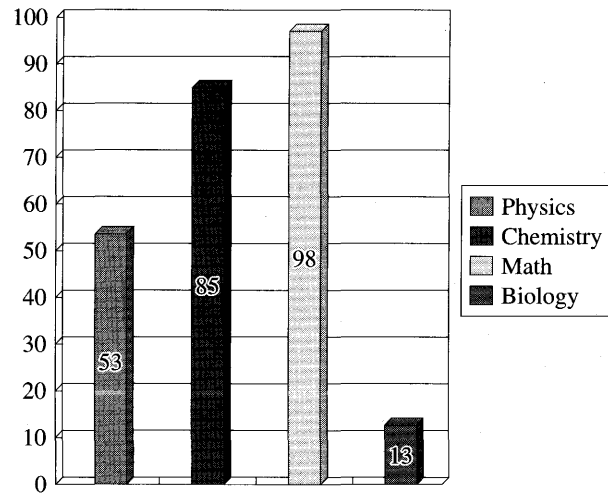


Fig 4 Number of responses about subjects which girl students dislike most

**QUESTION 3**

Do you think that girl students have lack of confidence for not studying science?

In the response of the question3 61% students replied yes.

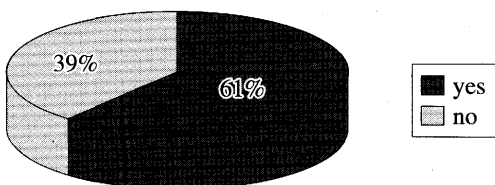


Fig 5 Percentage of the responses about the lack of confidence

**QUESTION 4**

If the answer to the Q3 is yes then what is cause for that?

135 responses are about the difficulty of science.

If we explain the causes of lack of confidence we can see that in Bangladeshi society females have to do the most of

the house hold work. After the school girl students have to help their mother in the house hold work. As science is difficult comparing to other subjects they need more time to study. But in this situation which is not possible for the girl students.

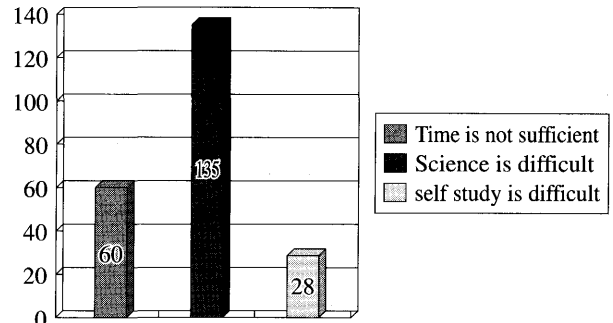


Fig 6 Responses about the causes of lack of confidence

**OPINIONS**

Now we will discuss some opinions of the students here. We used mean to analysis data in Table 2. The value of 5 point scale used for the study is: 1= strongly agree, 2= agree, 3= neutral, 4= disagree and 5= disagree. Mean calculation= (1 number of response+2 number of response+3 number of response+4 number of response+5 number of response)/ total number of responses.

Table2: Students' opinion about the poor enrolment of girls in grade 9 science courses

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	Mean
1. Lack of school having well equipped science lab, near to girl students' house	105	66	25	39	35	2.38
2. Lack of residence in the school where science is being taught.	102	73	26	49	20	2.30

Statement 1 in table 2 shows that the mean is near 2 which mean most of the students agreed with the statement, "...". Statement 2 shows that the mean is near 2 which mean most of the students support the statement. "...".

Now we will analyze the data from the teachers

**ANALYSIS OF DATA FROM TEACHER**

**QUESTION 1**

Do you think that, the conditions for girl students in studying science are not good?

In response to this question 69% of the teachers replied yes.

**QUESTION 2**

If the answer to the Q1 is yes, what is the cause for that?

Figure 8 shows that 46 responses are preferences for boys.

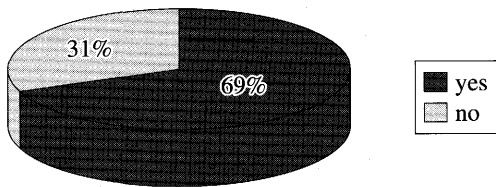


Fig 7 Percentage of the responses about whether the condition for girl students in studying science is good or not

In Bangladeshi family boys are given more preferences than girls. This is one of the main reasons for girl students not studying science.

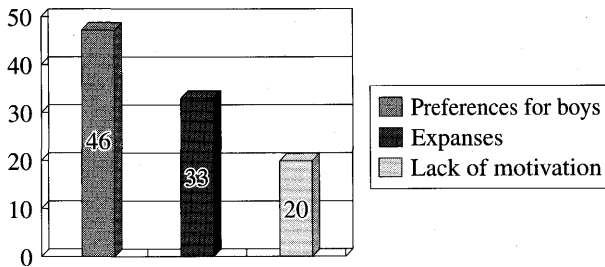


Fig 8 Responses about the causes of conditions for the girl students not studying science

## OPINION

We will discuss the statement agreed by the teacher here.

Table3: Teachers' opinion about the poor enrolment of girls in grade nine science courses

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	Mean
State does not take any initiative to increase the enrollment of girl students in the science education	30	29	8	10	10	2.32

From the above statement in the Table 3 we can find that the mean is near 2 which mean we can accept the statement. Most of the teachers agreed with the statements.

## 6. FINDINGS AND DISCUSSION

We have some important findings for this research.

- 1) Cultural and social backwardness has strong influence for girl's poor participation in science education
- 2) Lack of financial and motivational support from family. Families prefer their sons to daughters for studying science.
- 3) Chances are few for woman in science related job. In Bangladesh very few women are working in science related jobs. There is almost no woman in the upper level in the science related job. So the girl students have lack of motivation for studying in science
- 4) Girls have to do the domestic jobs after the school. In Bangladeshi society, girl students have to do the house

hold work which boy students don't have to do.

- 5) In Bangladesh there is safety problem for the girl students especially when they are alone. For this reason girl students are discouraged to go fur to study. Most of the cases, secondary schools are far from the house as the numbers of the secondary schools are less than that of primary schools. And not every secondary school has science lab to teach the students in the grade nine level. The schools those have the science lab don't have the residential facilities for the students from remote area.
- 6) Government has taken some initiatives for the girl students in general education but in science education there is no special care for the girl students.

## 7. RECOMMENDATION

We have made some important recommendations through the investigation.

- 1) Family members, teachers should encourage girl student to study science from their childhood. For example: telling them about the famous woman scientist working in the NASA.
- 2) Improvement of infrastructure in girls' school and increasing the quota for woman in science related jobs by the government.
- 3) Female science stipend program should be introduced. Female Secondary Stipend Project really increases the enrolment of girl students in secondary education. Stipend is same for science, humanities and business studies. In science education, students have to pay extra fee for practical work. And also students have to spend more time in science practical work. So to support science education for girl students, government should initiate the special science stipend program for the girl student.
- 4) Importance of girls' science education should be focused through electronic and print media. Now the media has strong influence on the people's thinking, life style etc. Mass people can be motivated through media easily. So media should be used to highlight the science education for the girl students.
- 5) There is lack of well equipped schools especially in rural area. So the quality of the school should be improved. in the rural areas. At least residential facilities should be given to district level school where lab facilities are there.

## 8. ACKNOWLEDGEMENT

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Note: 1) Grade 9 and 10 of Bangladesh are equivalent to junior school grade 3 and high school grade 1 of Japan.

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