



Abu Hamid Latif
Editor

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F o r e w o r d

Bangladesh, like many other developing countries, is confronted with multiple challenges in educational development. In a situation like this, undertaking, publicizing and disseminating relevant research require concerted and sustained efforts. UNESCO and BAFED have, since 2002, collaborated to provide researchers with a platform for presentation and discussion of selected research studies and their dissemination among stakeholders.

This issue of Bangladesh Education Journal is a follow up to the Ninth Educational Researchers' Conference, held in November 2006. Four topics are covered in this issue, encompassing such important and diverse areas as cultivating interest in mathematics education, learning assessment in early secondary education, skills-based technical and vocational education, quality improvement of the secondary education for ethnic minority students.

Beginning with the next issue, the journal will have a new partner – BRAC University Institute of Educational Development (BU-IED). The involvement of BU-IED is expected to enhance the quality and relevance of the journal and in the process, help develop a shared understanding of the major educational challenges confronting Bangladesh. More insights into, and in depth analysis and critical reflections on the key issues, challenges and opportunities relating to the progress towards Education for All goals and education-related Millennium Development Goals are urgently needed.

If experience of last five years is any indication, institutional and individual initiatives in research and their coverage is encouraging. However, in a country with limited financial resources, funding for research remains a formidable challenge. But concerted efforts and urgent action by all concerned are needed to ensure that educational research gets the attention and resources it rightly deserves.

Hassan A. Keynan

Officer-in-Charge

UNESCO Dhaka

E d i t o r i a l

The Ninth Educational Researchers' Conference, jointly organized by Unesco Dhaka Office and Bangladesh Forum for Educational Development (BAFED), was held on 25 November 2006. The present volume of the journal presents four selected research papers out of six research studies presented at the conference. It is encouraging that researchers especially younger generation of researchers and professionals have shown great interest for presentation of their studies in the conference and publication of their papers in the journal.

With this issue, the journal completes its five year journey beginning 2002 under joint sponsorship of UNESCO Dhaka Office and BAFED. The next volume of the journal will be published under a new arrangement BRAC University Institute of Educational Development (BU-IED) will join hands with UNESCO and BAFED and is expected to contribute in raising the standard and overall improvement of the journal. Thus the journal will enter into its second phase from January 2007.

Abu Hamid Latif

Editor

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An Exploration of the Students' Assessment at the Beginning of Secondary Education

Samir Ranjan Nath*

Abstract

This paper examines the results of pre-assessment held in 2005 in all secondary educational institutions in Bangladesh. The results show a wide variation in the performance of the students by institution, stream, upazila, and district. In-depth exploration of the assessment results and process of assessment in two districts in two successive years (2005 and 2006) hint a variation in the process from one district to another. Poor correlation between the results of the schools and the madrasas and both with the district-wise literacy rates raised question about the reliability of the assessment. No standard procedure was maintained in question preparation or assessment of answer sheets. Wide variation was observed in the results of two successive years in some upazilas. Thus, any generalised conclusion from the assessment results regarding quality of primary education is at risk. Moreover, no use of the results at the institution level questions the main purpose of the assessment. Finally, a standard assessment system was suggested maintaining current nature of decentralised management.

Introduction

Students are assessed for various purposes and in many ways. The purposes may be i) to provide remedial measures for improvement based on current level; ii) to recognise students level of skills and competencies through certification; iii) to give promotion to the next level/grade of education; and iv) to select the better portion for a particular purpose, especially admission to education or job. The tools and techniques vary based on the purpose of the assessment.

Two different ministries are responsible for education in Bangladesh; one for the primary and mass education and the other for the rest including secondary education. Primary education in Bangladesh is confined up to class V; it has been made compulsory for all children since 1990. Due to various initiatives from both the government and the non-government agencies, and sometimes with the assistance from the development partners, the enrolment rate has increased faster during this period compared to any other previous time.

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However, the question of completion of primary education and quality of education remained unsolved.

Quality is a crucial issue for any education provision. It has links with everything that happens under the education provision, but the stakeholders' primary concern is the immediate output i.e., the learning achievement of the students. Except the two scholarship examinations held at the end of class V and class VIII, there was no provision to examine the learning achievement of the pupils at primary and junior secondary levels at the national scale. These scholarship examinations are not enough to understand the fuller scenario of students' or the system's quality, because only a better portion of the students can participate in these. For instance, the top 20% of the students of class V in each primary school participates in primary scholarship examination. Thus, the authorities of the majority secondary schools were in dark about the quality of pupils they were admitting. However, the so called good schools, minority in number and most of whom are situated in the towns and cities, were suppose to admit pupils through a rigorous scrutiny at their end. The Education Watch, an initiative of civil society organizations, provides annual assessment on various quality indicators through sample surveys and studies.

Two district level examinations one at the beginning of class VI and the other before the end of class VIII in all secondary schools are two new initiatives of the Ministry of Education, can be considered as bridge in order to fill this gap if the examinations are conducted seriously. First such examination was taken in November 2004 among the pupils of class VIII and second one in February 2005 among the pupils of class V. Similar examinations were also held for the following cohorts of pupils.

Assessment in class VI

According to a government circular, a district level examination committee is to be formed in each district headed by the District Commissioner and the District Education Officer as its member secretary (Ministry of Education 2003a, 2003b). The members of the committee include district and upazila level government chief officials, local college principals, heads of secondary schools and madrasas, and the public representatives. Representation from all the upazilas in the district is ensured. Accordingly, sub-district level examination committees are also formed headed by the chief government officials there.

The sub-district level committees are responsible to prepare the question papers according to the primary curriculum and following the guidance of the respective district level committee. To do so, they can seek help from the National Curriculum and Textbook Board (NCTB), if necessary. Each secondary education institution is responsible to conduct the examination of its students and assess the answer papers. Duration of examination is two hours. Total marks in each examination is 100, divided into five subjects 20 each for Bangla, English, and mathematics, 30 for environmental studies (Paribesh Parichiti) equally divided by social and general sciences, and 10 for religious studies. In religious studies section, separate questions are given to the students of different religion. Multiple choices, objective and descriptive

types of questions are set in the assessment.

Scores of the pupils are divided into five categories, such as a) 1-19, b) 20-29, c) 30-44, d) 45-59, and e) 60 and above. Pupils getting a score 30 or above is considered as pass. Along with the distribution of pupils according to above category for each secondary school and madrasa the examination committees also publish upazila-wise merit list separately for both schools and madrasas. After each examination, a booklet compiling above information is published and send to all levels from school authority to the education secretary. It is to be noted that the booklets do not provide gender segregated data on students' performance.

The main objective of this assessment, as mentioned in the government circular, is to improve quality of education. Students' assessment scores can only be used to know their skills and competencies they gained from primary education. The institutions are supposed to use these results for further actions to improve quality of the students. Students' performance in this assessment has no affect on their admission in class VI.

Aim of this paper

This paper aims to explore the assessment results held at the beginning of secondary education. This includes analysis of pupils' results at division, district, and institution levels and exploration of assessment process. Attempt was also made to see the differences between the two major streams school and madrasa.

Data and Methods

Pre-assessment data of 2005 aggregated at the district level was mainly used. Data of all the districts except Jessore was available. In addition, information of all the schools and madrasas of two districts (Rajshahi and Kurigram) were collected for institution level analysis. This was available for two years viz., 2005 and 2006. The district level database contains results of 1.64 million students from 27,466 educational institutions. The educational institution level database (of two districts) contains 69,000 students from 1,340 schools and madrasas.

Question papers used in the assessment in Kurigram and Rajshahi were also collected and analysed. Besides, the district education officers, a number of upazila education officers and some school and madrasa heads were interviewed to know the whole process of question paper preparation, conducting exams, answer sheet checking and publication of results.

Results

Students' performance extracted from the pre-assessment

Division-wise analysis

At the national level, half of the pupils passed in the assessment i.e., received a score of 30 or more (Table 1). The pass rate was 45.3% among the school students and 73% among those in the madrasas ($p < 0.001$). That is, the madrasa students were 27.7 percentage points ahead of

their counterparts in the schools. Division-wise analysis shows that the pass rate was highest in Barisal (59.5%) and lowest in Chittagong (41.6%). The gap between the highest and the lowest performing divisions was about 18 percentage points. Khulna scored slightly behind than Barisal with 58.2% pass rate. Chittagong, Sylhet, and Dhaka divisions scored below the national average.

Of the six divisions, Khulna did the best among the school students and Chittagong did the worst. Among the madrasa students, Barisal did the best and Dhaka did the worst. The difference between the highest and the lowest performing divisions was about 20 percentage points in both the streams. However, the pass rate in the highest performing division in school category was lower than that of the lowest performing division in madrasa category. The schools performed lower than the madrasas in all the six divisions ($p < 0.001$). The highest gap was observed in Chittagong division 39.1 percentage points, and the lowest in Dhaka division 20 percentage points. School-madrasa gap was higher than the national average in three divisions' viz., Chittagong, Barisal, and Sylhet.

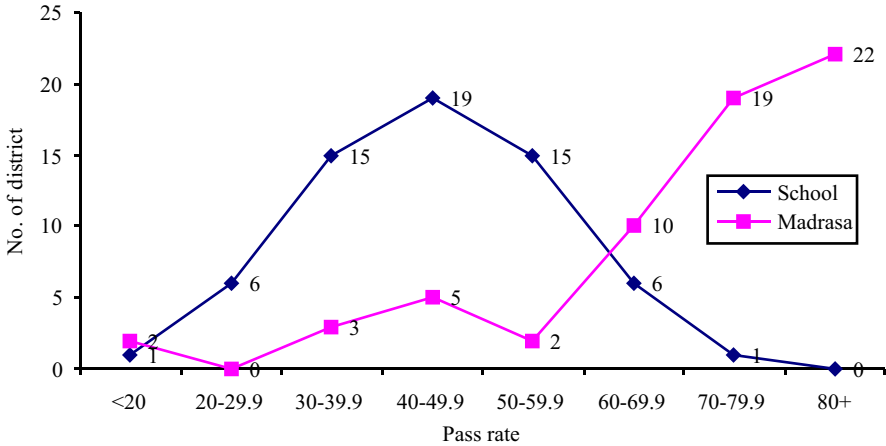
Table 1: Pass rate by division and stream, 2005

Division	Stream			Difference between school And madrasa (S-M)	
	Schools	Madrasas	Both	Magnitude	Level of significance
Barisal division	49.4	84.8	59.5	- 35.4	$p < 0.001$
Chittagong division	34.6	73.7	41.6	- 39.1	$p < 0.001$
Dhaka division	45.2	65.2	47.9	- 20.0	$p < 0.001$
Khulna division	54.5	77.5	58.2	- 23.0	$p < 0.001$
Rajshahi division	49.0	71.4	53.7	- 22.4	$p < 0.001$
Sylhet division	43.9	76.7	48.7	- 32.8	$p < 0.001$
Bangladesh	45.3	73.0	50.2	- 27.7	$p < 0.001$

District-wise analysis

Distribution of districts by pass rate and stream is provided in Figure 1. Whereas a normal distribution was observed in case of the schools, it was negatively skewed in the case of the madrasas. The school results show that the pass rate was 60% or more in only seven districts (11.1%), however, such performance was observed in 51 districts (81%) in the case of madrasas. The pass rate was 80% or more in 22 madrasa-districts, but no school-district showed such a good performance.

Figure 1: Distribution of districts by pass rate and stream, 2005



According to the results of the school students, Sariatpur was the lowest performing district with 14% pass rate. The other low performing districts were Khagrachhari, Noakhali, Feni, Brahmanbaria, Narsingdi, and Netrakona. The pass rates were 28-29% in these districts. Otherwise, Narail and Tangail were the two low performing districts shown in the madrasa results. The pass rates were respectively 9% and 19.5%.

On the other hand, among the school students, Natore was at the top of the list with 71.5% pass rate. The other high performing districts in this regard were Jamalpur, Bagerhat, Kustia, Patuakhali, Barguna and Satkhira. Pass rates were over 60% in all these districts. In case of the madrasas, Gaibandha scored the highest with 94.6% pass rate. The following districts in this regard were Jamalpur, Rajshahi, Dhaka, Sylhet, Patuakhali, and Pabna. Pass rates were over 90% in all these districts. The performance of 39 madrasa-districts was higher than that of the best performing school-district. It can be noted that no common district was found among the bottom five districts in both the streams. Only one district was found common in school and madrasa among the top ranking districts. It is Jamalpur, which stood second in both the list. Here also the schools were 24.5 percentage points behind the madrasas. Following are some examples where wide gap was found in respect to the position of the districts. Narail was at the bottom of the madrasa list, but secured 13th position in the school list. Gaibandha topped in the madrasa list but 29th position in the school list. Mymensingh had 12th position in the school list but 53rd in the madrasa list. Feni secured 62nd position in school list but 19th in the madrasa list. On the other hand, Jamalpur, Magura, Patuakhali, Pabna, and Kishoreganj had very closer position in both the streams.

The Pearson's correlation coefficient between the pass rates of schools and the madrasas by district was found to be 0.39, indicating a positive but poor relationship. The standard deviation of district-wise pass rates was 11.9 for the schools and 18.7 for the madrasas.

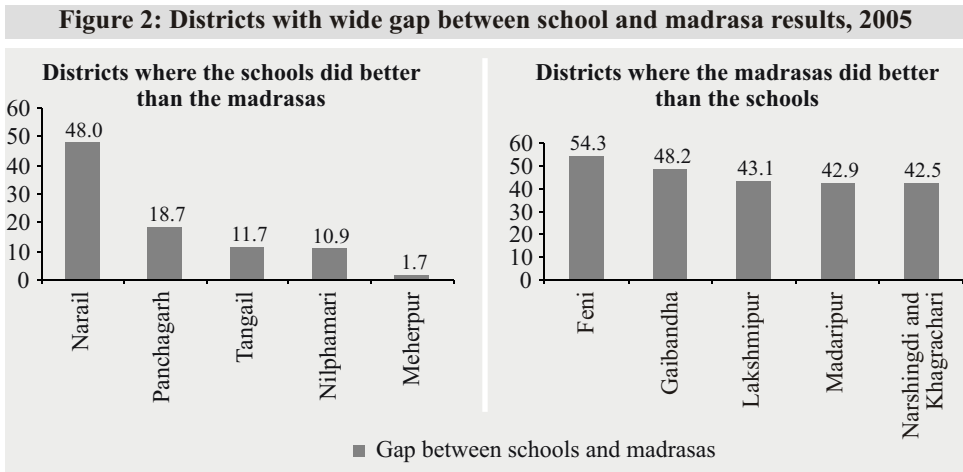
However, a mostly equal value of the coefficient of variation (26.3% for schools and 25.6% for madrasas) indicate that the district-wise variation of pass rates were similar in both the streams. Again, the relationships of the district-wise pass rates with the district-wise literacy rates found in census 2001 were examined (BBS 2003). The correlation coefficient between literacy rate and the pass rates was found to be 0.24, indicates a positive but poor relationship. Similar results were found when correlation coefficients were calculated separately for schools and madrasas pass rates. However, the relationship was sharp between literacy rates and madrasa pass rates compared to literacy and school pass rates ($r=0.34$, $p<0.01$ vs. 0.18, ns). By the by, the standard deviation and the coefficient of variation of the district-wise literacy rates were lower than those of the school and the madrasa pass rates.

District level analysis of pass rate and its difference between school and madrasa shows that the gap was below 10 percentage points in only six districts, 10-19.9 percentage points in eight districts, 20-29.9 percentage points in 28.6 districts, 30-39.9 percentage points in 21 districts, and 40 percentage points or more in 10 districts (Table 2). The gap was 20 percentage points or more in over three quarters of the districts and below 30% in half of the districts. The madrasas did better than the schools in majority of the districts (88.9%). The schools did better than the madrasas only in seven districts.

Table 2: Distribution of districts by school-madrasa gap in pass rate, 2005

Percentage points difference	No. of districts	%	Cumulative %	
			Less than	More than
<10	6	9.5	9.5	100.0
10 - 19.9	8	12.7	22.2	90.5
20 - 29.9	18	28.6	50.8	77.8
30 - 39.9	21	33.3	84.1	49.2
40+	10	15.9	100.0	15.9
Total	63	100.0		

The top five districts where the schools did better than the madrasas were Narail, Panchagarh, Tangail, Nilphamari, and Meherpur. Although in Narail the performance of the school students was 48 percentage points ahead of that of the madrasas, the gap reduced to below two percentage points in the case of Meherpur (Figure 2). On the other hand, the top six districts where the madrasas did better than the schools were Feni, Gaibandha, Lakshmipur, Madaripur, Narsingdi, and Khagrachhari. The gap was over 40 percentage points in all the districts. In Feni, the students of the madrasas were 54.3 percentage points ahead of their school counterparts.



Diagnosis of district results: Kurigram and Rajshahi

Pre-assessment results of Kurigram and Rajshahi districts in two successive years viz., 2005 and 2006 were considered for in-depth diagnosis because of their similarities at some points and dissimilarities as well (DACC Rajshahi 2005, 2006; DACC Kurigram 2005, 2006). Overall pass rates in the districts were different in both the years (Table 3). They were close to each other according to the performances of the school students of 2005, but not in 2006. However, the districts were far different in respect to madrasa results of both the years. The pass rates in schools and madrasas were very close in Kurigram, but a wide distance in Rajshahi in favour of the madrasas.

Table 3: Pass rates in Kurigram and Rajshahi districts by stream and year

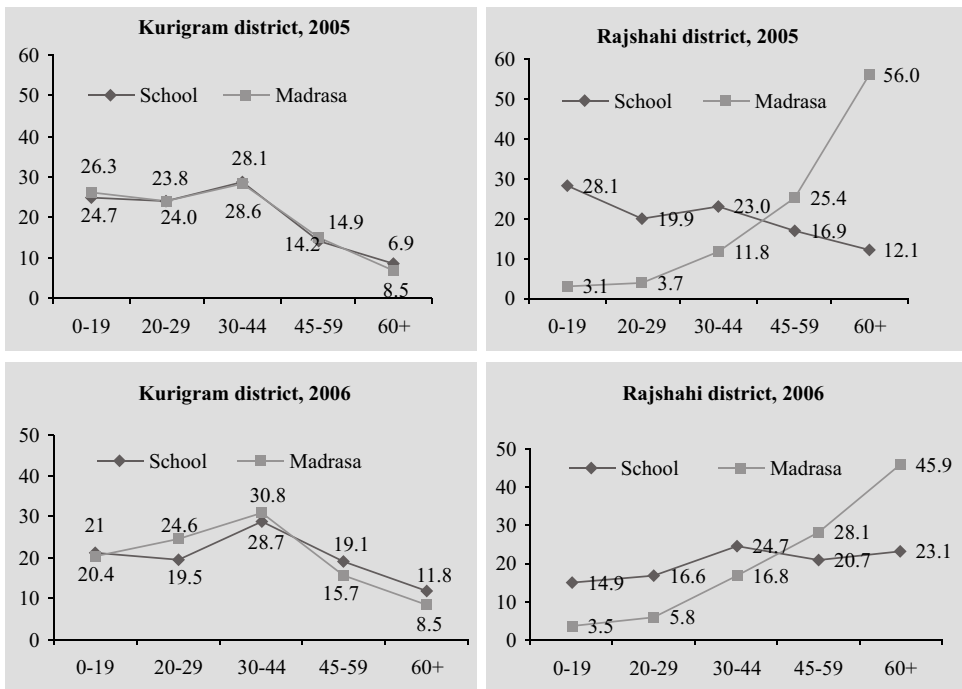
Stream	2005		2006	
	Kurigram	Rajshahi	Kurigram	Rajshahi
School	51.2	52.0	59.6	68.4
Madrasa	49.9	93.2	55.0	90.7
Total	50.9	59.3	58.4	72.5

In 2005, half of the students in Kurigram district and three-fifths in Rajshahi passed in the assessment. The performance increased in both the districts within one year. Whereas, the amount of increase was 7.5 percentage points in Kurigram and 13.2 percentage points in Rajshahi. The performances of both the schools and the madrasas increased in Kurigram district. The rate of increase was higher for the schools than the madrasas. On the other hand, in Rajshahi, the pass rate increased for the schools (16.2 percentage points) but decreased for the madrasas (2.5 percentage points). The pass rates of the schools and madrasas in

Kurigram and the schools in Rajshahi were mostly close to each other in 2005, but they were far behind than that of the madrasa students of Rajshahi. On the other hand, in 2006 both the schools and the madrasas of Kurigram were much behind than the respective institutions in Rajshahi. The 2005 results showed that Rajshahi secured 19th position and Kurigram 20th in the school performance list. On the other hand, in madrasa performance list, Rajshahi had 3rd position and Kurigram 54th.

Whereas, in 2005, a fifth of the examinees in Rajshahi got a score more than 60, only 8.1% of those in Kurigram showed such performance. These figures increased more in Rajshahi than in Kurigram and reached respectively at 27.3% and 10.9% in 2006. Although, in 2005 the proportion of pupils in different score category were mostly similar in the schools and the madrasas in Kurigram, an inverse situation was observed in Rajshahi (Figure 3). Fifty two percent of the school students in Rajshahi passed in the assessment, which was over 93% in case of the madrasas. The proportion of high performing students (having a score 60 or more) was 56% in the madrasas and 12.1% in the schools in Rajshahi. These figures were only 8.5% and 6.9% in Kurigram. The results of 2006 also show mostly the similar results; at least the directions of the curves were the same.

Figure 3: Different scenario of assessment results in Kurigram and Rajshahi districts



Case study: Rajshahi district

The number of secondary educational institutions participated in the pre-assessment test in Rajshahi district was 769 in 2005 and 776 in 2006 (DACC Rajshahi 2005, 2006). Over a quarter of these were the madrasas. The number of pupils participated in the assessment was nearly 41,500 thousand in 2005 and 38,000 in 2006. Including the Rajshahi city the number of upazilas was 10 in the district.

In 2005, the upazila-wise pass rates in the school category varied from 29.5% to 64.4% with a deviation of 35 percentage points between the lowest and the highest performing upazilas. Otherwise, except one, the pass rate for the madrasas was more than 90% in all the upazilas. It was 99% in Rajshahi city and 100% in Charghat. In 2006, the upazila-wise pass rates varied from 52.9% to 84% in case of the schools and from 81.3% to 99.7% in case of the madrasas. Here also, the gap between the highest and the lowest rates was bigger for the schools than the madrasas (31% and 18.4%).

Although the gap between the performances of the schools and the madrasas was maintained across the upazilas in both the years, it tremendously reduced over a year. For instance, in 2005, the highest gap was noticed in Bagha (51.7%), followed by Putia (50.7%); the rates reduced to 28.4% and 21.6% in 2006.

Overall, the pass rate in Rajshahi district increased over 13 percentage points. Separately, it increased 14.6 percentage points for the schools, but decreased 2.5 percentage points for the madrasas. In school category, the pass rate increased in all the upazilas. The highest increase was occurred in Godagari upazila followed by Putia over 30 percentage points in both. The lowest increase was occurred in Charghat 5.6 percentage points. On the other hand, in madrasa category, the pass rate decreased in seven upazilas. The decrease was about 11 percentage points in two upazilas - Bagmara and Bagha. The pass rate increased in three upazilas, with the highest in Godagari 13 percentage points. Whereas, the pass rate increased over 30 percentage points in the schools of Putia, it increased only 1% for the madrasas. In Bagmara and Bagha, the pass rate of the schools increased over 12 percentage points, but it decreased about the same amount in case of the madrasas. The gap (increase or decrease) between the pass rates of two successive years was within five percentage points in the madrasas of five upazilas, which was over five percentage points in the schools of all the upazilas.

In 2005, there were 10 madrasas in Charghat and seven in Rajshahi city. All the 327 madrasa pupils in Charghat and 203 of 205 pupils in Rajshahi city got pass marks, of which over three quarters got 60 or more. No students of 23 schools in Charghat and 17 schools in Rajshahi city got a score more than 60; such performance was found only in nine (4.4%) madrasas in the whole district. PN Girls High School is one of the good schools in Rajshahi city. Nearly a fifth of the 310 examinees of this school failed in the assessment.

Case study: Kurigram district

The number of educational institutes participated in the assessment in Kurigram district was 571 in 2005 and 583 in 2006 (DACC Kurigram 2005, 2006). Over 60% of these institutes were schools. Number of students participated in the examinations were nearly 28,000 in 2005 and over 28,500 in 2006. The district has nine upazilas.

In 2005, the pass rate in the school category varied from 40.8% to 71.3% with a deviation of 30.5 percentage points between the highest and the lowest performing upazilas. It ranged from 33.5% to 72.5% in the madrasa category with a difference of 39 percentage points. On the other hand, in 2006 the gap between the highest and the lowest performing upazilas was 44.8 percentage points for schools (41.6% to 86.4%) and 42.9 percentage points for madrasas (39.8% to 82.7%).

In both the years, the average performance of the madrasa students was better than those of the schools in four upazilas. Of these, two were common in both the years. An inverse situation was observed in other two upazilas. In Kurigram sadar upazila, the madrasa students were 5.3 percentage points ahead of the school students in 2005, but the school students surpassed their madrasa counterparts in 2006 with 14.1 percentage points. Again, in Razibpur upazila, the difference was 25.8 percentage points in 2005 favouring the schools, but it became 13.1 percentage points in 2006 favouring of the madrasas. The school students did better than the madrasas in the rest of the upazilas.

The school performance decreased in four upazilas and the madrasa performance in three upazilas, of which two are common. It is surprising to note that in Razibpur upazila, whereas the schools performance decreased 1.7 percentage points, it increased 37.2 percentage points in case of the madrasas. An opposite scenario was observed in the sadar upazila of this district.

In 2005, a number of educational institutions was found in this district where no student received a score 60 or above. Proportion of such institutions was 34.6% among the schools and 56.3% among the madrasas. All the students of three schools and nine madrasas got 60 or more marks. On the other hand, all students of four schools and 13 madrasas failed in the examination.

Exploration of the process

The above findings on the pre-assessment results show unbelievable variations in the performances of the students from one district to another, from one upazila to another within a district, and from one school to another within an upazila. Difference between the two streams - school and madrasa, are also not out of question. A general understanding about the madrasas is that the children of relatively poor households enrol in these educational institutions. Teaching learning provision is also not much scientific there due to lack of training of the teachers and the infrastructure of the institutions is also poorer than others (Ahmed et al., 2006). Again, the performances of the pupils of some upazilas were not

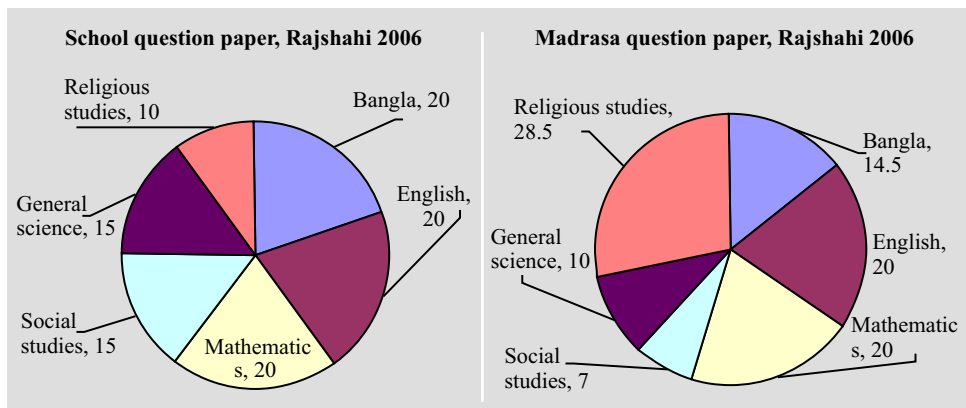
consistent in two successive years. In this regard, an attempt was made to see how the question papers were actually prepared, tests administered, and answer papers checked.

Question preparation

The question papers used in the pre-assessment in Rajshahi and Kurigram in 2005 and 2006 were analysed in this section. In Rajshahi, the district assessment coordination committee (DACC) prepared two separate question papers each year one for the schools and another for the madrasas. These two were used in all the schools and the madrasas in the district. The upazila committees (UACC) had no role in this regard. On the other hand, in Kurigram district, the DACC handed over the task of question preparation to the respective upazila assessment coordination committees (UACC). Two to three such committees collectively prepared question paper for those upazilas. Thus, a number of sets of question papers were prepared each year in this district. For instance, in 2005, two upazilas viz., Nageshwari and Phulbari used the same question paper and in 2006, Bhurungamari joined with them. Independent question papers were prepared in the sadar upazila of Kurigram in both the years. One interesting observation is that the schools and the madrasas used the same question paper in these upazilas. Whatever the case is, a panel of expert head teachers prepared the question papers. None of these committees consulted with NCTB in preparing question papers. It is to be noted that, according to the government circular, the upazila committees are suppose to prepare the question paper, which was not followed in Rajshahi district. It was followed in Kurigram district with minor modifications.

Furthermore, DACC-Rajshahi did not follow the distribution of marks for madrasa question paper as mentioned in the government circular. For instance, in 2006 they kept 20% marks for environmental science instead of 30%. This 10% marks was shifted to religious studies (Qur'an-Akaid) to make it 20%. Again, some questions in Bangla were very much related to

Figure 4: Difference in the distribution of marks in various subjects: school vs. madrasa question paper in Rajshahi, 2006



Islamic religion, which bears over a quarter of the total marks in the subject. Three marks in social studies were also related to religious studies. This means that the madrasa students were assessed with a special emphasis to religious studies (28.5%), which is obviously a violation of the government circular (Figure 4).

There were 30% alternative questions in the Bangla, English and mathematics parts of the question paper for the madrasas in Rajshahi. On the other hand, all the questions in the question paper had to be answered by the students of the schools. The question papers in Kurigram district had no alternative questions. That is, the madrasa question paper of Rajshahi was relatively easier than that in the schools.

It was interesting to see that the religious studies section of the school question paper in Rajshahi had three parts for the students of three different religions (Islam, Hinduism and Christianity). The religious studies section in the question paper of Kurigram also had three sections; these are Islam and Hinduism for the Muslims and Hindus of the schools and Arabic for the students of the madrasas. They followed the government circular in distributing marks in different subjects.

Major part of the Kurigram question paper in Bhurungamari, Nageshwari and Phulbari upazilas contained multiple choice or short answer (one or two words or a sentence) questions. Over half of the questions in the question papers of these upazilas were exactly common in two successive years. The others were mostly similar with minor modifications. For instance, same arithmetic was given in 2005 and 2006 changing a number only or same sentence was given for translation from Bangla to English changing a word. These were not the cases in the sadar upazila of Kurigram or in Rajshahi. Many questions demanding answers of writing a paragraph of 4/5 sentences were there in the question paper in these two places. Below 10% of the questions were common here in two successive years. Although, competency-based education is implementing at primary level, instead of competency based test instrument textbook-based question papers were used in the assessment.

Administering the tests and checking the answer papers

The students of Rajshahi district participated in the examination in their own educational institutions. The examination held in all the secondary institutions participated in it. Students' own teachers were the test administrators. The same teachers also checked the answer papers. This was not the case in the upazilas of Kurigram district. Here the schools and the madrasas in each upazila collectively took the decisions and implemented. Following are some of the important features of the implementation process in Kurigram sadar upazila (UNO office Kurigram 2005a, 2005b, 2006).

- The heads or their representatives of 73 educational institutions in a meeting gave the responsibility of preparing draft question papers to the heads of seven schools and four madrasas.

Each of them prepared separate question papers following the marks distribution

suggested by the ministry. The upazila nirbahi officer (UNO) and the upazila secondary education officer jointly scrutinised them and prepared the final question paper for the upazila.

Each student had to pay Tk. 10 against his/her participation in the examination. The respective institution heads were responsible to collect the money and handed over to the UACC.

The heads or their representatives of all the institutions jointly decided that examination would be held only in 13 centres (10 schools and 3 madrasas). All the institutions in the upazila were distributed among these centres.

To supervise all the activities related to examination 13 government officials of various departments were given the responsibility of in-charges of these centres and respective institution heads were made centre secretaries.

The examination was held on a date fixed earlier by the DACC-Kurigram. The respective government officials handed over the answer papers to the chair of the UACC after the exam is over. A team of experts (35 teachers from different schools and madrasas) collectively checked all the answer sheets in the upazila auditorium hall.

Implication of assessment results

Use of the assessment results is important one. According to the government circular, the results are supposed to be used in the schools and the madrasas to improve the skills and competencies of the students. However, we came to know that these have little use in the respective institutions.

The students were not much aware of this examination. After few days of admission into the secondary educational institutions, they were asked to pay Tk. 10 each and participate in the pre-assessment examination. So, majority of them were unprepared to attend the test. As there is no provision of pass or fail based on the exam results the students did not take it seriously. Some of the students complained that they had to keep their textbooks of class V to the institution authorities while leaving them. Thus, they were unable to take preparation for this test in class VI. It has a better side too. By the way, it measured the actual skills and competencies of the students. One of the teachers said, 'As the majority of the students are not serious about this examination, it reflects the performance of the pupils free from the influence of the notebooks and the private tutors. Even they do not try to copy from each others answer scripts.'

The teachers were asked whether they took any measure based on the performance of the students. Although they praised about the process of taking the examination but some teachers mentioned that the pre-assessment has no significance on the teaching-learning provision of class VI. They also said that there is none to see whether the schools are taking

any step based on the performance of their students. This means that the teachers were not rightly motivated about the objective of such assessment.

The district education officer in Kurigram mentioned that they prepare upazila-wise merit list for both schools and the madrasas. The meritorious students are given warm reception in a prize giving ceremony arranged at the district level. Senior government officials in the district and other elite are invited in the ceremony to inspire the students to better education.

Why did the madrasas do better?

We were curious to know the reasons of madrasa students doing better in all the upazilas of Rajshahi district compared to their counterparts in the schools. The issue was discussed with the district education officer and some of the upazila education officers. One of the respondents said, 'May be the madrasa teachers check the answer sheet in a relaxed way compared to the schoolteachers. Teachers in the madrasas are flexible to give more score to the students.' The other respondent added, 'The issue is crucial one. The curriculum of the ebtedayee madrasas may be easier than that of the schools. But we never differentiate the two streams. We consider them equal.' However, the madrasa teachers did not agree with these statements. Moreover, they claimed that their institutions provide quality education. However, they could not explain the process of quality education in the madrasas compared to the schools. Surprisingly, it did not come out as a question to any of the concerned persons why the madrasa students did much better than those of the schools?

It is to be noted that the district and the upazila level officials, who were involved in the assessment, were less likely to know what goes on in other districts or the upazilas regarding question paper preparation, answer script checking including overall management of the examination. They were not found aware of the exam results in the neighbouring areas.

Conclusions

The above findings from the pre-assessment results published by the district level assessment coordination committees and fieldwork in some districts, upazilas and schools clearly show that the districts and the upazilas took initiative to take the assessment test, because the education ministry ordered them to do so. Serious actions were also taken in some districts and upazilas. However, the system lacks countrywide standardization of the question papers and assessment procedure. Even, the results in some upazilas were so deviated from one year to another that no conclusion can be drawn about the quality of primary education in the areas. Large gap between performances of the students of the schools and the madrasas also raised questions about the validity of the process. Thus, the results found through the assessment are not comparable and any generalised interpretation from these results must be wrong. Poor relationship between the results of the two streams and both with the district-wise literacy rates raised question about the reliability of the assessment. There is no need of conducting the assessment all over the country using a single question paper. Current provision of district and upazila level decentralisation should be

continued with emphasis on a standard mechanism. The ministry can prepare, obviously consulting with the concerned experts and the stakeholders, a general guideline for the districts and the upazilas regarding standard of question paper and answer paper checking including the overall procedure. Lessons from the current practices should also be considered. Good practices in some of the upazilas and districts can be useful in preparing a standard procedure. There should be a monitoring mechanism that the procedure is strictly followed at all levels. A way needs to be finding out to oblige the schools and the madrasas to do the follow-up activities with the students based on their performance in pre-assessment, which was the main aim of this initiative.

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Developing a Quality Mathematics Education Culture in Bangladesh

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Abstract

Today's world largely depends on science, and science in turn depends on mathematics. But in Bangladesh today, the number of students in science discipline is rapidly receding. The main reason behind this phenomenon is that students shy away from mathematics. Mathematics has become a nightmare for most of the students. They are quite unable to understand the immense importance of mathematics to build up their future career. A time will come when good scientists and engineers will not be easily available in Bangladesh. This paper will shed some lights on the loopholes of present mathematics education and suggest some effective solutions to solve those problems. Several guidelines will also be provided to the students and teachers of mathematics as well as for the parents so that they come forward to develop a quality mathematics education culture in Bangladesh.

Introduction

Our civilisation would scarcely exist without the physical laws and intellectual techniques developed as a by-product of mathematical research. No one can balance his cheque-book without applying arithmetic invented by the ancient Mesopotamians and Hindus. No one can build a wall without drawing on techniques of geometrical measurement developed by Egyptian mathematicians. It was Greek pioneers of Geometry who conceived the idea that earth might have the shape of a sphere. Classical mathematics, when rescued from the oblivion of the dark ages, helped to ignite the adventurous spirit of the era of Columbus. The men who wrought the industrial revolution gained confidence in machines and what they could do from partly mathematical, partly scientific investigations of Galileo and Newton. Today atomic research draws heavily on Einstein's Theory of Relativity.

It is widely recognized that many of the dominant industries of the future – and the highest paying jobs that these industries produce – will be driven by advances in technology that require a strong math and science education. But at present, not many well-prepared math and science students are produced in Bangladesh. In order to move side by side with the

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advanced world, all concerned should contemplate on this issue and try to take necessary steps to make education system congenial for overall growth of science and technology.

The term 'culture' means the attitudes and behaviour that are characteristic of a particular group of people. In a standard education system, the common trait is that both teachers and students possess a positive mentality towards mathematics. Without this, the nation will surely lag far behind in terms of going side by side with the advanced world.

Students who are competent in mathematics have more self-confidence in real life problem-solving situations, are better prepared to make informed decisions and to live in a world of changing technology. Therefore, it is quite indispensable for the nation as a whole to take effective steps towards developing a quality mathematics education culture.

What is Mathematics?

Mathematics is an important human endeavour. It was not discovered in the polished form of our books, but often developed in intuitive and experimental fashion out of a need to solve the problems. Mathematics, in short, is in the thick of modern life (Bergamini, 1969).

Mathematics consists of a complex interconnected set of concepts. No single item can be thoroughly grasped without reference to others. A child begins to understand '5' when she appreciates at least some of an indefinite number of linked mathematical points, including the fact that it is 1 more than 4, 1 less than 6 and that it is the sum of 3 and 2. In fact, the meaning and significance of any particular number cannot really be comprehended without at least some idea of the number system as a whole. Addition cannot be grasped without realising its relationship with subtraction and the way in which it operates within the set of natural numbers, the integers and ultimately the set of real numbers. The very identity of any particular mathematical concept is bound up with its relationships to others (Davis, 2001).

It has been a long-standing claim of mathematics that mathematics is the queen of sciences. Today, mathematics has permeated every field of scientific endeavour and plays an invaluable role in the fields ranging from science to technology, from modelling ecological disasters and the spread of diseases to understanding the architecture of human brain.

History of Mathematics

Mathematics had its crude beginning perhaps 50 centuries ago during civilizations of Middle East. For the Babylonians and the Egyptians, it was a practical tool, essential in day-to-day living. Astronomers reckoned the movement of sun and moon so that they could keep track of harvests and festivals. Men learned to measure and count so that they might tally their flocks and trade their produce. With geometry the volume of a cylindrical granary could be calculated; with advanced arithmetic the value of its grain content could be measured. In Egypt, Herodotus wrote, the land was divided by "assigning square plots of ground of equal size to all", for which all paid rent. Soon men were venturing into mathematics of increased complexity. And in the art and tools of each period, they left behind a fascinating record of their mathematical progress (Bergamini, 1969).

By the time of the Greeks, mathematics had become such a vast body of knowledge that it could no longer be passed along by the word of mouth. The Greeks wrote hundreds of books on the subject. In the centuries of darkness that followed, much of its treasury was lost. But enough remained for the scholars of middle ages to unearth these classics, translate them into many languages and give mathematics the impetus of the last 500 years. The fame of al-Khwarizmi (A.D. 790-850) rests on his popularization of two great mathematical principles: the use of algebra and the use of Indian numerals. The very word algebra comes from the title of one of his works 'The book of al-Jabr and al-Muqabala'. There were other Arab mathematicians who contributed greatly in the history of mathematics (Whitfield, 1999).

Many changes began to take place in the European economy in the fourteenth century that eventually had an effect on mathematics. The Italian merchants of middle ages travelled to distant places in the East; bought goods that were wanted back home, and then returned to Italy in hopes of selling these goods at a profit. These merchants needed very little mathematics other than the ability to determine their costs and revenues for each voyage. By the early fourteenth century, however, a commercial revolution, spurred originally by the demands of the crusades, had begun to change the system greatly. New technologies in shipbuilding and greater safety on shipping lanes enabled the sedentary merchants of Renaissance to replace the travelling merchants of the middle ages. These 'new men' could remain at home in Italy and hire others to travel to the various parts, make the deals, act as agents, and arrange for shipping. Their business led to the creation of international trading companies centred in the major international cities, and these companies needed far more sophisticated mathematics than did their predecessors. They had to deal with credit, exchanging promissory notes and interest calculations. Double-entry book keeping began as a way of keeping track of the various transactions (Katz, 1998).

In the 1910s, Srinivasa Aaiyengar Ramanujan (1887-1920) developed over 3000 theorems, including properties of highly composite numbers, the partition function and its asymptotic, and mock theta functions. He also made major breakthroughs and discoveries in the areas of gamma functions, divergent series, hypergeometric series and prime number theory.

At the dawn of the 21st century, mathematics, science, engineering, and technology have together created knowledge, communication, and prosperity undreamed of by ancient philosophers.

Importance of Mathematics

The importance of mathematics is two-fold. It is important in the advancement of science and our understanding of the workings of the universe, and it is also important to individuals for personal advancement, both mentally and in the workplace. Mathematics equips pupils with a uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem-solving skills, and the ability to think in abstract ways. Mathematics is important in everyday life, many forms of employment, science and technology, medicine, the economy, the environment and development, and in public

decision-making.

Everyday use of arithmetic and display of information by means of graphs is very common. These are the elementary aspects of mathematics. Advanced mathematics is widely used, but often in an unseen and unadvertised way. For example,

- The mathematics of error-correcting codes is applied to CD players and to computers.
- The stunning pictures of far away planets sent by Voyager II could not have had their crispness and quality without such mathematics.
- Voyager's journey to the planets could not have been calculated without mathematics of differential equations.
- Whenever it is said that advances are made with supercomputers, there has to be a mathematical theory which instructs the computer what is to be done, so allowing it to apply its capacity for speed and accuracy.
- The physical sciences (chemistry, physics, oceanography, astronomy) require mathematics for development of their theories.
- Mathematics and statistics provide the theory and the methodology for analysis of wide varieties of data. These are also essential in medicine, for analysing data on the causes of illness and on the utility of new drugs.

Current Status of Mathematics Education in Bangladesh

The education system of Bangladesh is divided into three levels – primary, secondary, and tertiary. Alongside national education system, English medium education is also provided by some private enterprises. They offer 'A' level and 'O' level courses. There is also Madrasa system which emphasizes on Arabic and Islam-based education. Mathematics is taught in almost all these educational streams. It is a compulsory subject for all pupils up to the age of 16. But unfortunately, most of the students are afraid of mathematics. They find no pleasure in solving math problems at home or in classrooms. Due to this fear of mathematics, the number of students in science discipline is decreasing quite alarmingly in Bangladesh. Teachers of mathematics are, in most cases, unable to help young learners. The ICT policy (2002) stated that, “To address the issue of deficiency in English and mathematics education, a crash programme shall be taken up to train teachers.” Initiative has been taken by the government in this regard but the pace is slow.

Table 1 and Table 2 indicate that at both SSC and HSC levels, the number of enrolment in science group is gradually decreasing, but it is increasing significantly in commerce group.

Table 1: Number of students in different disciplines for SSC examination

Year	Science	Humanities	Business Studies
2001	264100	392299	129821
2002	333544	482147	190246
2003	301505	413424	206095
2004	255197	306284	194906
2005	231613	307330	212478
2006	202048	343707	239060

(Source: BANBEIS, 2006)

Table 2: Number of students in different disciplines for HSC examination

Year	Science	Humanities	Business Studies
2001	126315	305157	94283
2002	139097	293478	105721
2003	126021	254555	120931
2004	117766	240987	124728
2005	96500	204313	114275
2006	82199	206498	123327

(Source: BANBEIS, 2006)

For the last five years, eminent Information and Communication Technology (ICT)-specialists, mathematics teachers, and other enthusiastic persons have started organising Olympiad of Mathematics all over Bangladesh. This program has created lot of enthusiasm amongst the young learners who are interested in solving math problems. This Math Olympiad will help in developing mathematics education culture in Bangladesh in years to come.

Objectives

The broad objective of this study was to explore the overall situation of mathematics education system in Bangladesh. Some of the other specific objectives are stated here:

1. To create awareness among the students about the importance of mathematics;
2. To find the loopholes in education system of Bangladesh that are responsible for students' dislike of mathematics as a subject;
3. To find out ways as low to encourage students in mathematics by teachers in the class;

4. Most importantly, to provide effective guidelines to all concerned so that they can proceed towards developing a quality mathematics education culture in Bangladesh.

Methodology

Survey method was used in this study for collecting data. First, a research team comprising three members was formed. Three structured questionnaires, one for the students of grade VIII-X, the second one for the college students, and the last one for the teachers of different educational institutions teaching mathematics were developed to identify the problems in the current mathematics education system. The questionnaires consisted of both close and open type of questions.

12 districts were selected purposively, covering all the six administrative divisions of the country. In addition, following the same procedure, two upazilas were chosen from each district; i.e., a total of 24 upazilas were chosen. Again, two high schools and a college from each upazila were selected randomly. Thus, a total of 48 high schools and 24 colleges were selected. 3,602 randomly selected students (of grade VII-XII) from these educational institutions were surveyed in October-December, 2006. Moreover, two mathematics teachers from each school and college were taken as sample for the study. Thus, the total sample size of mathematics teachers was 144.

Significant amount of data were also collected from secondary sources like various books, reports, journals, articles, and relevant internet websites.

The data were analyzed through simple statistical calculations such as frequencies and percentages following conventional methods.

Findings

Problems related to Mathematics education in Bangladesh

Problems regarding teachers

1. It was found that 70% teachers teaching mathematics at different schools did not study mathematics at their graduation and post-graduation levels. These teachers do not have the capability to arouse the interest of the students in mathematics. They do not even possess sufficient knowledge regarding the history of mathematics. In most of the cases, they took the classes reluctantly and tried to push the students towards private coaching classes.
2. 60% teachers of mathematics responded that they were regularly required to take one or more classes in other subjects like physics or chemistry. It was well-nigh impossible for them to concentrate solely on mathematics.
3. Some of the mathematics teachers came to the class with deficient preparations. They failed to keep the students informed of the newer developments in the field of mathematics.

4. There were teachers who know their subject well, but they lacked patience to deal with students' difficulties and were unwilling to adjust teaching techniques to varying abilities of different students. This is one of the reasons for many students to start disliking the subject.
5. 67% students responded that their math teachers did not solve any problem outside the textbook and prepared questions only from fixed books. This trend encourages students to remember the solutions of some common problems.
6. 59% students pointed out that their math teachers gave zero if they solved their problems in different way or through other method than those followed by teachers. It hampered the eagerness and creativity of the students.
7. Using geometrical tools is very much necessary in order to make the students acquainted with these tools and to make geometry interesting to them. Only 40% teachers responded that they used geometrical tools while taking classes of geometry.

Problems regarding guardians

Guardians of the students can play an important role in arousing interest of their wards in different subjects including mathematics. However, in our survey, only 32% students responded that their guardians encouraged them in mathematics.

Problems regarding students

1. 90% students thought that private coaching in mathematics was essential. They wanted to get good grades from their math teachers by going to their home for private coaching. Therefore, they remained inattentive in the classrooms.
2. 79% students responded that they regularly followed guidebooks on mathematics. They did not try to solve a problem by themselves. Moreover, they did not try to understand; just tried to remember the answers.

Problems regarding textbooks

It was found that there were serious deficiencies of adequate standard examples in the textbooks of mathematics. For instance, in the textbook of Algebra of class IX-X, in chapter 5.1, only 10 examples are provided, whereas there are 40 questions given in the exercise section. These textbooks do not satisfy the requirements of the students and the teachers of different levels. The inevitable consequence is that students go for collecting the guidebooks, just for cramming the solutions.

Other problems

1. Quality of mathematics education is very poor in rural areas than in urban areas (due to lack of qualified teachers, infrastructure problems etc).
2. 100% teachers responded that they did not have any standard teaching manual. The manual for the mathematics teachers prepared by NCTB is not easily available.

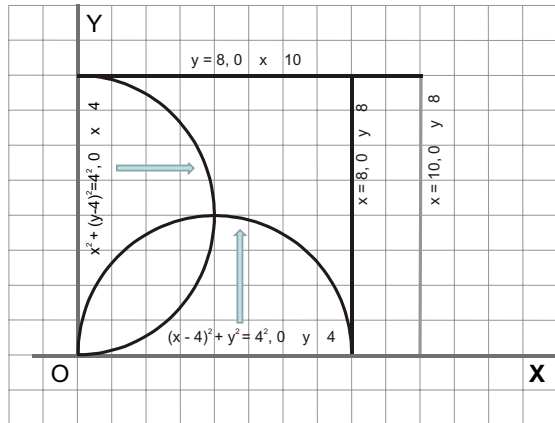
3. Most of the students get admission into the high schools with very poor mathematical background. Especially those who are from rural areas, in most cases they learn very little in primary schools because of lack of availability of efficient teachers and other socio-economic problems.
4. Practical classes of mathematics are not held properly in almost all schools.
5. Poverty and malnutrition create negative impact on pupils' mind and body and act as a serious hindrance on their overall development.

Recommendations

In order to solve the problems mentioned above and to move effectively towards developing a quality mathematics education culture in Bangladesh, the following recommends are made:

- The teachers of mathematics should be well-educated and well trained. Only those teachers who have taken mathematics at their graduation/post-graduation level should be allowed to teach mathematics in the classrooms.
- They should go to the class with a lesson plan and sufficient preparations to be able to satisfy the students.
- Mathematics teachers should concentrate on teaching on mathematics; they should not be requested to teach other subjects as far as possible.
- The textbooks of mathematics should be up-dated, with required number of standard examples.
- Teachers are expected to show friendly and helpful attitudes towards the students.
- They should appreciate alternative solutions of different math problems by the students
- Copying questions from textbooks in examination should be minimized.
- Students should be encouraged to ask different questions in the class.
- Each class should be divided into two sections, according to the merit of the students, and special attention should be given to the section comprising students weak in mathematics. When a student of this section will show good performance in math, s/he will be placed in the other section and vice versa.
- Students should be asked to follow guidebooks only when they have no alternative.
- Duration of Mathematics classes should not be less than one hour.
- Practical classes of Mathematics should be taken properly.
- The teaching manual prepared for the mathematics teachers should be made available.
- Guardians should be mindful so that their children do not avoid mathematics.

- Teachers should try to draw the attention of the students in mathematics by showing attractive and innovative things. Here is an example, where it will be shown how the algebraic equations and inequalities speak up the word *Maa* (Mother).
- Mathematics, as a course, must be made compulsory in science discipline at both SSC and HSC levels.
- Competitions like Math Olympiad need to be organised throughout the country.
- There should be a math club in every educational institutions where students will be able to sharpen their analytical skills through different sorts of games and other contests.
- To attract talented students to become math teachers, different incentives need to be provided.
- Government should take a crash programme of math teacher training to ensure the standard and quality of mathematics education.
- Researchers are to work to develop more studies on knowledge and skills needed to teach mathematics effectively.
- Proper steps should be taken to start the operation of an “Institute of Mathematics”, which would help mathematics teachers for their professional development.
- Both print and electronic media should come forward to raise public awareness about the importance of Mathematics education.



Conclusion

The great British scholar Henry Whitehead argued that there are relatively few pursuits in life that are inherently worthwhile; he instanced the making of music and the design of elegant and useful furniture and doing or at least appreciating mathematics is one of them. There is no doubt that mathematics is an essential component of any educational programme. Students should take mathematics seriously during their school days otherwise they will be excluding themselves from many career paths that need mathematics.

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Needs of Ethnic Minority Students for Learning Improvement in Secondary Schools

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Abstract

The aim of the study was to investigate the needs of ethnic minority students for learning improvement in secondary schools through an in-depth understanding of the factors affecting their poor performance. An analysis of important factors within and outside the school indicate that a weak foundation in the language of instruction in schools along with endemic economic crises, inefficient teaching methods, irregular attendance of teachers, lack of required parental support, responsibilities outside school, and above all weak educational foundation at primary level caused and perpetuated a sub-standard performance of ethnic minority students in general. Support systems in place help a few good students but these are not so well organised to serve vast majority of pupils. The study suggested some measures for learning improvement of ethnic minority students. These are: strengthening academic foundation of ethnic students at primary level, sensitising teachers to issues specific to ethnic minority pupils, developing a good foundation course in Bangla as second language, ensuring regular attendance, raising the quality of classroom teaching and need-based curriculum for slow learners, eliminating irregularities in the testing system, creating space to facilitate increased interaction between ethnic minority pupils and Bangali pupils; and developing a comprehensive support system for general and slow learners among the ethnic minority student population.

Introduction

In a country of almost 150 million population, two percent belong to ethnic minority communities. Numerous studies show that they possess and practice some unique cultures including their mother tongue. After independence of Bangladesh, the state language Bangla was made the medium of instruction at all levels of education. The Qudrat-e-Khuda Education Commission (1974) recommended 'We must...use Bengali (Bangla) as the medium of instruction at all levels of education to make our educational schemes successful.' As a result, small ethnic communities' demand for learning in their own mother tongue and

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other educational needs were not given the attention they deserved. Though many ethnic children could cross primary cycle due to flexible promotion system; many of them faced difficulty at secondary level (see Annex 1). A substantial number of ethnic minority students fail in public examinations at secondary level and many of them drop out early” (Kalam 2003, Nasreen 2004). These issues deserve an in-depth study.

Objectives

All the students from ethnic minority background do not perform poorly. So, the academic interest was to know why some ethnic minority students did well in the existing conditions and why many failed to do so. Specifically the concern was to understand how the performance (attendance, classroom participation, and examination score) of the ethnic minority students was influenced by school culture (teachers and students perceptions, beliefs, behaviour, norms, and values that reflect in the interaction processes, teaching-learning and beyond), socioeconomic and cultural factors of the community. The measures for learning improvement and overall performance were also explored.

Methodology

Qualitative method was followed. A research team of two assisted by six research assistants collected data from purposively selected six non-government secondary schools. Geographically schools were situated in the peripheral areas of Bangladesh i.e., three from Chittagong Hill Tracts (CHT) districts– Rangamati (Rangamati Sadar), Bandarban (Bandarban Sadar), Khagrachary (Manikchari), and other three from Madhupur (Madhupur Sadar), Moulvibazar (Srimangal) and Chapai Nawabgonj (Nachole). The study included co-educational schools, boys and girls with equal proportion of Bangali and ethnic minority students. However, having difficulties of communication and accommodation, the researchers had to compromise with the set criteria. As a result, the schools studied were co-educational with diverse ratio of Bangali and ethnic minority students (Table 1). For collecting data, each research assistant spent a month in a school and researchers moved from one school to another.

Data were collected through observation and interviews. Basic information on schools were collected through a school profile checklist. Further, to understand the teaching learning process, purposively selected 90 classes of various subjects (of grades VII and IX) were observed. Interaction of the ethnic minority students with their teachers and Bangali classmates was observed on various occasions in and outside classrooms were Examination halls observed for 10 days in each school. Again, 120 students and 41 assistant teachers were interviewed in-groups. Head teachers were interviewed individually. 72 parents were interviewed in 10 groups as well. Attempt was made to capture the cultural and socio-economic realities of the ethnic minority students. In doing so, researchers mainly depended on informants' outlook along with researchers' judgement.

Presentation and Discussion

School Profiles

In the following pages it is intended to present and discuss the information gathered and opinions and views collected by the actors/informants that might help explain poor performance of ethnic students in selected secondary schools and to identify measures that would help ethnic minority students in improving their learning performance. Special attention was given to ascertain how ethnic students are treated in Bangali cultural environment of the schools and how these influence their performance.

Schools were established with generous support from local Muslim elites; however, the contribution of the ethnic minority elite (e.g., headmen) was not rare. One school was established in 1950s and other four were between 1970 and 1990. The schools began as junior high schools with few students (in one case only 13) and teachers. Five schools were developed as secondary schools in subsequent years. The teachers, specially the head teachers, in two cases, played prime role in establishing the schools mainly for self-employment.

Table1: Basic information of the schools

Location	Distance from upazila (km.)	No. of student		No. of classrooms	Having library	Having laboratory
		Bangali (%)	Ethnic minority (%)			
Bandarban	10	134 (64)	75 (36)	9	N	Y
Rangamati	5	331 (53)	289 (47)	12	Y	Y
Khagrachari	3	395 (70)	172 (30)	8	N	N
Sreemongol	10	238 (71)	96 (29)	8	N	N
Madhupur	10	331 (83)	66 (17)	8	Y	N
Nachole	11	239 (80)	61 (20)	8	Y	Y

Y=Yes, N=No

Two schools were initially started as boy's school and later turned into co-educational institutions and others were co-educational from the beginning. The schools received government subvention and it took on an average eight years for sanctioning the provision.

Teachers

Of the 71 teachers in six schools, 58 (82%) were male and 13 (18%) were female. Only three (one male and two female) teachers belonged to ethnic minority community. More than half of the teachers had B.Ed degree and some had Bp.Ed. On average, the teachers had 12 years of teaching experience. They take from 8 to 38 classes per weak. The head teachers take least number of classes and senior teachers take almost half of the class load compared to younger teachers. Most of the teachers received government subvention.

Management

A 10-member management committee was found in each school with little representation of the ethnic minorities. Though the committees were inactive, there prevailed a dictatorial authority of the SMC chairs. Head teachers, the secretary of the committee, played the executive role in close consultation with the chairs. In two schools conflicting relationships among head teacher, other teachers and SMC chairs were reported. An assistant teacher at Khagrachari school claimed that head teacher did not pay 10 % of his salary that supposed to come from students' contribution. Generally teachers were divided into pro and anti of head teacher. Teachers' intra-relation found so bad in some places that an assistant teacher did not hesitate to call head teacher, "...a devil, a lair, a Monafiq (*hypocrite*)."

Attendance

Attendance of the students and teachers in school was poor. One-fifth of the teachers did not come to school regularly and left school as and when they want. Overall, irrespective of gender, in most of the schools, the attendance rate was higher among the Bangali students compared to ethnic students.

Performance in examination

A number of students from different ethnic groups found to participate in scholarship examination. However, participation did not ensure success for ethnic minority students. During last four years, only one Bangali student of Khagrachari school got a scholarship. Again, if performance of students in school final (SSC) examination is considered as an indicator of the standard of a secondary school, average performance of students during last four years (2001-2004) was poor for ethnic minority students than that of Bangali students. About 72% of the ethnic minority students and 67.7% of the Bangali students could not pass the examinations.

Infrastructure

Schools had 1 to 3.61 acre of land with good physical structure, spacious playground and natural touch with green grass and trees. Considerable development of schools took place with the help of SMC and support from local elite, administration, and NGO donation. All schools had teachers' common room. Common room for student exists in three schools (one was only for girls). Three schools had no electricity. Roof, doors, and windows of the classrooms found mostly in good condition. Five schools had tube wells for drinking water. Schools had separate toilet for boys and girls and separate provision for teachers. With this good infrastructure and experienced teachers schools could not ensure good performance of their students.

School Culture

School is a miniature of society, a model of social system (Haralambus, 1991). In school, pupils interact with other members of the school community. As a miniature of society, the school has a culture. Maslowski defined school culture as “The basic assumptions, norms and values, and cultural artifacts that are shared by school members, which influence their functioning at school” (Maslowski 1997 cited in Maslowski 2001). Teachers' and students' perceptions, beliefs, behaviour, norms, and values mould culture of each school. The schools under study are no exception.

Good school vs. bad school: a basic assumption

The teachers had their own view of a 'good' school and a 'bad' school. Many teachers thought that they were teaching in a bad school where quality of teaching learning could not be expected. In backward areas where the schools are situated, the weak students come to these schools and good students go to better schools in other areas according to the teachers of the schools. When teachers found that meritorious students do not come to their schools, they became frustrated and took little initiative to improve poor performance of the students. The labelling of good school and bad school have psychological effect on teachers which have continued to effect their teaching in the classroom specially dealing with weak ethnic minority students.

Who does better: perception divided

The teachers were divided in their opinion as to which group was doing better in school. Most of the teachers in Bandarban school thought that ethnic minority students in their school were doing better than the Bangali students. On the other hand, in Rangamati and Madhupur, teachers could not come to a consensus. Teachers of other three schools reported that ethnic minority students were lagging behind. Although a number of *Upazati*¹ (ethnic) students did well in school examinations. “They are creative and getting help from many NGOs, so they are doing well.” a teacher said. In contrast, teachers who believed that ethnic minority students performed badly pointed out that causes for this were in their poverty, their responsibilities outside school, illiterate families, difficulty with Bangla language, lack of awareness of parents, and school at a distance.

Questions arose that why did many teachers contradict with apparent poor performance of ethnic minority students in classroom, public examination, and school attendance. It seemed that many teachers expressed their opinion by considering only few well performers of ethnic minority students keeping out general and slow learners. The teachers may have their own opinion but generally they have little idea about the special needs of the ethnic minority students.

¹ Bangali teachers of Rangamati and Bandarban often used the term *Upazati* to mean the small ethnic groups. This term is popular among the Bangalis, however ethnic community peoples reject the term.

Strengths and weaknesses of students– teachers' perception

Teachers generally admitted that ethnic minority students had weakness in Bangla, English, maths and science. They thought the reasons behind the weakness and poor performance of the students were: irregular attendance, non-attention, introversion, problem in pronouncing words particularly joint letters, difficulty in understanding Bangla language, workload within and outside the household, lack of necessary educational materials (and timely supply), prejudiced outlook, low self perception, laziness, silence in the class, shyness, lack of proper environment at home. Some teachers also mentioned other reasons for poor performance such as, weak foundation at primary level, less interaction with the Bangalis, lack of future plan or understanding the value of education, over simplicity, fondness in cultural activities, sports, tendency not to attend school regularly. Some teachers thought that students from ethnic minority communities possess less ability than Bangali students in understanding class lessons. Researchers found that many teachers agree with what a teacher of Madhupur school said, “Bangali students have more capacity to receive the subject matter whereas they [ethnic minority students] even do not open up their mouth to speak in the class room.” Even, teachers of Madhupur school think that ethnic student have less IQ and the head teacher of Khagrachari School said, “Generally they (ethnic students) are not motivated to study. Again the head teacher of Nachole school said, “...they (ethnic minority students) come, seat in the backbenches and go from school. They do not study at all. If we say something, they would stop coming to school next day. So we do not do anything.” On the other hand, “If a Bangali student could not understand something in classroom, they would ask but they (ethnic minority students) would never expressed their problems”, as reported by an assistant teacher.” However, some teachers pointed out that ethnic minority students had some qualities particularly in extra curricular activities such as, aptitude in game and sports, good at drawing, and create no noise in the classroom.

Observation on 'teaching-learning' in classroom

Many teachers were found late in classrooms and anxious to finish lesson as early as possible. When a teacher is late in a class, students go to teachers' common room to request some other teacher to come to class. The teacher who responds to the request does not teach normally, ask students to do some class-work or to read loudly in the class.

While teaching except in few cases, teachers generally do not make clear the purpose of the lesson. Teachers were found illustrating a particular topic/theme/lesson with example in many cases, but it was less in English, science and math classes. Sometimes in English classes, teachers only read from the text and translated into Bangla the meaning of the text read out. In the process of teaching, sequence of content was maintained but in some cases especially in English and Bangla it was not done properly. Teachers were able to present and explain contents completely. In few cases, other than lecture method, different methods and techniques like discussion, question-answer, peer-work, group-work were used but in English classes proper method of teaching was not followed.

The teachers, in general, did not encourage students to ask questions. If students asked questions, no satisfactory answer was given in most cases. There was no board work in many classes when it seemed appropriate. No board-work in Bangla classes. Relatively much legible and organised board-work was done in maths and English classes. Although many students were found attentive in class, a good number of them particularly in Bangla and English classes seemed disinterested and inattentive. In few classes teachers tried sincerely to make students understand and encourage them by saying “good” for answering correct answer. Whenever home-task was given, sometimes, it was given very hurriedly. Teachers did not verify students' work (writing assignments, homework, class problems, etc.) properly and regularly. Though teachers of English and math were found prepared in many cases, very few teachers were found to be prepared enough for Bangla and science subjects.

There were differences among teachers about paying attention to different ethnic groups. For example, teachers (mainly at Madhupur) asked questions first to Bangali students more often. Sometimes teachers looked to Bangali students in such a way that they were expecting answer from them.

Teaching learning in the eyes of ethnic minority students

Both Bangali and minority students said that teaching learning in school was Motamuti bhalo (moderately well). According to them, teachers are mindful just before examinations. Considering examination at hand, students also become serious in their study at that time. Students pointed out that teachers' tendency is to finish syllabus just before examination. But some students disliked the burden of lessons and tasks on them by the teachers. According to students, teaching learning is suspended for many days just after the examination because of poor attendance of teachers and students. Students generally disliked when the teachers punished them for incorrect responses in the class.

Student-student and teacher-student relations

Students of same ethnic background have more interactions. They have a tendency to seat closer in classrooms. They were found moving around in-groups as well. At Nachole and Khagrachari schools, the least interaction was observed between Bangali and ethnic minority students. Teachers are also aware of this and Bangali teachers think that ethnic minority pupils are not inclined to mix with their Bangali peers. However, few exceptional close relations between Bangali and ethnic minority students could be observed. In general, teachers maintain an authoritarian role in school and on the students irrespective of their identity.

Observation on examination

Many irregularities were observed in examinations. Firstly, examinations were not conducted as per schedule started late and finished early. Sometimes students came on time but teachers were late in distributing question papers. It was common that question papers were in short supply, so in many cases, students had to share question paper with others.

Once in Nachole School, not enough question papers were there, so teachers first distributed question papers among Bangali students and then went to the office room for collecting question papers, came back and then distributed among ethnic minorities. In some cases, questions were claimed to have been set out-of- the syllabus. In two cases, examination had to be cancelled for mistakes in question papers.

As the ethnic minority students have to cover long distance on foot, in many cases they were late in reaching examination hall. Often they did not get 3 hours time allocated for exams fully. Most of the students finished within one hour and twenty minutes. In many cases in different schools ethnic minority students were found very slow in writing or looking blank in the examination hall. This presumably indicates that students do not have the capacity (if the answer was not common or drawn from memorization) to answer all questions within the set time. On the other hand, teachers in most cases, wanted to go back home as early as possible, so, they asked students to submit answer-papers early. As a consequence, they submitted exam papers early sometime after one hour of writing. And once a student submitted his/her exam paper, others were found to follow him/her.

Usually seat-plan was not maintained carefully. There was no seat-plan in two schools. As a result, sometimes exam hall is quite noisy. Teachers' invigilation was moderate and they did so in two classes at a time. In some cases they had to give proxy for absentee teachers, since a good number of teachers found absent from their vigilance duty. Sometimes they also engaged themselves in conversation not related to examination matters, and collect exam fees at the time of exam. Teachers punished (slapped) students in the examination hall for writing names and roll numbers incorrectly or copying from others. Sometimes students sought help from teachers to understand questions in the examination but ethnic minority students reframed from such request.

Socio-Economic Vulnerability

Like other studies (Rafi and Chowdhury 2001, Ahasan, 1998, Mohsin 1997) the investigators of this study found widespread socio-economic vulnerability among ethnic minority communities. Traditionally, ethnic minority communities live on survival economy. Whatever they produce is needed to meet their consumption needs (Rafi 2001). Depending on the nature and traditional livelihood, many of the ethnic people these days work as day labourer. The head teachers mentioned that a major portion of the ethnic minority students in their schools come from poor families and they have no alternative but to work as wage earner for supporting their families so they have little time for their study.

Families favour few, disfavour many

Parents think that ethnic minority students from well off families (with a regular source of income) do well in school as they have educated parents to help and take care at home. In contrast, a vast number of parents are unable to meet educational costs of their children could not provide any help to their study and the children are also to work outside home. Thus, they

find little time to study and consequently do not do well in exam. However, it was also claimed that many poor parents tried their level best to support schooling of their children, although they can not provide private tutors, which they think is a necessary condition for doing well in exams.

Fees too high

One of the great difficulties that the ethnic minority students face is to pay different types of fees in school. On average, a student has to pay at least Tk. 1000 per year as fees. It was observed that many ethnic minority students applied for exemption of tuition/examination fees to head teachers. Many ethnic minority students could not pay fees regularly and when it becomes to a high amount, they are in trouble and stop attending school. In fact, high burden of fees is regarded as one of the main reasons for dropout among ethnic minority students.

Is it brain or primary schooling that matters?

Some parents have doubt on the abilities and capacity of their children. Many parents told that their sons and daughters were weak in maths and English because they were less intelligent. Parents of Madhupur said, "I suspect whether their brain functions or not? Either they do not pay attention to their study or they cannot understand lessons." *Bangani*² parents also had similar complain and added that "*Matha kom*" (dull brain) is the reason for poor performance in their studies. But parents of Madhupur said, "Students develop a weak base at primary level and that is the main reason for their poor performance in further studies.

Empty stomach and education

Families of small ethnic groups depend on forest and agricultural activities for their livelihood. The ethnic minority families in Chattagong Hill Tracts (CHT) depend on jum cultivation that requires family support. So, traditionally *pahari*³ boys and girls have to spend a good deal of time for this purpose. A good number of them also work as daily labour and some of them are engaged in household chores in both plain and hill districts. According to the teachers of Rangamati school, many of the *upazati (ethnic)* students do not have money to buy school tiffin. They come from a long distance and they have to start early in the morning and go back at the evening. They fast at lunch. Naturally they are not attentive in class after lunch break. "An empty stomach cannot be filled with words." a teacher in Sreemongol school said. Teachers thought that the ethnic minority students who were lagging behind and those who could not do well in exam would do better if socio-economic condition of the minority communities could be improved.

² The term *Bangani* is used by the informants to mean the ethnic community people of tea garden areas.

³ The term *Pahari* is used by the informants to mean the ethnic community people of CHT.

Community Culture

Stakeholders thought that there are cultural factors of the community that have influence on performance of ethnic students. There are quite a good number of cultural festivals among the ethnic minority groups. It was reported that at the time of a marriage ceremony in a community or at the time of other festivals, ethnic students do not attend schools. In Bandarban, “*Para Bandho*” reported as a unique festival when nobody is allowed to go out of the locality even to schools. Due to festivals like these ethnic minority students are irregular in schools and they lag behind in their studies.

Fond of game, sports and TV

All small ethnic communities are reported to be very fond of performing cultural activities like dance, music, sports etc. Teachers said that students from small ethnic communities do very well in most games and sports. They spend more time for their hobbies than they spend for their studies. Some teachers thought that more attraction for game and sports hamper their study. Some teachers and parents reported that they waste much time watching TV.

How does language matter?

Language is considered to be the dominant factor in education. Teachers mentioned that students of ethnic minority communities have difficulty in understanding Bangla (the medium of instruction) swiftly both at primary and secondary level of education. At examination, most ethnic minority students were seen not writing answer at usual speed. It could be that students at secondary level were still weak in understanding and writing in Bangla language as they had a weak foundation at primary level. A guardian of Bandarban told his own story of difficulties, “I stood first in the admission test in class VI. But as soon as I started my study, I had problem of understanding instructions in Bangla. I could not understand what teachers gave us as home task or what they said in the class. I had to overcome this problem with a long-time effort.” But not every student could overcome this problem. Parents of Khagrachari told that, “...many of adivashis are weak in Bangla. They cannot pronounce it well.” Teachers of Rangamati said, “...they are generally weak but particularly very weak in Bangla as it is not their mother tongue.” Teachers of Madhupur told, “ They are weak in Bangla along with other subjects. Actually adivashis practice Bangla rarely. Except talking with Bangali teachers and classmates they rarely use Bangla language for other purposes and they do not study Bangla at home. So, they pronounce it differently and write in accordance with their pronunciations.”

Community support only for the bright students

Several support systems from close relatives of ethnic minorities could be observed. Among the chakmas, people provide some donation for meeting educational expenses of poor students of their community. At Rangamati, many of the ethnic minority students pursue education staying in their relative's house and the relatives also bear their educational expenses. Lachai Marma of Khagrachari told, “I let my niece to stay at my home because her

parents are too poor to support her education.” However, most of the support goes only to bright students, average students are not fortunate to have these support for their education.

Findings

In spite of having reasonable infrastructure facilities most of the schools failed to provide proper learning environment to ethnic minority students. The study revealed that teachers' and students' irregular attendance, teachers' wrong perception about ethnic students, poor management and supervision, insufficient emphasis on classroom teaching-learning and on examination are common features in the schools that had adverse effect on the students performance in general and ethnic minority students in particular. With a weak foundation at primary level, ethnic minority students enter secondary level and it becomes very difficult for them to cope with the situation at secondary schools resulting in repetition, dropout and poor performance in public examinations. Teachers were divided in their opinion about strengths and weakness of students specially ethnic minority students but they were not found very sensitive about the needs of ethnic students and willing to provide special attention to slow learners not to speak of slow ethnic students.

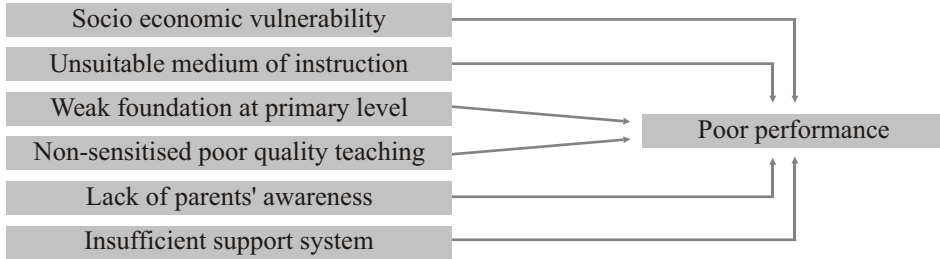
Weakness in language of instruction (Bangla) was found to be the major problem affecting learning performance of ethnic minority students in secondary schools. Teachers as well as parents shared the view that a weak foundation in Bangla made students weaker in other subjects also. The ethnic students, who use their mother tongue in daily life, felt difficulty in understanding and internalising meaning of the lessons.

Another aspect of these schools was that they had few teachers from ethnic minority communities. As a result, in a dominant Bangali environment in these schools, the ethnic minority students feel alienated in the classroom and they seldom try to communicate with teachers. Moreover, many teachers have some contrary assumptions about their school as well as of the student of ethnic minority. Assumptions presumably have a strong relation with behaviour and that affects ethnic students learning achievement.

Ethnic minority communities' traditional way of life and livelihood, particularly dependence on forest and agriculture seemed to be in the process of change. Economic hardship compels parents and their school going children to work as day labourer. As a result, children find little time for study. So, economic vulnerability was found as an important factor for poor performance of ethnic minority students. Support systems in place were also found to help a few good performers neglecting vast majority of general students. In such a situation children either stop going to school or drag on with no seriousness resulting in poor performance in the class and at the exam.

In short the major factors responsible for poor performance of ethnic minority students are presented in the following figure:

Figure 1: Major factors responsible for poor performance of ethnic minority students



Recommendations

The discussion and findings of the study have clearly identified the needs of ethnic minority students for learning improvement in general. The recommendations that follow are addressed towards meeting those learning needs of those students.

The following measures are suggested to be taken at the policy-planning level of the education system of the country:

- Necessary policy formulation and implementation programme are to be taken for a culture sensitive learning environment in the schools where a substantial number of students attend from ethnic minority communities.
- Teacher recruitment policy needs to be reviewed so that proportionate numbers of teachers from ethnic minority communities are recruited for schools with students from ethnic communities.
- Advocacy programmes can be taken to encourage regular attendance of teachers and students and periodic visits of school supervisors are to be ensured by higher authorities.
- Policy level decision is required for introduction of a good foundation course in Bangla as second language for ethnic minority students. This will allow them to understand the lessons in the class and communicate better with teachers and Bangali classmates.
- A national stipend scheme for ethnic minority students should be introduced by the government for the poor students to allow them continue their studies.

The following measures are suggested to be taken in Teachers'-Training Programmes for secondary schools:

- A special course should be introduced in teachers' training programmes for primary and secondary teachers for better understanding the ethnic issues, and learning how to deal with ethnic minority students.
- In training, teachers particularly head teachers should be encouraged to be proactive in taking appropriate steps for raising fraternity among students through extra curricular and cultural activities and thus create a congenial environment in the schools for all students irrespective of their background.

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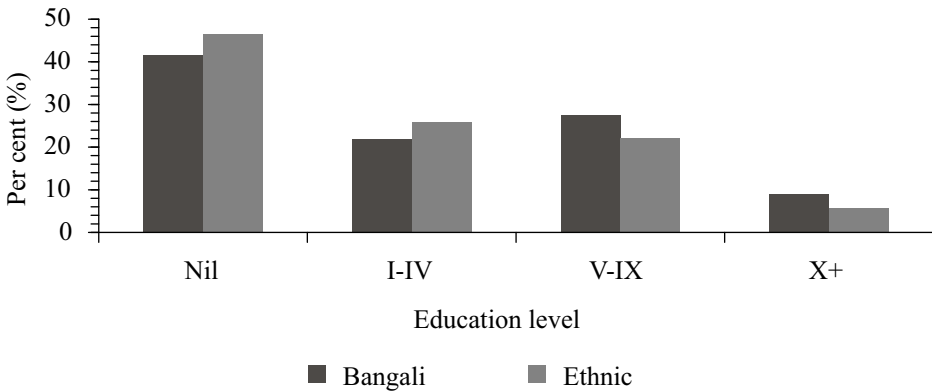
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Annex

Annex: chart 1. Persons completed different education levels



The above chart show that the ethnic minority people are proportionately lagging behind the Bengalis in non-schooled criteria. Although the situation is better up to class IV, persons completing with primary, secondary and post secondary education proportionately lesser among the small ethnic population than the Bengalis.

Technical and Vocational Education (TVE) for Skill Development of Unskilled Labor Force in Bangladesh

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Abstract

This paper examines the role of technical and vocational education (TVE) institutions in developing skilled human resources in Bangladesh and also reveals the weaknesses in the existing technical and vocational education programs. The paper is based on a questionnaire based sample survey of skills development training institutions of both government and non-government sectors and also of a sizeable number of trainees, who attended courses in these institutions. It shows that the concept of skilled manpower is not properly understood in general, and technical people themselves commonly fail in identifying the required level of skills of technical workers engaged in various activity areas. TVE institutions are not enough in number to produce huge number of technical hands required for home and abroad. The TVE institutions also do not have sufficient equipment and tools for skill development training in workshops and laboratories. Further, there are gaps in the overall policy framework for human resources development in the country. The paper draws a few suggestions on how to improve the quality of TVE in Bangladesh.

Introduction

As an integral part of formal education system, technical and vocational education (TVE) contributes in the development of human resources in all countries. In many cases, TVE becomes more important than general education for overall development of a country. It has been observed that the countries with higher rate of investment in TVE are in a better position in many respects. This has a great significance for poor countries which consider excessive population as a burden; the 'liability of the large population' can be converted into a real productive force.

Development of skilled workforce in Bangladesh deserves particular attention for the reason that the country has already undertaken planned policy of 'exporting' workforce. Necessary

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changes in skills structure of migrant workers are essential for getting higher benefits from them. TVE institutions are important institutions for training skilled workers. The study was made to look into the role these institutions play in developing skilled workers for the country.

Bangladesh is seen as a 'population-surplus' country. Since a very large part of its population is unskilled, it can convert this potential human beings into valuable resources. TVE is expected to play important role in developing the country's huge human resources as a skilled workforce needed of both at home and abroad.

Major points of concern in the study were to investigate the contribution of TVE institutions in human resource development, the significant factors that help development of the skilled labors or act as constraints in acquiring of high level skills. The study was expected to reveal important aspects and conditions helpful for taking necessary steps for improvement of TVE in the country.

Objectives

The main objective of the study is to assess the role of TVE institutions for development of skilled labor force in Bangladesh and in the assessment process; the study would make inquiry into -

- a. the types of the TVE institutions and their number by types in the country;
- b. the activities and performance of TVE graduates at their workplaces; and
- c. the possible line of actions for improvement of TVE programme in the country.

Methodology

In assessing the role of TVE institutions in developing skilled workforce in Bangladesh, the study conducted a survey of faculty members/executives of the TVE institutions and the graduates working as skilled labor force in different technical fields.

All the different types of government and non-government institutions which produce skilled workforce for various technical areas were considered as the population of the study. The total population comprised the teachers/faculties of these institutions and the graduates from these different organizations (see Table 1).

The sampling frame had one institution from each category of the TVE institutions and eight faculties and 10 graduates of each of the sample institutions (except Bureau of workforce & Employment Training, which does not conduct training classes at its own premises). Two separate questionnaires were used for the two groups of respondents: the faculties and the graduates.

Table 1: List of different types of govt. and non-govt. institutions that produce skilled workforce

Name of the institution/organization	No of institutions/ organizations
1. Technical Teaching Center (TTC)	22
2. Government Polytechnic Institute	20
3. Government Textile Institute	6
4. Youth Development Center	64
5. Nursing Institute	43
6. Hotel and Tourism Institute under BPC	3
7. BGMEA Institute of Fashion and Technology (BIFT)	2
8. Bangladesh Institute of Marine Technology (BIMT)	2
9. BRTC Training Center	11
10. MOWTS Institute of Technology (MIT)	1
11. Underprivileged Children Education Program (UCEP)	4
12. Technical School and College (TSC)	64
13. BSCIC Training Institute	39
14. Bureau of manpower & Employment Training (BMET)	1
Total	280

Source: Bureau of manpower & Employment Training (BMET), as per 2004.

The first set of questionnaire that used a four-point scale as 4 (Strongly Agree) = SA, 3 (Agree) = A, 2 (Disagree) = D and 1 (Strongly Disagree) = SD was prepared for the faculty members/executives of 14 institutions. The second set was also prepared with a four-point scale for survey of opinions of sample graduates of TVE institutions. The collected data have been analyzed by simple percentage and weighted average (WA) calculations for each statement.

112 questionnaires of the first set were distributed to each of the eight faculty members of the 14 sample institutions and 130 questionnaires of the second set were distributed to each of the 10 graduates of the 13 of 14 sample institutions. Ultimately, 80 filled in questionnaires of the first set and 97 of the second set were found acceptable for processing.

Data Interpretation and Findings

Several separate tables and graphical charts have been prepared on the basis of opinions of

the respondents for the analysis of the present status of technical and vocational education in Bangladesh. The data were tabulated in the form of frequency distribution and percentage shares and weighted averages have been calculated for the various items.

Development of skilled workforce

Responses of the teachers/faculty members and TVE graduates about the role and activities of the TVE institutions for skill development are presented in table 2 and graph 1. The table shows that 27.5% of the teachers/faculty members and 27.8 % of the TVE graduate strongly agree with the opinion that TVE institutions develop skilled workforce for practical work. 52.5 % of the teachers/faculty members consider that a good number of poor and distressed students get skills training through TVE institutions, but 45.36 % of the TVE graduates themselves discard the opinion by responding that they strongly disagree.

Only 42.26 % of the TVE graduates are of the opinion that TVE institutions have real contribution in sufficiently developing them as skilled workers. 80.00% of the teachers/faculty members and 57.73 % of the TVE graduate do not consider that TVE institutions produce the required number of specialized workers to meet the demand for them in the market.

Figure-1: Role and activities of TVE institutions

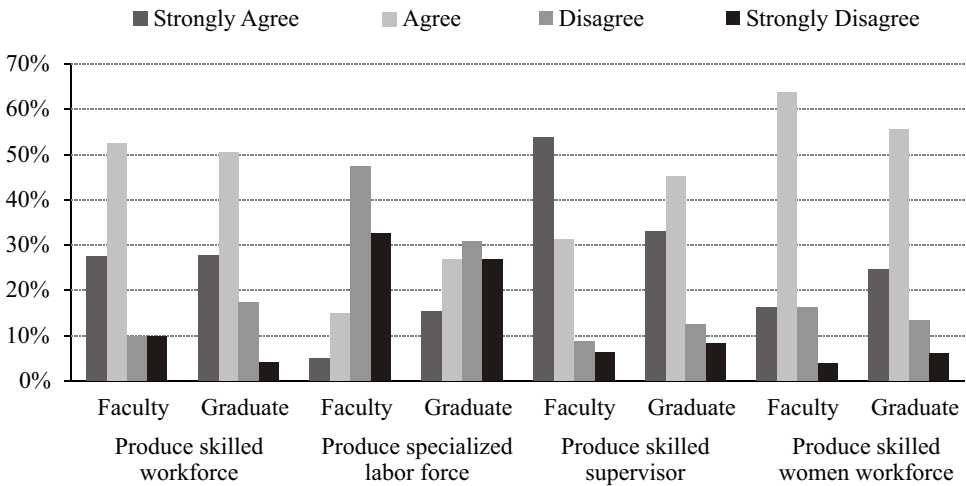


Table 2: Role and activities of TVE institutions [Faculty or F(N) = 80; Graduates or G(N) = 97]

S/N	Question/Statement	Resp.	SA	A	D	SD	WA
1.	TVE develop skilled manpower for practical work	F	22 (27.50)	42 (52.50)	8 (10.00)	8 (10.00)	3.25
		G	27 (27.80)	49 (50.50)	17 (17.50)	4 (4.10)	2.24
2.	A good number of poor and distressed students get skills training	F	29 (36.25)	42 (52.50)	9 (11.25)	0	2.98
		G	10 (10.30)	29 (20.89)	14 (14.43)	44 (45.36)	3.02
3.	TVE produces specialized labor in quantities that meet the demand for them in the market	F	4 (5.00)	12 (15.00)	38 (47.50)	26 (32.50)	
		G	15 (15.46)	26 (26.80)	30 (30.93)	26 (26.80)	2.31
4.	Graduates from TVE institutions are skilled in supervising the technical work at workplace	F	43 (53.75)	25 (31.25)	7 (8.75)	5 (6.25)	3.20
		G	32 (32.99)	44 (45.36)	12 (12.37)	8 (8.24)	3.01
5.	Skills training in TVE focus more on technical operations than on household production	F	28 (35.00)	43 (53.75)	6 (7.50)	3 (3.75)	3.20
		G	35 (36.08)	27 (27.84)	22 (22.68)	13 (13.40)	2.86
6.	Unskilled labors prefer learning by doing than training at TVE institutions.	F	25 (31.25)	45 (56.25)	7 (8.75)	3 (3.75)	3.15
		G					
7.	TVE institutions play an important role in developing skills of women labor force	F	18 (22.50)	49 (61.25)	8 (10.00)	5 (6.25)	3.00
		G	45 (46.39)	32 (32.99)	11 (11.34)	9 (9.28)	3.16
8.	TVE institutions produce skilled women workforce for household work	F	13 (16.25)	51 (63.75)	13 (16.25)	3 (3.75)	2.94
		G	24 (24.74)	54 (55.67)	13 (13.40)	6 (6.19)	2.99

However, according to the survey findings, TVE programs produce skilled workers and supervision staffs in some technical and vocational areas, while some other areas such as farming, fishing, forestry, livestock, and artisanship are not covered since available TVE programmes do not provide training in these areas. As a result, the graduates cannot help village people who use the indigenous techniques and skills. Thus, transfers of technology to common or general people do not take place. Also, a vast majority of TVE graduates do not have institutional training in management and policy making. The survey findings suggest that skills training activities in TVE institutions are gender biased and TVE institutions do not pay attention in training male and female labor force required in various production fields and household related skills.

Table 3 indicates that 52.5 % of the teachers/faculty members and 50.5 % of the TVE graduates respondents agree that training in TVE institutions improve skills of the unskilled labor force, while only 6.25 % of the teachers/faculty members and 8.25 % of the TVE graduate respondents do not agree with this opinion.

Table 3: Employment and earning of foreign exchange [Faculty or F (N) = 80; Graduates or G(N) = 97]

S/N	Question/Statement	Resp.	SA	A	D	SD	WA
1.	Unskilled labors improve their skills through training in TVE institutions	F	31(38.75)	40(50.00)	5(6.25)	4(5.00)	3.23
		G	44(45.36)	45(46.39)	8(8.25)	0	3.29
2.	Unskilled workforce get opportunity of receiving higher degree	F	17(21.25)	47(58.75)	13(16.25)	3(3.75)	2.98
		G	32(32.99)	44(45.36)	12(12.37)	9(9.27)	3.02
3.	TVE institutions generates scopes for solving unemployment problem by providing technical training to them	F	36(45.00)	35(43.75)	7(8.75)	2(2.50)	3.31
		G	45(46.39)	36(37.11)	8(8.25)	8(8.25)	3.22
4.	TVE institutions prepare the unemployed youth for self-employment	F	25(31.25)	43(53.75)	7(8.75)	5(6.25)	3.10
		G	32(32.99)	39(40.21)	18(18.56)	8(8.25)	2.98
5.	TVE institutions develop skills of the youth in specialized areas that allow them to work abroad and earn foreign exchange	F	24(30.00)	39(48.75)	14(17.50)	3(3.75)	3.05
		G	24(24.74)	54(55.67)	13(13.40)	6(6.19)	2.99
6.	There is a lack of information regarding the demand for skilled manpower in the world market	F	22(27.5)	41(51.25)	11(13.75)	6(7.50)	2.99
		G	31(31.96)	44(45.36)	14(14.43)	8(8.25)	3.01
7.	Attention to identification of skills and forecasting labor demands is not sufficient	F	28(35.00)	43(53.75)	6(7.50)	3(3.75)	3.20
		G	34(35.05)	39(40.20)	17(17.53)	7(7.22)	3.03

80.00 % of the teachers/faculty members and 78.35 % of the TVE graduates confirm that TVE institutions provide professionally useful certificates/degrees to graduates which help them get job.

About 85.00 % of the teachers/faculty members and 73.11 % of the TVE graduates consider that skills training in TVE institutions are useful for self-employment. Further, 78.75 % of the teachers/faculty members and 80.41% of the TVE graduates hold the opinion that TVE institutions contribute to development of skilled workforce in specified technical areas that allow them to seek employment abroad and send money home in the form of foreign exchange.

But 78.75 % of the teachers/ faculty members and 77.32 % of the TVE graduates hold the opinion that there is lack of information regarding the demand for workforce in the importing countries, 27.5 % of the teachers/ faculty members and 31.96 % of the TVE graduates strongly agree with this opinion. According to the opinion of 88.75 % of the teachers/ faculty members and 75.25 % of the TVE graduates forecasting demand for labor force with different skills in the world market and the capacity of the country to meet such demand are not available and it seems to be not a focused area of the government.

Limitations of TVE institutions

Despite the fact that TVE institutions play an important role in skills development of technical workers in the country, they suffer from a number of limitations. The following paragraphs present a summary of findings of the survey on these limitations.

Table 4: Limitations of TVE institutions [Faculty or F (N) = 80; Graduates or G (N) = 97]

S/N	Question/Statement	Resp.	SA	A	D	SD	WA
1.	Allocation of budget is sufficient for the TVE institutions	F	0	5(6.25)	36(45.00)	39(48.75)	1.58
		G	0	7(7.22)	37(38.14)	53(54.64)	1.53
2.	Number of TVE institutions is sufficient for meeting the demand	F	2(2.50)	4(5.00)	31(38.75)	43(53.75)	1.56
		G	7(7.22)	13(13.40)	26(26.80)	51(52.58)	1.75
3.	Number of woman TVE institution is sufficient for the woman population	F	16(19.59)	26(32.50)	18(22.50)	20(25.00)	2.48
		G					
4.	The number of need based TVE departments are sufficient	F	5(6.25)	3(3.75)	43(53.75)	29(36.25)	1.80
		G	19(19.59)	23(23.71)	30(31.93)	25(25.77)	2.37
5.	There is no specific training policy for TVE faculty members	F	51(63.75)	27(33.75)	2(2.50)	0	2.98
		G					
6.	TVE faculty members and skilled workers are paid and honored adequately	F	41(51.25)	22(27.50)	6(7.50)	11(13.75)	3.16
		G	35(36.08)	35(36.08)	18(18.56)	9(9.28)	3.63
7.	TVE institutions fail to respond to requirements of job markets	F	10(12.50)	4(5.00)	26(32.50)	40(50.00)	1.90
		G	19(19.59)	38(39.18)	22(22.68)	18(18.56)	2.60

As shown in table 4, almost all the faculty members and TVE graduates are of the opinion that budgetary allocation for TVE institutions are not sufficient to meet the needs. The faculty members of the TVE institutions are poorly paid and they lack incentive in taking adequate care in training their apprentices/students. TVE faculty members believe that the government has no specific training policy for their professional development.

53.75 % of the teachers/faculty members and 52.58 % of the TVE graduates strongly agree that the number of technical and vocational institutions is not enough for a populous country like Bangladesh. This is particularly true for women population of the country. Besides, the number of need based TVE departments/programmes are not sufficient in the existing TVE institutions, as such general people lack interest in these institutions for skill development.

TVE institutions are not given the attention that they deserve so that they can carry out effective activities for developing skilled workforce for industry, agriculture, construction and all other important sectors of the country's economy. As in most other areas, policy making in TVE suffers from bureaucratic delays and the process is not beneficial for of the employees, individuals, and industries and for the society in general.

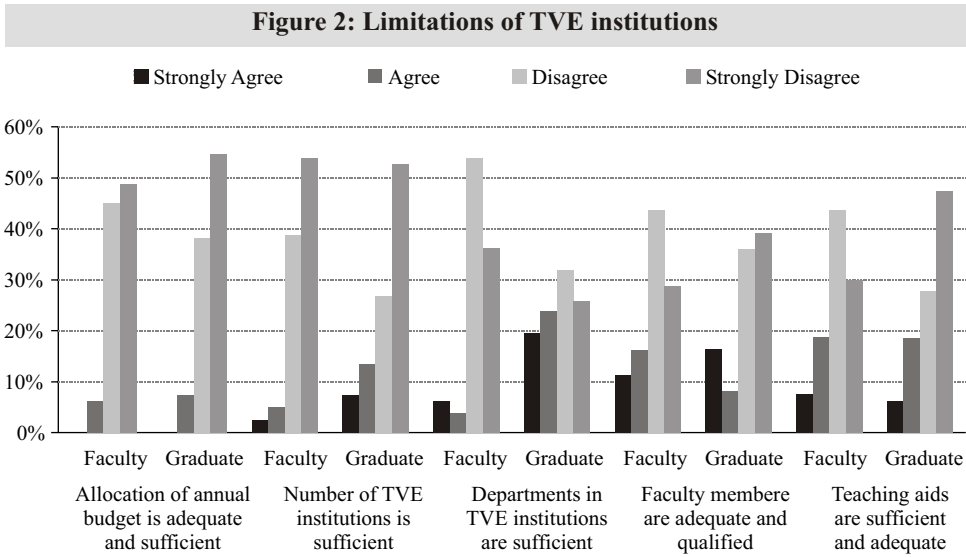


Table 5 shows that 90.00% of the teachers/faculty members and 85.56 % of the TVE graduate respondents hold that there is a lack of understanding about skilled workforce. This is because the workers having training in Bangladesh may have attained some technical skills but most of them have poor educational background, which is a constraint for developing their skills to required levels.

**Table 5: Academic and conceptual limitations of TVE institutions
[Faculty or F(N) = 80; Graduates or G(N) = 97]**

S/N	Question/Statement	Resp.	SA	A	D	SD	WA
1.	There is a lack of understanding about skilled manpower in general	F	29(36.25)	43(53.75)	4(5.00)	4(5.00)	3.21
		G	36(37.11)	47(48.45)	9(9.28)	5(5.15)	3.18
2.	General people have little interest in TVE for skill development	F					
		G	18(18.56)	58(59.79)	14(14.43)	7(7.22)	2.90
3.	TVE institutions have adequate and qualified faculty members	F	9(11.25)	13(16.25)	35(43.75)	23(28.75)	2.10
		G	16(16.49)	8(8.25)	35(36.08)	38(39.18)	2.02
4.	TVE institutions lack subject specialists for skill development	F	14(17.50)	13(16.25)	29(36.25)	24(30.00)	2.21
		G					
5.	Women face a complex set of barriers to skill development training	F					
		G	19(19.59)	38(39.18)	22(22.68)	18(18.56)	2.60
6.	Teaching aids for TVE institutions are adequate for skill development.	F	6(7.50)	15(18.75)	35(43.75)	24(30.00)	2.04
		G	6(6.19)	18(18.56)	27(27.84)	46(47.42)	1.84
7.	Equipment and workshops are sufficient in number for the skill development	F	5(6.25)	13(16.25)	43(53.75)	19(23.75)	2.05
		G	13(13.40)	15(15.46)	45(46.39)	24(24.74)	2.18
8.	Equipment needed for training in the workshops and laboratories are up to the mark	F	13(16.25)	9(11.25)	29(36.25)	29(36.25)	2.93
		G	10(10.30)	14(14.43)	44(45.36)	29(29.89)	2.49

Only 27.5 % of the teachers/faculty members and 24.74 % of the TVE graduates opined that the faculties in TVE institutions are adequate and qualified. Most of the respondents think that there are not enough subject specialists for different fields. They also strongly hold the view that the number of different technical and vocational departments in TVE institutions is not sufficient to meet the present demand of the country.

Almost all of the respondents strongly agree that the equipment and teaching aids for TVE institutions are not adequate and available practical workshops are not enough for development of required skilled labor force. Some TVE institutions have some sophisticated equipment donated by different donor agencies and development partners but their use is limited because of the shortage of skilled operators.

Problems and prospects

Table 6 and graph 3 show that 82.50 % of the teachers/faculty members and 92.78 % of the TVE graduate respondents hold the opinion that TVE graduates should be given opportunity of higher education. This facility may be provided through monthly stipend or loan at low interest to TVE graduates.

Table 6: Problems and prospects of TVE program [Faculty or F(N) = 80; Graduates or G(N) = 97]

S/N	Question/Statement	Resp.	SA	A	D	SD	WA
1.	TVE graduates should be given opportunity of higher education	F	13(16.5)	53(66.25)	13(16.25)	1(1.25)	2.98
		G	53(54.64)	37(38.14)	7(7.22)	0	3.47
2.	Barriers to skilled training for women should be assessed and resolved	F	20(25.00)	21(26.25)	26(32.50)	13(16.25)	2.60
		G	29(30.89)	38(39.18)	17(17.53)	13(13.40)	2.86
3.	Relevant persons should be involved in the planning and decision-making levels	F	29(36.25)	38(47.50)	13(16.25)	0	3.20
		G					
4.	There should be a standard wage policy for TVE faculty members and skilled labor force	F	40(50.00)	33(41.25)	5(6.25)	2(2.50)	3.39
		G	43(44.33)	42(43.29)	5(5.15)	7(7.21)	3.25
5.	TVE curriculum should be revised for preparing the trainees for self-employment	F	26(32.50)	38(47.5)	12(15.00)	4(5.00)	3.08
		G	36(37.11)	39(40.20)	17(17.53)	5(5.15)	3.09
6.	TVE curriculum should be revised on need basis of manpower importing foreign countries	F	26(32.5)	38(47.50)	12(15.00)	4(5.00)	3.08
		G	46(47.42)	32(32.99)	12(12.37)	7(7.21)	3.21
7.	Research studies should be conducted to identify problems and prospects of TVE in Bangladesh	F	25(31.25)	45(56.25)	7(8.75)	3(3.75)	3.15
		G	37(38.14)	47(48.45)	7(7.21)	6(6.19)	3.19

TVE institutions for women are very few compared to women population and also, there is no provision of seat reservation for women students in other institutions. Women students face a number of problems in taking technical and vocational training. For example, there is no hostel for women students in TVE institutions. 51.25 % of teachers/faculty members and

69.07 % of TVE graduate respondents feel that the problems related to skills training for women should be properly identified and necessary action should be taken. 91.25 % of teachers/faculty members and 87.62 % of TVE graduates hold that the faculty members of TVE institutions are poorly paid and they lack incentive for taking adequate care of their apprentices/students. 80.00 % of the teachers/faculty members and 77.31 % of TVE graduates suggested that TVE curriculum should be revised in such a way that graduates can be self employed if they so wished. Besides, almost all of them suggest that research studies should be conducted to identify the problems and prospects of technical and vocational training programs of the country.

Conclusion

The total number of different types of Technical and Vocational Institutions is 280 which is not enough for a country of almost 150 million people.

TVE institutions have contribution in developing skilled workforce for various technical areas and thus play an important role in helping the youth of the country find employment both at home and abroad. Although TVE graduates attain technical skills, they have poor understanding about the concept of skill itself and further they lack knowledge and skill of management and policy making.

TVE institutions are not given sufficient attention they deserve so that they can carry out effective activities for developing skilled workforce for industry, agriculture, construction and other important sectors of the country's economy. Various fields such as farming, fishery, forestry, livestock and artisanship are not included in TVE institutions which is required for upgrading indigenous knowledge and skills and also for transfer of technology to the common people.

The equipment available for skill development in the workshops and laboratories are not adequate in both quantity and quality. There are some sophisticated equipment donated by different donor agencies and development partners but their use is limited because of shortage of skilled operators.

The faculty members of the TVE institutions are poorly paid and they lack incentive for taking adequate care of their apprentices/ students.

Like in most other areas, policy making for TVE suffers from bureaucratic delays, political and business motives and the decisions do benefit neither employees, individuals, industries, nor the society in general.

Recommendations

The following recommendations are made in the light of findings of the study for overall improvement of the technical and vocational education scenario of the country.

1. To meet the requirement of a vast population, the number of TV Institutions should be

increased after assessing the need for skilled workforce in the country and the employment market abroad. Particular attention should be given to accommodate girls willing to receive TV education.

2. Although existing TV Institutions are producing skilled workforce, the existing curricula of these institutions need to be reviewed so that the curricula is updated with inclusion of management and supervision courses.
3. The existing facilities of TV Institutions especially workshops and laboratories should be modernized and related supplies increased. Appropriate and qualified technical personnel are to be appointed for proper handling of these costly equipment.
4. The faculty and staff of TV Institutions deserve higher pay and incentive for their performance. The authorities concerned should look into these aspects with a sense of urgency.