

Status of Secondary School Certificate's (SSC) Results of General Education in Bangladesh according to Gender.

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Abstract: This is a status paper about Secondary School Certificate (SSC) results of general education in Bangladesh. The aim of the study is to find out the scenario of SSC results of general education according to gender. To identify the scenario of results, the percentage passed of SSC results for general education by gender over the country from the year 1990 to 2015 are considered in the analysis. The mean and median of SSC results for these 26 years for all students are 60.96% and 60.28 % respectively. These figures for male students are 62.59% and 62.40% and for female students are 58.98% and 57.09%. The coefficient of variation for male students result is 28.19% and for female students is 32.69%. So the male students show better performance compared with female students. Mean, median for male students results are higher than female students. The mean, median, interquartile range, coefficient of variations for the SSC result in percentage before introducing creative questions is lower than that for overall data. Again the all the statistics for the results from 2010 to 2016, after introducing creative questions are higher than that for overall data. It is obvious that after introducing creative questions, the students for both genders have increased the pass rate of SSC results. The study confirms that a significant positive impact on results of introducing creative question in 2010 and the pass rate of female students has sharply increased after introducing creative question. In this study, it also shows that Bangladesh Open University is also playing a significant role in Secondary School Education. During 2010-2015, the average pass rate in the SSC examination of BOU is about 66%. It should be mentioned that the learners of BOU are not regular students and they are dropped out students from their regular study for different reasons. The study also shows that a significant number of learners are passing SSC examination by open and distance mode from Bangladesh Open University.

Key words: SSC results, coefficient of variation, BOU, distance mode

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I. Introduction

Learning is a continuous process. The journey of learning never ends in life. Learning may be categorized as formal and informal learning. Formal learning is defined as “Learning typically provided by an education or training institution, structured (in terms of learning objectives, learning time or learning support) and leading to certification. Formal learning is intentional from the learner’s perspective.” This paper focused on the public examination result of secondary level general education about the formal education of Bangladesh. Secondary education is the bridge between primary and Higher education in Bangladesh. According to the National Education Policy (2010) one of the objectives of secondary education is “to impart quality education at this primary level to extend and consolidate the knowledge acquired during primary education to help the students acquire a strong foundation of quality higher education”. Considering the objectives of National Education Policy 2010 secondary level curriculum was revised on 2012 to make learners more creative and to upraise the education quality of the nation. As mentioned in the Education Policy “on completion of Class X, a public examination will be held on a national basis. Creative methodology will be applied to both the examinations and evaluation will be made in the grading system.” The changes in the assessment system of secondary level make positive changes in Secondary School Certificate (SSC) Examination to an international standard.

II. Assessment And Learning

Assessment is a continuous process. It is a diagnostic process to know what student learns and how learning can be improved according to the objective of learning. Allen (2004) describe that “Assessment involves the use of empirical data on student learning to refine programs and improve student learning”. Barbara E. Walvoord (2004) the author defines assessment as “the systematic collection of information about student

learning, using the time, knowledge, expertise, and resources available, in order to inform decision about how to improve learning.”

2.1 Different types of assessment:

Generally assessment can be defined in three ways, are shown in Fig.1. These are; assessment for learning, assessment of leaning and assessment as learning.

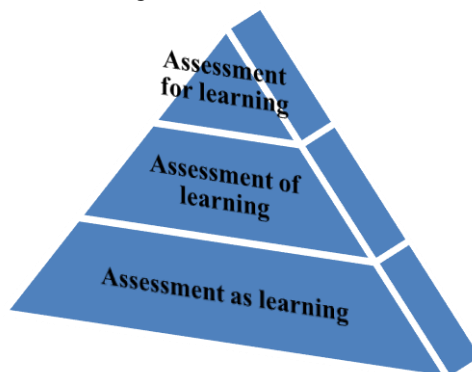


Fig.1. The Assessment Pyramid

Assessment for learning: In this assessment process teacher is giving continuous feedback to the learners to improve their quality, skill and attitude. This is also known as formative assessment.

Assessment of learning: Assessment of learning is that type of assessment when teacher assess the students against learning outcomes or objectives. Manitoba Education, Citizenship and Youth(2006) describe that “assessment of learning refers to strategies designed to confirm what students know, demonstrate whether or not they have met curriculum outcomes or the goals of their individualized programs, or to certify proficiency and make decisions about students’ future programs or placements.” This is often known as summative assessment.

Assessment as learning: This is a self assessment strategy. Students use self assessment, they monitor their activities and progress and assess themselves. P. Afflerbach (2002) notes that “Assessment as learning is based in research about how learning happens, and is characterized by students reflecting on their own learning and making adjustments so that they achieve deeper understanding.”

III. Secondary Education Of Bangladesh

According to National Education Policy 2010 “secondary level of education will include Classes IX to XII. There will be three streams at the secondary level, general, madrasa and technical and each stream will have several branches”. But in practice there are three types of secondary schools in Bangladesh. These are: junior secondary(six to eight), secondary (nine to ten) higher secondary (eleven to twelve).Very recently six to eight is going under primary education to implement the National Education Policy-2010.

Table1: Number of Secondary Schools in the year 2015

Management Type	Number of Secondary School	Total Number of Teachers	Total Number of Students	Teacher Student Ratio
Public	804	8177	335320	1: 40.08
Private	19493	234940	9407752	
Total	20297	243117	9743072	

Source: BANBIES

3.1 Public examination on secondary level of Bangladesh

Secondary School Certificate (SSC) Examination is the first public examination which held after 10 years of schooling. This public examination is inherited from British. British government introduced the examination as entrance examination later on it renamed as matriculation examination. Now it is well known as Secondary School Certificate (SSC) examination. In parallel of general education two other streams i.e Madrasa and Vocational education also exist in Bangladesh education system. Under the ministry of education for general education there are eight boards of Intermediate and Secondary Education who are responsible for conducting the public examinations such as SSC of general education and Higher Secondary Certificate (HSC) level public examinations. There are also madrasa, vocational and technical board for two other streams.

3.2 Examination Reform in Bangladesh

In the age of globalization it is necessary to reform our education system to global standard. From this realization of that government has taken many steps in education sector. Exam reform is one of the major steps of them. Question paper development and answer script evaluation are to major component of student's summative assessment. Earlier no standard format was followed in different boards to develop the question paper in SSC examination. That's why question standard vary from board to board and year to year. From 2006 enormous activities has done by ministry of education. Introducing structured question which is rename as creative question is one milestone in exam reform of Bangladesh. In the structured question (creative question) system every narrative question has a specific structure. Following the Blooms Taxonomy the structure of the question is as follows:

Table 02: Marks distribution and level of each structured question:

Parts of each Question	level	Marks	K	C	A	HOT	Actual level wise distribution	
a.	Knowledge/Recall (K)	01	01					<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">70%</div> <div style="border: 1px solid black; padding: 2px;">30%</div> </div>
b.	Comprehension (C)	02	01	01				
c.	Application (A)	03	01	01	01			
d.	Higher order thinking (HOT) (analysis, synthesis, evaluation)	04	01	01	01	01		
Each question deserve		10	04	03	02	01		

In order to make consistency with the structured question a guideline had been given in terms of MCQ questions. These is 70% MCQ question from knowledge and comprehension level and 30% questions application and higher order thinking level.

From 2008 internal school examination had been conducted following the structured question and MCQ questions. From 2010 following structured question and new type MCQ introduced in a package named Creative Question in Bangla 1st paper and Religious Studies and from 2011 question paper of all subjects (excluding math) was designed with creative question system and the answer script was evaluated with specification grid. This paper is also trying to find out the impact of this system. In the next section, data and methodology will be discussed.

IV. Data And Methodology

This is a status paper about Secondary School Certificate (SSC) results of general education in Bangladesh. To identify the scenario of the SSC results by using time series analysis with the results of general education in Bangladesh from the year 1990 to 2015 are considered in the analysis. Data on the percentage passed of SSC results from the year 1990 to 2015 according to gender are taken from BANBEIS. Descriptive statistics like mean, median, interquartile range, standard deviation, coefficient of variation, skewness and kurtosis are used to see the scenario of results. For comparison of the results between male and female students, different types of graphs are shown here.

V. Result And Discussion

5.1 Result of general education in SSC Examination

In this study, we are trying to find out the scenario of Secondary School Certificate's (SSC) result of general education according to gender. Fig.2 shows the line graph of SSC passed of male, female and overall students. Line graph shows that the pass rate for male students are always higher than female students but per year increasing rate is higher for female students.

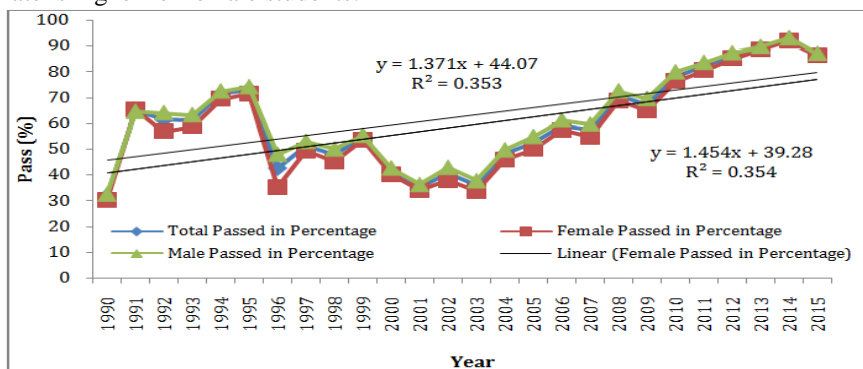


Fig.2. Line Graph of Passed Students for Male, Female and Total students

Table 3 shows the descriptive statistics of SSC results from 1990 to 2015 for overall and gender wise students. The mean and median of SSC results for these 26 years for all students are 60.96% and 60.28 % respectively. The mean and median for male students are 62.59% and 62.40 and for female students are 58.98 and 57.09. For measuring variability of the data, standard deviation, inter quartile range and coefficients of variations are used. The coefficient of variation for male students result is 28.19% and for female students is 32.69%.

Table3. Descriptive statistics of the SSC result in percentage from 1990 to 2015

Statistics	AllStudents	Male Students	Female Students
Mean	60.96	62.59	58.92
Standard Deviation	18.00	17.64	18.67
Variance	323.87	311.23	348.66
Skewness	0.15	0.09	0.19
Kurtosis	1.94	1.97	1.93
Inter quartile range	25.24	24.55	26.42
Median	60.28	62.40	57.09
Co-efficient of variation	29.52	28.19	31.69

Analysis shows that results from 1990 to 2015, the male students` performance better compared with female students. Mean, median for male students results are higher than that for female students also. On the other hand the standard deviation, variance, inter quartile range and coefficient of variation for male students results are lower than that of students results which implies that the SSC result for male students have more average with less variability result. For determining the shape characteristics of the data, it is shown that SSC results for overall, male and female follow positively skewed and leptokurtic data.

5.2 Comparative study on the result of general education in SSC Examination after introducing creative questions. Table 4 shows a comparative study about mean, median, coefficient of variation of SSC the results before and after introducing creative questions respectively. The mean, median, inter quartile range, coefficient of variations for the SSC result in percentage from 1990 to 2009, before introducing creative questions are lower than that for overall data. Statistics of the table concluded that for the results from 2010 to 2015, after introducing creative questions mean median of male, female and also overall data are higher than that before. Standard deviation and variance has decreased which should be expected. So it is obvious that after introducing creative questions, pass rate of SSC results in both genders have increased.

Table 4. Descriptive statistics of the SSC result in percentage for the students before and after introducing creative question.

Statistics	Before (1990-2009)			After (2010-2015)		
	All Students	Male Students	Female Students	All Students	Male Students	Female Students
Mean	53.49	55.30	51.12	85.89	86.88	84.91
Standard Deviation	12.81	12.71	13.16	5.13	4.64	5.64
Variance	164.14	161.64	173.15	26.31	21.51	31.79
Skewness	-0.08	-0.16	-0.02	-0.26	-0.17	-0.32
Kurtosis	1.86	1.95	1.79	2.06	2.10	2.03
Interquartile range	21.18	18.96	22.91	7.12	6.25	7.97
Median	53.60	55.15	51.74	86.52	87.28	85.78
Co-efficient of variation	23.95	22.99	25.74	5.97	5.34	6.64

5.3 Co-relation among different variables in overall result and result after introducing creative questions. Statistics shows that correlations among different variables are significant and higher for after than before introducing creative question. After introducing creative question, correlation between appeared and passed are significant and higher than earlier to introduce creative questions (Table 5 & Table 6);

Table 5. Correlation between appeared and passed students with significant level

Correlated Variables	Correlations	p-value
Total appeared and passed	0.795	0.00
Male appeared and Passed	0.656	0.00
Female appeared and passed	0.870	0.00
Male appeared and Female appeared	0.850	0.00
Male passed and female passed	0.962	0.00

Table 6. Correlation between appeared and passed students with significant level for the student before and after introducing creative questions

Correlated Variables	Before introducing CQ (1990-2009)		After introducing CQ (2010-2015)	
	Correlations	p-value	Correlations	p-value
Total Appeared and Total Passed	0.546	0.00	0.947	0.00
Male appeared and Male Passed	0.454	0.00	0.936	0.00
Female appeared and Female passed	0.693	0.00	0.955	0.00
Male appeared and Female appeared	0.808	0.00	0.994	0.00
Male Passed and Female passed	0.825	0.00	0.998	0.00

VI. Learning Through Open And Distance Mode

Bangladesh Open University is the only public university in Bangladesh who is offering academic courses from secondary to PhD through open and distance mode. Learners who are engaged in different jobs and are not able to continue their studies with regular classes are the beneficiary group of BOU. All over the country BOU has 12 regional centers, 80 sub-regional centres, 26625 tutors and 1478 study centers to develop the human resources of Bangladesh through formal and non-formal education. For SSC learners BOU is offering weekend tutorial class, TV and radio session and e-books for preparing their study.

6.1 Analysis of BOU results

The mean and median of SSC results of BOU students for 2010 to 2015 years are 66.40% and 66.52 % respectively. The standard deviation and coefficient of variation are 6.59% and 9.92% respectively. Correlation (0.909) between appeared and passed of BOU students is statistically significant.

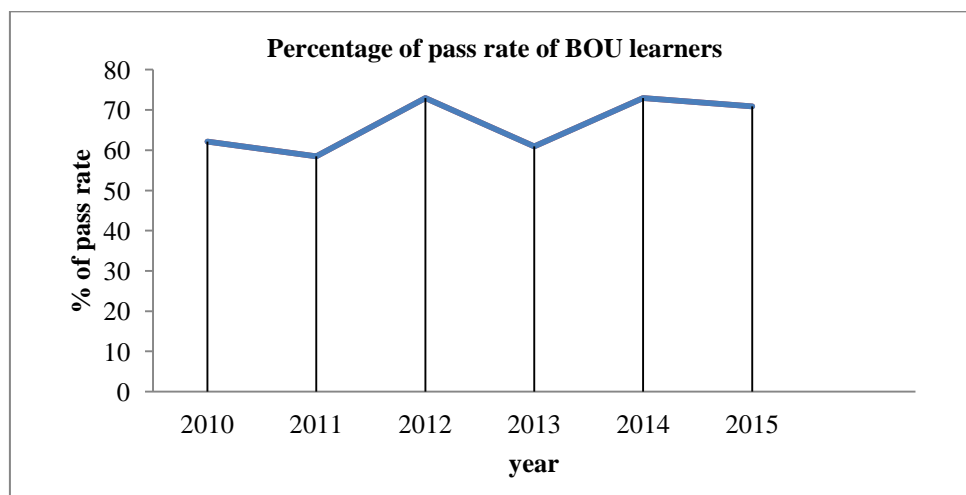


Fig.3. Percentage of Pass rate of BOU Learners

VII. Conclusion

In this study, we are trying to find out the scenario of Secondary School Certificate's (SSC) result of general education according to gender. The conclusion of this study is given below:

- The average pass of male students are always higher than female students but per year increasing pass rate for female is higher;
- The mean and median of SSC results for these 26 years for all students are 60.96% and 60.28 % respectively;
- These figures for male students are 62.59% and 62.40% and for female students it's are 58.98% and 57.09%;

- The coefficient of variation for male students result is 28.19% and for female students is 32.69%. So the male students' shows better performance compared with female students. Mean, median for male students results are higher than the female students;
- The mean, median, interquartile range, coefficient of variations for the SSC result in percentage before introducing creative questions are lower than that for overall data;
- The results from 2010 to 2016, after introducing creative questions are higher than that for overall data. So it is obvious that after introducing creative questions, the students for both genders have increased the pass rate of SSC results;
- After introducing creative question, correlation between appeared and passed are significant and higher than earlier to introduce creative questions;
- The mean and median of SSC results of BOU students for these 6 years are 66.40% and 66.52 % respectively. The standard deviation and coefficient of variation are 6.59 and 9.92% respectively;
- Correlation (0.909) between appeared and passed of BOU students is statistically significant.

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