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Review of the Results of the 35% Competency Based Test Items in the
2014 Grade 5 Primary Completion Examination
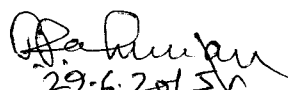
June 2015

Preface:

It is a pleasure to present the Report on the Review of the 35% Competency Based Items in the 2014 Grade 5 Completion Examination.

The Directorate of Primary Education (DPE) in association with the National Academy for Primary Education (NAPE) conducted a nationwide Grade 5 Completion Examination in 2014. The examination consisted of 35% competency based test items and 65% traditional items. NAPE has done a sample analysis of the results of both the competency based and traditional test items as well as a sample analysis of the quality of marking. Information has been obtained by subject, item type, location, gender and school type regarding how students have performed on these items.

NAPE is grateful to all personnel who contributed to this activity, both for the laborious work involved and for providing valuable information regarding future development and organisational needs. NAPE is also grateful for the support of the development partners. Their assistance and cooperation is greatly appreciated.

NAPE also thanks the DPEs and the UEOs for providing the sample student answers papers as requested.

Moreover, NAPE wishes to convey gratitude to the Secretary, Ministry of Primary and Mass Education and Director General, Directorate of Primary Education for their regular support to carry out this demanding work.

29-6-2015
Md Fazlur Rahman

Director General

National Academy for Primary Education (NAPE)

Main Findings of Analysis of Sample Results of New Competency Based in 2014 PECE

The 2014, PECE sample analysis showed that all subjects achieved greater than 33% mean score, the pass rate of the PECE. The total mean score of all subjects in this sample was 62%

Bangla Language Sample Results show that the average scores of students on the new competency based items were 21 marks out of a possible 35 marks (61%).

English Language results show that the average scores of students the new competency based items were 16.4 marks out of a possible 35 marks (47%).

Mathematics results show that the average scores of students the new competency based items were 21.94 marks out of a possible 35 marks (63%).

Science results show that the average scores of students the new competency based items were 24.66 marks out of a possible 35 marks (70%).

Bangladesh and Global Studies results show that the average scores of students the new competency based items were 23.9 marks out of a possible 35 marks (69%).

These results are represented in table and graph form below:

Subject	%Mean Score
Bangla Language	61
English Language	47
Mathematics	63
Science	70
Bangladesh and Global Studies	69
Total % Mean Score	**62**

Table 1: Overall % Mean Scores of All Sample 0f 2014, PECE
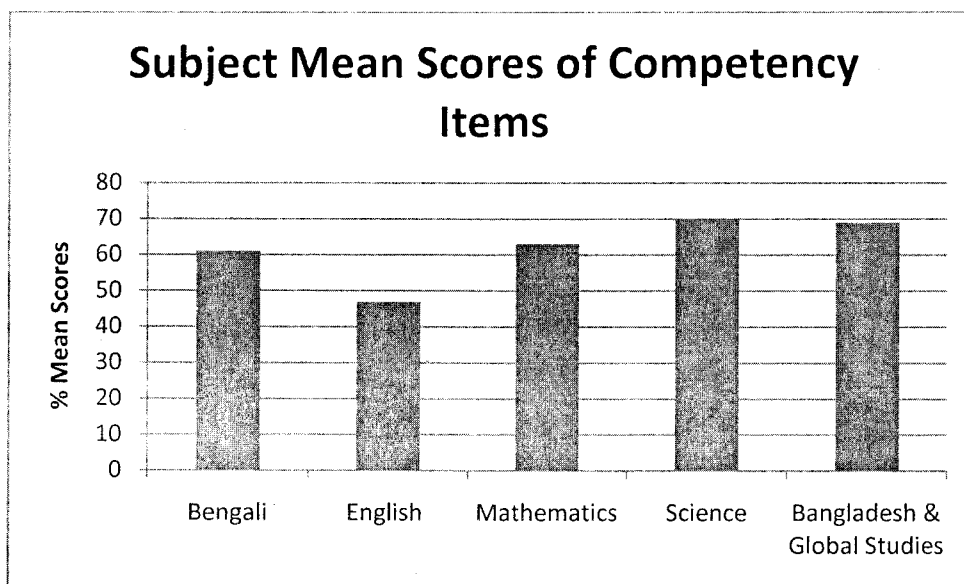
Graph 1: Subject % Mean Scores of Competency Items Sampled PECE 2014

The sample used for this review provided few examples of differences in achievement according to gender, location, division or school type.

Marking and Scoring found in the sample, in general, was carried out fairly reliably. However in Bengali Language it was found that 37% of the items were either over or under marked; in English Language, 12% - 17% were either over or under marked: in Mathematics >03% appeared to be incorrectly marked; in Science approximately 25% were over marked and in Bangladesh and Global Studies >3% were over or under marked.

Besides this, the main difficulties observed were markers entering the marks incorrectly; not putting an entry on the cover page of the answer papers, over marking and under marking, giving no marks when the answer was correct, giving half marks when no half marks were to be given according to the marking scheme.

The percentage of incorrectly marked scripts, while it is relatively low for this sample, (with the exception of Bengali Language and Science), has implications for the nationwide examination – this year a total of 26,83,781 students were examined. Projecting the incorrectly marked scripts for this number of students would suggest that a large number of students would not have obtained the correct scores.

Spearman Rank and Pearson's Correlation tests were used to test the null hypothesis of there being no correlation between Bengali Language achievement and student achievement of the other subjects (English Language. Mathematics, Science and Social Studies). The results showed that the null hypothesis could not be contradicted. In other words students performing well in Bengali Language had no statistical certainty of performing well in other subjects.

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List of Graphs by Subject

List of Tables according to Subject

Acronyms

ADB	Asian Development Bank
CBTI	Competency Based Item
CRQ	Constructed Response Questions
DFAT	Department of Foreign Affairs and Trade, Australia
DFATD	Department of Foreign Affairs Trade and Development, Canada
DFID	Department for International Development
DLI	Disbursement Linked Indicators
DP	Development Partner
DPE	Directorate of Primary Education
EU	European Union
FiB	Fill in the Blanks
GoB	Government of Bangladesh
GPS	Government Primary School
JICA	Japan International Cooperation Agency
KPI	Key Performance Indicator
MCQ	Multiple Choice Questions
NAPE	National Academy for Primary Education
NNGPS	New Nationalised Government Primary School
PECE	Primary Education Completion Examination
PEDP3	Third Primary Education Development Programme
SCRQ	Short Constructed Response Questions
SIDA	Swedish International Development Cooperation
UNICEF	United Nations Children's Fund

Background

The Third Primary Education Development Program (PEDP 3) is a six-year, sector wide program covering Grades 1 through 5 and one year of pre-primary education. PEDP3, led and administered by Government line agencies, aims to establish an efficient, inclusive and equitable quality primary education system delivering effective and relevant child-friendly learning to all Bangladesh's children from pre-primary through Grade 5. The program is financed jointly by the Government of Bangladesh (GoB) and nine Development Partners (DPs) – the World Bank, Asian Development Bank (ADB), Department of Foreign Affairs, Trade and Development (DFATD) Canada, Department for International Development (DFID), European Union (EU), Swedish International Development Cooperation (SIDA), United Nations Children's Fund (UNICEF), Department of Foreign Affairs and Trade (DFAT) Australia, and Japan International Cooperation Agency (JICA). There are six results areas, for which outcomes are monitored through fifteen Key Performance Indicators (KPIs). These areas are: i) Learning Outcomes, ii) Participation, iii) Disparities, iv) Decentralization, v) Effectiveness, and vi) Program Planning and Management. Results in these areas are to be achieved through activities and outputs in twenty-nine sub-components. More than 70 percent of DPs' financing for PEDP3 is triggered by achieving outputs in nine sub-components, monitored through "Disbursement Linked Indicators" (DLIs). One of the nine DLI's of the program relates to incremental improvements in the Grade 5 Examination, with an aim to make it 100% competency based by 2018.

The Directorate of Primary Education (DPE), in association with the National Academy for Primary Education (NAPE), conducts the nationwide Primary Education Completion Examinations (PECE). Under PEDP3, test items of the exam are gradually being replaced by competency based items with an aim to assess competency gains of children instead of rote learning. NAPE is also responsible for the analysis of student achievement of the competency based items in the exam.

Introduction

Competency Based Test Items (CBTIs) started to be introduced since the 2012 PECE, where only 10% of the traditional test items were replaced by CBTIs. In 2013 PECE, 25% of the test items were CBTI and in 2014 35% of the test items were CBTIs. According to the plan of GoB and PEDP3, by the end of 2018, the entire PECE will be competency based, meaning the entire test will be comprised of CBTIs.

An exam for assessing competency gains is a new concept in Bangladesh. Therefore, teachers and students have very little experience of answering and assessing CBTIs. There were concerns that many students might fail to pass the exams and at the same time examiners might face difficulties in assessing the answer scripts. That is why additional teacher training and orientation programs were conducted before introducing the CBTIs in the exams.

Additionally, NAPE was given the responsibility of conducting a sample based analysis on the CBTIs to find (a) how students performed in the CBTIs; (b) how the examiners scored these new types of test items; and (iii) what steps should be taken for better implementation of the new assessment mechanism.

Analyses were conducted for the 2012 and 2013 exam: an analysis of 10 percent competency based test item for 2012 of a sample of answer scripts in selected upazilas; an analysis of 25% competency based test items for 2013 and an additional analysis of the marking and scoring of the sample, in selected upazilas.

A more rigorous statistical analysis of the test results is required to assess improvements in quality (including the progression toward a fully competency-based exam) as well as potential regional and/or gender disparities. Additionally, improvements in dissemination are needed to complement this statistical analysis

Methodology

A representative, stratified sample was identified by the DPE with support from the World Bank. The DPE sent a letter to the Upaxilas requesting their cooperation in providing a framework according to the identified requirements. An example of the framework is found in Annex1. A letter was sent from NAPE to the DPE to ask the to request the upazilas to participate in this review of the 2014 PECE. These letters are foiund in Annex 2.Each upazilla was required to send a total of 60 scripts for each subject to NAPE. NAPE then allocated the scripts to the subject Specialists, who checjed them and identified any anomolies. The upazillas also provided information regarding the schools whose answer scripts were to be used in the analysis.

NAPE then prepared a grid for data entry (Annex3) and afterwards conducted the data analysis and composed the report. The completed subject data entry grids are found in Annex4.

Sample

The DPE with World Bank support identified an appropriate sample of student results from uapzillas, rural, urban and remote areas, male and female students, different school types etc. The sample included seven Divisions, namely Dhaka, Chittagong, Barishal, Khulna, Rangpur, Sylhet and Rajashai. Within each Division three upazilas were selected to represent metropolitan, urban and rural schools in total, a sample of 1,260 students,

During the course of obtaining the sample however some changes were made due to difficulties in obtaining the student test papers, some of which had been destroyed and also for political reasons. The proposed sample is found in Annex1 along with the schools subsituted due to difficulties in obtaining the answer scripts from the proposed schools.

A map showing the geographical distribution of the sample divisions is found below.

Division wide coverage of the PECE 2014 School Sample

Bangladesh

PECE 2014 Sample Divisions

Legend
- International Boundary
- District Boundary
- Coast Line / River
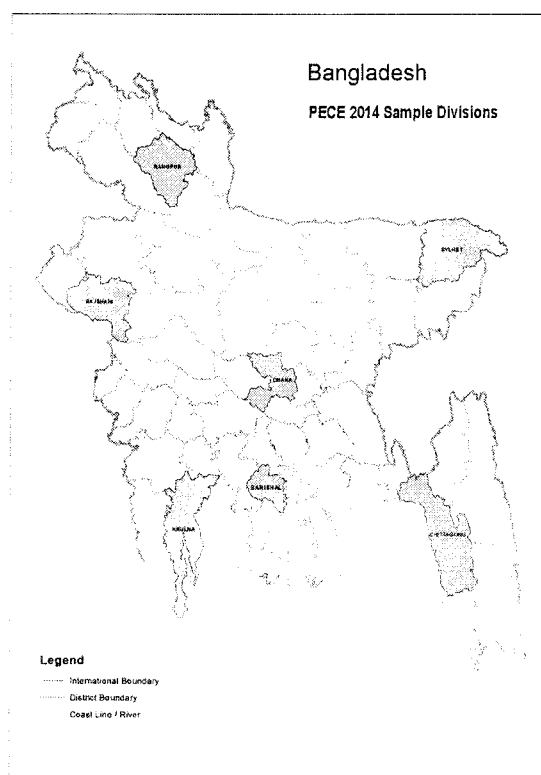
The Results

NAPE has used widely accepted statistical standards in analyzing the data.

Results are presented as mean scores and mean percentage scores. The achievement of students is discussed according to subjects under the following heading for each of the five subjects:

- Overall student achievement
- Overall Student Achievement by Location
- Overall Student Achievement by Gender
- Overall District results
- Overall Student Achievement by School Type
- Results of the Traditional PECE Items
- Comparison of the results of the traditional and competency based items according to overall student achievement and item type.
- A review of marking and scoring of the PECE sample
- Relation between achievement in Bengali Language and other subjects

Subject Sections

Section 1: Bengali Language

1. Mean Scores of Bengali Language

Five items were provided to students. The items were based on an unseen reading text. It would be unlikely that students would be able to answer the items by using memory skills. The items measured student knowledge, understanding and comprehension, their knowledge and understanding of grammar and punctuation and also their ability to write on a given topic using their own words

1.1 Overall Mean Scores

Bengali Language Sample Results show that the average score of students on all the new competency based items was 61% (21 marks out of a possible 35 marks).

BENGALI LANGUAGE ANALYSIS SHOWING MEAN SCORE

Mean =21.2341
Std. Dev. =7.12775
N =1,162
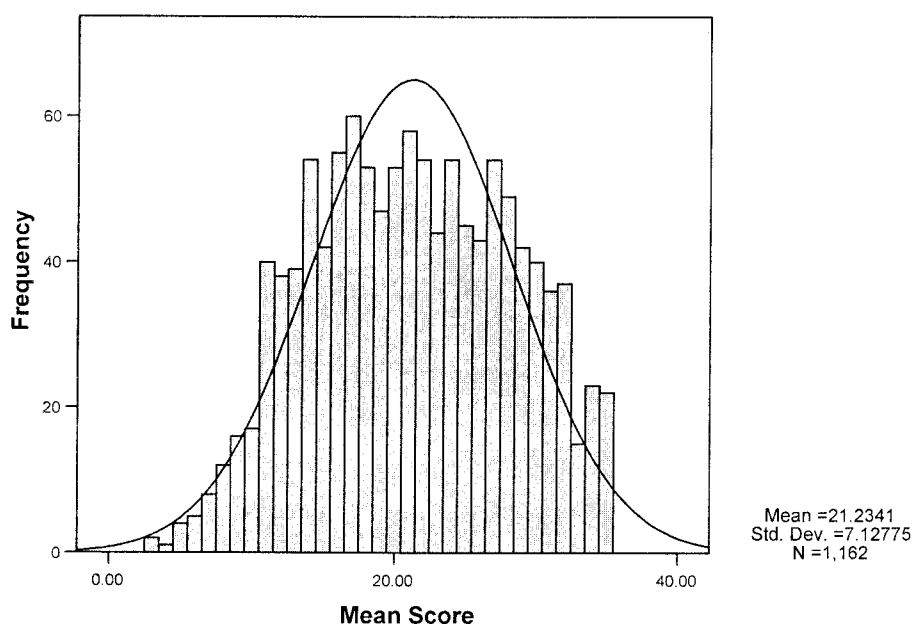
Graph 1: Overall Mean Score in Bengali Language

1.2 Bengali Overall Mean Scores According to Item Type

According to each item type the total mean scores for each question/item type were as follows:

Item Type	% Total Mean Score
Multiple Choice	79
Fill in the Blanks	76
Compound Letters	66
Short Constructed Response Items	50
Constructed Response Items	52

Table 1: Total % Mean Scores by Item Types

A Graph showing the Overall Mean Score and the Mean Scores according to Item Type is found below.

This identifies that students found Multiple Choice and Fill in the Blanks easier than being able to identify compound letters and short and constructed response items. Students were possibly happier and had been taught to complete items MCQs. It also suggests that students found it more difficult and may not have been taught to use their minds to develop and write about ideas in relation to a given topic.

Bengali Mean Scores by Item Type
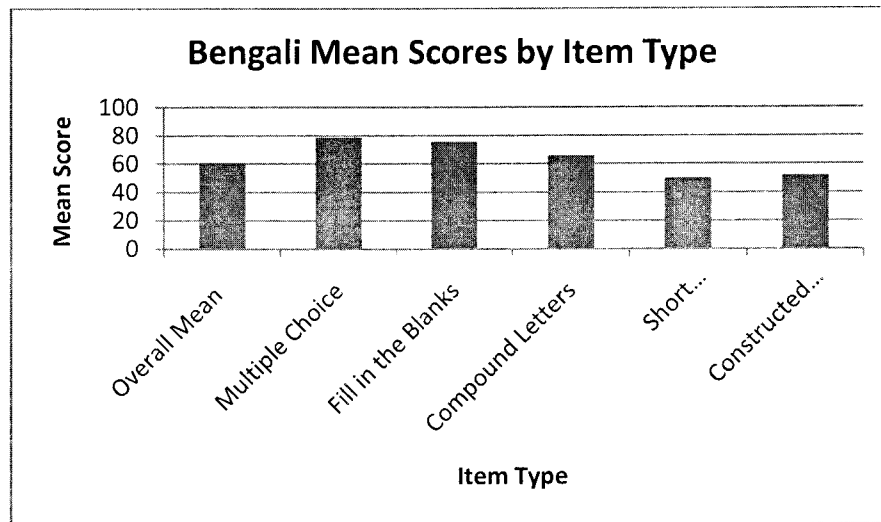
Graph 2: Overall % Mean Scores by Item Type

1.3   Bengali Overall Mean Scores According to Location

There was little difference in the overall achievement of scores by location: rural areas had a score of 60%, urban areas a score of 61% and metropolitan areas a score of 61%.

Overall % Mean Scores by Location
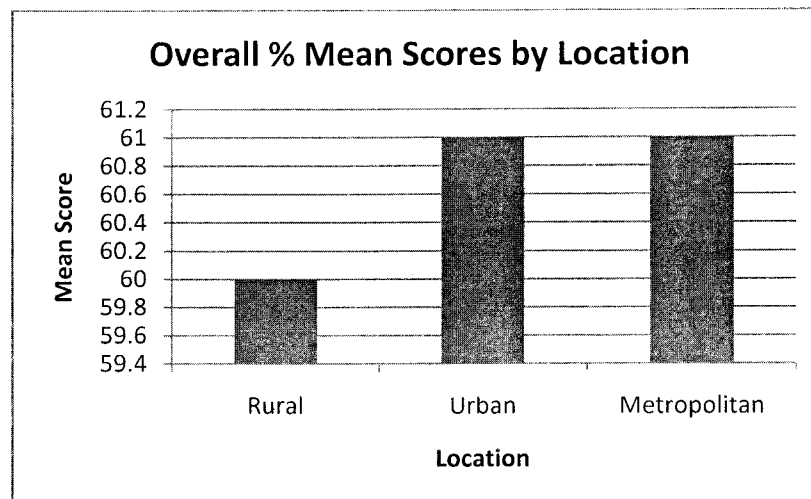
Graph 3: Overall % Mean Scores by Location

2 Multiple Choice Item Achievement

Multiple Choice scores ranged from 98% for Item 1 to 61% for Item 4. The items requiring a higher level of skill to identify the answer were analysis items (item4) and compound letters (item 3) and punctuation item (item 5)

Total % Mean Scores of MCQ Items, PECE 2014

Item Number	% Mean Score
5	69
4	61
3	74
2	95
1	98
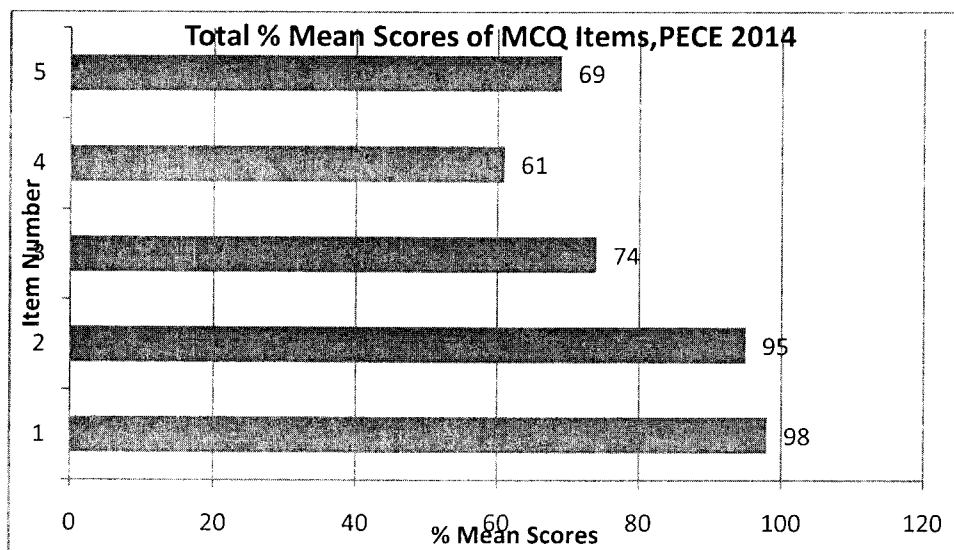
Graph 4: Percentage Mean Scores of MCQ Items

2.1 Bengali MCQs by Skill Achievement

The item results vary according to item difficulty and skill demanded.

Item Number	Item 1(i)	Item 1(ii)	Item 1(iii)	Item 1(iv)	Item 1(v)
Skill Tested	Reading Comprehension Understanding of whole text	Reading Comprehension Giving a reason for an event in the text	Analysis of grammar item and identification of correct the compound letters	Reading Comprehension Understanding why something happened	Application/to apply knowledge of punctuation correctly
% Mean Score	98	95	74	61	69

Table 2: Total %Mean Scores for MCQs

2.2 Bengali MCQ Achievement by Division

Barishal achieved the highest MCQ mean score of 86% with Syllhet achieving the lowest score of 74%.

MCQ % Mean Score by Division	
Dhaka	81
Chittagong	82
Rajshahi	76
Barishal	86
Rangpur	80
Khulna	78
Syllhet	74

Table 3: Bengali MCQ Achievement by Division

2.3 Bengali MCQ Achievement by Gender

Little difference in achievement is observed according to gender with boys having 80% mean score and girls having a 79% mean score.

2.3 Bengali MCQ Achievement by School Type

Other School Types such as the BRAC schools, kindergarten, non-government schools are included in this group and these schools had a higher mean score (82%) than both the Newly Nationalised Government Primary Schools (NNGPS) and the Government Primary Schools (GPS) who achieved mean scores of 76% and 80% respectively.

3. Fill in the Blanks Items

3.1 Total Mean Score of Fill in the Blanks Items
Students were asked to complete sentences by selecting one word from a selection of words. It required students to read and understand a paragraph. This is a similar item type to MCQ except that students were asked to choose between six possible answers for five blanks, in comparison with choosing from four possible answers in MCQs.

The Mean Score obtained was 3.8 (76%).

3.2 Fill in the Blanks Item Achievement by Division

Barishal achieved the highest score for these items (86%) followed by Khulna (82%) with Dhaka showing the weakest result (74%)

Fill in the Blank Mean Score by Division	
Dhaka	74
Chittagong	78
Rajshahi	80
Barishal	86
Rangpur	76
Khulna	82
Syllhet	80

Table 4: Fill in the Blanks Scores by Division

3.3 Fill in the Blanks Achievement by Gender

Both Boys and Girls achieved the same mean score 3.8 out of a possible 5.0, a score of 76%

3.4 Achievement by Metropolitan, Urban and Rural Areas

Students from rural areas achieved the highest score (82%) in this activity with urban areas achieving 77% and metropolitan areas achieving a mean score of 70%.

3.5 Bengali MCQ Achievement by School Type

Schools such as BRAC schools, kindergartens etc (Others) achieved the highest mean score (78%) compared with GPS (76%) and NNGPS (74%).

Fill in the Blank Mean Score by School Type	
GPS	76
NNGPS	74
Other	78

Table 5: Fill in the Blanks Scores by School Type

4   Using Compound Letters

The use of compound letters appeared to be difficult for the students. The total mean score was 66%. No student achieved a full score on this exercise which suggests that insufficient attention is paid to students' understanding of compound letters and their importance in the development of the Bengali vocabulary.

Using Compound Letters: Mean Score

Mean =3.3072
Std. Dev. =1.
41644
N =1,162
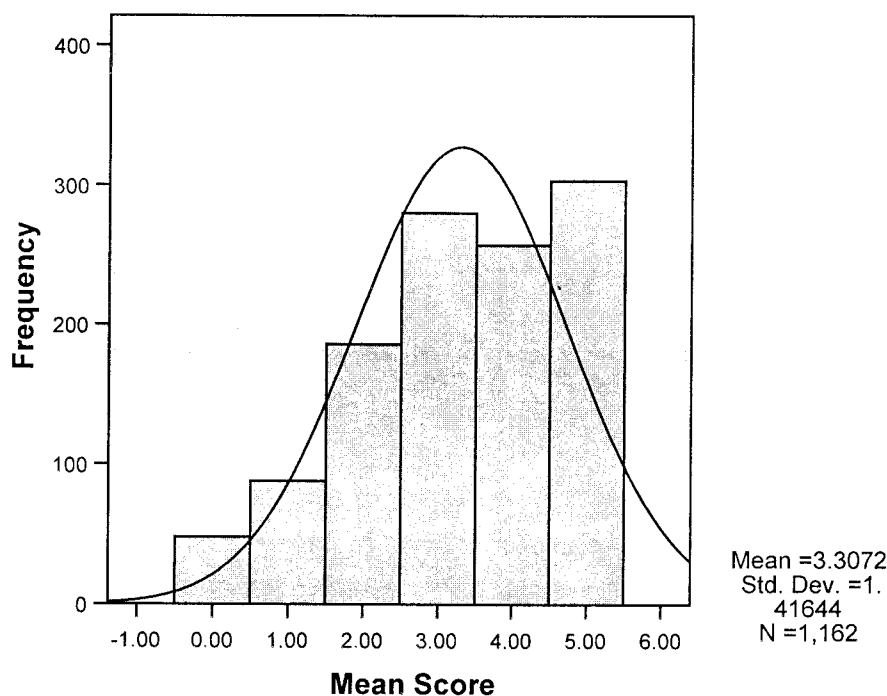
Graph 5: % MCQ Mean Score of Achievement of Compound Words

5. Short Constructed Response Items (SCRQ)

Three short constructed response items were given for the 2014 PECE. They consisted of writing five sentences for students to give their opinion, to explain what they would do under different circumstances etc. The mean score of the sampled scripts was 51%. This demonstrated that students had not been taught to use their minds to write about given topics in their own words. It can be seen from the frequency graph below that many students (almost 120) had a 0 score for this activity, while approximately 100 students obtained full marks.

A graph showing the results is found below.

Mean Score of SCRQ

Mean =7.5921
Std. Dev. =4.
59287
N =1,162
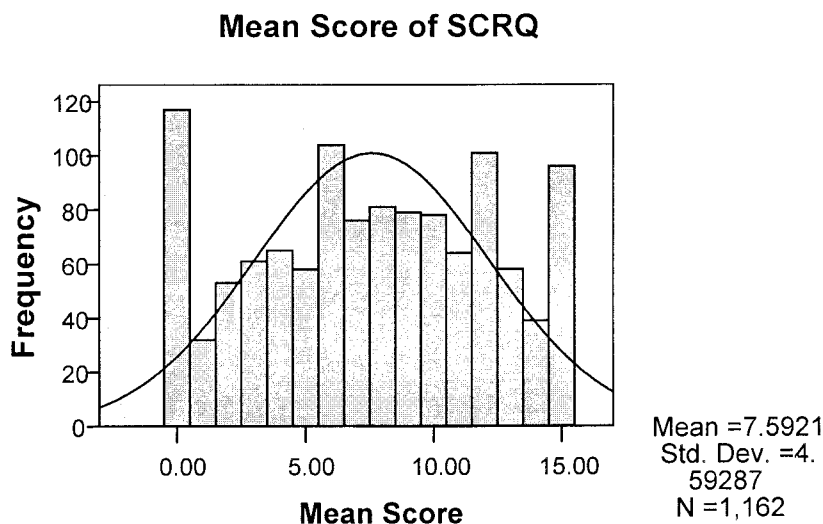
Graph 6: % Mean Score of SCRQ Items

6. Constructed Response items

The constructed response item consisted of writing a letter. A marking scheme was provided to the markers where criteria were provided along with the marks to be used for scoring. The student mean score was 52%. This again like SCRQ items suggests that students are not given sufficient opportunities to develop their thinking and writing skills, especially the skills of expressing their own opinions. It can be seen from the frequency graph below that a large number of students (over 300) had a 0 mean score for this activity

Mean Score of Constructed Response Item
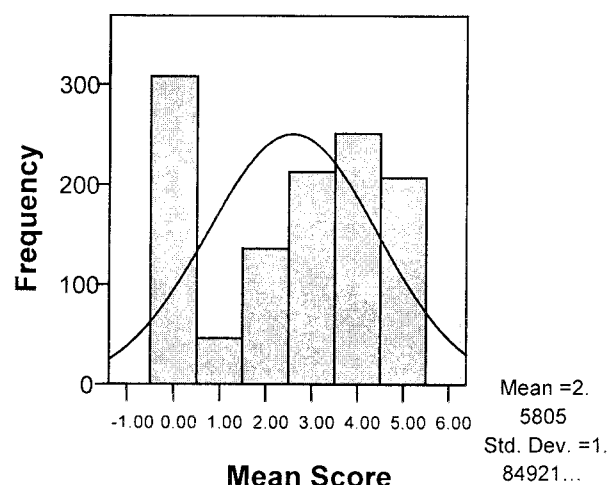
Graph 7: % Mean Score of SCRQ Items

7. Reliability of Marking and Scoring the Bengali Answer Scripts

It was found that the Bengali scripts demonstrated markers over marking and under marking, sometimes giving the mark when there was no answer. This suggests that the markers did not follow the strict marking scheme provided. Markers may have under marked because of their lack of use of the marking scheme while, they may have over marked to enable the students to pass the PECE. It might also be a result of the short time provided to the markers to complete the marking. It should also be noted that the scripts are signed by three persons namely – first examiner, scruitiniser and head examiner, yet there is no evidence that any of the scripts were checked for accuracy of marking.

In the sample it was found that approximately 006% of the SCRQ items were under marked while approximately 12% of the scripts were over marked, the remainder being marked correctly. It was found that for the CRQ items 12% were under marked while 25% were over marked. Taking this evidence and projecting it to all the PECE students tested in Bangladesh in 2014, (26,83,781 students[1]) means that there would be a large number of students who would not get the correct score and as a result might have had lower marks than they should have, missed out on either passing the PECE or obtaining a scholarship or may have achieved the pass score through over marking.

8. Traditional PECE Item Results Compared with Competency Based items

8.1 Overall Mean Scores

The Overall Mean score for the traditional items was 67% (39.9) as compared with 61% (21.23) for the competency based items. The standard deviation for the competency based

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[1] Annual School Census, 2014, Government of the People's Republic, Bangladesh, Ministry of Primary and Mass Education

items was 1.62 while for the traditional items it was 12.2. This would suggest that the results of the competency items are more reliable than those of the traditional items. This is to be expected as the competency items have been piloted and only those items within a specific range of achievement are used in the PECE.

The data also shows that the median for the traditional item sample is 41 while the mode is 43. This means that the data is positively skewed – the scores falling to the lower scale which suggests that many students found the traditional items difficult.
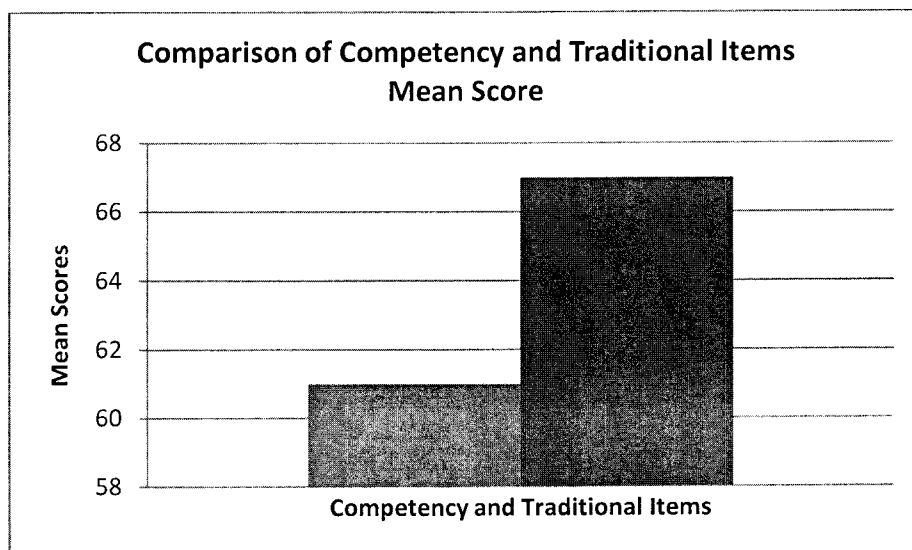
Graph 8: Overall % Mean Score of Competency and Traditional Items

8.2 Achievement of MCQ Items

The mean score for the traditional MCQ items was 72% (3.68) with a standard deviation of 12.2 and a median and mode of 4.0. The competency based items had a score of 79% (3.96) with standard deviation of 0.99 and a median of 4 and a mode of 5.
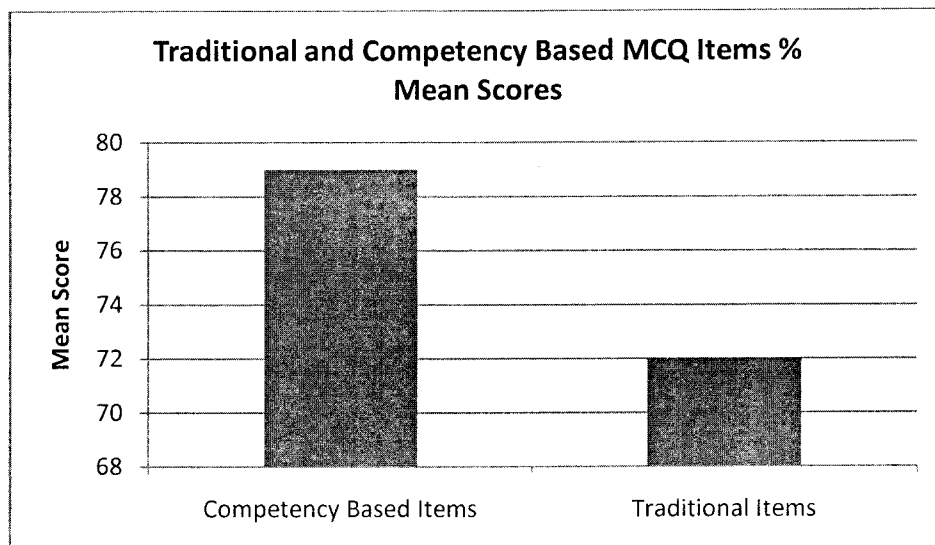
Graph 9: MCQ %Mean Score of Competency and Traditional Items

8.3 Achievement of CRQ Items

The mean score of the CRQ items was 60% (36.18) with a standard deviation of 11.7 and a median and mode of 4. The competency based items had a score of 52% (2.58) and a standard deviation of 1.85.

Traditional and Competency Based CRQ Items % Mean Score

(y-axis: Mean Score, values 48, 50, 52, 54, 56, 58, 60, 62; bars: Competency Based Items ≈ 52, Traditional Items ≈ 60)
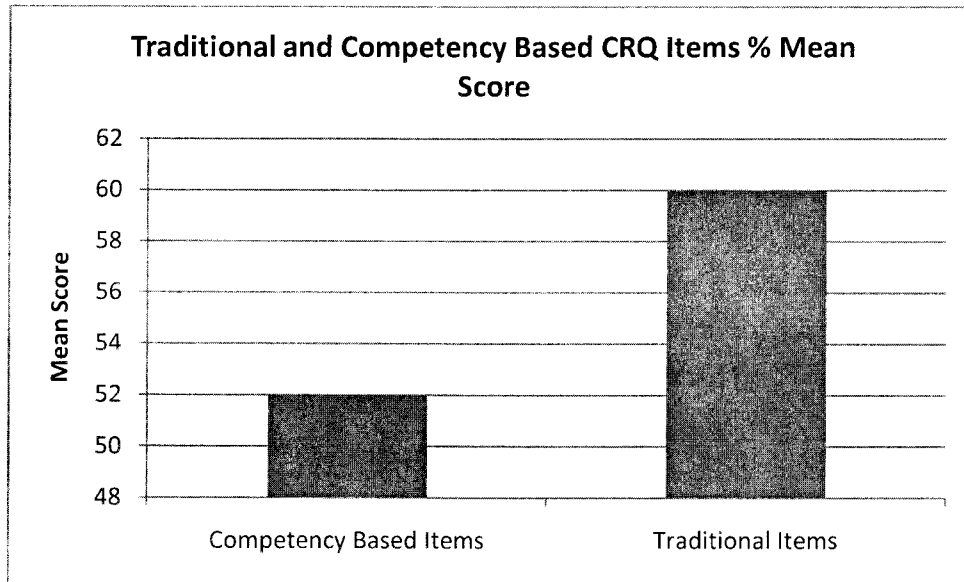
Graph 10: CRQ % Mean Score of Competency and Traditional Items

9 Conclusions

The overall mean score of the competency items in the examination was 61% as compared with 67% in the traditional items.
- Students found the MCQ competency based items easier than the traditional MCQs
- Students found the competency based CRQs more difficult than the traditional CRQs
- Over marking was more evident than under marking
- Evidence that student thinking skills needed to be focused on for improvement in competency achievement.

Section 2: English Language

1. Overall Mean Scores of English Language

Reading and writing skills were tested using competency based items. Twenty-two items were provided to students - 10 MCQs, 5 Fill in the Blanks, 5 SCRQ and 1 CRQ. The items were based on an unseen reading text which required students to demonstrate their understanding of the text. The items measured student knowledge, understanding and comprehension, their knowledge and understanding of sentence structure and their ability to write on a given topic using their own words

1.1 Overall Mean Scores

English Language sample results show that the average score of students on all the new competency based items was 16.4 marks out of a possible 35 marks (47%).

English Language Overall Mean Score

Mean =16.5448
Std. Dev. =6.78755
N =1,162
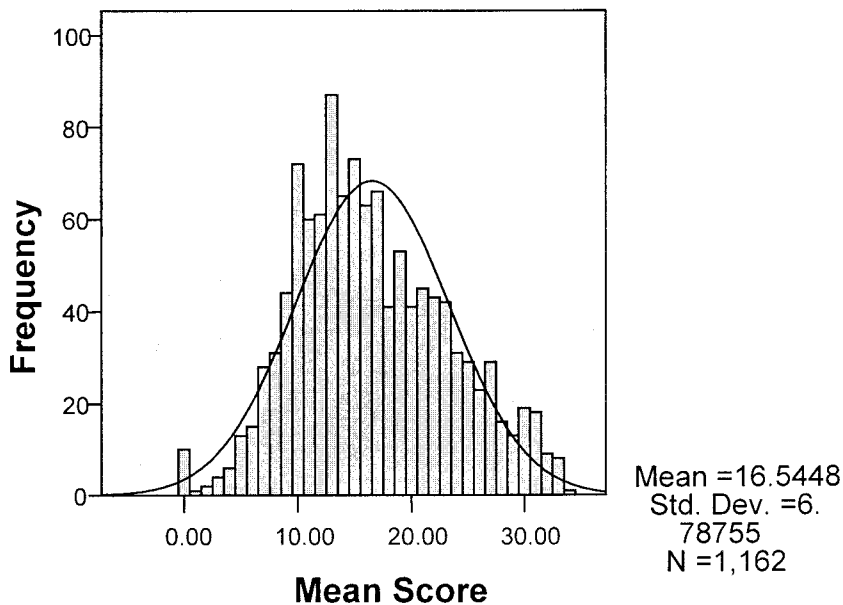
Graph 1: Overall Mean Score in English Language

1.2 Overall English Language Mean Scores According to Item Type

According to each item type the total mean scores for each question/item type were as follows:

Item Type	% Total Mean Score
Multiple Choice	54
Fill in the Blanks	60
Short Constructed Response Items	34
Constructed Response Items	57

Table 1: Total % Mean Scores by Item Type

The graph below shows the scores diagrammatically.

Overall Mean Score by Item Type
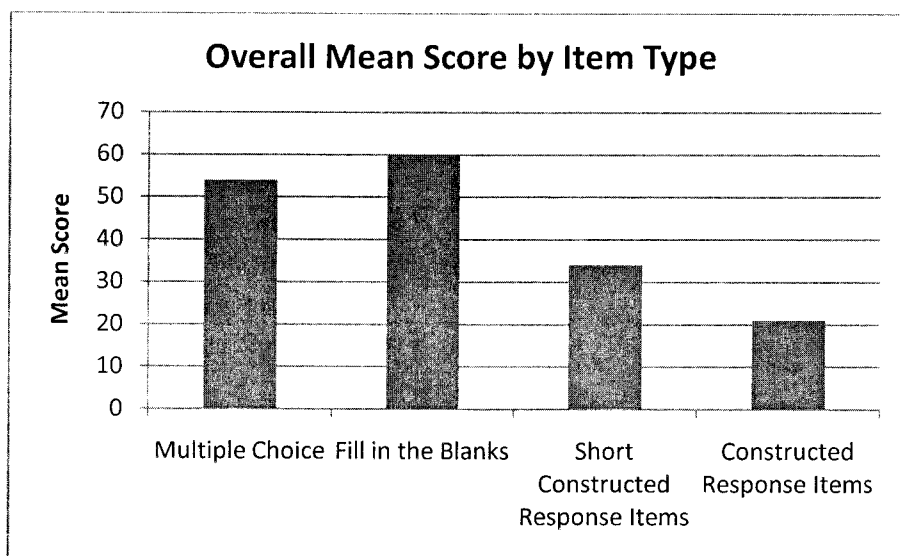
Graph 2: Overall Mean Score in English Language by Item Type

This identifies that students found multiple choice easier than fill in the blanks and short constructed response and constructed response items. Students were possibly happier and had been taught to complete items where all possible answers were provided rather than have to thinks to select a correct answer. It also suggests that students have not been taught to use their minds to develop and write about ideas in relation to a given topic.

1.2 Overall English Language Achievement Mean Scores by Location

Little difference can be seen in student mean scores by location. Students in rural areas achieved a mean score of (46%); those in Urban (47%) and Metropolitan Areas (47%).

Overall English Language Mean Scores by Location
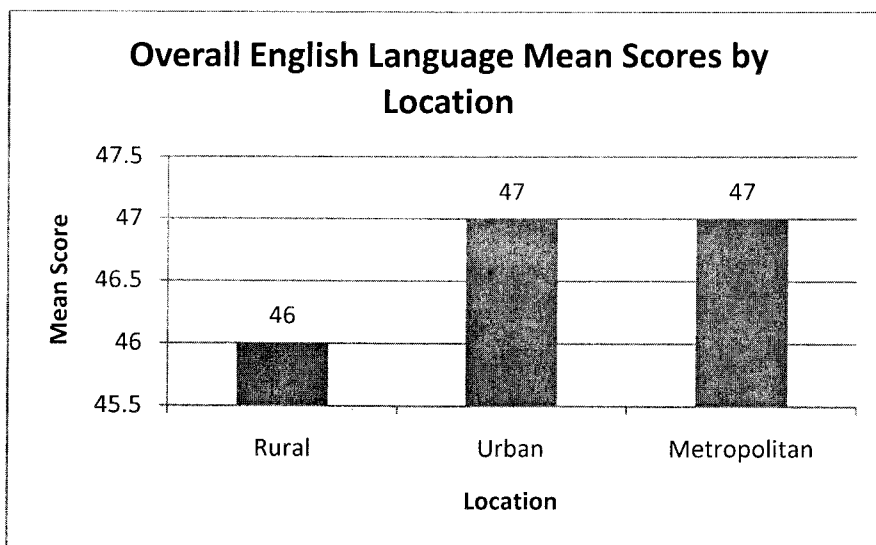
Graph 3: Overall Mean Score in English Language by Location

2. Multiple Choice Item Achievement

Students were asked when answering Multiple Choice Items to choose one correct answer from four possible answers. All the options were possible answers but only one was the correct answer.

The overall mean score of Multiple Choice items was 54%

English Language Overall Mean Score

Mean =5.4165
Std. Dev. =2.34904
N =1,162
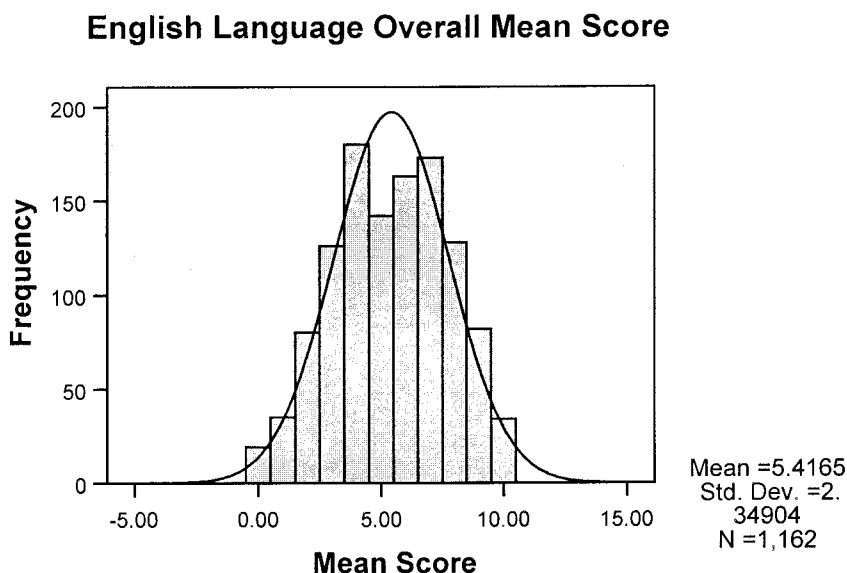
Graph 4: MCQ Overall Mean Score in English Language

2.1 English Language MCQ Achievement by Division

Barishal achieved the highest MCQ mean score of 63% with Syllhet achieving the lowest score of 46%. The table below shows the mean scores by division.

MCQ % Mean Score by Division	
Dhaka	60
Chittagong	58
Rajshahi	47
Barishal	63
Rangpur	56
Khulna	49
Syllhet	46

Table 2: English Language MCQ Achievement by Division

2.2 English Language MCQ Achievement by Gender

Little difference in achievement is observed according to gender with boys having 55% mean score and girls having a 53% mean score.

2.3 English Language MCQ Achievement by School Type

Other School Types such as the BRAC schools, kindergarten, non-government schools are included in this group and these schools had a higher mean score (56%) than both the Newly Nationalised Government Primary Schools (NNGPS) and the Government Primary Schools (GPS) who achieved mean scores of 53%.

3. Fill in the Blanks Items

3.1 Total Mean Score of Fill in the Blanks Items

Students were asked to complete sentences by selecting one word from a selection of words. It required students to and understand a paragraph. This is a similar item type to MCQ except that students were asked to choose between eight possible answers for five blanks, in comparison with choosing from four possible answers in MCQs. This should have been easier to do than the MCQs as the choice of appropriate words were fewer in number. However it involved students needing to understand the content and to select according to the content.

The Mean Score obtained was .3.0(60%).

Overall Mean Score of Fill in the Blanks Items

Mean =3.0043
Std. Dev. =1.
69027
N =1,162
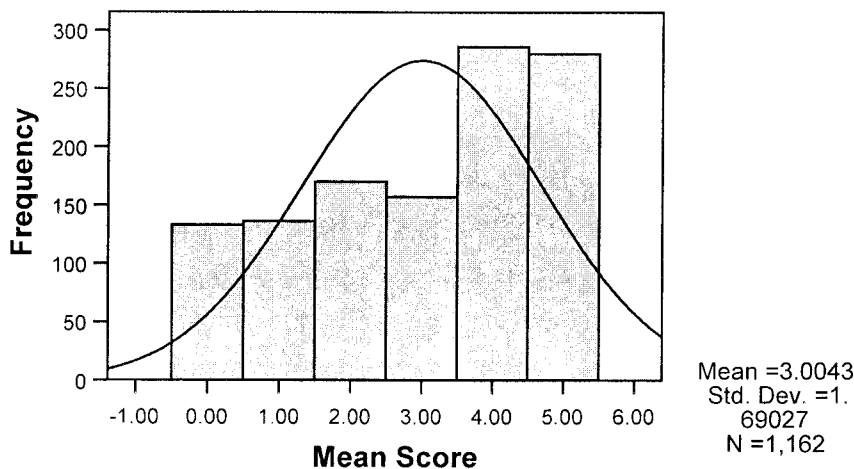
Graph 5: Overall Mean Score of Fill in the Blanks Items

3.2 Fill in the Blanks Item Achievement by Division

Barishal achieved the highest score for these items (37%) followed by Dhaka (35%) with Rajshahi showing the weakest result (25%)

Fill in the Blank Mean Score by Division	
Dhaka	35
Chittagong	33
Rajshahi	25
Barishal	37
Rangpur	33
Khulna	26
Syllhet	24

Table 3: Fill in the Blanks Scores by Division
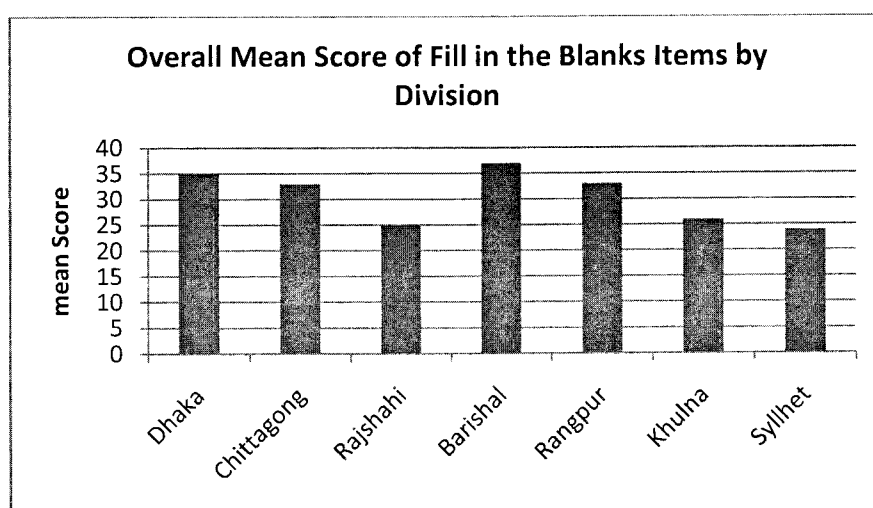
Graph 6: Overall Mean Score of Fill in the Blanks Items by Division

3.3 Fill in the Blanks Achievement by Gender

Boys achieved a score of 3.0 (30%) while girls achieved a score of 2.9 (29%)

3.4 English Language Fill in the Blanks Achievement by School Type

Schools such as BRAC schools, kindergartens etc (Others) achieved the highest mean score (32%) compared with GPS (30%) and NNGPS (29%).

Fill in the Blank % Mean Score by School Type	
GPS	30
NNGPS	29
Other	32

Table 4: Fill in the Blanks Scores by School Type

4. Short Constructed Response Items (SCRQ)

Five short constructed response items were given for the 2014 PECE. They consisted of writing short sentences in response to the questions. The mean score of the sampled scripts was 34%. This demonstrated that students had not been taught to use their minds to write about given topics in their own words. It can be seen from the frequency graph below that many students (almost 300) had a 0 score for this activity, while approximately 100 students obtained full marks.

A graph showing the results is found below.

English Language SCRQ Mean Score

Mean =3.4294
Std. Dev. =3.
02939
N =1,162
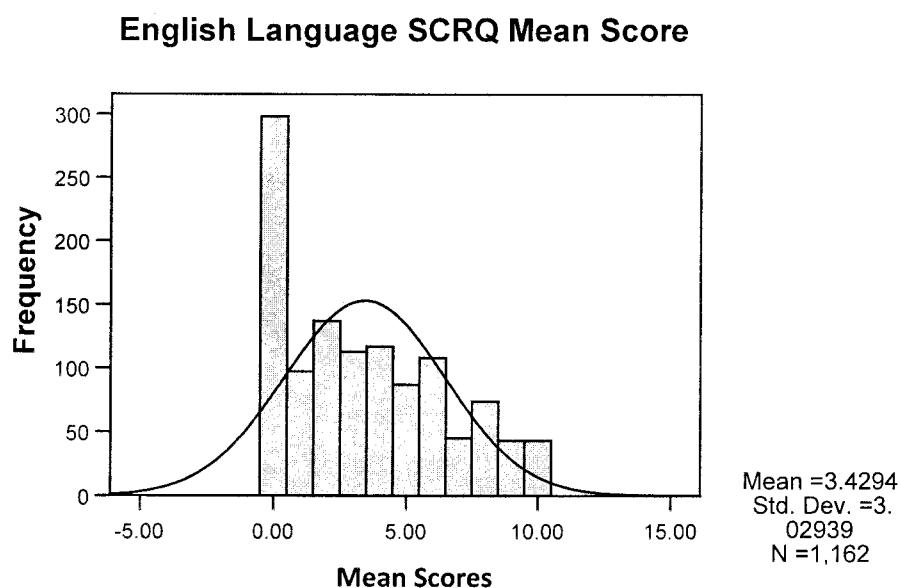
Graph 7:SCRQ Overall Mean Score in English Language

5. Constructed Response Items

This consisted one item, writing a letter. Approximately 162 (14%) of students did not attempt the CRQ item. A marking scheme was provided to the markers where criteria were provided along with the marks to be used for scoring. The mean score of the students who answered the CRQ question was 57%. (5.65 marks out of a possible 10 marks). This again like SCRQ items suggests that students are not given sufficient opportunities to develop their thinking and writing skills especially their skills of expressing their own opinions.

Constructed Response Mean Scores

Mean =5.6528
Std. Dev. =2.
64079
N =965
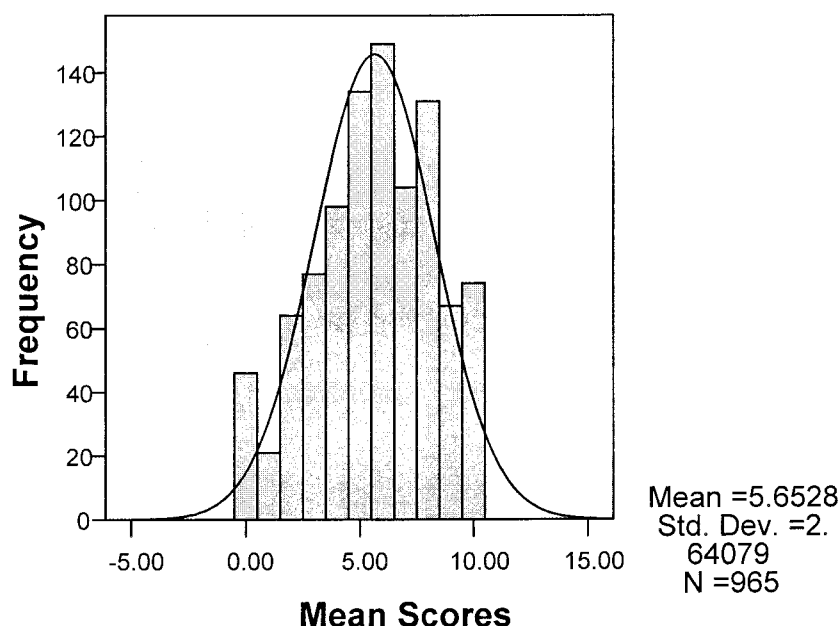
Graph 8: CRQ Overall Mean Score in English Language

6. Reliability of Marking and Scoring the English Language Answer Scripts

It was found that the English Language answer scripts demonstrated marker over marking and under marking, sometimes giving the mark when there was no answer. This suggests that the markers did not always follow the strict marking scheme provided. Markers may have under marked because of their negligence in their use of the answer scheme. This might be due to the short time provided to the markers to complete the marking. Where they may have over marked, the increase in the total marks might sometimes have helped students to pass the PECE (not, all over marking helps students all time to pass PECE, but it increases the total marks). It should also be noted that the scripts are signed by three persons namely – first examiner, scruitiniser and head examiner, yet there is no evidence that any of the scripts were checked for accuracy of marking.

A table showing the results of a review of the marking of English Language scripts is found below.

Quality of Marking of Scripts	SCRQs					CRQ
	Q6-a	Q6-b	Q6-c	Q6-d	Q6-e	Q-7
Under Marking	27	57	17	30	19	14
Justified/ Correctly Marked	830	798	788	747	747	785
Over Marking	196	162	186	160	129	196
No answer in answer script	1	1	1	3	2	4
Skipped (did not answer question)	107	143	169	221	264	162
Total Number of Students	1161	1161	1161	1161	1161	1161

Table 5: Review of Marking of PECE 2014

From this it can be seen that the majority of scripts were correctly marked. However, over marking was more common than under-marking and a large number of students did not even attempt to answer SCRQ or CRQ questions. Taking this evidence and projecting it to all the PECE students tested in Bangladesh means that there would be a large number of students who did not get the correct score and as a result might have missed out on either passing the PECE or obtaining a scholarship or may have achieved the pass score through over marking.

7. Traditional PECE Items and Competency Items

A comparison was made between the achievement of the traditional items and the competency based items in the 2014 PECE. The competency based items are unseen items where students are required to think while the traditional items tend to have been practiced many times in the classroom and so is often a test of a student's memory. It should be noted that the competency based items consisted of MCQs, Fill in the Blanks and SRCQs and CRQs while the traditional items consisted of MCQs, matching items, SCRQ and CRQ items. Also the analysis is based on a larger number of traditional item responses to those of the competency based items. It can be seen from the results that the students performed best on the traditional items where many of the item responses could be memorized.

7.1 Overall Traditional Items Mean Scores Compared with Competency Based Items

The Overall Mean score for the traditional items was 51% (33.32 out of a possible 65 marks) as compared with 47% (16.45 marks out of a possible 35 marks) for the competency based items. The traditional items had a standard deviation of 12.19, a median of 31.00 and a mode of 24. The range of scores was from 00 to 65

Overall Mean Score of Traditional Items

Mean =33.322
Std. Dev. =12.19176
N =1,152
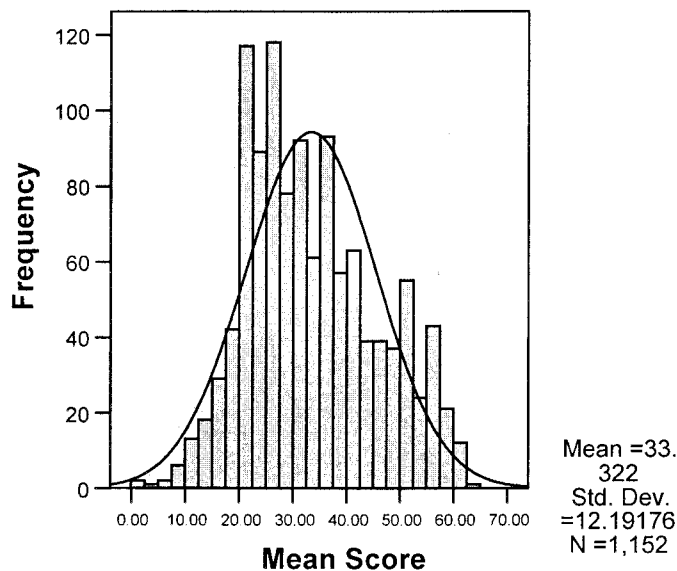
Graph 9: Overall Mean Score in English Language of Traditional Items

The graph below provides a comparison of the % mean scores of traditional and competency based items

Comparison of Competency and Traditional Items Overall % Mean Scores
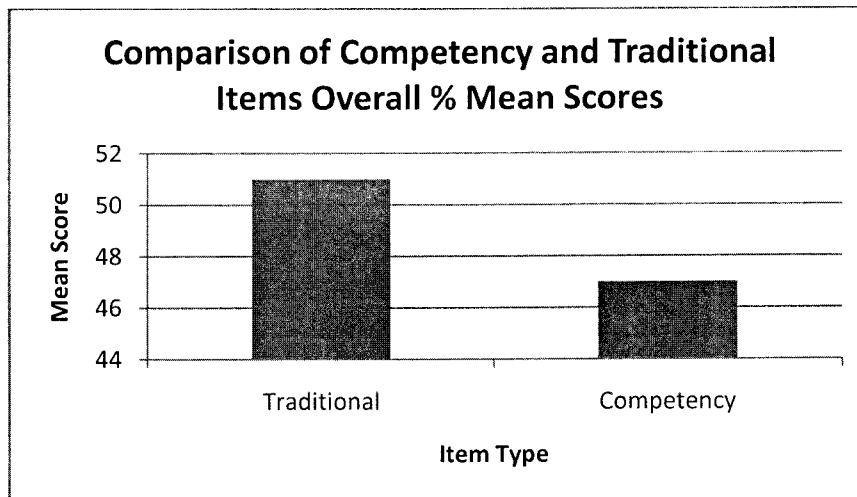
Graph 10 Comparison of Traditional Items and Competency items Overall % Mean Score

7.2 Achievement of Traditional MCQ compared with Competency Based MCQs

The mean score for the traditional MCQ and Matching items was 71% (10.07 out of a possible 15 marks) with a standard deviation of 3.26 and a median and mode of 11.0 and 14.0 respectively. The competency based items had a score of 54% (5.4) with standard deviation of 2.34 and a median of 5 and a mode of 4. A graph showing the achievement of traditional MCQ compared with competency based MCQs is found below.

Comparison of % Mean Scores of Traditional and Competency Based MCQs
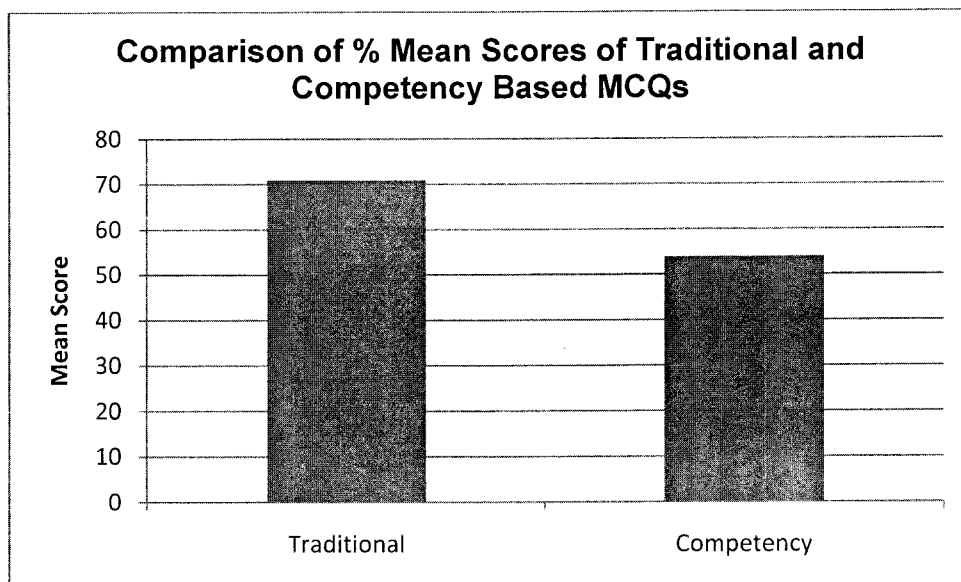
Graph 11: Comparison of % Mean Score of MCQ Traditional and Competency Items

The mean score of the traditional SCRQ and CRQ items was 46.9% (23 marks out of a possible 50 marks) with a standard deviation of 10.6 and a median 21.0 and mode of 7.0. The competency based SCRQ and CRQ items had a score of 41% (8.1 marks out of a possible 20 marks) and a standard deviation of 5.2. A graph showing the distribution of mean scores is found below.
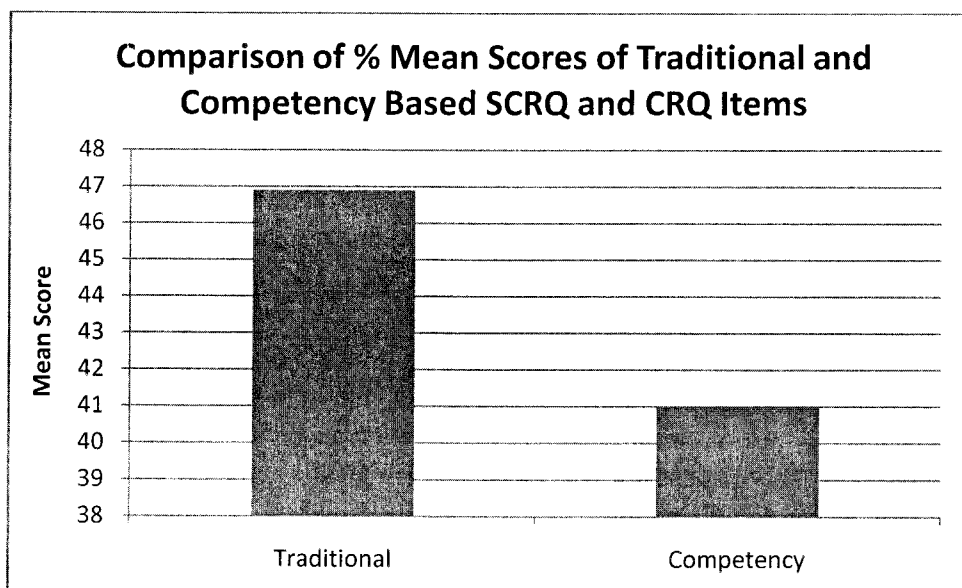
Graph 12: Comparison of CRQ % Mean Scores of Traditional and Competency Items

8. Conclusions

Little difference been observed in performing between competency (47%) items and traditional (51%) items, where the students achieved in average approximately 50% marks. From this it would appear that students require more experience in developing their language skills of comprehension and writing to a specific task. In performing competency based items, little difference can be seen in rural areas (46%), Urban (47%) and Metropolitan Areas (47%). Beside that Others type of school (Kindergarten, NGO School, etc) performed better than the Newly Nationalized Government Primary Schools (NNGPS) and the Government Primary Schools (GPS). On the other hand, little difference in achievement is observed between boys (55%) and girls (53%).

Most of the students performed well in MCQ, Fill in the blanks and Matching Items but many of them didn't attempt the SCRQ and CRQ items or get poor scores. This demonstrated that students were probably happier and had been taught to complete items where all possible answers were provided. It also suggests that students need to be taught to use their minds to develop and write about ideas in relation to a given topic. Students need to be given sufficient opportunities to develop their thinking and writing skills especially their skills of expressing their own opinions.

It is observed that most of the answer scripts were marked correctly by markers; few answer scripts were found to be over marked. This reflected that while marking most of the scripts, the marker did not strictly follow the answer scheme provided or had too short a time to complete the marking. It is recommended that all markers have to follow the marking scheme strictly and have to give proper time to mark the answer scripts correctly.

There should be a provision in the marking system for checks of the accuracy of marking to be made. The scrutinizer should play this role.

Section 3: Mathematics Sample Results

1. Mean Scores of Mathematics

Twenty three items (35 marks) were provided to students – MCQs, SCRQs and CRQS. These items were unseen items and students would be unlikely to be able to answer the items simply by using their memory and procedural knowledge skills. The competency items measured student knowledge, their ability to carry out and show an understanding of mathematical procedures and their ability to compute and solve problems. Overall students obtained 63% (21.94 marks) achievement of the items.

Overall Mathematics Mean Score

Mean =21.9473
Std. Dev. =8.19983
N =1,157
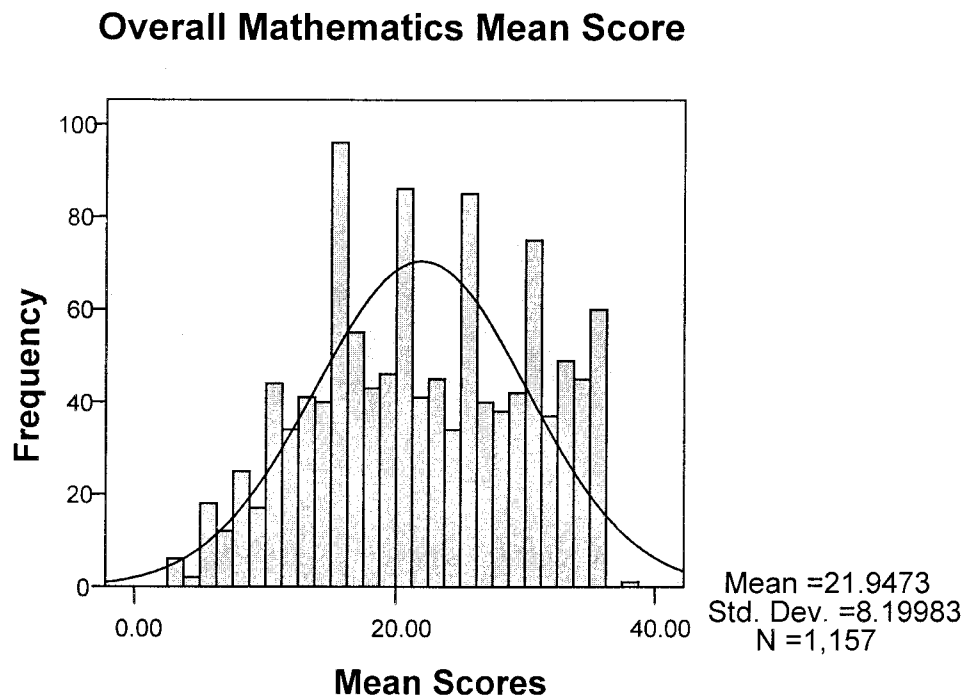
Graph 1: Overall Mathematics Mean Score

While the frequency curve is a normal curve there are major outliers which suggest the need for further investigation. For example, it could be the result of anomalies in marking or in test administration or in the test items themselves.

1.1 Mean Scores According to Item Type

Item Type	% Total Mean Score
Multiple Choice	81
Short Constructed Response Items	78
Constructed Response Items	50

Table1: Mean Scores by Item Type

The mean scores of the different item types indicate that students found the multiple choice questions easiest to answer; the short constructed response items being found more difficult

than the MCQs (78%) and the constructed response items being found to be the most difficult with only a mean score of 50%

1.2 Mean Scores According to Location

From Table 2 and Graph 2 it can be seen that urban areas achieve a higher overall mean score (65%) than rural and metropolitan areas (61%)

% Mean Score According to Location	
Rural	61
Urban	65
Metropolitan	61

Table 2: Mean Scores by Location
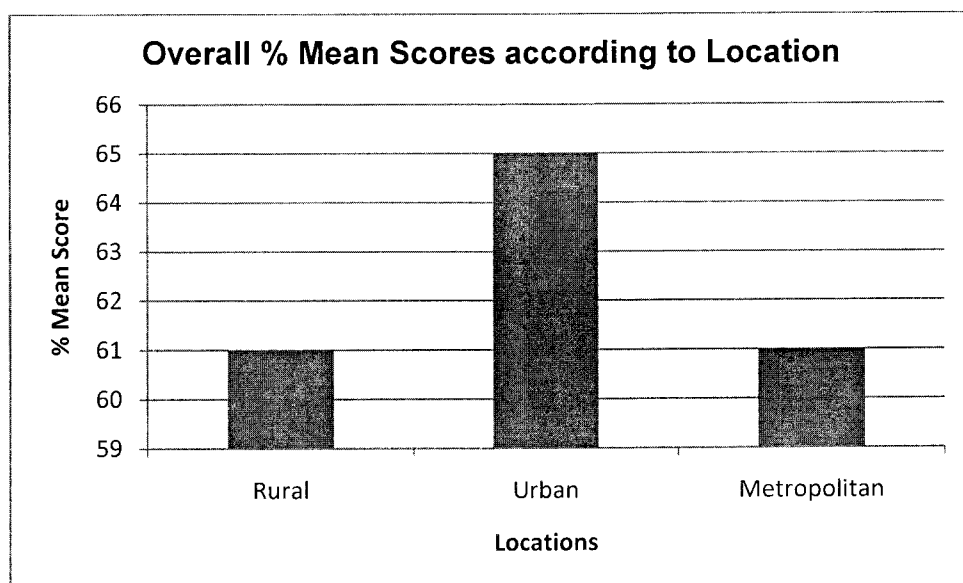
Graph 2: Overall % Mean Score by Location

2. Mathematics Mean Scores according to Item Type

2.1 Mathematics MCQ Mean Scores

Ten of the items were MCQ items. The items tested students understanding of multiplication, their knowledge of fractions their application of the principals of division and understanding of fractions and decimal fractions as well as their knowledge of mathematical sentences. The mean score for the MCQs was 81%, a mean score of 8.07 out of a possible 10 marks with a median of 9 and a mode of 10. The students appeared to be able to answer MCQs easily

The frequency graph shows a negative skew which suggests that there were too few difficult MCQ items in the PECE. However, it could also be argued that a negative skew is desirable in the PECE where the goal is to demonstrate an achievement of the Grade 5 curriculum by students

MCQ Mean Scores

Mean =8.0744
Std. Dev. =2.
05247
N =1,156
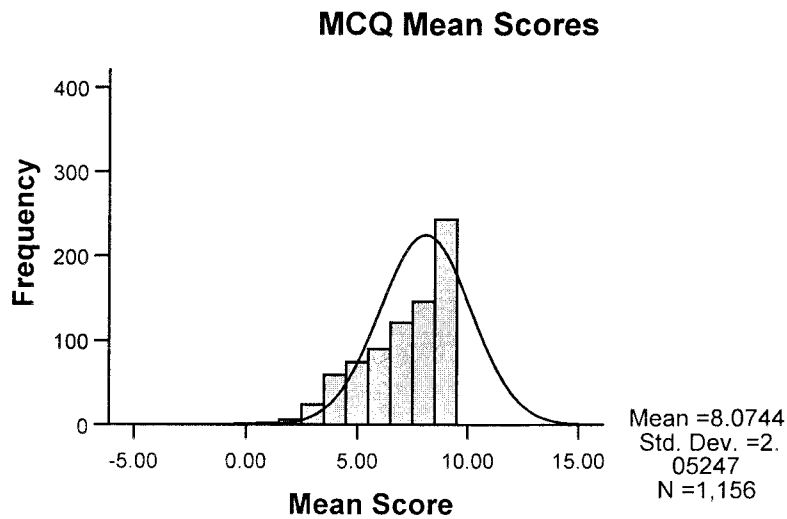
Graph 3: Overall % MCQ Mean Score

2.2 Mean Scores by Division

From the data shown below the mean score for the districts ranged from a score of 73% for Khulna Division to a score of 88% for Dhaka Division.

% Mean Scores by Division						
Shyllet	Dhaka	Chittagong	Barisal	Rajashi	Rangpur	Khulna
76	88	83	88	75	84	73

Table 3: Overall % MCQ Mean Scores by Division

2.3 Mean Score by Gender

There was no difference between the achievement of boys on girls both boys and girls obtaining a mean of 81%

% Mean Score by Gender	
Boys	Girls
81	81

Table 4: Overall % MCQ Mean Scores by Gender

2.4 Mean Score by School Type

There was little difference in achievement by school type with GPS, NNGPS and Other schools obtaining a mean score of 80% or over.

% Mean Score by School Type		
GPS	NNGPS	Other
82	80	80

Table 5: Overall % MCQ Mean Scores by School Type

3 Mathematics SCRQ Mean Score

Five SCRQ items were provided testing the ability of students to solve a problem; to demonstrate their knowledge of the collection of population data for the census and the use of mathematical signs; to demonstrate their understanding of geometry and to apply their knowledge of averages to answer items. The mean score for SCRQ achievement was 78%, a mean score of 3.9 marks out of a possible 5 marks.

Overall SCRQ

Mean =3.8832
Std. Dev. =1.29576...
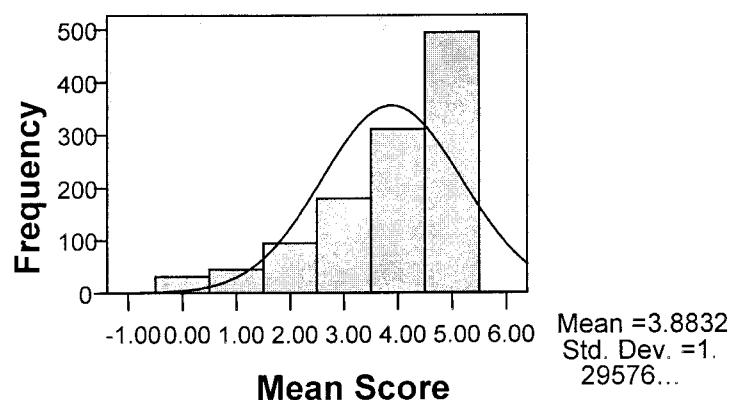
Graph 4: SCRQ Overall % Mean Score

3.1 SCRQ Mean Score by Division

The division's mean scores ranged from 70% in Khulna Division (3.5 marks out of a possible 5 marks) to 88% in Dhaka Division (4.4 marks out of a possible 5 marks). Barisal had a mean score of 4.3 (84%), Rangpur a mean score of 4.1 (82%), Shyllet a mean score of 3.3 (78%), Chittagong a mean score of 3.9 (76%) and Rajashi a score of 3.7 (74%).

% Mean Scores by Division						
Shyllet	**Dhaka**	**Chittagong**	**Barisal**	**Rajashi**	**Rangpur**	**Khulna**
78	88	76	84	74	82	70

Table 6:SCRQ Mean Score by Division
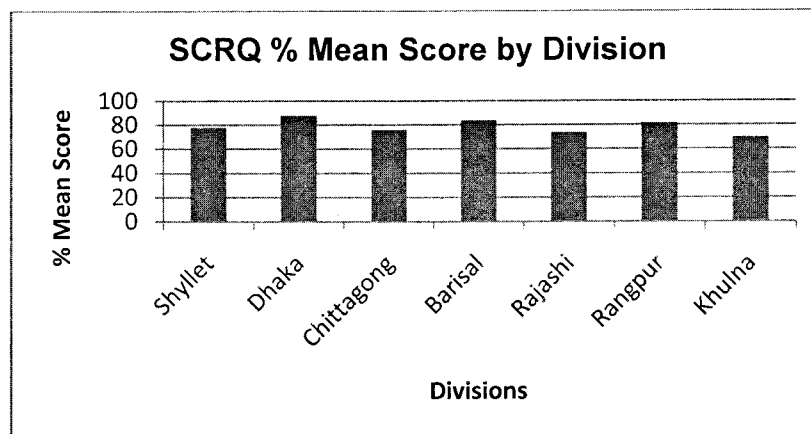
Graph 5: SCRQ % Mean Score by Division

3.2 SCRQ Mean Score by Gender

There is very little difference in the mean scores of boys and girls.

% Mean Score by Gender	
Boys	Girls
76	78

Table 7: SCRQ % Mean Scores by Gender

3.3 SCRQ Mean Score by School Type

Other school types had a higher mean score achievement of SCRQs having a score of 80%. GPS had a mean score of 3.8 out of 5 (76%), NNGPS a mean score of 3.7 (74%) and Other schools had a mean score of 4.0 (80%) out of 5)

% Mean Score by School Type		
GPS	NNGPS	Other
76	74	80

Table 8 SCRQ % Mean Scores by School Type

4. Mathematics CRQ Mean Scores

Seven CRQ items were provided. Students found these difficult to do. The items consisted of problem solving which required the application of the four rules (addition, subtraction, multiplication and division) to solve problems.

The mean score was 50% - 10 marks out of a possible 20 marks (Std. Error of Mean of .19). This suggests that students are not accustomed to solving problems by themselves and more used to following procedures and memorizing facts.

While the frequency curve is a normal curve there are three outliers which tend to suggest some problems. For example, it could be the result of anomalies in marking, These anomalies will need to be further investigated.

CRQ Mean Score

Mean =10.0087
Std. Dev. =6.62727...
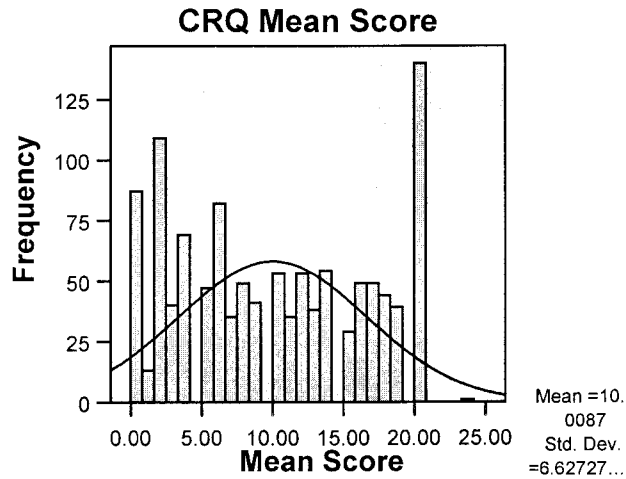
Graph 6: CRQ Overall % Mean Score

4.1 CRQ Mean Score by Division

Dhaka Division achieved the highest mean score of 12.3 (62%) out of a possible 20 marks with Khulna achieving the lowest mean score of 9.9 (35%).

% Mean Scores by Division						
Shyllet	**Dhaka**	**Chittagong**	**Barisal**	**Rajashi**	**Rangpur**	**Khulna**
37	62	51	53	44	35	50

Table 9 CRQ % Mean Scores by Division
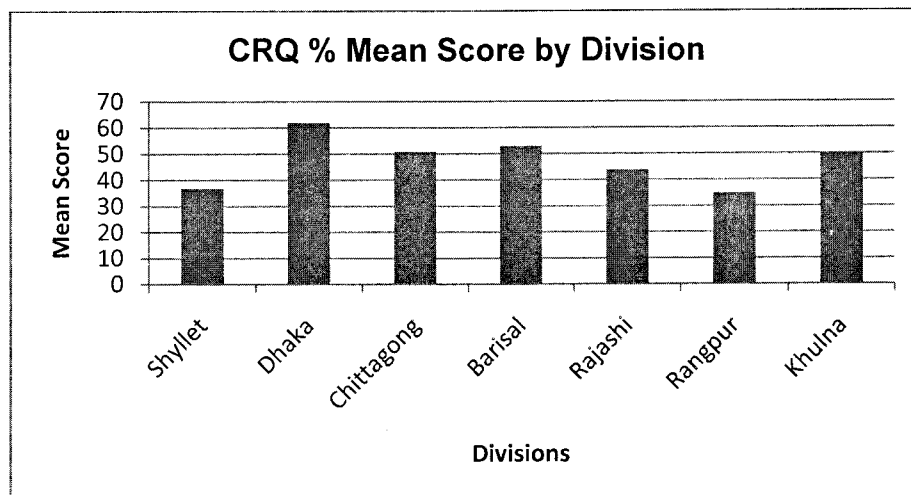
Graph 7: CRQ % Mean Score by Division

4.2 CRQ Mean Score by Gender

There was very little difference in the achievement of boys and girls.

% Mean Score by Gender	
Boys	Girls
50	49.5

Table 10 CRQ % Mean Scores by Gender

4.3 CRQ Mean Score by School Type

Other schools had a much higher mean score (60%) than GPS and NNGPS schools (45% and 46% respectively)

% Mean Score by School Type		
GPS	NNGPS	Other
45	46	60

Table 11 CRQ % Mean Scores by School Type

5. Reliability of Marking and Scoring the Mathematics Answer Script

It was found that the Mathematics scripts were mainly marked well according to the marking scheme However, there was slight evidence of markers over marking and under marking. There was also evidence of half points being awarded which is not found in the marking scheme. Twenty five specific student answers were not correctly marked (14 were under marked and 11 were over marked). On the whole it would appear that the markers followed the marking scheme provided however some inconsistencies suggest that as yet the use of a marking scheme is not standardized practice in all divisions. It also suggests that marking mathematics is easier than marking Bengali language.

6. Traditional PECE Item Results Compared with Competency Based items

Sixty-five percent of the items were traditional items compared with 35% being competency based. While this comparison may not be "fair" since the sample number of competency items and traditional items are different along with the different item structures, it provides a general indicator of achievement.

6.1 Traditional Items Overall Mean Scores

The overall % mean score in the traditional mathematics items was 66% (a score of 43 out of a possible 65 marks). The traditional items had a standard deviation of 16.5 and a mode of 63 and a median of 46. A graph showing the distribution of the scores is found below.

Overall % Traditional Items Mean Score

Mean =43.0984
Std. Dev. =16.
53839
N =1,158
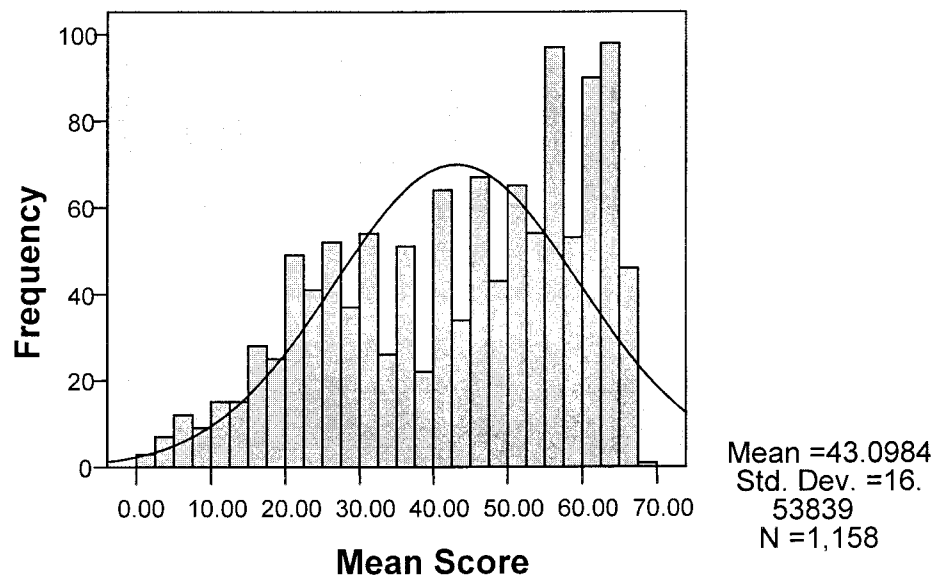
Graph 8; Overall Traditional Items % Mean Score

7.2 Achievement of MCQ Items

All the MCQ s in the PECE 2014 were competency based items so no data is available for the traditional items.

7.3 Achievement of SCRQ Items

The traditional SCRQ items achieved a mean score of 74% (3.7 out of a possible 5 marks) with a standard deviation of 2.1 and a median of 4.0 and a mode of 5.0

% Mean Score of Traditional SCRQ

Mean =3.7073
Std. Dev. =2.
15472
N =1,158
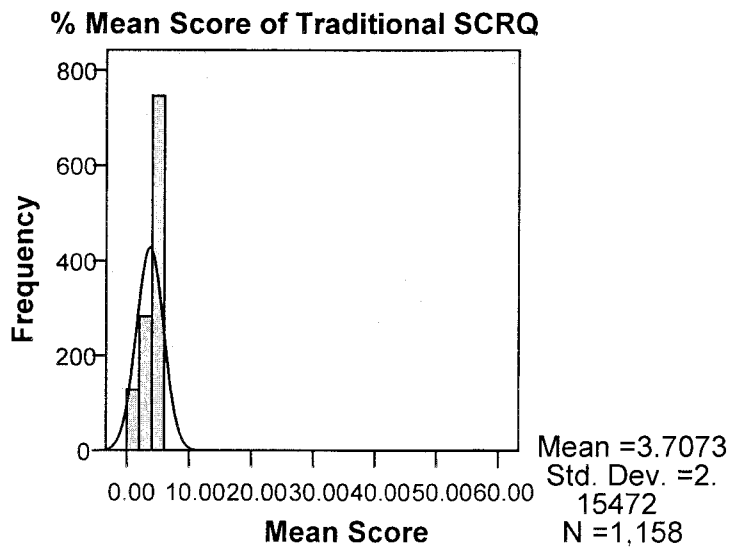
Graph 9; Traditional SCRQ % Mean Score

The competency based SCRQ had a mean score of 78% (3.9 marks out of a possible 5 marks). Thus there appears to be very little difference in the mean scores of the SCRQ items. However the frequency graphs indicate that the competency mean scores have a better spread of results than the traditional item mean scores with the traditional scores having a positive skew and the competency based scores demonstrating a negative skew.

% Mean Score of Traditional SCRQ

Mean =3.7073
Std. Dev. =2.
15472
N =1,158

Overall Competency SCRQ

Mean =3.88?
Std. Dev. =1
29576...
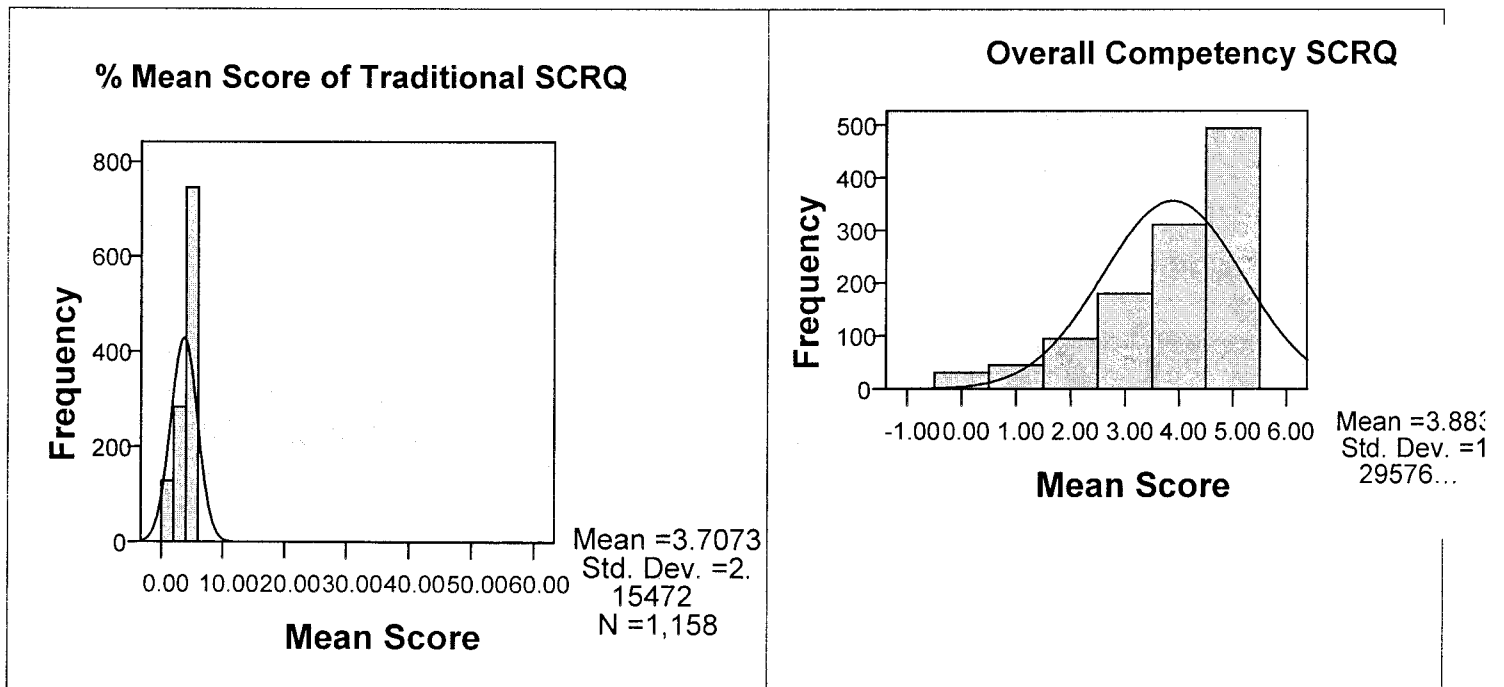
Graph 10: Comparison between distributions of achievement of traditional and competency based items

8. Achievement of Traditional CRQ Items

The traditional CRQ items achieved a mean score of 65% (39.42 out of a possible 60 marks) with a standard deviation of 15.8. The graph below shows the spread of the scores showing a positive skew.

Achievement of Traditional CRQ Items

Mean =39.4252
Std. Dev. =15.
86586...
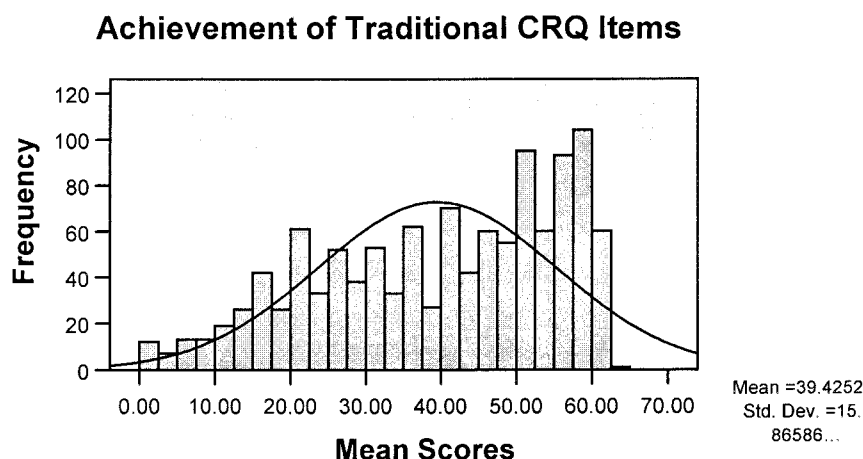
Graph 11: % Mean Score s of Traditional CRQ Items

The competency based items achieved a mean score of 50% (10 marks out of a possible 20 marks) with a standard deviation of 0.19.

9 Conclusions

From the analysis it can be seen that there is no big difference between student performance on competency based and traditional items. This means that using competency based items is unlikely to have a negative effect on the examination results.

Students as a whole found that MCQ items were easier than SCRQ and CRQ items where they had to read and write answers in both language and mathematical sentences. The relation between the achievement of mathematics and knowledge of Bengail Language has a high correlation especially for the achievement of SCRQs and CRQ items when students have to answer using Bengali Language.

Through considering the issues identified in the analysis, it is hoped that related stakeholders and policy makers can take the necessary initiatives for improving student performance in the classroom as well as in the PECE.

Section 4: Science Sample Results

1. Mean Scores of Science

Twenty three items (35 marks) were provided to students – MCQs, and CRQS. These items were unseen items and students would be unlikely to be able to answer the items by using memory skills. These items measured student knowledge, their ability to carry out and show an understanding of scientific concepts and their ability to apply their knowledge and understanding in real life situations. Overall students obtained 70% (24.66 marks out of a possible 35 marks) achievement of the items.

Overall Science Mean Score

Mean =24.6557
Std. Dev. =6.02196
N =1,156
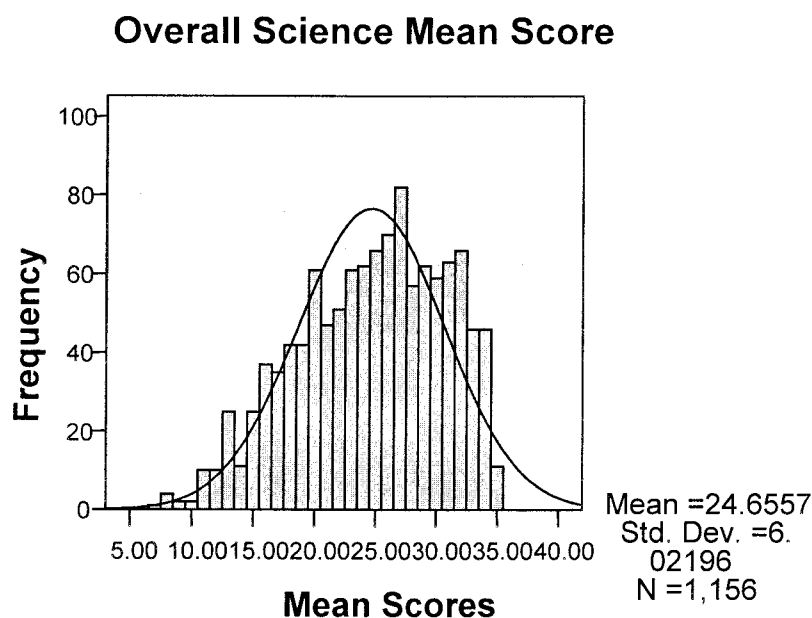
Graph 1: Overall Science Mean Score

1.1 Mean Scores According to Item Type

Item Type	% Total Mean Score
Multiple Choice	81
Constructed Response Items	57

Table1: Mean Scores by Item Type

The mean scores of the different item types indicate that students found the multiple choice questions easier to answer; the constructed response items being found to be the most difficult with only a mean score of 57%

1.3 Mean Scores According to Location

From Table 2 and Graph 2 it can be seen that urban and metropolitan areas achieve a higher overall mean score (71%) than rural areas (69%)

% Mean Score According to Location	
Rural	69
Urban	71
Metropolitan	71

Table 2: Mean Scores by Location
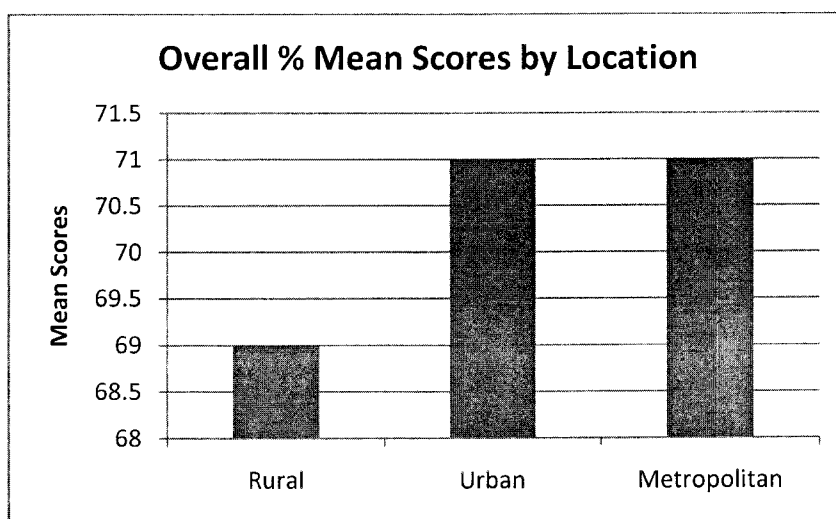
Graph 2: Overall % Mean Score by Location

2. Science Mean Scores according to Item Type

2.1 Science MCQ Mean Scores

Twenty of the items were MCQ items. The items tested student's knowledge, understanding and application of science in real life situations. The mean score for the MCQs was 81%, a mean score of 16.18 out of a possible 20 marks with a median of 17 and a mode of 18. The students appeared to be able to answer MCQs easily

The frequency graph shows a negative skew which suggests that there were too few challenging MCQ items in the PECE. However, it could also be argued that a negative skew is desirable in the PECE where the goal is to demonstrate that most students have shown achievement of the Grade 5 curriculum.

Overall % MCQ Mean Score

Mean =16.
1801
Std. Dev. =3.
00403
N =583
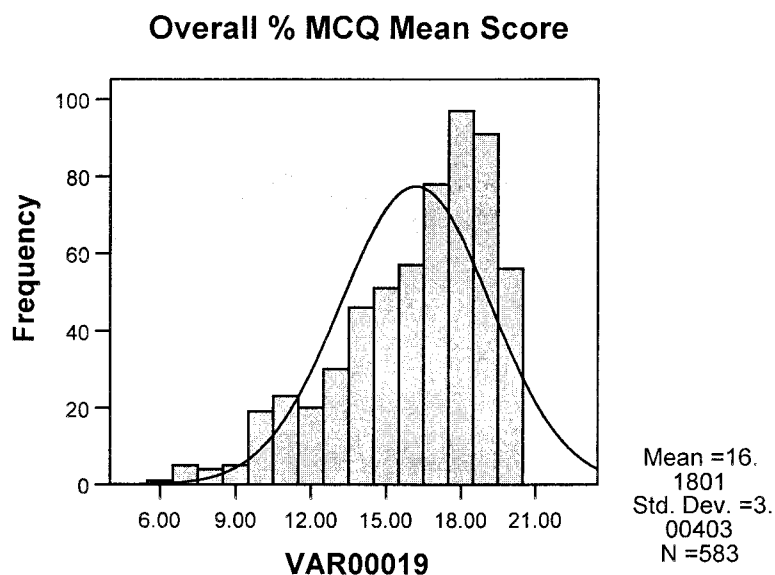
Graph 3: Overall % MCQ Mean Score

2.2 MCQ Mean Scores by Division

From the data shown below the mean score for the districts ranged from a score of 91% for Rajashi Division to a score of 73% for Shyllet Division.

% Mean Scores by Division						
Shyllet	Dhaka	Chittagong	Barisal	Rajashi	Rangpur	Khulna
73	79	83	87	91	83	87

Table 3: Overall % MCQ Mean Scores by Division
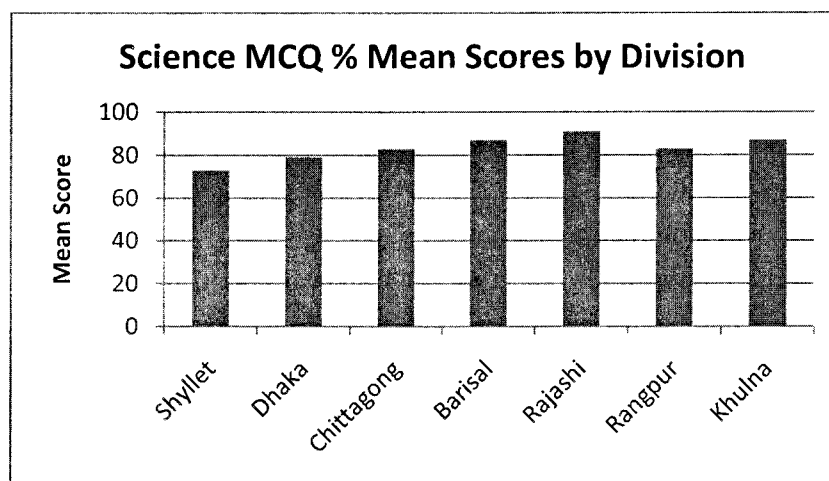
Graph 4: Science % Mean Scores by Division

2.3 MCQ Mean Score by Gender

There was no difference between the achievement of boys or girls, both boys and girls obtaining a mean of 85%, boys having a score of 16.18 and girls a score of 16.15 out of a possible 20 marks.

% Mean Score by Gender	
Boys	**Girls**
81	81

Table 4: Overall % MCQ Mean Scores by Gender

2.4 MCQ Mean Score by School Type

There was little difference in achievement by school type with GPS and Other schools obtaining a mean score of 81% with NNGPS schools having a mean score of 77%

% Mean Score by School Type		
GPS	**NNGPS**	**Other**
81	77	81

Table 5: Overall % MCQ Mean Scores by School Type
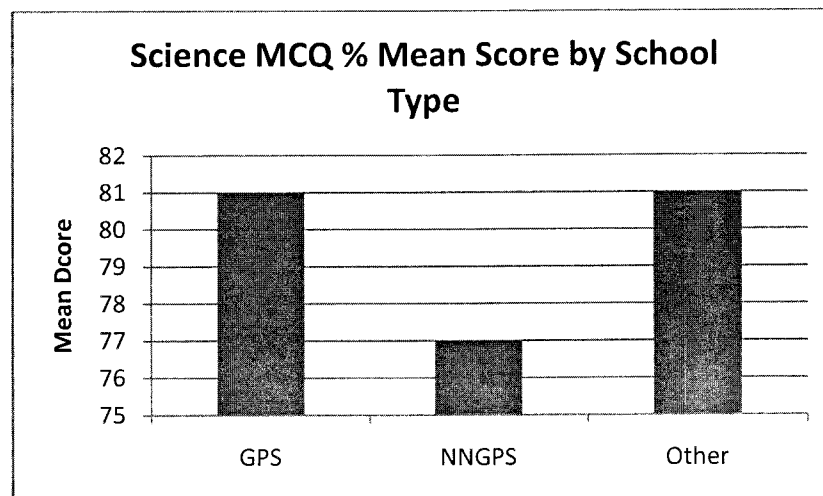
Graph 5: Science MCQ Mean Scores by School Type

3 Science CRQ Mean Score

Three CRQ items were provided testing the ability of students to apply their knowledge and understanding of science concepts to real life situations. The mean score for CRQ achievement was 57%, a mean score of 8.49 marks out of a possible 15 marks.

Overall CRQ % Mean Score

Mean =8.4913
Std. Dev. =4.
26979
N =1,156
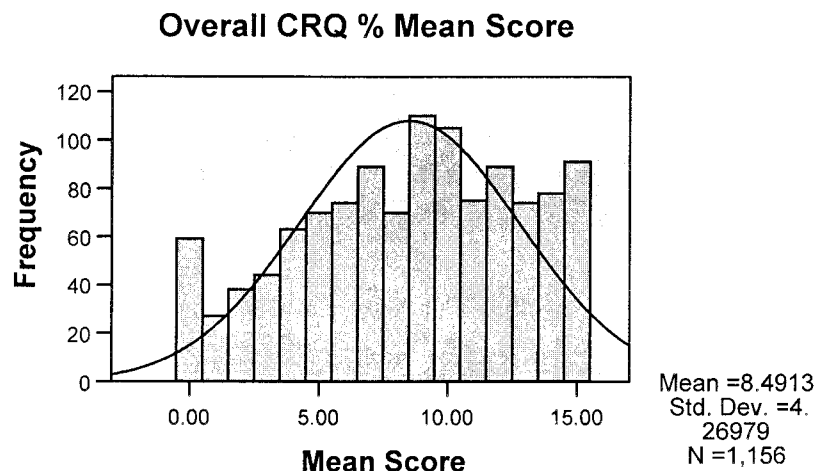
Graph 6: CRQ Overall % Mean Score

3.1 CRQ Mean Score by Division

The division's mean scores ranged from 70% in Khulna Division (3.5 marks out of a possible 5 marks) to 88% in Dhaka Division (4.4 marks out of a possible 5 marks). Barisal had a mean score of 4.3 (84%), Rangpur a mean score of 4.1 (82%), Shyllet a mean score of 3.3 (78%), Chittagong a mean score of 3.9 (76%) and Rajashi a score of 3.7 (74%).

CRQ % Mean Scores by Division						
Shyllet	Dhaka	Chittagong	Barisal	Rajashi	Rangpur	Khulna
48	62	61	53	56	52	64

Table 6: CRQ % Mean Score by Division
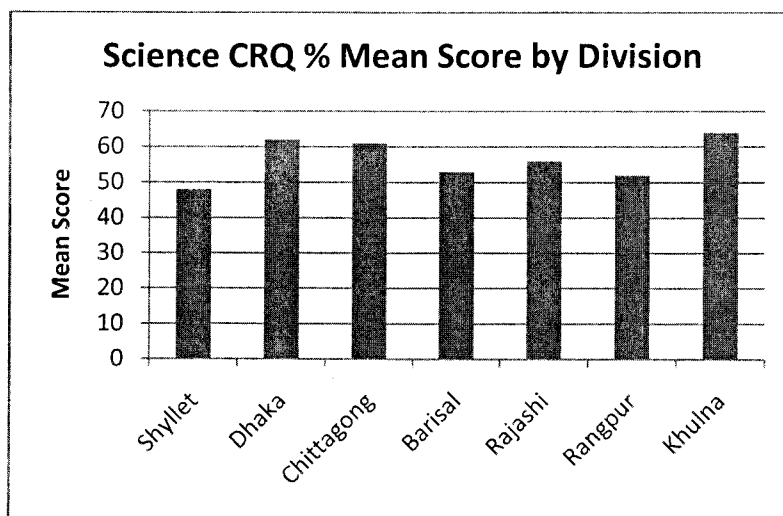
Graph 7: CRQ % Mean Score by Division

3.2 CRQ Mean Score by Gender

The Science mean scores of boys was 58% (8.7 marks out of a possible 15 marks); for girls it was 55% (8.3 marks out of a possible 15 marks)

% Mean Score by Gender	
Boys	**Girls**
58	55

Table 7: CRQ % Mean Scores by Gender

3.3 SCRQ Mean Score by School Type

Other school types had a higher mean score achievement of CRQs having a score of 71% (10.6 marks out of a possible 15). GPS had a mean score of 55% (8.2 marks out of a possible 15 marks) and NNGPS a mean score of 44% (6.6 marks out of a possible 15 marks).

% Mean Score by School Type		
GPS	**NNGPS**	**Other**
55	44	71

Table 8 SCRQ % Mean Scores by School Type
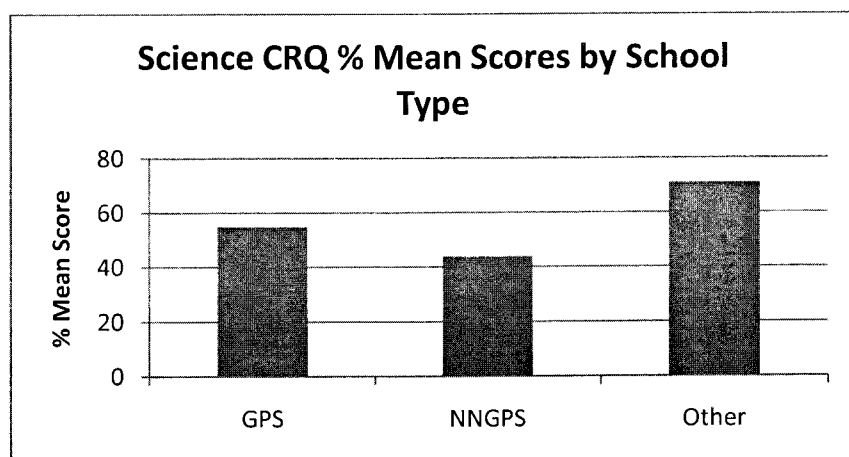
Graph 8: Science CRQ Mean Scores by School Type

4. Traditional PECE Item Results

Sixty-five percent of the items were traditional items compared with 35% being competency based.

4.1 Overall Mean Scores

The overall mean score in the traditional science items was 68% (a score of 43 out of a possible 65 marks). The traditional items had a standard deviation of 12.89 and a mode of 49 and a median of 463. A graph showing the distribution of the scores is found below.

Overall Mean Score of Traditional Items

Mean =43.
0571
Std. Dev. =12.
89156
N =1,156
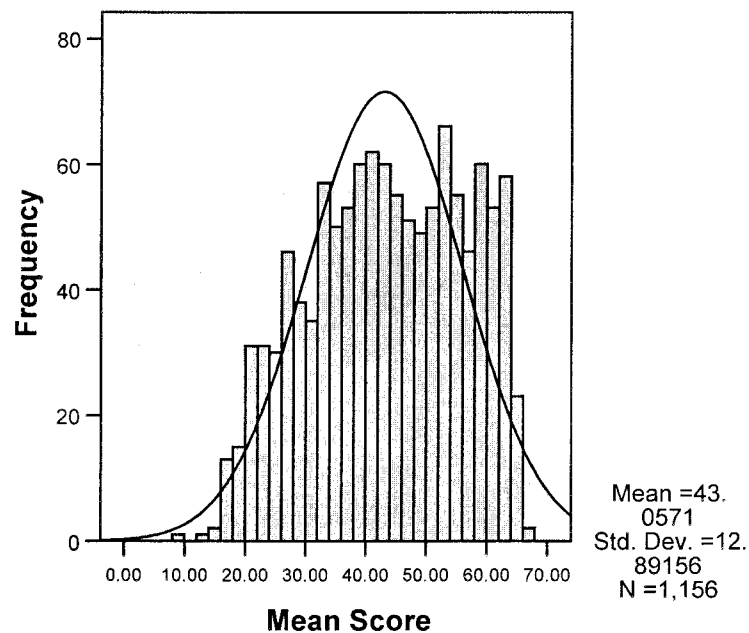
Mean Score

Graph 9: Overall Traditional Items % Mean Score

4.2 Achievement of MCQ and Fill in the Blanks Items

Students achieved a score of 82 % (24.62 marks out of a possible 30 marks) in these items with a standard deviation of 4.5, a mode of 29 of and median of 25. Students found these items easy to complete.

4.3 Achievement of SCRQ and CRQ Items

The traditional SCRQ and CRQ items achieved a mean score of 51% (18.5 out of a possible 35 marks) with a standard deviation of 10.01 and a median of 18.0 and a mode of 17.0. Students found these items easy to complete

A graph showing achievement of traditional items by item type is found below.

Achievement of Traditional Items by Item Type
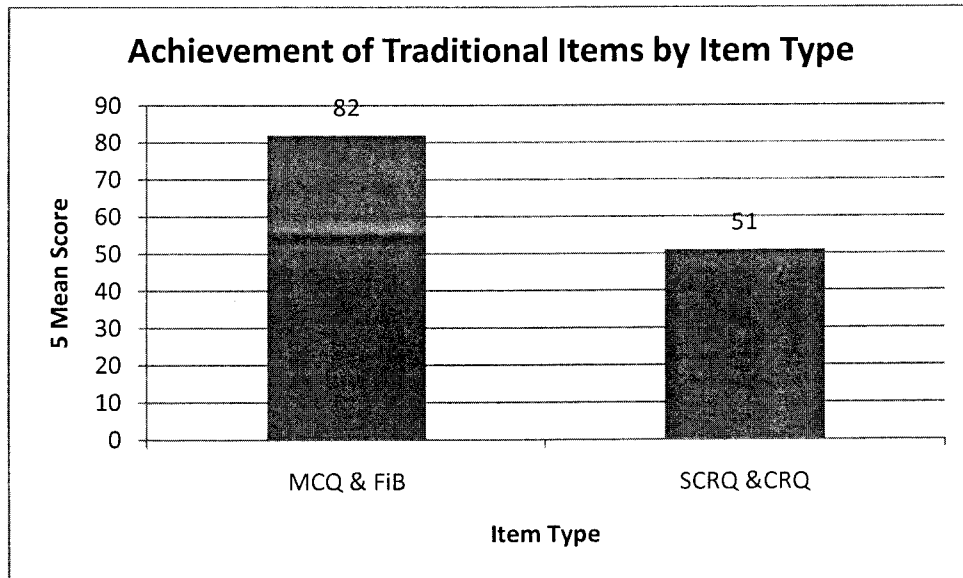
Graph 10: Overall Traditional Items % Mean Score by Item Type

5. Traditional PECE Item Results Compared with Competency Based items

From this it can be seen that students achieved better in the competency based items achieving an overall score of 70% while they achieved 66% in the traditional items. From these results it could be said that the sampled students found the competency based items easier to achieve than the traditional items.

Overall Achievement of Traditional and Competency Items
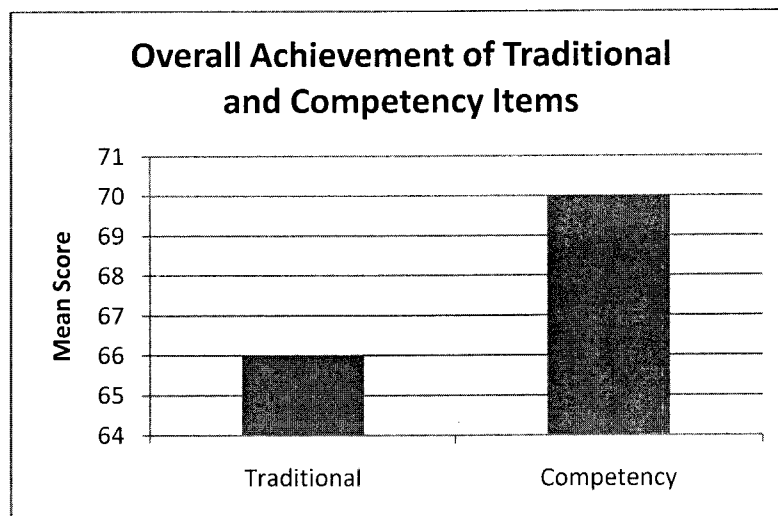
Graph 11: Overall Achievement of Traditional and Competency Items

5.1 Comparison by Item Type

The students achieved a mean of 82% in the MCQ and fill in the blanks items while the competency based items achieved a mean of 81%. In the SRCQ and the MCQ items The competency based items achieved a mean score of 57% while the traditional items achieved a score of 51%

Item Type	Traditional Item % Mean Score	Competency Item % Mean Score
MCQ & Fill in the Blanks	82	81
SCRQ and CRQ	51	57

Table 9: Comparison of Achievement by Item Type

Comparison of % Mean Scores of Traditional and Competency Based Items
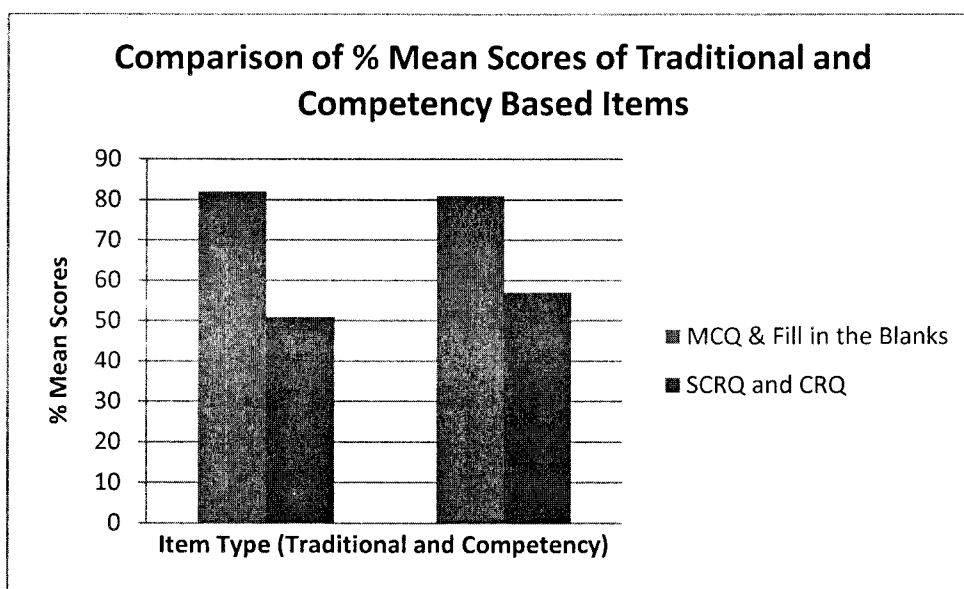
Graph 12: Comparison of % Mean Scores of Traditional and Competency Based Items

6. Reliability of Marking and Scoring the Science Answer Script

It was found that the Science competency items were, on the whole (74% - 76%) well marked according to the mark scheme. However, there was evidence of markers over marking and under marking. The table below provides information regarding this.

Item Type	Under Marking	Correct Marking	Over Marking
MCQ & Fill in the Blanks	>.01%	76%	24%
SCRQ and CRQ	>.01%	74%	25%

Table 10: Reliability of Marking by Item Type

Over marking was more prevalent than under marking – 24% for MCQ and Fill in the Blanks items and 25% for SCRQ and CRQ items. There were four incidences of incorrect entry of marks, one instance of marks been given but the answer was incorrect and 49 incidents of no mark entry being written on the answer sheet front cover.

If the evidence identified in the sample scripts is projected onto the answer scripts of the whole population who sat the PECE in 2014, approximately 25% of the scripts could be said to have been over marked.

9 Conclusions

Taking into account the difficulty of comparing the results of the competency and traditional items in the tests there appears to be little difference in the overall achievement according to the overall mean scores – 70% mean score for the competency based items and 66% score for the traditional items. However, the achievements of the different item types show that students have the greatest difficulty in answering the SCRQ and CRQ items, both traditional and competency based. Further study needs to be undertaken to identify whether the reason for this is due to lack of training in the development of critical analysis skills or students' inability to read and write and express their ideas in their own words or for any other valid reason.

Marking of the scripts needs to be improved since it appears that students answer scripts in the science sample show an over marking of 24-25%. This over marking could possibly be reduced by more pro-active markers training, greater scrutiny of the scripts by the scrutinisers as well as the adherence of the markers to the marking scheme provided. It would also be improved if the amount of time given to the markers to mark the scripts was increased.

Section 5: Bangladesh and Global Studies

Two forms of items were competency based namely MCQ and CRQ. Twenty MCQ and three CRQ were provided for the 2014 PECE giving a total score of 35.

1. Overall Mean Scores in Bangladesh and Global Studies

Twenty three items (35 marks) were provided to students – MCQs and CRQS. These items were unseen items and students would be unlikely to be able to answer the items by using memory skills. These items measured student knowledge, understanding of social studies concepts (12 items) and their ability to apply and use their knowledge and understanding in real life situations (8 items). Overall students obtained 69% achievement of the items.

Overall Mean Score in Bangladesh and Global Studies

Mean =23.49
Std. Dev. =6.28515
N =1,147
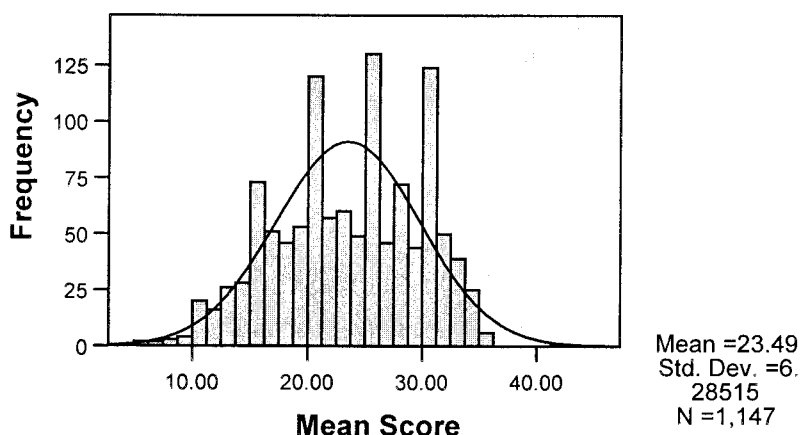
Graph 1: Overall Mean Score in Bangladesh and Global Studies

While the frequency curve is a normal curve there are five major outliers which need further investigation. For example, it could be the result of anomalies in marking or in test administration or problems with the items themselves. Also the curve shows a slight positive skew (Mean of 23.9 and Median of 24.00 and Mode of 28.00).

1.1 Overall % Mean Scores by Divisions

Khulna had the highest mean score of 77% with Shyllet having the lowest mean score of 62%. A table and graph showing the mean scores in all divisions is shown below.

Shyllet	Dhaka	Chittagong	Barisal	Rajashi	Rangpur	Khulna
62	71	73	73	67	70	77

Table 1: Overall % Mean Scores by Division
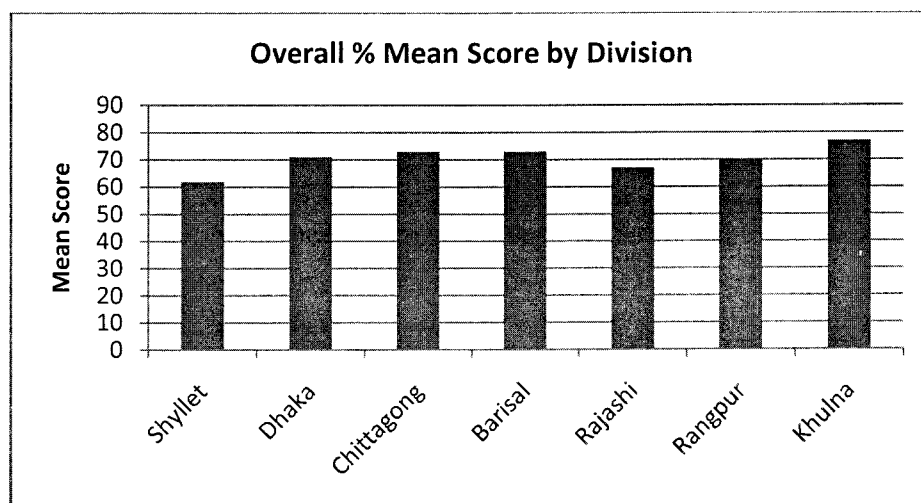
Graph 2: Overall % Mean Score by Division

1.2 Overall % Mean Scores by Gender

There was little difference between the scores of boys and girls: boys had a mean score of 70% (24.47 marks out of a possible 35 marks while girls had a% mean score of 71% (24.85 out of a possible 35 marks)

% Mean Score	
Boys	**Girls**
70	71

Table 2: Mean Scores by Gender

1.3 Overall % Mean Scores by School Type

The overall % mean scores by school type showed that the group of schools classified as Others (BRAC schools,, kindergarten, non-government schools) achieved the highest score of 77% (27.0 out of a possible 35 marks) with GPS achieving a score of 71% (25 marks out of a possible 35 marks) and NNGPS achieving a score of 63% (22 marks out of a possible 35 marks)
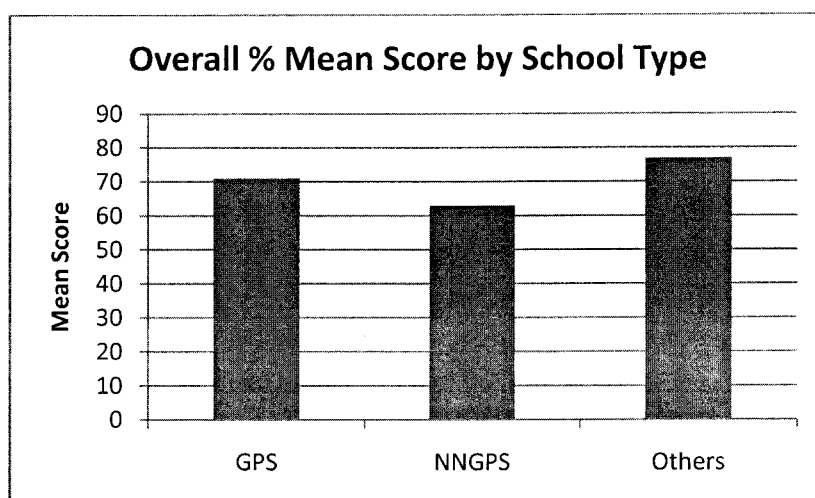
Graph 3: Overall % Mean Score by School Type

2. MCQ Mean Scores

Twenty items were MCQ items and covered a large number of curriculum competencies. Twelve of the items tested student understanding of their knowledge and concepts while eight tested students' ability to apply their knowledge and understanding in real life situations. The MCQ mean score was 81%. The graph shows a negative skew (Mean of 23.9, Median of 17 and a Mode of 18). This could mean that the items were too easy or that students demonstrated a mastery of answering MCQ items.

Overall MCQ Mean Score

Mean =16.1569
Std. Dev. =3.06072
N =1,147
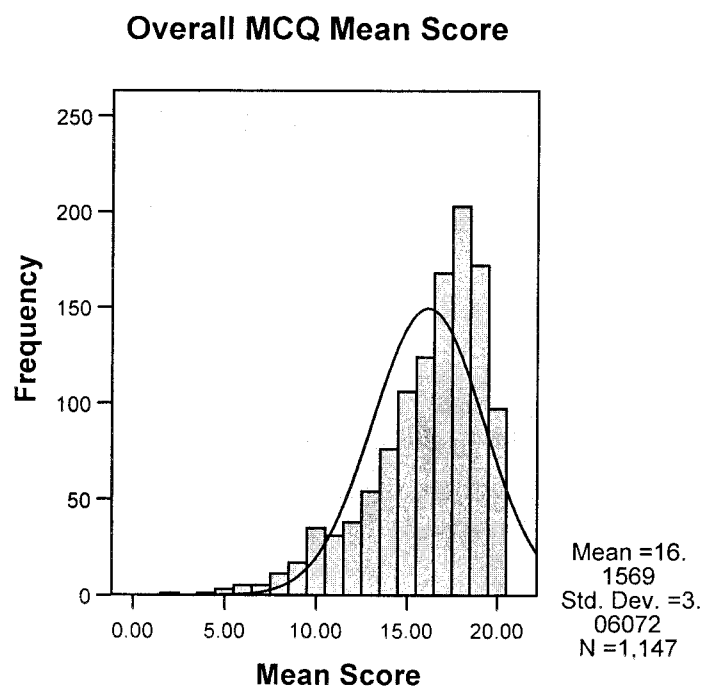
Mean Score

Graph 4: Overall MCQ Mean Score

2.1 MCQ Mean Scores according to Division

The MCQ mean scores according to division showed little variation with Shyllet Division obtaining a score of 86% and Rajashi achieving the lowest score of 71%.

% Mean Scores by Division						
Shyllet	Dhaka	Chittagong	Barisal	Rajashi	Rangpur	Khulna
86%	85%	82%	86%	71%	83%	77%

Table 3: % Mean Scores by Divisions

% MCQ Mean Scores According to Divisions
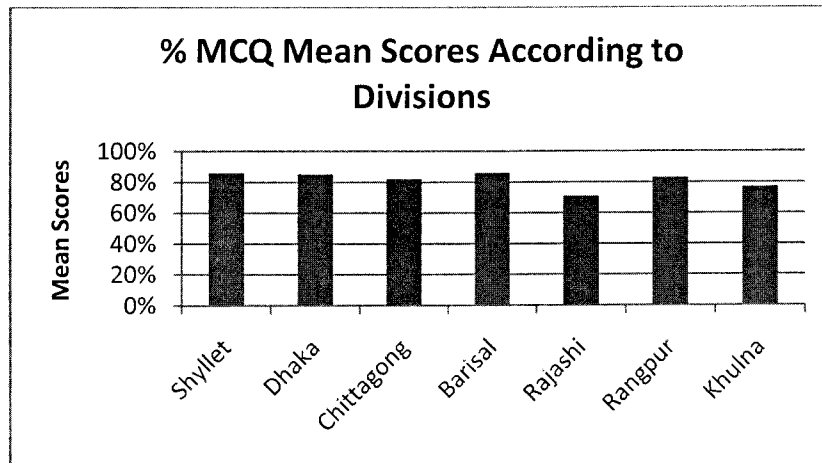
Graph 5: % MCQ Mean Scores by Division

2.2 MCQ Mean Scores according to Gender

There was little difference between the achievement of boys and girls. Boys (16.18 marks) and girls (16.14 marks) had a mean score of 81%

2.3 MCQ Mean Score According to School Type

Others (BRAC schools, kindergarten, non-government schools) achieved a 5 mean score of 84% with GPS schools having a % mean score of 81% and NNGPS a % mean score of 77%

MCQ % Mean Score by School Type		
GPS	**NNGPS**	**Others**
81	77	84

Table 4: MCQ % Mean Score by School Type
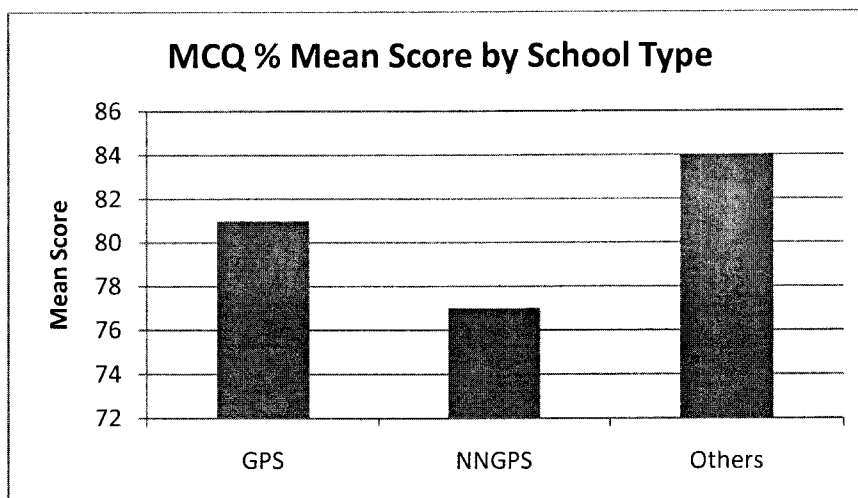
Graph 6: MCQ % Mean Scores by School Type

3. CRQ Mean Scores

Three CRQ items were provided. Students found these difficult to do. The items consisted of applying their knowledge in real life situations.

The mean score was 49% (Std. Error of Mean of .13, Median is 0.8 and Mode is 0.0). This suggests that students are not accustomed to applying their knowledge and more used to memorizing facts.

While the frequency curve is a normal curve there is one major outlier which indicates some problem. For example, it could be the result of anomalies in marking; these anomalies will need to be further investigated, or, it could be a result of application skills not being taught in the classroom.

The results of the CRQ answers are opposite to the results of the MCQ answers. This may be a result of poor language ability. Using Pearson's Correlation it is found that the relationship between Bengali Language achievement and CRQ achievement is significant at 0.01 level (2 tailed). This means that if students are not skilled in Bengali language they are unable to express their ideas when it comes to writing constructed response items.

CRQ Mean Scores

Mean =7.333
Std. Dev. =4.5346
N =1,147
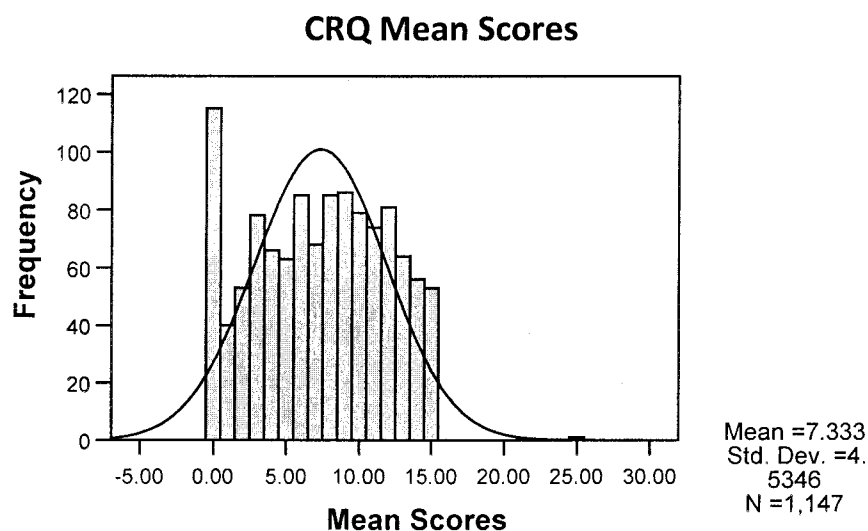
Graph 7: CRQ % Mean Scores

3.1 CRQ Mean Scores by Division

Khulna division showed the highest achievement with a score of 64% with Shyllet having the lowest score of 48%

% Mean Scores by Division						
Shyllet	Dhaka	Chittagong	Barisal	Rajashi	Rangpur	Khulna
48%	62%	61%	53%	55%	52%	64%

Table 5: CRQ % Mean Scores by Divisions
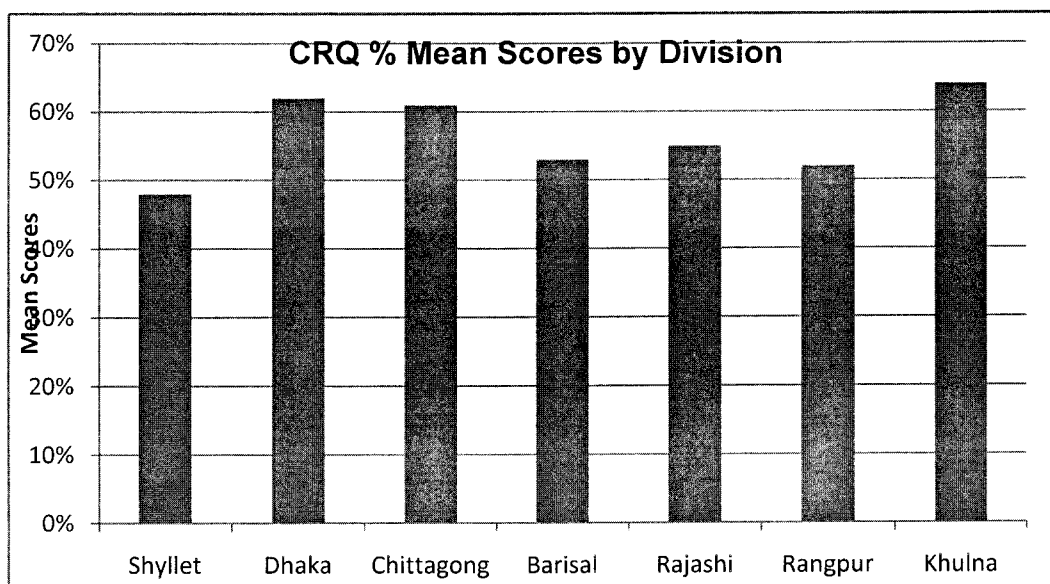
Graph 8: CRQ % Mean Scores by Division

3.2 CRQ Mean Scores by Gender

There was little difference in the achievement of boys and girls. Boys had a mean score of 55% (8.3 marks out of a possible 15 marks) and girls had a mean score of 58% (8.7 marks out of a possible 15 marks).

3.3 Mean Score by School Type

It was found that GPS schools had a mean score of 55% (8.2 marks out of a possible 15 marks); NNGPS had a mean score of 44% (6.6 marks out of a possible 15 marks; Others (BRAC schools, kindergarten, non-government schools) had a mean score of 71% (10.6 marks out of a possible 15 marks).

CRQ % Mean Score by School Type		
GPS	NNGPS	Others
55	44	71

Table 6: CRQ % Mean Score by School Type
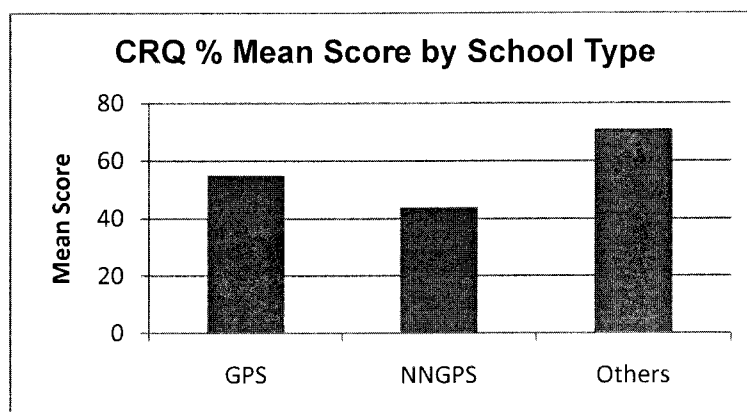
Graph 9: CRQ % Mean Scores by School Type

4. Reliability of Marking and Scoring the Bangladesh and Global Studies Answer Scripts

The scripts reviewed showed an 81% reliability of marking with >1% being under marked and approximately 2% being over marked. The main difficulties observed were markers entering the marks incorrectly; not putting an entry on the cover page of the answer papers, over marking and under marking, giving no marks when the answer was correct.

The percentage of incorrectly marked scripts, while it is low for this sample, has implications for the nationwide examination and this should be further investigated by the conduct of an inter-rater reliability study.

5. Traditional Bangladesh and Global Studies Items

Sixty five items were traditional items. Overall the students achieved a score of 65% (42.5 marks out of a possible 65 marks) with a median and mode of 42.00 and a standard deviation of 12.9.

5.1 Traditional MCQ and Fill in the Blanks Items

Students achieved a mean score of 57% (17 marks out of a possible 30 marks). This can be compared with the 81% score obtained by the competency based MCQ items.

% Mean Scores of Traditional MCQ and FiB Items

Mean =17.042
Std. Dev. =10.33634...
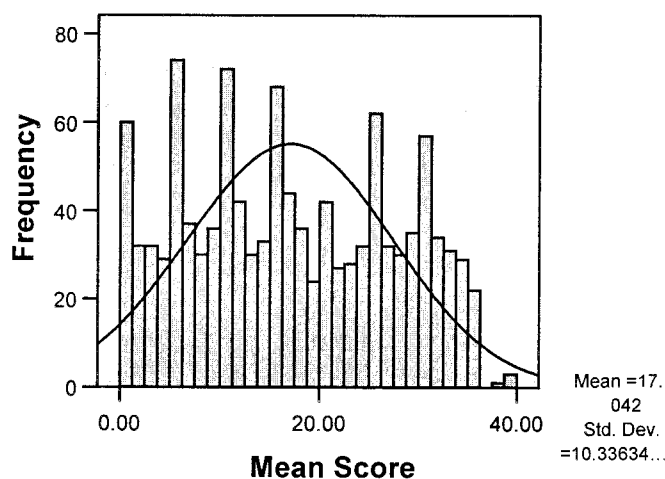
Graph 10: % Mean Scores of Traditional MCQ and FIB Items

6. Traditional SCRQ and CRQ Items

A mean score of 73% (25.53 marks out of a possible 35 marks) was achieved in these items. A graph showing the distribution of scores is found on the next page. Competency items achieved a score of 49% (7.3 marks out of a possible 15 marks).

Some care should be taken in comparing the results because the competency based items are only 35% of the PECE while the traditional items are 65% of the PECE.

% Mean Scores of Traditional CRQ and SCRQ

Mean =25.5344
Std. Dev. =4.10926
N =1,147
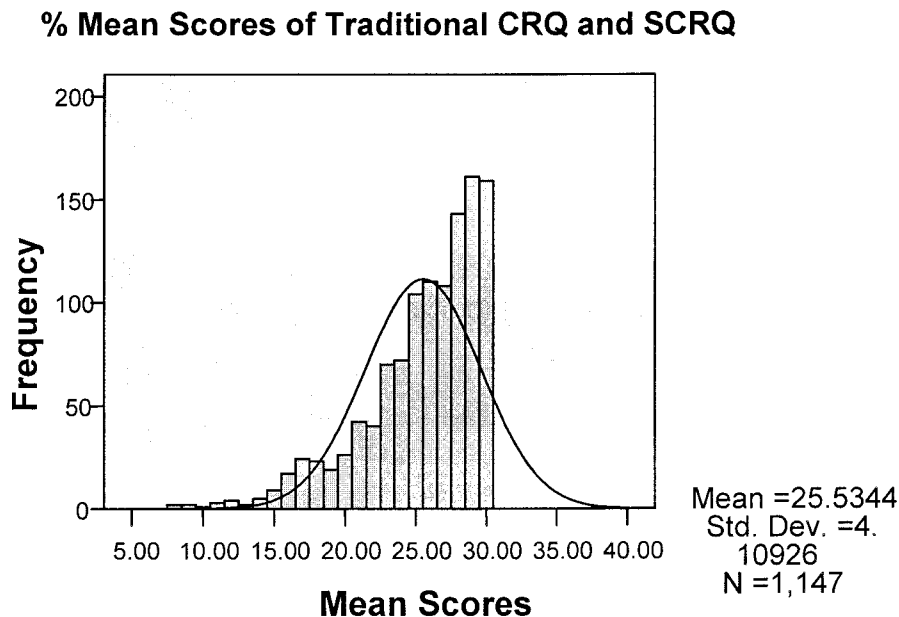
Graph 11: % Mean Scores of Traditional CRQ and SCRQ

7. Comparison of Traditional and Competency Item Achievement

It can be seen from the graph below that the overall achievement of students was higher on the competency items than on the traditional items. Students achieved higher scores on the competency based MCQs and FiB items while achieved a lower score on the SCRQ and CRQ items. This would suggest that the competency based MCQs and FiB items were easier than the traditional MCQs and FiB items while the competency based SCRQ and CRQ items were more difficult, maybe as a result of them being unseen items unlike the traditional items which would have been practiced in class.
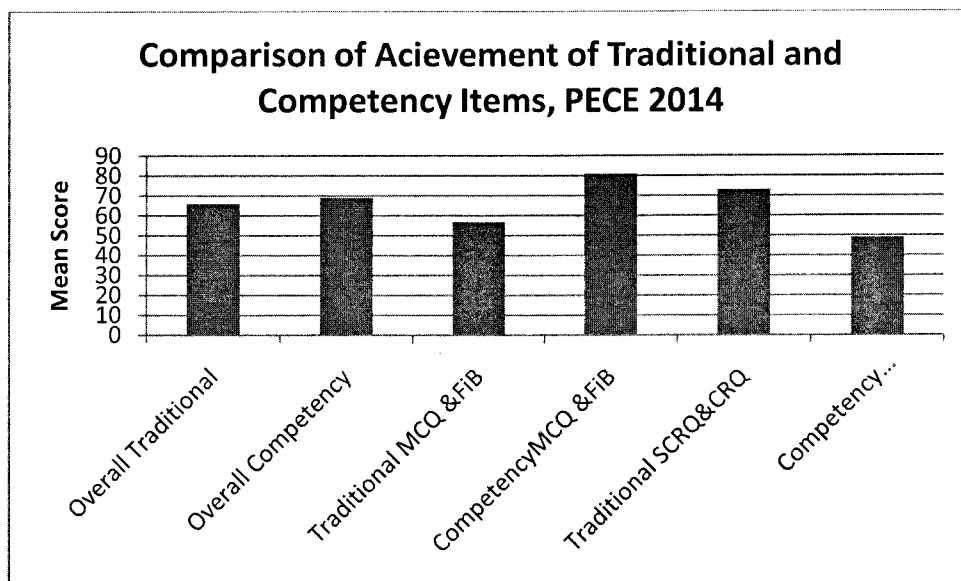
Graph 12: Comparison of Achievement of Traditional and Competency Items, PECE 2014

8. Conclusion

Overall the students achieved a score of 65% in the traditional items and 69% in the competency based items. Students appeared to find the MCQ competency items easier than the traditional items obtaining scores of 81% in the competency based MCQs and FiBs and 57% in the traditional MCQs. However they appeared to find the SCRQ and CRQ of the competency based items more difficult than the SCRQs and MCQs of the traditional items obtaining a score of 49% in the competency items and 73% in the traditional items.

The Relation between Achievement in Bengali Language and Achievement in other Subjects

Spearman Rank Correlation Coefficient was conducted on a number of subject combinations as shown in the table below.

Variable 1	Variable 2
Bengali Language	English Language
Bengali Language	Mathematics
Bengali Language	Science
Bengali Language	Bangladesh and Global Studies

Table 1: Combinations assessed using Spearman Rank Correlation

As the individual results show, no paired combinations of subjects showed any significant correlation at the 0.01 level. This means that the attainment of students in Bengali Language was in no way a predictor of their performance in other subject areas.

To broaden the assessment of student performance two other Spearman Rank tests were conducted, one CRQ Bengali Language and CRQ Social Studies and another Mathematics and Science. Again these tests showed no relationship in the performance of one subject as related to the other.

Because Spearman Rank results showed that there was no correlation between Bengali Language achievement and the achievement of the other subjects tested, it was considered that the top performing students in Bengali Language might perform well in the other subjects. To check the null hypothesis of there being no correlation between Bengali Language achievement and student achievement of the other subjects (English Language. Mathematics, Science and Social Studies), Pearson Correlation test was undertaken. The results are found below. These results show that the null hypothesis could not be contradicted. In other words students performing well in Bengali Language had no statistical certainty of performing well in other subjects.

The analyses are found in Annex 3.

Glossary of Terminology

Standard Deviation	The standard deviation measures how concentrated the data are around the mean; the more concentrated, the smaller the standard deviation. It lets you know if you can rely on the Mean to give you a meaningful representation of all the data
Mean	The average of a set of data obtained by dividing the sum of observed values by the number of observations
Mode	The value in a set of data that occurs most frequently. If two values appear with the most frequency the data is said to be bimodal.
Median	The median of a set of data is calculated by listing the data in ascending order, then finding the point that is exactly in the middle. If there are two centre values, these two values are averaged and the median is this average score even though it does not appear in the data set.
Negative Skew	Data that are skewed to the left have a long tail that extends to the left. In this situation the mean and the median are both less than the mode.
Positive Skew	Data that are skewed to the right have a long tail that extends to the right. An alternate way of talking about a data set skewed to the right is to say that it is positively skewed. In this situation the mean and the median are both greater than the mode.
Average	See Mean
MCQ	Multiple Choice Questions
SCRQ	Short Constructed Response Questions
CRQ	Constructed Response Questions
Frequency	How often a value appears in a set of data
Normal Curve	Shows data in a normal distribution in the form of a bell curve
Significance	Means that the statistic is reliable. It tells how sure you are that a difference or relationship exists

Proposed and Amended Sample

Divisions		Name of the Upazila/Thana (Suggested Upazillas in parenthasis)	Type of School	Number of Students
Dhaka	Metropolitan	Upazilla 1 (Demra)	GPS	20
			NNGPS	20
		Substituted with Tongi	Others	20
	Urban	Upazila 2 (Savar Sadar Pouroshova)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazila 3 (Grior)	GPS	20
			NNGPS	20
			Others	20
Total		**3**	**9**	**180**
Chittagong	Metropolitan	Upazilla 1 (Halishahar)	GPS	20
			NNGPS	20
		Substituted with Kutuali	Others	20
	Urban	Upazila 2 (Potia Sadar)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazila 3 (Bashkhali)	GPS	20
			NNGPS	20
			Others	20
Total		**3**	**9**	**180**
Barishal	Metropolitan	Upazilla 1 (Wajipur)	GPS	20
			NNGPS	20
			Others	20
	Urban	Upazila 2 (Pathorghata)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazila 3 (Bmna)	GPS	20
			NNGPS	20
			Others	20
Total		**3**	**9**	**180**
Khulna	Metropolitan	Upazilla 1 (Boyra)	GPS	20
			NNGPS	20
			Others	20
	Urban	Upazila 2 (Shatkihira Sadar)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazila 3 (Ashashuni)	GPS	20
			NNGPS	20
			Others	20
Total		**3**	**9**	**180**
Rajshahi	Metropolitan	Upazilla 1 (Sardar)	GPS	20
		Substituted with Boyalia	NNGPS	20
			Others	20
	Urban	Upazila 2 (tanor)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazila 3 (Bholarhaat)	GPS	20
			NNGPS	20
			Others	20

Divisions		Name of the Upazila/Thana (Suggested Upazillas in parenthasis)	Type of School	Number of Students
Rangpur	Metropolitan	Upazilla 1 (Kotowali)	GPS	20
			NNGPS	20
		Substituted with Sadar	Others	20
	Urban	Upazila 2 (Gaibandha Sadari)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazila 3 (Shaghata)	GPS	20
			NNGPS	20
			Others	20
Total		**3**	**9**	**180**
Sylhet	Metropolitan	Upazilla 1 (Shibganj) **Substituted with Sadar**	GPS	20
			NNGPS	20
			Others	20
	Urban	Upazila 2 (Bianibazar)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazia 3 (Shahbajpur Baralekha)	GPS	20
			NNGPS	20
			Others	20
Total		**3**	**9**	**180**

Total Sample Size: 180 students/ 7 Divisions = 1260 students

Proposed and Amended Sample

Divisions		Name of the Upazila/Thana (Suggested Upazillas in parenthasis)	Type of School	Number of Students
Dhaka	Metropolitan	Upazilla 1 (Demra)	GPS	20
			NNGPS	20
		Substituted with Tongi	Others	20
	Urban	Upazila 2 (Savar Sadar Pouroshova)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazila 3 (Grior)	GPS	20
			NNGPS	20
			Others	20
Total		**3**	**9**	**180**
Chittagong	Metropolitan	Upazilla 1 (Halishahar)	GPS	20
			NNGPS	20
		Substituted with Kutuali	Others	20
	Urban	Upazila 2 (Potia Sadar)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazila 3 (Bashkhali)	GPS	20
			NNGPS	20
			Others	20
Total		**3**	**9**	**180**
Barishal	Metropolitan	Upazilla 1 (Wajipur)	GPS	20
			NNGPS	20
			Others	20
	Urban	Upazila 2 (Pathorghata)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazila 3 (Bmna)	GPS	20
			NNGPS	20
			Others	20
Total		**3**	**9**	**180**
Khulna	Metropolitan	Upazilla 1 (Boyra)	GPS	20
			NNGPS	20
			Others	20
	Urban	Upazila 2 (Shatkihira Sadar)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazila 3 (Ashashuni)	GPS	20
			NNGPS	20
			Others	20
Total		**3**	**9**	**180**
Rajshahi	Metropolitan	Upazilla 1 (Sardar)	GPS	20
		Substituted with Boyalia	NNGPS	20
			Others	20
	Urban	Upazila 2 (tanor)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazila 3 (Bholarhaat)	GPS	20
			NNGPS	20
			Others	20

Divisions		Name of the Upazila/Thana (Suggested Upazillas in parenthasis)	Type of School	Number of Students
Rangpur	Metropolitan	Upazilla 1 (Kotowali) **Substituted with Sadar**	GPS	20
			NNGPS	20
			Others	20
	Urban	Upazila 2 (Gaibandha Sadari)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazila 3 (Shaghata)	GPS	20
			NNGPS	20
			Others	20
Total		**3**	**9**	**180**
Sylhet	Metropolitan	Upazilla 1 (Shibganj) **Substituted with Sadar**	GPS	20
			NNGPS	20
			Others	20
	Urban	Upazila 2 (Bianibazar)	GPS	20
			NNGPS	20
			Others	20
	Rural	Upazia 3 (Shahbajpur Baralekha)	GPS	20
			NNGPS	20
			Others	20
Total		**3**	**9**	**180**

Total Sample Size: 180 students/ 7 Divisions = 1260 students

Letter sent By NAPE to DPE requesting Permission for 2014 PECE Sample

জাতীয় প্রাথমিক শিক্ষা একাডেমী (নেপ)
ময়মনসিংহ।
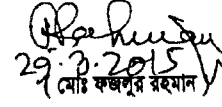
স্মারক নং-৩৮.০৪.০০০০.৪০১.০২৬.১৫-১২০৫   তারিখ: ২৯/০৩/২০১৫ খ্রি:

বিষয়ঃ প্রাথমিক শিক্ষা সমাপনী পরীক্ষা -২০১৪ এর উত্তরপত্র বিশ্লেষণ প্রসঙ্গে।

উপর্যুক্ত বিষয়ে আপনার সদয় অবগতি ও প্রয়োজনীয় কার্যার্থে জানানো যাচ্ছে যে, ৫ম শ্রেণির প্রাথমিক শিক্ষা সমাপনী পরীক্ষা পিইডিপি-৩ এর একটি ডিএলআইভুক্ত কার্যক্রম। উক্ত কার্যক্রমের অংশ হিসেবে ডিএলআই এর শর্তপূরণকল্পে ২০১৪ সালে অনুষ্ঠিত ৫ম শ্রেণির প্রাথমিক শিক্ষা সমাপনী পরীক্ষার উত্তর পত্র বিশ্লেষণপূর্বক প্রতিবেদন প্রেরণের বিষয়টি উল্লেখ রয়েছে। ইতোমধ্যে জাতীয় প্রাথমিক শিক্ষা একাডেমী (নেপ) নিম্নের সংযুক্ত তালিকায় বর্ণিত ৭টি বিভাগের ২১টি উপজেলা হতে তথ্য সংগ্রহের জন্য প্রাথমিক সিদ্ধান্ত গ্রহণ করেছে। এ বিষয়ে উন্নয়ন সহযোগী সংস্থা এবং প্রাথমিক শিক্ষা অধিদপ্তরের সংগে আলোচনা সাপেক্ষে পরবর্তী কার্যক্রম গ্রহন করা হবে। এজন্য সংযুক্ত তালিকায় বর্ণিত উপজেলা সমূহের উত্তরপত্র সংরক্ষণপূর্বক নেপ-এ প্রেরণের জন্য প্রয়োজনীয় ব্যবস্থা গ্রহণের জন্য সদয় অনুরোধ করা হলো।

সংযুক্তি : উপজেলার তালিকা - ২পাতা

২৯.৩.২০১৫
(মোঃ ফজলুর রহমান)
মহাপরিচালক

মহাপরিচালক
প্রাথমিক শিক্ষা অধিদপ্তর
মিরপুর-২, ঢাকা-১২১৬।
দৃষ্টি আকর্ষণ: পরিচালক (প্রশাসন)

অনুলিপি ঃ

১। সচিব প্রাথমিক ও গণশিক্ষা মন্ত্রণালয়, বাংলাদেশ সচিবালয়, ঢাকা।

২। পরিচালক (প্রোগ্রাম), পিইডিপি-৩, প্রাথমিক শিক্ষা অধিদপ্তর, মিরপুর-২, ঢাকা-১২১৬।

৩। পরিচালক (প্রশিক্ষণ), প্রাথমিক শিক্ষা অধিদপ্তর, মিরপুর-২, ঢাকা-১২১৬।

৪। অফিস কপি।

Letter sent by DPE to Upazillas requesting Answer Scripts to be Provided to NAPE

সমাপনী পরীক্ষা অধিশাখা

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
প্রাথমিক শিক্ষা অধিদপ্তর
সেকশন ২, মিরপুর, ঢাকা ১২১৬
www.dpe.gov.bd

স্মারক নং: প্রাশিঅ/সাঃ প্রঃ (সমাপনী সেল)/৩এম-৩৩৫(পার্ট-১)/২০১০/৫৯৭(৫) তারিখ: ৩০ চৈত্র ১৪২১
১৩ এপ্রিল ২০১৫

বিষয়: প্রাথমিক শিক্ষা সমাপনী পরীক্ষা ২০১৪ এর উত্তরপত্র বিশ্লেষন।

সূত্র: জাতীয় প্রাথমিক শিক্ষা একাডেমি (নেপ), ময়মনসিংহ এর ২৯ মার্চ ২০১৫ তারিখের ১২০৫ নং স্মারক।

উপর্যুক্ত বিষয় ও সূত্রের প্রেক্ষিতে জানানো যাচ্ছে যে, ৫ম শ্রেণির প্রাথমিক শিক্ষা সমাপনী পরীক্ষা পিইডিপি-৩ এর একটি ডিএলআইভূক্ত কার্যক্রম। উক্ত কার্যক্রমের অংশ হিসেবে ডিএলআই এর শর্তপূরণকল্পে ২০১৪ সালে অনুষ্ঠিত ৫ম শ্রেণির প্রাথমিক শিক্ষা সমাপনী পরীক্ষার উত্তরপত্র বিশ্লেষনপূর্বক প্রতিবেদন দাখিলের সিদ্ধান্ত রয়েছে।

২। উল্লিখিত বিষয়ে শর্তপূরণের লক্ষ্যে ইতোমধ্যে ৭টি বিভাগের ২১টি উপজেলা নির্বাচন করা হয়েছে। ২১টি উপজলার বিভিন্ন ক্যাটাগরির বিদ্যালয় হতে ৪০-৬০টি রোল নম্বর নির্বাচন করা হয়েছে যাদের সকল বিষয় (৬টি) এর উত্তরপত্র জাতীয় প্রাথমিক শিক্ষা একাডেমি (নেপ) এ প্রেরণের সিদ্ধান্ত গৃহিত হয়েছে।

৩। গৃহিত সিদ্ধান্ত মোতাবেক আগামী ২০ এপ্রিল ২০১৫ তারিখের মধ্যে উপজেলা শিক্ষা অফিসারগণকে নির্বাচিত ২১টি উপজেলার জন্য তালিকায় সংযুক্ত নির্বাচিত রোল এর সকল বিষয় এর উত্তরপত্র মহাপরিচালক, জাতীয় প্রাথমিক শিক্ষা একাডেমি (নেপ), কলেজ রোড, ময়মনসিংহ- এই ঠিকানায় বাহক মারফত প্রেরণের জন্য নির্দেশক্রমে অনুরোধ করা হলো। উত্তরপত্রসমূহ সিলগালা করে খামের উপরে ''গোপনীয়'' কথাটি লিপিবদ্ধ করতে হবে। তাছাড়া বর্ণিত বিষয়ে যে কোন ধরণের সহযোগিতার জন্য জনাব মাজহারুল হক, সহকারী বিশেষজ্ঞ, জাতীয় প্রাথমিক শিক্ষা একাডেমি (নেপ), (মোবাইল নম্বর- ০১৭১২২২৩৪২৯) এর সাথে যোগাযোগ করা যাবে। ।

বিষয়টি অতীব জরুরী।

উপজেলা শিক্ষা অফিসার (নির্বাচিত)
উপজেলা.......তানোর.........জেলা..রাজশাহী।

মীর্জা মোঃ হাসান খসরু ১৩-৪-১৫
সহকারী পরিচালক (সো:প্র:)
ফোনঃ ৯০০০৩২৬

অনুলিপি:

১। মহাপরিচালক, জাতীয় প্রাথমিক শিক্ষা একাডেমি (নেপ), কলেজ রোড, ময়মনসিংহ।

২। পরিচালক (প্রোগ্রাম), প্রাথমিক শিক্ষা অধিদপ্তর, মিরপুর-২, ঢাকা-১২১৬।

৩। বিভাগীয় উপপরিচালক, প্রাথমিক শিক্ষা, ঢাকা/রাজশাহী/বরিশাল/ খুলনা/চট্টগ্রাম/সিলেট/রংপুর বিভাগ।

৪। জেলা প্রাথমিক শিক্ষা অফিসার, ঢাকা/মানিকগঞ্জ/রাজশাহী/নবাবগঞ্জ/বরিশাল/খুলনা/সাতক্ষীরা/চট্টগ্রাম/ সিলেট/ মৌলভীবাজার/রংপুর/গাইবান্ধা।

৫। মহাপরিচালক মহোদয়ের ব্যক্তিগত সহকারী, প্রাথমিক শিক্ষা অধিদপ্তর।

৬। অফিস কপি।

Correlation Tests of Achievement between Subjects

Spearman Rank Correlation Coefficient was conducted on a number of subject combinations as shown in the table below.

Variable 1	Variable 2
Bengali Language	English Language
Bengali Language	Mathematics
Bengali Language	Science
Bengali Language	Bangladesh and Global Studies

As the individual results show, no paired combinations of subjects showed any significant correlation at the 0.01 level. This means that the attainment of students in Bengali Language was in no way a predictor of their performance in other subject areas.

To broaden the assessment of student performance two other Spearman Rank tests were conducted, one CRQ Bengali Language and CRQ Social Studies and another Mathematics and Science. Again these tests showed no relationship in the performance of one subject as related to the other.

Scatter graphs and Tables of Results are shown below.

Bengali Language and English Language
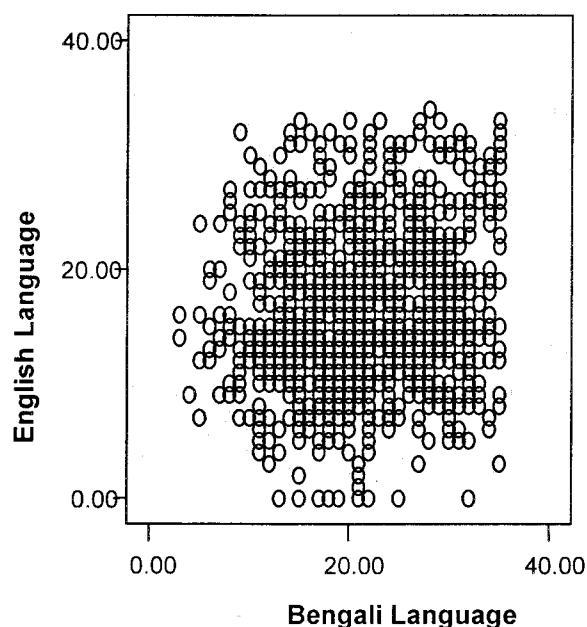
			Bengali Language	English Language
Spearman's rho	Bengali Language	Correlation Coefficient	1.000	.120(**)
		Sig. (2-tailed)	.	.000
			1162	1161
	English Language	Correlation Coefficient	.120(**)	1.000
		Sig. (2-tailed)	.000	.
		N	1161	1162

Bengali Language and Mathematics
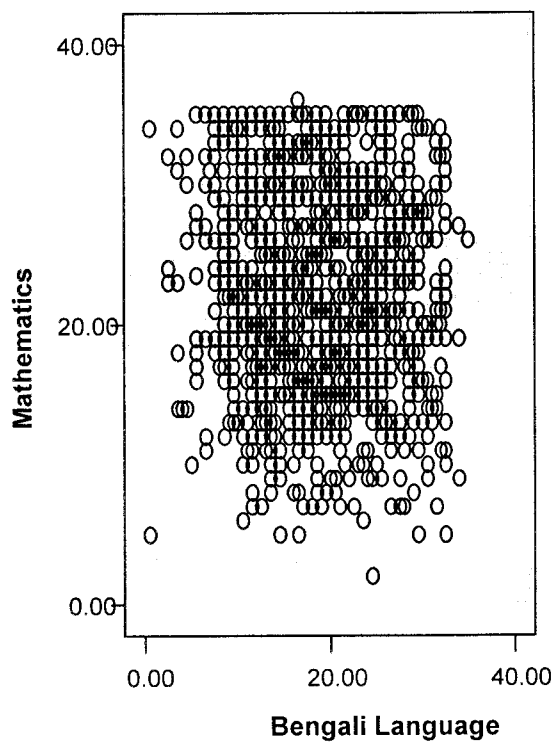
			Bengali Language	Mathematics
Spearman's rho	Bengali Language	Correlation Coefficient	1.000	.004
		Sig. (2-tailed)	.	.897
		N	1162	1097
	Mathematics	Correlation Coefficient	.004	1.000
		Sig. (2-tailed)	.897	.
		N	1097	1098

** Correlation is significant at the 0.01 level (2-tailed).

Bengali Language and Science
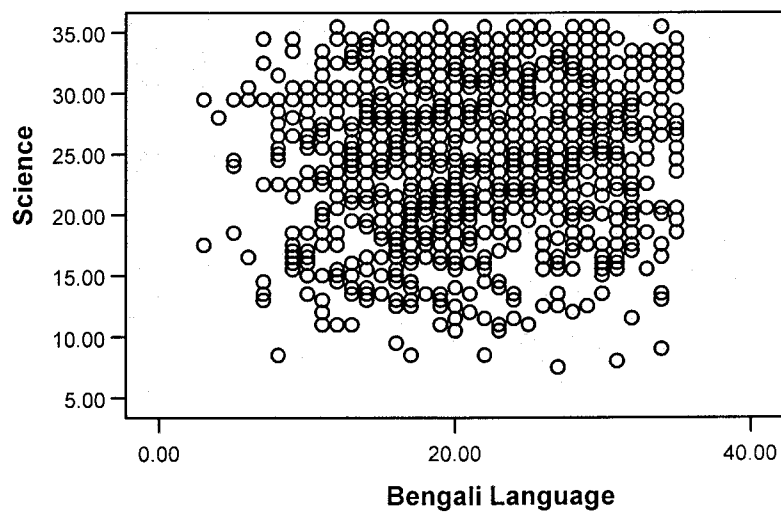
			Bengali Language	Science
Spearman's rho	Bengali Language	Correlation Coefficient	1.000	.107(**)
		Sig. (2-tailed)	.	.000
		N	1162	1155
	Science	Correlation Coefficient	.107(**)	1.000
		Sig. (2-tailed)	.000	.
		N	1155	1156

** Correlation is significant at the 0.01 level (2-tailed).

Bengali Language and Bangladesh and Global Studies
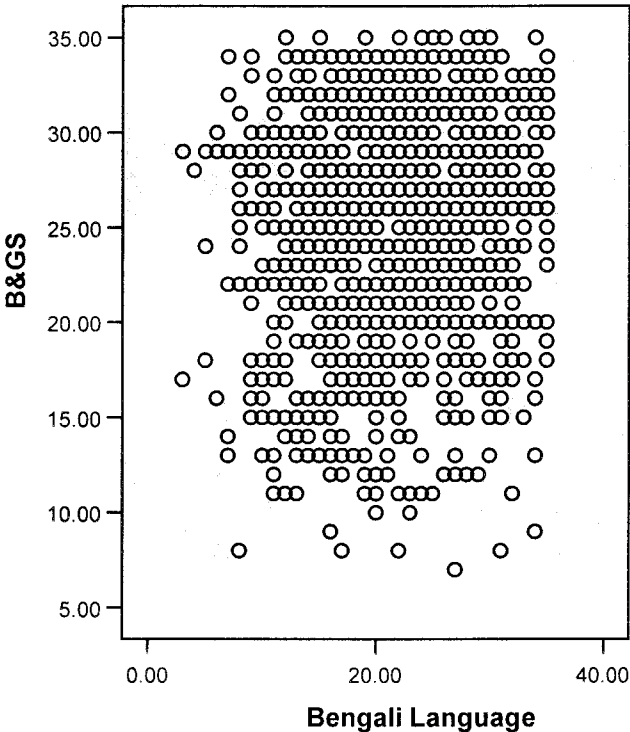
			Bengali Language	B&GS
Spearman's rho	Bengali Language	Correlation Coefficient	1.000	.107(**)
		Sig. (2-tailed)	.	.000
		N	1162	1155
	B&GS	Correlation Coefficient	.107(**)	1.000
		Sig. (2-tailed)	.000	.
		N	1155	1156

Correlation is significant at the 0.01 level (2-tailed).

Comparison of CRQ Achievement between Bengali Language and Social Studies
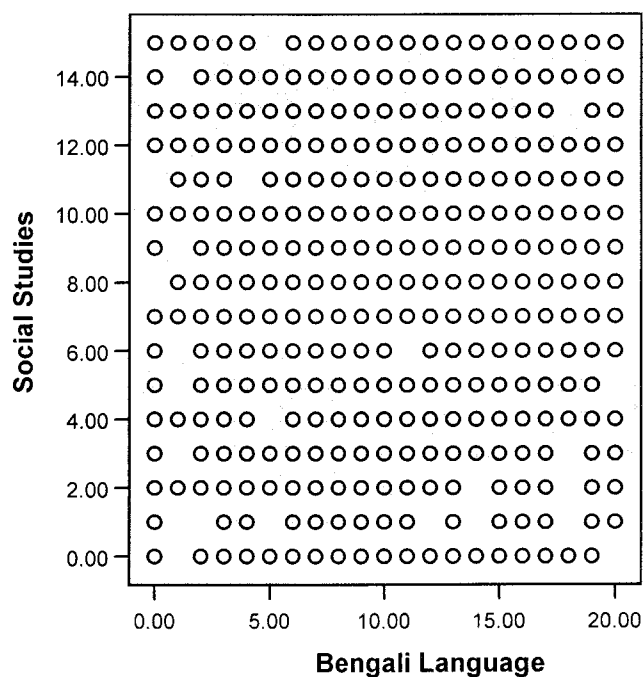
			Bengali Language	Social Studies
Spearman's rho	Bengali Language	Correlation Coefficient	1.000	.109(**)
		Sig. (2-tailed)	.	.000
		N	1162	1155
	VAR00009	Correlation Coefficient	.109(**)	1.000
		Sig. (2-tailed)	.000	.
		N	1155	1156

** Correlation is significant at the 0.01 level (2-tailed).

Correlation between Mathematics and Science Achievement
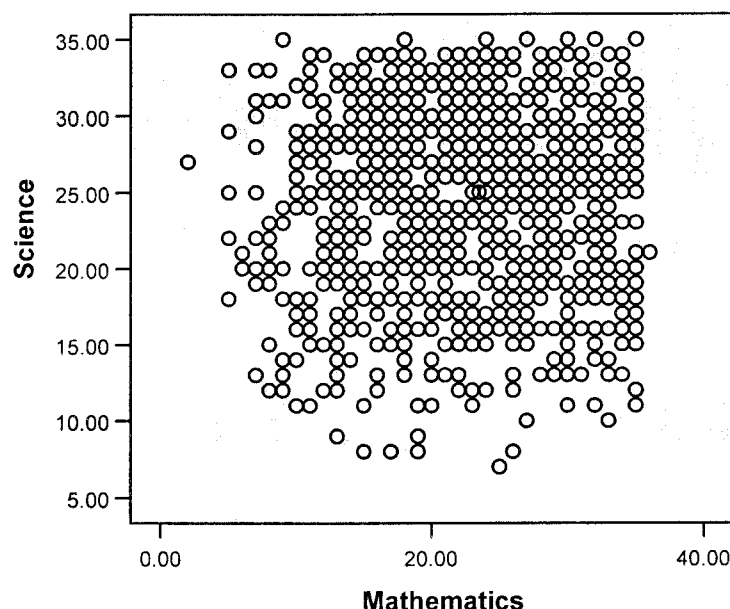
			Mathematics	Science
Spearman's rho	Mathematics	Correlation Coefficient	1.000	.032
		Sig. (2-tailed)	.	.295
		N	1098	1098
	Science	Correlation Coefficient	.032	1.000
		Sig. (2-tailed)	.295	.
		N	1098	1156

Because Spearman Rank results showed that there was no correlation between Bengali Language achievement and the achievement of the other subjects tested, it was considered that the top performing students in Bengali Language might perform well in the other subjects. To check the null hypothesis of there being no correlation between Bengali Language achievement and student achievement of the other subjects (English Language. Mathematics, Science and Social Studies), Pearson Correlation test was undertaken. The results are found below. These results show that the null hypothesis could not be contradicted. In other words students performing well in Bengali Language had no statistical certainty of performing well in other subjects.

25% of Students who had the highest marks in Bengali Language and Subject Correlation

		Bengali Language	English Language	Mathematics	Science	B&G Studies
Bengali Language	Pearson Correlation	1	.094	-.024	-.027	-.027
	Sig. (2-tailed)		.111	.690	.643	.643
	N	290	289	276	288	288
English Language	Pearson Correlation	.094	1	.023	.063	.063
	Sig. (2-tailed)	.111		.707	.289	.289
	N	289	289	276	288	288
Mathematics	Pearson Correlation	-.024	.023	1	-.055	-.055
	Sig. (2-tailed)	.690	.707		.359	.359
	N	276	276	276	276	276
Science	Pearson Correlation	-.027	.063	-.055	1	1.000(**)
	Sig. (2-tailed)	.643	.289	.359		.000
	N	288	288	276	288	288
B&G Studies	Pearson Correlation	-.027	.063	-.055	1.000(**)	1
	Sig. (2-tailed)	.643	.289	.359	.000	
	N	288	288	276	288	288

** Correlation is significant at the 0.01 level (2-tailed).

The poorest performing 25% of the sample in Bengali Language was similarly treated and again the null hypothesis could not be disproved. Students performing poorly in Bengali Language could not be assumed to perform poorly in the other subjects tested.

25% of Students who had the lowest marks in Bengali Language and Subject Correlation

		Bengali Language	English Language	Mathematics	Science	B&G Studies
Bengali Language	Pearson Correlation	1	-.023	-.038	.048	.048
	Sig. (2-tailed)		.701	.528	.417	.417
	N	292	292	281	290	290
English Language	Pearson Correlation	-.023	1	.162(**)	.069	.069
	Sig. (2-tailed)	.701		.007	.242	.242
	N	292	292	281	290	290
Mathematics	Pearson Correlation	-.038	.162(**)	1	.017	.017
	Sig. (2-tailed)	.528	.007		.780	.780
	N	281	281	281	281	281
Science	Pearson Correlation	.048	.069	.017	1	1.000(**)
	Sig. (2-tailed)	.417	.242	.780		.000
	N	290	290	281	290	290
B&G Studies	Pearson Correlation	.048	.069	.017	1.000(**)	1
	Sig. (2-tailed)	.417	.242	.780	.000	
	N	290	290	281	290	290

** Correlation is significant at the 0.01 level (2-tailed).

Example of Excel Grid used for Data Entry

s Script Serial	Upazilla Name	District Name	Division Name	Type of School 1-GPS, 2-NNGPS, 3-Other	Q1(1)	Q1(2)	Q1(3)	Q1(4)	Q1(5)	Q1(6)	Q1(7)	Q1(8)	Q1(9)	Q1(10)	Q1(11)	Q1(12)	Q1(13)	Q1(14)	Q1(15)	Q1(16)	Q1(17)	Q1(18)	Q1(19)	Q1(20)	Total score according to question paper	Total Achieved score according to score account sheet	Total score in Com based item	Remarks for MCQ	Question No. 4(a)	Achieved score	Quality of scoring 1-Under Marking; 2-Correct Marking; 3-Over Marking	Question No. 4(b)	Actual score	Quality of scoring 1-Under Marking; 2-Correct Marking; 3-Over Marking	Question No. 4(c)	Actual score	Quality of scoring 1-Under Marking; 2-Correct Marking; 3-Over Marking	Total Score in CRQ Item
5915590	Borolekha	Moulovibazar	Sylhet	1		1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	1	0	1	1	20	18		wrong entry	5	0	2	5	0	2	5	0	2	0
5914685	Borolekha	Moulovibazar	Sylhet	1		1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	20	19		wrong entry	5	2	2	5	1	2	5	1	2	4
5914747	Borolekha	Moulovibazar	Sylhet	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20	19			5	2	2	5	2	2	5	2	2	6
5914825	Borolekha	Moulovibazar	Sylhet	2		1	1	0	1	1	0	1	1	1	0	1	1	0	1	1	1	0	1	0	20	14			5	0	2	5	0	2	5	0	2	0
5914901	Borolekha	Moulovibazar	Sylhet	2		1	1	1	1	1	1	1	0	1	0	1	1	1	0	1	1	1	0	1	20	16			5	0	2	5	1	2	5	0	2	1
5914946	Borolekha	Moulovibazar	Sylhet	2		1	1	0	1	1	1	1	0	1	0	1	1	0	1	1	0	1	0	1	20	15			5	2	2	5	3	2	5	2	3	7
5915007	Borolekha	Moulovibazar	Sylhet	3		1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	0	1	0	1	20	18			5	2	2	5	2	2	5	2	2	7
5915069	Borolekha	Moulovibazar	Sylhet	1		1	1	1	1	1	1	1	0	1	0	1	1	0	1	1	0	1	1	1	20	18			5	3	2	5	2	3	5	4	3	9
5915378	Borolekha	Moulovibazar	Sylhet	2		1	1	1	1	1	0	1	0	1	0	1	1	0	1	0	0	1	0	1	20	14			5	0	2	5	2	2	5	4	2	6
5915540	Borolekha	Moulovibazar	Sylhet	1		1	1	1	1	1	1	1	0	1	0	0	1	0	1	1	0	1	0	0	20	7			5	1	2	5	0	2	5	1	2	2
5915609	Borolekha	Moulovibazar	Sylhet	2		1	0	1	1	1	0	1	0	1	1	0	1	0	1	0	1	0	1	0	20	15			5	0	2	5	0	2	5	0	2	0